Supplementary file 2. Extraction tables

UK intervention studies

<table>
<tr>
<td>

Addicott 2008

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td>X</td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up: Used data from previous years</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size: 314

</td>
<td>

Data collection method: Used hospital episode statistics and data from the Trusts

Outcome measures:

<table>
<tr><td>Place of death</td></tr>
<tr><td>Utilisation of services</td></tr>
<tr><td>Costs</td></tr>
<tr><td></td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Marie Curie Delivering Choice Programme. Rapid response team making visits to homes late afternoon/evening and overnight and discharge nurses. Aim

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Summary of results:

Home deaths rose from 19 per cent in 2005–6 to 23 per cent during the implementation of the programme (2006–7). Statistically significant change for all causes of death and for deaths from causes other than cancer (excluding accidental deaths), although was not statistically significant for patients with cancer.

The proportion of home deaths rose from 19 per cent in 2005–6 to 42 per cent in 2006–7 for those who were in the programme remaining at 19 per cent for those who were not.

No statistical difference in the average bed days per admission used by all patients with cancer in the last eight weeks of life when compared to previous years. Fall in admissions was not statistically significant. Length of stay and admissions were lower for patients receiving the care team intervention.

Costs of hospital care did not change (£3,066 before programme £3019 after programme). Patients using the care team had lower costs.

For a sub-sample evaluated further there was no difference in overall community and acute care costs compared to before the programme.

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<table>
<tr>
<td>Population characteristics:
<table><tr><td>Type of group</td><td>Patients</td></tr><tr><td>Condition/ department</td><td>End of life, 77% cancer</td></tr><tr><td>Sex</td><td></td></tr><tr><td>Age</td><td>Majority more than 75 years</td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Context: Lincolnshire, partner organisations three PCTs and a hospital trust, social services, ambulance service, hospices and third sector organisations. Data specifically patients in Boston locality over a seven month period.</td>
<td>to facilitate speedy discharge of patients from hospital to preferred place of care.

In addition introduction of a palliative care co-ordination centre, educational activities, videoconferencing, support groups</td>
<td>Main author conclusions: The programme achieved the aim of fewer deaths in hospital while keeping costs stable.

Reported associations or causative links:

Intervention → Impact on patient preferences, no impact on costs or health care usage

Potential applicability considerations:

Service may be being accessed by those who specifically wish to die at home. There was some increase in home deaths in the years before the programme (not statistically significant).</td>
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<tr>
<td>Ahmad 2007

Country: UK</td>
<td>Data collection method: Survey

Outcome measures:

<table><tr><td>Client satisfaction</td></tr></table></td>
<td>Summary of results:

94% of the 19 service users commented that they were pleased with the care pathway process and that they were relieved not to be asked the same questions repeatedly by health care professionals. All reported that the care pathway had clarified their care journey.</td>
</tr>
</table>

RCT	
Non-RCT	
CBA	
BA	X
Comparator:	
Length of follow up: 3 months	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size:

Population characteristics:

Type of group	Patients
Condition/ department	Learning disability
Sex	nr

Staff views

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Three areas for care pathway development: epilepsy, challenging behaviour and hearing impairment. The pathways included having a designated care co-ordinator, a treatment plan, user awareness programme and a means of measuring progress.

83% (14) of staff perceived that communication between professionals had been increased as a result of introducing the pathway.

Main author conclusions:

Care pathways facilitate relationships within services

Reported associations or causative links:

Care pathway → increased communication within services and improved patient satisfaction

Potential applicability considerations:

None described

<table><tr><td>Age</td><td>nr</td></tr><tr><td>Other (specify)</td><td></td></tr></table> Context: Describes the pilot of the care pathway initiative in 6 sites in the West Midlands. Developed with the Partnership for Developing Quality organisation. Teams at each site received training.		
Bakerly 2009 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator: Usual care (retrospective group 12 months prior)</td></tr></table>	Data collection method: Review of case notes Outcome measures: <table><tr><td>Length of stay</td></tr><tr><td>Number of contacts/visits/admissions</td></tr><tr><td></td></tr><tr><td></td></tr></table> The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service	Summary of results: In the integrated care group (130 patients) average length of stay was 3.3 (SD 3.9) days compared with 10.4 (SD 7.7) in the hospital group (95 patients). There was no difference in 2 month readmissions at 0.42 and 0.48 per patient in the intervention and conventional treatment groups respectively (P= 0.65). The average number of home visits per patients in the integrated care group was 3.08 (SD = 0.95; 95% CI = 2.9–3.2). Cost per patient in the integrated care group was £1653 (95%CI = £1521–1802) compared with £2256 (95%CI, £2126–2407) in the hospital group. The integrated care group resulted in cost saving of approximately £600 (P < 0.001) per patient.

Length of follow up: n/a Qualitative Cross-sectional Other (specify) Cost effectiveness analysis Sample size: 95 comparator, 130 intervention Population characteristics: Type of group: Patients Condition: Acute COPD Sex: 55/56% male Age: Mean 68/70 Other (specify): Context: A University hospital (no other details)		provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign Hospital at home assessment service. A team comprising three full-time specialist respiratory nurses and a middle-grade physician, (0.4 whole time equivalent dedicated to the service) reviewed admissions to assess suitability for early discharge with home nurse support.	The extra costs of community specialist nurse visits, and any emergency contacts were more than offset by the reduced initial hospital length of stay. Main author conclusions: The model offered cost savings from a provider point of view, but outcomes are more complex across the whole system, with potential for different organisational perspectives regarding benefits, and potential impact on other types of services. Reported associations or causative links: Multidisciplinary case note review → reduced length of stay + cost reduction Potential applicability considerations: 82% of the intervention group required home nurse support. This is higher than a previously suggested figure of 25% which may over-estimate the cost-saving effect

Beacon 2015

Country: UK

RCT	
Non-RCT	
CBA	
BA	X
Comparator:	
Length of follow up:	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: Unclear

Population characteristics:

Type of group	Patients
Condition	Vulnerable people, complex

Data collection method: Action learning, interviews with patients, patient diaries, a "performance dashboard"

Outcome measures:

Hospital admissions
Length of stay
Bed days
Use of community services
Patient views

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Practice integrated care teams. Principles of giving clients control, whole person care, working together and planning ahead. Team includes a practice nurse, a social worker, community health

Summary of results: Very limited data. Reports an overall reduction in secondary care activity of 9% for patients with an integrated plan in place (unclear which time points/patients compared), 22% reduction in emergency admissions. Describes patients having positive views of integrated working although no data presented. Describes an independent evaluation as reporting strong commitment from staff and increased confidence, skills and capacity (no data). In 2014 2003 patients had an integrated care plan in place. Describes cost savings of 17% although unclear how this is calculated, reports the reduction in emergency admissions formed a large part of the savings.

Main author conclusions:

There has been an overall reduction in secondary care activity for patients the teams have been working with, with the largest reduction being in emergency admissions. Alongside this, patient feedback has reinforced the value of this personalised approach and increased overall satisfaction with the care and advice received from health and social care professionals and an improved professional experience.

Importance of involving patients and carers, recognising the role of the community sector, having strong senior leadership, identifying a common need/joint commitment, need for managing anxieties and change, challenges in shifting financial resources.

Reported associations or causative links:

Team working → Reduction in emergency service/costs

	conditions and social issues, high risk of hospital admission	practitioners such as district nurse and an active case manager. High risk patients identified and assessed against criteria for the team. Key workers appointed, electronic integrated care record, monthly meeting. Access to software system which has joined health and social care systems.	Potential applicability considerations: Area of high level of deprivation, life expectancy below national average. Hospital admissions 40% higher than national average, with length of stay and bed days also higher. Note: unable to source the report from the independent evaluation referred to.
	Sex		
	Age		
	Other (specify)		
Context: Central Manchester. Team design led by clinicians. Environment which valued and encouraged shared working rather than structural change. Investment fund established scrutinised by an integrated care board which created a funding stream for investment.			
Boyle 2008 Linked to Boyle 2012a and 2012b Country: UK		Data collection method: Retrospective review of case notes, using routinely collected data Outcome measures: Number pts not admitted	Summary of results: Positive effects - 16.3% decrease in emergency medical admissions and a 3.9% decrease in emergency surgical admissions. Median length of stay for emergency medical patients decreased from 7 to

RCT	
Non-RCT	
CBA	
BA	X
Comparator: None	
Length of follow up: Compares 2005 to 2006	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 17105 + 18553

Population characteristics:

Type of group	Patients
Condition/ department	Emergency care
Sex	nr

Number of medical emergency admissions
Length of stay

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Streamlined process for evaluating patients presenting for unscheduled care.

-Existing Medical Assessment Unit was closed and an equivalent number of trolley spaces were opened in the Emergency Department.

-Doctors and nurses from the MAU were transferred to work in the main department.

5 days ($p<0.001$).

Greater number of elective surgery cases discharged in 24 hours (+12.8%) and fewer staying more than 3 days (-2.1%).

Reduction in the number of incident forms and formal complaints (no data)

No significant impact on mortality

Adverse effects - Performance against the 4-hour target declined (described as still acceptable).

Number of bed days for admitted surgical and medical cases rose 9.1%, and for paediatric emergency cases 27.1%. Long stay patients stayed longer.

Increase in the number of medical outliers on surgical wards.

Reduction in hospital income.

The overall capacity of the hospital was less, indicated by the worsened bed state, as measured by the number of days on amber and red alerts and increased number of outliers.

The number of patients not waiting and re-attending increased.

Main author conclusions:

Integrated emergency care can offer advantages within emergency care. However, improved efficiency placed the hospital at a financial disadvantage as patients were treated more cheaply.

<table><tr><td>Age</td><td>nr</td></tr><tr><td>Other (specify)</td><td></td></tr></table> Context: Emergency Department of Addenbrookes, a 1100-bed hospital providing all regional specialties except burns and cardiothoracic surgery.	-A new acute medicine service led by four consultants was introduced, -Acute physicians deemed responsible for the medical care of medical emergencies for up to 72 hours. -The roles of senior nursing staff were changed, with a ‘‘flow nurse’’ role to direct patients from the reception area to the most appropriate part of the ED. -A coordinator had operational responsibility for the department. -Daily meetings attended by senior representatives of all major specialties. -Medical case records were redesigned to provide a common assessment document for all. -Medical, surgical and paediatric short-stay wards were opened next to the emergency department. A clinical decision unit replaced the more traditional observation unit. A patient requiring admission was fully clerked by the first attending doctor and patients were allocated directly to a specialty on arrival.	Reported associations or causative links: Integrating emergency services → reduced number of admissions Improved hospital efficiency → financial disadvantage. Potential applicability considerations: “Few hospitals are of our size and have the range of our services on site”.

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<tr>
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Boyle 2012a

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td>X</td></tr>
<tr><td colspan="2">Comparator: na</td></tr>
<tr><td colspan="2">Length of follow up: 6 years (2003 and 2009)</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size: 457,694

Population characteristics:

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Data collection method: Dr Foster data to identify changes in mortality before and length of stay for non-elective admissions, and all-cause mortality measures.

Outcome measures:

<table>
<tr><td>Hospital mortality ratios</td></tr>
<tr><td>Standardised admission ratios</td></tr>
<tr><td>Length of stay</td></tr>
<tr><td>Quality – complaints, incidents, leaving without being seen</td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

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Summary of results:

There was a significant trend towards improved survival, both for non-elective admissions and deaths in the new emergency assessment unit compared with previous service configuration ($p>0.001$). There was a marked decrease in the standardised admission ratios. Formal complaints, incident reports and the proportion of patients leaving before treatment declined. The proportion of patients re-admitted as an emergency within 28 days did not change. Slight increase in female patients and older patients after reconfiguration.

Main author conclusions:

The new unit improved the organisation of emergency care, reduced hospital admissions, and was associated with reduced in-hospital mortality and a better quality of care.

Reported associations or causative links:

Streamlined emergency department patient evaluation process → Improved efficiency and quality of care

Potential applicability considerations:

Standardised assessment ratio figures were adjusted for deprivation but this made no difference to the data.

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</table>

<table><tr><td>Type of group</td><td>Patients</td></tr><tr><td>Condition/ department</td><td>Emergency admissions</td></tr><tr><td>Sex</td><td>46% women,</td></tr><tr><td>Age</td><td>22% under 16,17% under 25, 6% over 65</td></tr><tr><td>Other (specify)</td><td>67% triage category 4</td></tr></table> Context: Addenbrookes hospital Cambridge. Sees around 90,000 emergency patients per year	Emergency department and medical admissions unit were combined to form an emergency assessment unit. Relocation of units and staff. "Accompanied by a change in environment, staffing, working practices and diagnostic service support". The emergency department was expanded from 28 cubicles to 40. Number of medical staff was increased with three additional consultants, two specialist registrars in acute medicine and two new emergency medicine consultants. Pathology and radiology support was increased. Combined clerking process that was supported by shared documentation, with the overall aim of reducing assessments. Development of short stay medical and surgical wards, a clinical decisions unit and a children's observation unit.	The new unit became the main route for non-elective admissions into the hospital, numbers increased. Other changes were made to services during the study lifetime such as four hour wait, GP contract and community services however, the authors argued these did not have a substantial effect on the emergency department.
Boyle 2012b Same intervention as Boyle 2012a but compares the results to other hospitals.	Data collection method: The Dr Foster Unit provided data sets on other hospitals most similar Outcome measures: Hospital standardised mortality ratios (HSMRs)	Summary of results: The SAR decreased when the new unit opened and was the lowest of comparable hospitals in the subsequent four years. The probability one pre-specified hospital out of 16 performing consistently best across all 4 years was statistically significant (p=0.0002). There was a steady decrease in HSMR, compared with controls during the study period The probability that the intervention hospital

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator: Data from 23 EDs in Trusts outside London	
Length of follow up:	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: Unclear

Population characteristics:

Type of group	Patients

Standardised admission ratios (SARs).

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

See Boyle 2012a for details

performed best out of 16 hospital trusts 3 out of 4 years was statistically significant (p=0.0149).

Main author conclusions:

Combining a medical assessment with the emergency department was associated with a beneficial and sustained decrease in HSMR and SAR.

GP-referred surgical admission units being co-located in emergency departments had little effect on HSMR or the numbers of admissions.

Reported associations or causative links:

Streamlined assessment service ⟶ Improved mortality and admission figures

Potential applicability considerations:

No hospital other than Addenbrookes routinely received GP-referred medical patients in their emergency department. Three other emergency departments also routinely received GP-referred surgical admissions.

<table><tr><td>Condition/ department</td><td>Emergency</td></tr><tr><td>Sex</td><td>nr</td></tr><tr><td>Age</td><td>nr</td></tr><tr><td>Other (specify)</td><td></td></tr></table> Context: Addenbrookes hospital Cambridge. Sees around 90,000 emergency patients per year		
Choo 2014 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td>X</td></tr><tr><td colspan="2">Comparator: Prior to reconfiguration services delivered across two hospitals and two privately provided treatment centres</td></tr></table>	Data collection method: Outcome measures: <table><tr><td>Clinical outcomes - all reported clinical incidents, clinical throughput/activity data</td></tr><tr><td>Patient experience questionnaire</td></tr><tr><td>Measure of Job satisfaction online survey to staff - personal satisfaction, satisfaction with workload, satisfaction with professional support, satisfaction</td></tr></table>	Summary of results: Percentage change reported for clinical outcomes - 6% reduction in the total number of gynaecological admissions and a 17% reduction in day-case admissions. 9% reduction in inpatient admissions and a 1% reduction in emergency admissions. A 4% reduction in the total number of operations performed and a 22% reduction in emergency gynaecology surgery. Total number of elective operations increased by 3%. No difference for nine categories of incidents reported although an increase in the reported unavailability of equipment (p=0.048). Reduction in patient report of spending more than 20 minutes waiting for a scan (p= 0.0054). 54% of patients post-reconfiguration reported receiving blood test results within 20 minutes compared to none previously although there was no difference in time waiting for a

		with training, satisfaction with pay, satisfaction with prospects, and satisfaction with standards of care.	blood test. Fewer patients stayed on the ward more than 4 hours ($p<0.0001$). The average overall satisfaction among consultants showed a significant reduction from 3.63 to 3.26 ($P = 0.000$) after reconfiguration. However, this score remained in the same category of being "neither satisfied nor dissatisfied".
Length of follow up: Compares year before and year following reconfiguration		The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign	Main author conclusions: There was a reduction in gynaecological activity and increased cancellation of elective operations, but reconfiguration did not significantly reduce the number of elective operations performed. Patients presenting as an emergency experienced a reduction in the length of time they had to wait for key investigations and results, and an overall reduction in their length of stay. There was a reduction in total gynaecological admissions to the Trust probably due to a separate change in service provision which provided a new day care treatment centre.
Qualitative			
Cross-sectional			
Other (specify)			
Sample size: 279 patients, 13 consultants completed questionnaires, clinical outcomes data for 6,800 before and 6,400 post reconfiguration. Population characteristics: Type of group: Patients + Staff Condition/ department: Gynaecology Sex: All patients female		Elective inpatient gynaecology services were relocated from both hospitals to the one Hospital. Opening of more gynaecology beds at this hospital. All emergency gynaecology services were re-located from two centres and an inpatient ward to a new "short stay unit" at the second hospital, with a dedicated gynaecology consultant on-call. Reduction in the overall number of inpatient beds from the reconfigurations.	Reported associations or causative links: Reconfiguration → Increased cancellation of elective operations Reconfiguration → Reduction in length of wait for investigations/results Complex pattern of provision and outcomes.

<table><tr><td>Age</td><td>nr</td></tr><tr><td>Other (specify)</td><td></td></tr></table> Context: One of the biggest Trusts in England, providing services to over 2.5 million residents of Nottingham area. Annual income of £722.5million, 87 wards and about 1,700 beds. Two similar capacity teaching hospitals located 4 miles apart.	Staffing rotas were changed to allow 40 hour emergency consultant cover, with consultants on duty and physically present in the hospital when on duty. One week blocks Monday to Friday from 9-5 pm.	Potential applicability considerations: Large Trust with two closely located hospitals. Other changes to provision being made alongside this reconfiguration
Clarkson 2011 Country: UK <table><tr><td>RCT</td><td>X</td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator: Care manager assessment only</td></tr></table>	Data collection method: Reanalysed data from a previous RCT. Outcome measures: <table><tr><td>Change in functioning</td></tr><tr><td>Costs – days/visits, admission to care homes</td></tr><tr><td>Informal costs – housing, carers</td></tr><tr><td></td></tr></table>	Summary of results: Most changes due to random fluctuations. Less deterioration in physical functioning in the experimental group (p=0.08). Intervention group initially (first 50 days) gained in terms of more stayed in their own homes however after this period there was little difference. The intervention increased the likelihood of care home admission for the most frail. The main effect for care home admission for all the experimental group was 0.73 hazard ratio (p=0.12). Few significant differences regarding costs. Suggestion of an increase in costs to the NHS and social services for the frailest individuals. No

Length of follow up: One year Qualitative Cross-sectional Other (specify) Sample size: Population characteristics: Type of group: Patients Condition/ department: Mean age 81, frail Sex: Age: Other (specify): Context: Community/nursing homes		The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign Social services care managers and additional clinical assessment from specialised clinicians, with a standard reporting procedure to the care manager. Aim to identify clinical conditions which might reduce the need for care home admission if treated.	significant different in social services costs, slightly higher informal costs. Authors concluded that the active ingredient was clinicians providing more accurate assessment of health needs which led to more appropriate care home admissions, slightly increased NHS expenditure for the most frail but costs were not shifted to social services, instead there were increased informal costs for older people and their carers. Main author conclusions: Integrating specialist clinical assessments with social service care managers may reduce physical deterioration and delay care home admission (but short lived effect only reported). Reported associations or causative links: Integration of clinical assessments → No difference in costs, may impact on care home admission Potential applicability considerations: None reported

Coupe 2013

Country: UK

RCT	
Non-RCT	
CBA	
BA	X
Comparator:	
Length of follow up: Compares 2010 baseline to 2012 current and 2014 projected	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size:

Population characteristics:

Data collection method:

Outcome measures:

Emergency admissions
Number of admissions
Beds lost to delayed transfer of care
Number of beds
Quality dimensions (Darzi and Maxwell dimensions)

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Wye Valley Trust integrated health and social care organisation. "Deep partnership" agreement, single chief executive, core managerial functions merged. Included redesign of five care pathways (frail elderly, diabetes, COPD,

Summary of results:

Compares the expected impact of the reconfiguration to actual impact. Targeted savings were not achieved and the Trust had a deficit of £15 million. Projected savings had been modelled as a minimum of £0.3 million and a maximum of £12.5 million per year.

Emergency admissions to the acute hospital increased from 7891 to 8162, community hospital admissions slightly increased from 1515 to 1573, there was a reduction in beds lost from 15 to 2.5. Quality indicators were positive low scale for effectiveness, positive high scale for patient experience and neutral for patient safety and efficiency.

Integrated commissioning with social services ceased.

Reasons for the financial adverse impact -

The money transferred for community services by the primary care trust into the integrated organisation was below the actual cost of running these services. Recurring investment in community services was not secured.

The strategic health authority withdrew the offer of transitional monies.

There was no funding mechanism to incentivise or reflect the cost of health promoting community care.

Other organisational priorities (cost improvements and management of the merger) diverted energy from delivering the new model of care.

<table><tr><td>Type of group</td><td></td></tr><tr><td>Condition</td><td></td></tr><tr><td>Sex</td><td></td></tr><tr><td>Age</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table> Context: Merger between an acute trust, a primary care trust and council adult social care services. Population of around 300,000, annual turnover of £165 million. A rural and dispersed population of Herefordshire and Powys. Developed between 2007 and 2011 in a series of stages guided by a transition board.		stroke, musculoskeletal care), redesign of the unscheduled care systems, a locality based model, neighbourhood teams, four tier system from health promotion (tier 0), prevention and screening (tier 1), active managements (tier 2) elective admission and crisis management (tier 3) and specialist intervention (tier 4).	There was limited GP commitment and limited GP uptake of new roles. There was limited change management leadership. Main author conclusions: Integrated care may meet patient needs more appropriately and improve health and well-being outcomes but is unlikely to achieve cost savings. Improved community services require investment to ensure capacity. Ownership and integration amongst GPs is required, with the development of CCGs providing an obstacle to co-operation. Change needs to be supported by effective management and a positive culture amongst staff. Reported associations or causative links: Integrated care → Benefits for patient experience of care Integrated care → Adverse impact on budget Culture, incentivisation, investment → Integrated care Potential applicability considerations: Rural area, with a population described as relatively healthy and long living, some pockets of deprivation. The area compared favourably pre-reconfiguration to figures for England as a whole (and another integrated care organisation) with

<table>
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<td>fewer A&E attendances, admissions, and emergency bed days. The mean length of stay was slightly higher than England as a whole (5 days versus 3.6).

The author comments that the size of catchment area and turnover have an impact on service costs and configuration, and that moves to consolidate acute services in larger urban units will require new care models for rural and sparsely populated areas.</td>
</tr>
<tr>
<td>Cunningham 2008

Country: UK

<table>
<tr><td>RCT</td><td>X cluster RCT</td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator: Standard care or

care delivered with an ICP. Standard care was separate documentation for

nursing, medical, clinical observation, and prescribing</td></tr>
</table>
</td>
<td>Data collection method: Patients received care according to permuted block cluster randomization (7-day periods in blocks of 8 weeks).

Outcome measures:
<table>
<tr><td>Speed of recovery of physiological variables

(heart rate, respiratory rate, oxygen requirement)</td></tr>
<tr><td>Quantity and speed of reduction for bronchodilator requirement</td></tr>
<tr><td>Time to fulfilling discharge criteria</td></tr>
<tr><td>Education provided</td></tr>
<tr><td>Prescribing errors.</td></tr>
<tr><td>Parent perceptions</td></tr>
</table>
</td>
<td>Summary of results:

No difference in admission rates. Child discharged after initial treatment in 69 of 163 cases in which care was provided with an ICP (42%) and 49 of 135 cases in which care was standard (36%; P=0.38). No difference in recovery time in the groups based on the rate of improvement in heart rate or respiratory rate or in the dose of bronchodilator prescribed for the first 24 hour (all p=0.2).

The mean ICP length of stay was 37.6 hours (range, 33.5-42.4 hours), versus 40.7 hours (range, 35.9-46; P=0.36).

The ICP was associated with a 30% reduction in the total number of prescribing errors (mean=14.8 for standard care, versus mean 10.4 for ICP; P=0.002).

The mean number clinical contacts with the patient during the first 12 hours was higher in the ICP group (all contacts: ICP 22, versus standard 19.2, P=0.0004).</td>
</tr>
</table>

charts with no prompts for timing of decisions, discharge or patient education.

Length of follow up: Immediate

Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 298

Population characteristics:

Type of group	Child patients
Condition/ department	Acute asthma/wheeze in Emergency department
Sex	nr
Age	2-16 years

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

ICP combined all nursing, medical, clinical observation, and prescribing charts chronologically within a single document. Sections prompted the identification of discharge criteria and directed education and issue of action plans. Tutorials on the use of the ICP were provided to all staff groups in the month before introduction and to new staff during the study.

Twice as many parents recalled receiving advice to book a follow up GP appointment in the ICP group.

Main author conclusions:

Use of the ICP led to a modest (although reported not statistically significant) reduction in length of stay, fewer prescribing errors, provision of more education, and improved advice to attend primary care, although more clinical contacts were required during the patient stay. The ICP did not reduce the time spent in the ED or increase the speed of recovery from the acute asthma/wheeze exacerbation.

Reported associations or causative links:

Integrated care pathway → Reduction in prescribing errors

Integrated care pathway → Increased staff contact

Potential applicability considerations:

Children with acute viral bronchiolitis, children requiring intensive care or children with significant cardiovascular or neurological deficit were excluded.

<table><tr><td>Other (specify)</td><td></td></tr></table> Context: Emergency department and the medical wards of a paediatric University Hospital in Edinburgh			
Department of Health, 2012 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td>X</td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator: Service data from study sites matched to data from controls</td></tr><tr><td colspan="2">Length of follow up: One year</td></tr><tr><td>Qualitative</td><td>X</td></tr></table>	Data collection method: Staff and patient interviews, care documents (Living documents), patient and staff questionnaires, routine hospital utilisation data, and local evaluation data Outcome measures: <table><tr><td>Emergency admissions</td></tr><tr><td>Elective admissions</td></tr><tr><td>Outpatient attendances</td></tr><tr><td>Costs</td></tr><tr><td>Staff views</td></tr><tr><td>Patient views</td></tr></table> The intervention:	Summary of results: Service utilisation data comparing patients from intervention areas to patients in control areas indicated a 4% reduction in elective admissions and a 20% reduction in outpatient attendances, and a 2% increase in emergency admissions. Much of the increase in emergency admissions was from those sites which piloted a case management intervention (these had a 9% increase). The case management sites also accounted for much of the reductions overall with these locations having a 22% reduction in outpatient attendances and a 21% reduction in elective admissions). The cost estimates have a large degree of uncertainty as accurate estimates were difficult to calculate in some areas. The increased elective and outpatient attendances for all sites except one (Torbay which had a different method of calculating inclusion) were balanced by the reduced emergency admissions suggesting a cost neutral outcome for secondary care costs pre-post the initiatives (p=0.36). Taking only the case management interventions as a group indicated a 9% reduction in secondary care costs (£223 per patient p=0.01).

Cross-sectional	X
Other (specify)	

Sample size: 2969 patients (interviews and survey), 8631 patients in service utilisation analysis (+ 42,206 controls). 1087 staff.

Population characteristics:

Type of group	Staff and patients
Condition/ department	Range – dementia, end of life, people at risk, over 60s, COPD, cardiovascular disease, diabetes, substance misuse, medical patients, those in fuel poverty.
Sex	Range
Age	Range

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Report on a National evaluation of the 63 Integrated Care Pilots. Initiatives varied by area with some encompassing large scale reconfiguration whereas others focused on integrating services within a single organisation. Most common was integrating of staff across organisations delivering community services.

Staff data highlighted changes in working patterns, with 62% reporting increased depth and 84% increased breadth of their job. 30% reported the need for additional training. 54% perceived that patient care had improved, 50% at the second time point attributed patient care improvements to the pilot initiative (37% reported it was too early to make a judgement).

Patients reported increased use of care plans (26% before the initiative, 34% after the initiative $p>0.010$). Patients reported service co-ordination (such as knowing who to contact after discharge) had improved (71% pre and 80% post intervention). There were also perceptions of a detrimental effect on being able to see the nurse of their choice (9% reduction), having preferences taken into account (15% reduction), and being less involved in decision-making ($p=0.003$). As with the service utilisation data the effect was stronger in sites piloting case management interventions.

Themes regarding facilitators to success of the initiatives included: strong leadership; existing relationships; shared values and vision; staff engagement; education and training for staff. Reported barriers included scale and complexity of change; threat to staff roles/identity; change to staff employment regulations; other co-existing organisational change; policy background, poor IT systems.

Main author conclusions:

Staff perceptions of benefit were mostly related to improved processes. There was little evidence of patients perceiving benefits.

Other (specify)		The initiatives may have reduced some hospital costs such as planned admissions and outpatient attendances however, the cost of the initiative varied considerably between different sites and for many there was no overall cost-benefit for acute care. The calculation used also did not include any additional cost for increased community provision. Case management approaches may have potential to reduce secondary care costs. The most likely improvements may be related to healthcare processes. Reported associations or causative links: Integrated care → Improved processes Integrated care → Staff perception of improved care Integrated care → No impact/adverse impact on patient perceptions Case management → Reduced hospital costs Potential applicability considerations: The sites all received considerable support for implementation as part of the pilot initiative including having a project manager and ongoing feedback from the evaluation team.
Context: Most initiatives based in primary care, most involved integration between several partner organisations. The sites all received considerable support for implementation as part of the pilot initiative including having a project manager and ongoing feedback from the evaluation team.		

Dodd 2011

Country: UK

RCT	
Non-RCT	
CBA	
BA	X
Comparator: Compares 2006/7 to 2008/9	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 251 database, 23 patients, 11 staff

Population characteristics:

Data collection method: Record of admissions and caseload database, questionnaire

Outcome measures:

Hospital bed use
Estimated costs of team treatment and hospital admission
Patient and family views

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Multi-agency Complex Care Team led by a case manager with line management responsibility for the team. Manager a nurse, deputy manager an occupational therapist, also comprises a healthcare

Summary of results:

There were no statistically significant changes in the number of non-elective emergency admissions per year over the financial years 2006–07 to 2008–09 (monthly means per year were 53, 49 and 51 patients for 2006–07, 2007–08 and 2008–09). The reduction in mean excess bed usage between before and after the introduction of the service provided by the team was not statistically significant.

There was an overall estimated saving of £54,111 on hospital bed costs, and it was estimated that purchasing beds in local care homes rather than using hospital beds saved £33, 200.

Reduced length of stay was estimated to provide a saving, over and above salary costs, of £61,436 in 2008/09 on excess bed-days. The annual saving over and above salary costs was estimated to be around £148,000.

All feedback received from patients and carers rated the service ‘Good’ or ‘Excellent’ for overall quality, communications, information and advice, accessibility and helpfulness.

Particular factors contributing to success: Practice champions were established who encouraged staff to challenge boundaries and to think and work in new ways. Direct team line management and independent team budget responsibility is essential. The team needed to be top heavy with senior staff. Effective leadership skills were required by the manager, and skills of negotiation and service development. IT support required. The co-location of staff contributed to success. The small size of the team meant it could not provide 24 hour service.

<table><tr><td>Type of group</td><td>Adult patients</td></tr><tr><td>Condition/ department</td><td>Any patient over 18 with complex needs in an acute health crisis. Many older adults with long term conditions</td></tr><tr><td>Sex</td><td>71 male, 118 female</td></tr><tr><td>Age</td><td>36-98</td></tr><tr><td>Other (specify)</td><td></td></tr></table> Context: A six-partner, dispensing Personal Medical Services (PMS) Practice. 10 700 patients in a town and 48 surrounding villages across 60 square miles. Also provides medical care for 250 beds in local nursing and care homes. The service model was evaluated during a period of significant	assistant. GPs provide input and the team is located with social workers in the GP surgery. Key aspects are collaborative and proactive identification of patients at risk, rapid creation and deployment of the team, and follow-up of patients with an appropriate long-term care plan. The manager holds a team budget for the administration and management of the team and a budget for spot purchasing of beds for periods of 1–2 weeks in local care homes. The case manager or the deputy case manager will assess the patient's needs in discussion with the patient and carers (where appropriate). The Complex Care Team identifies and oversees the delivery of appropriate services to support the patient.	Main author conclusions: The introduction of the team enhanced quality of care and experience for the patient, and reduced secondary care costs by preventing admissions excess bed-days. Reported associations or causative links: Integrated community team → reduced hospital admission/length of stay Potential applicability considerations: During the study period there was no intermediate care team

<table>
<tr>
<td>development in response to the local context.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graffy 2008

Country: UK
<table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td>X</td></tr><tr><td colspan="2">Comparator:</td></tr><tr><td colspan="2">Length of follow up: 3 years</td></tr><tr><td>Qualitative</td><td></td></tr><tr><td>Cross-sectional</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Sample size: 59

Population characteristics:</td>
<td>Data collection method: Case study (document analysis, meeting minutes, conversations with staff).

Outcome measures:
<table><tr><td>Reduction in hospital emergency admissions</td></tr><tr><td>Barriers / facilitators to delivering care</td></tr></table>
The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Frail elderly patients were who were at risk of hospital admission were identified through patient hospital and social worker records. Discussions held between MDT about patients with</td>
<td>Summary of results:

48 identified people allocated to case management (level 1) and 11 to ongoing monitoring (level 2).Most continued to receive support though 7 eventually came off the register and 12 moved from level 1 to level 2. 17 died, one moved away and 11 were transferred to long-term care. 66% were admitted to hospital.

Following analysis the team considered that at least 17 emergency admissions had been avoided for 13 patients. The team commented that richer assessments of patient needs had been facilitated as well as better communication between HCPs. Barriers included time taken for meetings, the risk that other work had been affected and the difficulty engaging with all the GPs.

Following the pilot, 16 further practices out of 34 in Cambridgeshire took up the model. Local champions are being located, mainly from the new Community Matrons.

Main author conclusions:

The authors suggest there is a case for a controlled study of sharing case management work within the extended GP practice team.

Reported associations or causative links:

Case management of vulnerable ⟶ Decrease in admissions</td>
</tr>
</table>

<table><tr><td>Type of group</td><td>Frail elderly, at risk of hospital admission</td></tr><tr><td>Condition</td><td>29% > 2 admissions 41% history of falls 54% chronic condition hard to control 61% functional impairment 31% social problems</td></tr><tr><td>Sex</td><td>34 women 25 men</td></tr><tr><td>Age</td><td>Mean 84 (range 57-99)</td></tr><tr><td>Other (specify)</td><td></td></tr></table> Context: Semi-rural general practice, Cambridgeshire.	multiple admissions, falls, dementia or who were vulnerable / very dependent on carers. Identified patients were contacted to receive intensive case management, coordinated by a key worker. Each patient held a 2-page document in a yellow folder containing relevant information to be shared among HCPs.	elderly Potential applicability considerations: Primary care extended MDT in place.

Gravelle 2007

Country: UK

RCT	
Non-RCT	X
CBA	
BA	
Comparator: Other practices in England using propensity matching	
Length of follow up: One year	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 64 GP practices in intervention group

Population characteristics:

Data collection method: Routine hospital data

Outcome measures:

Practice rates of emergency admissions
Emergency bed days
Mortality (hospital episode statistics)

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Evercare – a case management approach. Selects patients on basis of history of frequent emergency admissions. An advanced practice nurse carries out a

Summary of results:

Intervention practices had a non-significant increase (comparing 5 months immediately before intervention versus last 5 months in intervention practices to estimated change in comparator practices) in emergency bed days (p=0.13), mortality (p=0.06), and emergency admissions (p=0.13) for high risk patients. For non-high risk patients emergency bed days reduced, but not significantly (p=0.1), and mortality (p=0.23), and emergency admissions (p=0.29) rose but not significantly.

All practices had higher admission rates at the end of the intervention period than at the beginning, but increases were greater in intervention practices.

Refers to qualitative evidence published elsewhere which suggests that frequency of contact, regular monitoring and psychosocial support could enable nurses to intervene to avoid admission in some cases.

Main author conclusions:

Case management had no impact on rates of emergency admissions, bed days or mortality.

Reported associations or causative links:

Case management → No impact on emergency care usage

<table><tr><td>**Type of group**</td><td>Patients</td></tr><tr><td>**Condition/ department**</td><td>Aged over 65. High risk patients (aged over 65 with two or more emergency admissions in last 13 months) and low risk patients.</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Nine PCTs, intervention 2003-2005	comprehensive assessment and patients are then regularly monitored.	**Potential applicability considerations:** The intervention practices had more high risk patients, significantly higher rates of admission and use of emergency bed days and faster growth rate in admissions compared to the general population aged over 65. Intervention practices served areas of more health deprivation.
Ham 2010 **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr></table>	**Data collection method:** **Outcome measures:** <table><tr><td></td></tr><tr><td></td></tr></table>	**Summary of results:** Limited data. No data on outcomes from Birmingham/Solihull. Data relating to Northumberland – Following fast track surgery the average length of stay for hip replacement has reduced from 7 days

CBA	
BA	X
Comparator:	
Length of follow up:	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size:

Population characteristics:

Type of group	Patients
Condition/ department	Chronic diseases
Sex	nr
Age	Mostly older adults (over 65)

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Provides an overview of NHS Beacon sites based on the Kaiser Permanente approach. Kaiser approach focuses on integration between hospitals and community, with specialists working alongside generalists. Uses care pathways, discharge planners, community rehabilitation facilities, patient information and education programmes, and emphasis on patient self-management. Includes leadership development for doctors to take on leadership roles.

(2008) to 3 or 4 days (2009). For knee replacement the average length of stay has reduced from 6 days (2008) to 4 days (2009).

Torbay – Improved access to therapists and district nurses (3.5 hours for urgent cases and 5 working days for non-urgent). Weekend working scheme.

Reduction in hospital bed days. Standardised emergency admission ratio (after adjusting for deprivation) in those aged 65 and older is 87.7, the third lowest in the South West of England.

Emergency bed usage in Torbay for 65 and over population is 2025 per 1000 compared to average 2778 per 1000 for South West as a whole. Also low use of emergency beds for those aged 85 and over and for those older people with two or more admissions. Daily occupied bed rates reduced for both acute and community hospitals (750 1999 compared to 528 in 2009).

Equipment provided within 7 days 90% 2006 versus 99% 2008.

Patients assessed within 28 days 72% 2006 versus 83% 2008.

Care packages in place within 28 days 67% 2006 versus 97% 2008.

Factors reported as important in the success of the Torbay initiative are: having a receptive context for change; organisational stability; continuity of leadership; partnership working at a local level; keeping the vision centre-stage.

Main author conclusions:

Other (specify) **Context:** Three beacon sites (Birmingham and Solihull, Northumbria, Torbay). Birmingham -representatives visited Kaiser, established a programme board. Presentation to partner organisations and support from their senior directors. Solihull became a Care Trust and took over social care services. Events for clinicians to come together, staff from Kaiser acted as mentors.	Birmingham – Centre established which is neither primary nor secondary care to care for people with long term conditions. Community services developed including consultants in community clinics, group consultations and new pathways. Northumbria – Focus on improving acute and emergency care including plans for a new specialist emergency hospital. Torbay – Focus on patient-centred care, establishment of 5 integrated teams, care co-ordinators, and intermediate care services.	One of the beacon sites (Torbay) demonstrates a reduction in hospital bed usage and reduced bed usage for emergency admissions in 65 and over age group. It also has reduced delayed transfers and improved access to intermediate care. **Reported associations or causative links:** Integrated care → Reduction in bed use/length of stay Integrated care → Improved access to care/care processes **Potential applicability considerations** Bacon sites with considerable support and mentoring from the Kaiser Permanente organisation.
Harris 2013 **Country: UK** **RCT** **Non-RCT** **CBA**	**Data collection method**: Recording of four meetings, content analysis **Outcome measures:** Type of utterance and content of conversation	**Summary of results:** The meetings closely resembled ward rounds with medical dominance during discussions. Discussion did not translate into plans of action and typically remained focussed on the patients. Allied health professionals tended to contribute less to discussion although their utterances tended to be more integrative.

BA	
Comparator:	
Length of follow up:	
Qualitative	
Cross-sectional	X
Other (specify)	

Sample size: Four group meetings with 23 case discussions, attendees ranged from 11 to 15

Population characteristics:

Type of group	Staff – consultants, presenting GPs, allied health professionals

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Multi-disciplinary group meetings

Main author conclusions:

Traditional communication patterns of medical dominance preclude working inclusively. Opportunities to explore learning from individual cases to other cases and how care could be provided better, would be beneficial.

Reported associations or causative links:

Medical dominance → Adverse impact on communication

Potential applicability considerations:

None highlighted

<table><tr><td>**Condition/ department**</td><td>Patients over 75 or with diabetes</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** North West London, part of integrated care pilot work		
Hawthorne 2009 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td>X</td></tr><tr><td colspan="2">Comparator:</td></tr><tr><td colspan="2">Length of follow up: 1998 to 2007</td></tr></table>	Data collection method: Routine data, survey of patients Outcome measures: <table><tr><td>Number receiving community care</td></tr><tr><td>Patient satisfaction</td></tr><tr><td></td></tr><tr><td></td></tr></table> The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service	Summary of results: The proportion of people with diabetes receiving their care in primary care had increased from 48% to 63% in 2007 and to 67% in 2007. 71% of patients happy or very happy with care at the Centre. Main author conclusions: The new service provided care closer to patients, with specialist care reserved for those needing it. Reported associations or causative links: Integrated services → More care provided in the community

		provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign Pathways of care based on 3 levels - level 1 primary care, level 2 community care and level 3 specialist care. Appointment of a new community diabetologist and a clinical nurse lead. District-wide referral criteria and structured pathway, district-wide podiatry, digital retinal screening and health care provider education, community clinic, additional community services such as weight management groups. Specialist services provided at a multidisciplinary Diabetes Centre including preconception care, a medical foot clinic, a young adult clinic, an insulin pump service and a diabetes renal clinic.	Potential applicability considerations: Half of patients with diabetes lived in the most deprived or second most deprived areas of the city
	Qualitative: Cross-sectional: X Other (specify): Sample size: 270,000 patients with diabetes Population characteristics: Type of group: Patients Condition: Diabetes Sex: nr Age: nr Other (specify): Context: Newcastle area, serving a population of approximately 270,000. Redesign was carried out within the existing costing.		
Higginson 2014		Data collection method: Range of baseline and follow up clinical measures	Summary of results:

Country: UK

RCT	X
Non-RCT	
CBA	
BA	
Comparator: Usual care	
Length of follow up: 6 weeks	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 105

Population characteristics:

Type of group	Patients

and questionnaires, interviews with patients and carers at the end of the study.

Outcome measures:

Breathlessness
Survival
Quality of life
Palliative needs
Depression and anxiety

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

A single point of access service for patients with breathlessness, with integrated palliative care, respiratory medicine, physiotherapy, and

Mastery in the breathlessness support service group improved compared with the control (mean difference 0·58, 95% CI 0·01–1·15, p=0·048; effect size 0·44).

There was significant improvement in the intervention group between baseline and 6 weeks for seven outcomes: mastery; total quality of life; dyspnoea; emotion; average breathlessness; on exertion breathlessness; and palliative care outcomes.

Survival rate from randomisation to 6 months was better in the breathlessness support service group than in the control group (50 of 53 [94%] vs 39 of 52 [75%]) and in overall survival (p=0·048).

Qualitative data described improved confidence, functioning, and control over breathlessness.

There was a tendency for improvement (not statistically significant) in the ability to undertake activities of daily living, lesser depression, and lower breathlessness on exertion.

There was no difference between groups in regard to formal care costs.

Main author conclusions:

The integrated palliative care and respiratory breathlessness support service led to improved breathlessness mastery at 6 weeks for patients with advanced disease.

Reported associations or causative links:

<table><tr><td>Condition</td><td>Breathlessness due to advanced disease</td></tr><tr><td>Sex</td><td>58% male</td></tr><tr><td>Age</td><td>Mean 67</td></tr><tr><td>Other (specify)</td><td>54% COPD 20% cancer</td></tr></table> Context: Small number of sites in urban areas	occupational therapy services. It aims to provide assessment and treatment of physical, emotional, psychological, and spiritual concerns and offers outpatient and home contact, with a focus on improving patient self-management.	Integrated services ⟶ Improved patient condition Potential applicability considerations: Inclusion criteria: refractory breathlessness on exertion or rest (MRC dyspnoea scale score ≥2); advanced disease; willing to engage with short-term home physiotherapy and occupational therapy. Excluded patients: breathlessness of unknown cause; a primary diagnosis of chronic hyperventilation syndrome; completely house (or hospital or nursing home) bound; or within 2 weeks of treatment for an acute exacerbation "Usual care at specialist centres was probably of an unusually good standard, with expert staff who were motivated to take part in this research". "By being based mainly in outpatient settings and for a short term, the intervention is scalable".
Hockley 2010 **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr></table>	**Data collection method:** Case study using patient case note data, staff questionnaire and interviews **Outcome measures:** <table><tr><td>Place of death</td></tr><tr><td>Number of do not resuscitate orders</td></tr></table>	**Summary of results:** The number of do not resuscitate orders across the homes was greater after the intervention (72% compared to 15% p<0.001). Written advanced care plans increased from 4% to 53% across all the homes (p>0.001). Use of the care pathway rose from 3% to 30% (p>0.001). The number of deaths in hospital reduced from 15% to 8%. The questionnaire indicated changing staff attitudes with 88% of

CBA	
BA	X
Comparator:	
Length of follow up: Compared case notes following implementation to one year previously	
Qualitative	
Cross-sectional	X
Other (specify)	

Sample size: Seven private nursing homes

Population characteristics:

Type of group	Care home staff
Condition/ department	Frail elderly needing 24 hour

Number of care plans in place

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Gold standards framework and Liverpool Care Pathway, two key champions were appointed to each home, GPs given information. Champions attended workshops and a four day course. Facilitator visited each home every 10-14 days. Monthly register meetings to discuss residents. Two nursing homes did not give training due to staff turnover.

respondents reporting that they recognised "quality of life" not just keeping residents alive. Many staff had not received previous training in end of life, and reported that they were more confident. There was no influence on staffing levels to enable staff to sit with a dying resident.

Main author conclusions:

End of life strategies can reduce hospital admissions.

Reported associations or causative links:

End of life pathways → Hospital admissions

Potential applicability considerations:

Experienced palliative care nurse facilitated the project, intensive level of contact with homes. Some homes struggled to implement the project.

	care in Nursing homes		
Sex			
Age			
Other (specify)			

Context: Midlothian Scotland, homes ranged from under 35 beds to those with 70 or more. Two homes struggled with staff shortages and changes. Most homes had staff turnover of over 33% during the project. Homes involved to different levels.

Huws 2008

Country: UK

RCT	
Non-RCT	
CBA	X
BA	
Comparator: Compared all patients over 50 to higher	

Data collection method:

Outcome measures:

Length of stay
Unplanned hospital admissions
Re-admissions

Summary of results:

For all over 50s the unplanned medical and geriatric admission rate was significantly lower in the intervention practices than comparator practices (from pre-intervention to intervention year) – adjusted relative risk of 0.909; relative risk reduction 9.1% (95% credible limit 0.840 to 0.984, p = 0.018); absolute risk reduction 0.99 admissions per 100 patients (95% credible limit 0.17 to 1.86, p = 0.018). Estimated to be a reduction of 135 admissions per practice per year (30 per full time APN)

risk patients with multiple admissions in same practices. Also compared to 30 other practices not taking part in study. **Length of follow up:** pre-intervention year compared to intervention year **Qualitative** | **Cross-sectional** | **Other (specify)** **Sample size:** **Population characteristics:** **Type of group**: Patients **Condition/ department**: **Sex**: nr	**The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Advance practice nurse (APN) case management role introduced, provided with 8 week induction course, met on a weekly basis. Led by a senior nurse manager. Each nurse allocated to a different practice. Potential patients for the service were screened by the APNs. Criteria was either a history of 2 or more admissions in the pre-intervention year and/or a new unplanned admission during the intervention year. Nurses were informed about patients who had been admitted the previous week. APNs allocated patients to high/medium/low unplanned re-admission risk categories. Patients moved between different categories and the nurses varied their inputs accordingly.	Length of stay of one night or more (pre-intervention to intervention year) was also lower in the over 50s intervention practices compared to non-intervention practices - adjusted relative risk 0.896; relative risk reduction 10.41% (95%, credible limit 0.820 to 0.979, p = 0.015). The intervention did not have a significant effect however, on re-admission or multiple admissions for the high risk patients subgroup, which had been the target for the advanced practice nurse care packages - adjusted relative risk of further multiple admissions per previously admitted patient 0.908 (95% credible limit 0.765 to 1.077); relative risk reduction 9.3%; adjusted relative risk of total admissions per multiple admitter 0.995 (95% credible limit 0.940 to 1.053) relative risk reduction 0.6%. Estimated 2% reduction in unplanned hospital admission for multiple re-admitters. **Main author conclusions:** There was a reduction in unplanned admissions and length of stay amongst patients in the intervention practices as a whole. However, there was no significant effect on admission rates for high risk patients who were the target of the intervention. Most of the reduction in admission rates was a reduction in new admissions rather than re-admissions.

<table><tr><td>**Age**</td><td>Over 50s</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** 9 practices in Swansea who were part of an existing collaborative consortium invited, 5 accepted.	APNs also accepted referrals of other patients considered to be at potentially increased risk. Care packages could include self-help advice, carer support, co-ordination of inputs from services.	**Reported associations or causative links:** Practice nurse case management → Reduction in new admissions but limited impact on readmissions **Potential applicability considerations:** The new role was implemented in self-selecting practices. The unplanned admission rate is higher in Wales than in England.
Jha 2007 **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr></table>	**Data collection method:** Review of case notes **Outcome measures:** <table><tr><td>Time from referral to first medical contact; diagnosis; referral to physiotherapy/continence advisory service; and treatment/discharge</td></tr><tr><td></td></tr><tr><td></td></tr></table>	**Summary of results:** Mean time from referral to first medical contact (36 vs. 73 days), diagnosis (53 vs. 143 days), referral to physiotherapy/continence advisory service (38 vs. 116 days) and treatment/discharge (251 vs. 398 days) were all significantly shorter in the group managed by the integrated care pathway (ICP). 35% (7/20) ICP patients were discharged without seeing a doctor **Main author conclusions:** Implementation of ICPs offers a more efficient service for patients with continence problems; 35% of women attending gynaecology

Comparator: Immediate referral to gynaecology outpatient department **Length of follow up**: n/a **Qualitative** | **Cross-sectional** | **Other (specify)** | Prospective cohort **Sample size:** 20 comparator, 20 intervention **Population characteristics:** **Type of group** | Patients **Condition** | Continence problems **Sex** | 100% female **Age** | Mean 59/61 **Other (specify)** |		**The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** ICP developed by authors for women presenting in primary care with incontinence or related urinary symptoms. Pathway involved assessment and conservative management in primary care, with referral to specialist services if these initial measures failed.	outpatient departments could be effectively managed by specialist nurses. **Reported associations or causative links:** Development and implementation of ~~ICP~~ → earlier diagnosis, access to specialist services, treatment and discharge **Potential applicability considerations:** Small observational study. Authors noted effects may have been mainly due to local factors (long waits for gynaecology outpatient appointments compared with nurse-led clinics). Authors noted that existing ICPs need to be adapted as necessary for local use, with regular monitoring and updating.

<table>
<tr>
<td>Context: Large DGH. Concern that women with continence problems were referred to gynaecology outpatients without any initial workup, leading to unnecessary referrals and delays in treatment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Johnstone 2012 (additional information from Johnstone 2011)

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
</table>
</td>
<td>Data collection method: Review of medical records

Outcome measures:
<table>
<tr><td>Implementation of evidence-based clinical standards</td></tr>
<tr><td></td></tr>
<tr><td></td></tr>
<tr><td></td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/</td>
<td>Summary of results:

Of 981 records reviewed, the ICP was used in 580 patients (59%). ICP use was associated with increased achievement of all clinical standards except daily review. The type of clinical setting also influenced the extent to which standards were achieved. Implementation in hospice and specialist in-patient care settings was consistently high. Achievement of standards for documented resuscitation status, symptom assessment and communication was lowest for patients dying at home. The 2011 paper reported that variances for management of pain, agitation and rattle decreased over time. The ICP was substantially revised in 2011 and within 3 months most teams were using the new pathway

Main author conclusions:

ICP use is associated with best practice in end of life care. Variation in implementation across sites and settings highlights the mediating influence of organisational context</td>
</tr>
</table>

	Other (specify) Audit of deaths between 2007 and 2009 **Sample size:** 981 **Population characteristics:** **Type of group** Patients **Condition** End of life **Sex** nr **Age** nr **Other (specify)** **Context:** ICP for end of life care across all settings in Wales introduced in 2000. Revised in 2010 in response to criticism of the Liverpool Care Pathway	**Location-focused/ General service redesign** ICP for care of dying patients and their families structured around 26 goals with reporting of variances and annual review	**Reported associations or causative links:** ICP use → improved documentation of care standards Type of setting → achievement of ICP standards **Potential applicability considerations:** ICP implementation nationally supported by a dedicated project manager Both 'top-down' support and 'bottom-up' enthusiasm required. Project had the support of a senior palliative medicine consultant
Julian 2007		Data collection method: Patient career diary, questionnaires, patient records	Summary of results:

Country: UK

RCT	
Non-RCT	X
CBA	
BA	
Comparator: Consultant-led one-stop menstrual clinic (OSMC)	
Length of follow up: 8 months after first attendance in secondary care	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 94 comparator, 99 intervention

Population characteristics:

Outcome measures:

Patient experience
Symptom scores
Medical and surgical treatments received
Primary and secondary care consultations

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

GP-led integrated care pathway with secondary care consultations only for complex or atypical cases.

79 women in the pathway group and 69 in the OSMC group completed follow-up. Measures of patient experience were significantly better in the pathway group. There were no significant differences between groups in surgical or medical treatment rates or GP appointments. There were significantly fewer hospital outpatient appointments in the pathway group.

Main author conclusions:

A GP-led ICP can significantly reduce outpatient attendances while improving patient experience and maintaining quality of care.

Reported associations or causative links:

GP-led ICP → reduced workload in both primary and secondary care

Potential applicability considerations:

This was a relatively small observational study. Results may not be generalisable to other disease areas.

Requires leadership from commissioners and willingness by GPs to increase their role. Study was undertaken at a time of increasing NHS resources in contrast to the situation in 2016.

<table><tr><td>Type of group</td><td>Patients</td></tr><tr><td>Condition/ department</td><td>Menorrhagia</td></tr><tr><td>Sex</td><td>100% women,</td></tr><tr><td>Age</td><td>nr (no difference between groups)</td></tr><tr><td>Other (specify)</td><td></td></tr></table> Context: GP practices in South Leicestershire PCT and OSMC at University Hospitals of Leicester NHS Trust. Driven by need to optimise referrals, role of GPs with special interest and GP role in commissioning		
Kent 2006 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr></table>	Data collection method: Case note review and staff and patient questionnaires Outcome measures: <table><tr><td>Quality and completeness of documentation</td></tr></table>	Summary of results: Standards of documentation improved following introduction of ICPs. There was an absolute improvement of 35–40% in recording of indicators derived from clinical guidelines and recommended best practice. Most patients responding to the survey reported that they looked at their pathway and discussed it with staff. ICPs were

CBA	
BA	X
Comparator: Period before introduction of ICPs	
Length of follow up: Unclear	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size:

Population characteristics:

Type of group	Patients and staff
Condition/ department	Various
Sex	nr
Age	nr
Other (specify)	

Incorporation of guidelines and best practice
Quality of patient information and staff–patient communication
Indicators of process and outcome (including length of stay)

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

.

Between 1996 and 1999 a project was funded by the Scottish Executive to develop, implement and evaluate ICPs at two sites in a university teaching hospital trust and a district general hospital. The project also aimed to develop and evaluate a template which would facilitate introduction of ICPs and to

associated with improved understanding of treatment and reduced anxiety.

There was strong evidence that ICPs improved discharge planning but very little evidence of an effect on outcomes. There were statistically significant reductions in length of stay for about half the conditions analysed, with highly significant reductions for varicose vein operations, trans-urethral prostatectomy and gynaecological abdominal surgery.

Main author conclusions:

Process indicators were improved by ICP use and there was some evidence of reduced length of stay with no apparent effect on outcome. Some key factors for success were identified.

Reported associations or causative links:

ICP → improved discharge planning

ICP → reduced length of stay for some conditions

Variance analysis → maintenance and development of ICPs

ICP → reduced variation in practice

Local ‘driver’ in addition to supportive clinicians and management → successful implementation of ICP

<table>
<tr>
<td>Context: NHS hospitals in Lanarkshire, Scotland. ICPs introduced against a background of organisational change and increasing requirement to standardise care and treatment.</td>
<td>develop ICPs as an audit tool. ICPs were introduced for 20 conditions.

The paper also reviews the use of ICPs in Lanarkshire from 1999 to 2006 and identifies key factors for successful implementation.</td>
<td>Potential applicability considerations:

Supportive policy environment in Scotland (and Lanarkshire specifically) for development and implementation of ICPs.</td>
</tr>
<tr>
<td>Lamb 2014

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td>X</td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>Data collection method: Survey

Outcome measures:
<table>
<tr><td>Views regarding elements of meetings and outcomes of meetings</td></tr>
<tr><td></td></tr>
<tr><td></td></tr>
<tr><td></td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign</td>
<td>Summary of results:

Median time spent each week in MDT meetings was 2 hours. 68% reported time in meetings saved time later with perceived benefits for efficiency of planning, treatment and pathway. Improved communication and relationships. Participants perceived that some patients could be treated by a protocol pathway rather than needing to be discussed at an MDT meeting.

Main author conclusions:

Staff reported that the MDT meetings were useful. Prioritising cases or managing some low-risk cases according to previously agreed protocols rather than MDT discussion may be beneficial.

Reported associations or causative links:</td>
</tr>
</table>

<table>
<tr>
<td>Sample size: 173

Population characteristics:
<table><tr><td>Type of group</td><td>Staff</td></tr><tr><td>Condition/ department</td><td>Urology cancer care</td></tr><tr><td>Sex</td><td>nr</td></tr><tr><td>Age</td><td>nr</td></tr><tr><td>Other (specify)</td><td>Professionals attending two forums, 44% consultants, 31% nurses</td></tr></table>
Context: Various – national sample</td>
<td>Survey asked questions about multi-disciplinary team urology meetings</td>
<td>MDT meetings → Saves time and improves communication/relationships

Potential applicability considerations:

Respondents predominantly oncologists and cancer nurses.

Sample described as representing many different NHS regions.</td>
</tr>
<tr>
<td>Letton 2013</td>
<td>Data collection method: Hospital records

Outcome measures:</td>
<td>Summary of results:

There was a statistically non-significant decrease in length of stay (5.8 vs. 4.6 days), duration of urethral catheters, duration of</td>
</tr>
</table>

Country: UK

RCT	
Non-RCT	
CBA	
BA	X
Comparator: Patients treated before introduction of the ICP	
Length of follow up: In-hospital only	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 58 comparator, 52 intervention

Population characteristics:

Type of group	Patients

Duration of intraperitoneal drains, urethral catheters and intravenous fluids
Time to eat and drink
Time to mobilisation
Total hospital stay
Adherence to prescribing guidelines

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Specific gynaecological oncology ICP replaced generic hospital surgical ICP used previously.

intravenous fluids and time to eat and drink. No improvements were seen in time to removal of drains or time taken for patients to mobilise.

There were significant improvements in adherence to prescribing guidelines for thromboprophylaxis and sodium docusate.

Main author conclusions:

The enhanced recovery ICP has improved adherence to prescribing guidelines. Subjective impressions suggest improved communication among healthcare professionals.

Reported associations or causative links:

Enhanced recovery ICP → Improved prescribing

Potential applicability considerations:

Length of stay had already been reduced by initiatives prior to introduction of the enhanced recovery ICP.

<table><tr><td>Condition/ department</td><td>Gynaecological cancer surgery</td></tr><tr><td>Sex</td><td>100% female</td></tr><tr><td>Age</td><td>nr</td></tr><tr><td>Other (specify)</td><td></td></tr></table> Context: Queen Elizabeth the Queen Mother Hospital. Work to reduce length of stay began in 2006. Intervention group treated April 2010 to May 2011.		
Levelt 2008 **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td>X</td></tr><tr><td colspan="2">**Comparator:** Patients treated before introduction of the ICP</td></tr></table>	**Data collection method:** Review of patient records plus telephone survey of UK coronary care units (CCUs) and publicly available data **Outcome measures:** <table><tr><td>Prescription of recommended drug therapies</td></tr><tr><td>Discharge medication and time to thrombolysis (national survey)</td></tr><tr><td></td></tr><tr><td></td></tr></table>	**Summary of results:** Following introduction of the ICP, prescription of aspirin, clopidogrel and enoxaparin increased but prescription of nitrates and tirofiban decreased. In the telephone survey 80/201 CCUs reported having an ICP for ACS. Prescription of aspirin, beta-blockers and statins at discharge, and door to needle time for thrombolysis, did not differ between units with and without an ICP **Main author conclusions:** Introduction of an ICP was associated with some benefits in the immediate management of patients with ACS at the local level.

Length of follow up: **Qualitative** | **Cross-sectional** | **Other (specify)** | **Sample size:** 50 pre ICP, 50 ICP **Population characteristics:** **Type of group** | Patients **Condition** | Acute coronary syndromes (except ST-segment elevation myocardial infarction) **Sex** | Pre ICP 74% male; ICP 50% male **Age** | 'Average' (range) Pre ICP	**The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Local ICP, no further details reported	Nationally, no difference was found between units with an ICP and those without **Reported associations or causative links:** None reported **Potential applicability considerations:** None reported

	67 (36 to 88); ICP 69 (30 to 95) **Other (specify)** **Context:** 450-bed district general hospital. ICP introduced in the context of lack of data on implementation of NICE guidance		
Lyon 2006 Country: UK RCT Non-RCT CBA: X BA Comparator: Compared to 6 neighbouring practices without the staff roles.		Data collection method: Data from hospital records Outcome measures: Hospital admissions GP consultations/home visits required Length of stay Budget solvency Staff workload The intervention:	Summary of results: Assessment by a social worker occurred on the day of referral for 97% compared to taking 6 weeks or more prior to the change. Discharge planning began within two working days in most cases compared to previously at end of stay or not at all. 4.2% of patients seen under this service required acute admission to hospital compared to 18.1% of the over 65's in the practice. The social care budget for the practice was within budget compared to overspending for the borough as a whole. No backfill for the reduction in district nursing time as a result of the new project was required.

Length of follow up: 12 months Qualitative Cross-sectional Other (specify) Sample size: 409 patients Population characteristics: Type of group: Patients Condition/ department: Older patients in hospital due for discharge, and high risk patients identified by GPs Sex: Age: Over 65 Other (specify):		Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign A social worker was based in a practice with a district nurse. District nurse provided half time input, social worker employed for a 12 month period. The two members of staff carried out joint assessments and put joint packages of care in place. Social worker had budget of £200 per week.	GP consultations reduced by 3% (6658 during project year versus 6834 in year prior to pilot). Home visits reduced by 17% during the project year compared to a year earlier (1371 versus 1651). There was a significant difference between admissions to hospital in the project practice versus other practices (p=0.046), a 15% reduction. However, pre intervention to post intervention there was no significant difference in the project population. There was a significant difference in length of stay between patients from the project practice versus other practices (p=0.02) average 31% reduction. Combining reduced length of stay and reduced admissions led to a reduced bed occupancy for the project patients of 41% compared to an increase of 2.25% for patients from other practices over the same time period (p<0.0001). Following the end of the study and social worker leaving, the gains seen were largely reduced to baseline. Main author conclusions: Social workers employed in community settings co-working with district nurses can reduce the pressure on hospitals, without putting pressure on other elements of the health and social care system for older adults. Early discharge planning was a key element of the intervention.

<table>
<tr>
<td>Context: The practice is in an area with high deprivation. 11,900 patients in the practice with 10% of the older adults in the borough. The need to address social factors had been identified by the practice, but social services operated separately. Backfill cost of district nurse time was covered by practice, social worker funded jointly by social services/practice/health authority</td>
<td></td>
<td>Reported associations or causative links:

Health and social care staff joint working → reduction in health care usage in older patients

Potential applicability considerations:

Area of high deprivation.

Staff employed specifically to carry out the intervention.</td>
</tr>
<tr>
<td>MacLean 2008

Country: UK
<table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr></table></td>
<td>Data collection method: Survey

Outcome measures:
<table><tr><td>Staff views</td></tr><tr><td>Completeness of documentation</td></tr><tr><td></td></tr><tr><td></td></tr><tr><td></td></tr></table></td>
<td>Summary of results:

Response rate of the survey was 22/56 (39%), with 80% of respondents being registered nurses. 91% of respondents thought the ICP had improved patient care and treatment; 77% felt that communications had improved and 77% that accessibility of patient information had improved. 86% of respondents felt better equipped to nurse patients with CDAD.

Examination of 41 copies of anonymised ICPs revealed that 76% indicated that medical staff had been made aware of the diagnosis and 93% recorded that a stop sign had been placed on the door; 63% recorded that domestic services staff had been made aware of the</td>
</tr>
</table>

Comparator: Length of follow up: Not applicable Qualitative: Cross-sectional: X Other (specify): Sample size: 22 Population characteristics: Type of group: Staff Condition/ department: *C. difficile*-associated disease (CDAD) Sex: nr Age: nr Other (specify):	The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign ICP implemented in six wards over a 6-month period. Intervention reported to be based on National *C. difficile* standards group Report to the department of Health 2004. Staff questionnaire designed by Infection Control Team (ICT) and Clinical Effectiveness Department (CED) based on similar questionnaires used by the CED. .	need for additional cleaning but only 54% recorded that the vacated bed space had been thoroughly disinfected. Main author conclusions: An improvement in communication and subsequent continuity of patient care through use of the ICP was clearly demonstrated. The ICP improved the ICT's ability to assess and advise on patient care. Some aspects of care remained poorly recorded. Reported associations or causative links: ICP → Improvement in staff perceptions of patient treatment and care and in recording of some aspects of care Potential applicability considerations: ICT acted as drivers of implementation

<table>
<tr>
<td>Context: Two hospitals in Highland region of Scotland. ICP for CDAD introduced in the context of rising numbers of cases in Scotland and outbreaks elsewhere in the UK and limited numbers of single rooms in the hospital clinical areas..</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mertes 2013

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td>X</td></tr>
<tr><td colspan="2">Comparator: Patients treated before introduction of the ICP</td></tr>
<tr><td colspan="2">Length of follow up:
In hospital only</td></tr>
<tr><td>Qualitative</td><td></td></tr>
</table>
</td>
<td>Data collection method: Retrospective review of patient records

Outcome measures:
<table>
<tr><td>Length of stay (LOS)</td></tr>
<tr><td>Post-operative length of stay (POLOS)</td></tr>
<tr><td>Day of surgery admissions (DOSA)</td></tr>
<tr><td></td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/</td>
<td>Summary of results:

Mean LOS fell from 6.9 to 5.5 days for THA and from 6.4 to 5.6 days for TKA patients. Mean POLOS for THA was reduced from 5.9 to 5.3 days. POLOS for TKA patients did not change significantly following introduction of the ICP. DOSA rate under the ICP was 83% for THA and 62% for TKA.

Main author conclusions:

.Introduction of the ICP reduced LOS, the effect being greatest for older and male patients.

Reported associations or causative links:

Implementation of ICP → Reduced LOS (increased rate of reduction in LOS for THA)

.

Potential applicability considerations:</td>
</tr>
</table>

Cross-sectional	
Other (specify)	

Sample size: Comparator 170 THA, 162 TKA. Intervention138 THA, 137 TKA

Population characteristics:

Type of group	Patients
Condition/ department	Total hip arthroplasty (THA) or total knee arthroplasty (TKA)
Sex	38.6/34.3% male (THA); 44.4/41.6% male (TKA)
Age	Mean 68.9/69.8 (THA); 71.2/69.7 (TKA)
Other (specify)	

Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Hospital ICP involving preoperative assessment, operative and post-operative care and variance mapping.

.

ICP altered the long-term rate of reduction in LOS for THA but not for TKA patients.

Large multi-disciplinary team required to deliver ICP.

No data on costs, complications or long-term outcomes.

<table>
<tr>
<td>Context: Addenbrooke's Hospital Cambridge. Paper frames ICP introduction in context of a need to deliver £15–20 billion of savings in the health sector.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ng 2014

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td>X</td></tr>
<tr><td colspan="2">Comparator: Year before put in place versus year after</td></tr>
<tr><td colspan="2">Length of follow up: One year</td></tr>
<tr><td>Qualitative</td><td></td></tr>
</table>
</td>
<td>Data collection method: Unclear presumably routine data, patient satisfaction survey

Outcome measures:
<table>
<tr><td>Accident and emergency admissions</td></tr>
<tr><td>Unscheduled admissions</td></tr>
<tr><td>Length of stay</td></tr>
<tr><td>Readmissions</td></tr>
<tr><td>Patient satisfaction</td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/</td>
<td>Summary of results:

After implementation of the service A&E attendances fell by 5% per month, non-elective admissions by 15.8% and readmissions by 17.3%.

Length of stay overall slightly rose by 2.3% from average 0.88 days to average 0.9 days (not statistically significant).

Patient satisfaction high, 94% rated the service as excellent.

Key aspects of the service were having nurses trained in paediatrics, clear clinical governance, pathways and robust documentation.

Main author conclusions:

The community team was effective in reducing A&E admissions, non-elective admissions and readmissions.

Reported associations or causative links:

Community team → Reduction in demand for acute services</td>
</tr>
</table>

<table>
<tr>
<td>
<table>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size:

Population characteristics:
<table>
<tr><td>Type of group</td><td>Children</td></tr>
<tr><td>Condition</td><td>Acutely ill</td></tr>
<tr><td>Sex</td><td>nr</td></tr>
<tr><td>Age</td><td>nr</td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Context: The service was developed at Southport and Ormskirk NHS Trust, a dual-site integrated care organisation, after negotiations between the Trust and the CCGs in Sefton and Lancashire.
</td>
<td>Location-focused/ General service redesign

Community children’s nursing outreach team with 7.2 WTE paediatric trained nurses at band 5 to 6 and 0.5 WTE administration and clerical support staff. Led by a paediatric matron supervised by a consultant paediatrician. The service ran from 7am to 10pm, 7 days a week. Agreements with pharmacy, IT and specialist services, referral criteria and clinical pathways put in place. Every referral discussed with a registrar or consultant and daily handover meetings. Referrals taken from accident and emergency and other hospital units.</td>
<td>Potential applicability considerations:

None described</td>
</tr>
<tr>
<td>Offredy 2008</td>
<td>Data collection method: Questionnaire to patients</td>
<td>Summary of results:</td>
</tr>
</table>

Country: UK RCT Non-RCT CBA BA Comparator: Length of follow up: Qualitative Cross-sectional X Other (specify) Very limited data provided Sample size: 5640 patients used the service Population characteristics: Type of group Patients	Outcome measures: Hospital referrals Cost The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign A headache service was developed. CT scanning was made available to community patients, care pathways developed for GPs. A GP with a special interest undertook triage of patients supported by a consultant neurologist. The paper also mentions extending the community assessment service to cardiology and dermatology clinics, and ophthalmology, gynaecology and minor surgery but provides no detail of these	The paper provides a list of outcomes and a few sample comments from patients but no data to support the listed outcomes. It reports a 40% reduction in outpatient visits following introduction of the community cardiology assessment service. 70% of dermatology activity had moved from hospital to community services. It also reports a saving of £1.2 million across the PCT in one year due to reduction in outpatient referrals. Main author conclusions: The model was successful and has attracted interest from other services. Reported associations or causative links: Community assessment clinics → Reduction in hospital referrals and cost saving Potential applicability considerations: Availability of access to technology (CT), availability of GPs with special interests

Condition Headaches Sex Age Other (specify) Context: Harrow, London. Discussion with hospital consultants and GPs prior to introduction, the PCT facilitated additional access to computerised tomography scanning for primary care patients. A three month pilot was led by a consultant and based in the hospital prior to the community model. Process mapping with key stakeholders was carried out prior to redesign.	beyond mentioning contribution of a multidisciplinary team, the importance of nurses in primary care coronary heart disease services, and the coronary community assessment service comprising GP with special interests and an outreach cardiologist. Disincentives introduced for GPs that sent less than 90% of referrals through the clinical assessment service.	
Paize 2007 **Country: UK** **RCT** / **Non-RCT**	**Data collection method:** Retrospective review of patient records **Outcome measures:** Length of stay	**Summary of results:** Following implementation of the ICP, median length of stay decreased from 11.5 to 9 days and surgical intervention from 8/13 to 1/18. Children on the ICP had smaller chest drains, received urokinase and had a clearly recorded analgesia strategy.

CBA	
BA	X
Comparator: Patients treated before introduction of the ICP	
Length of follow up: One year before and one year after introduction of the ICP	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size:

Population characteristics:

Type of group	Patients (children)
Condition/ department	Pleural empyema (complication of pneumonia)

ICU admission
Time with chest drain in situ
Surgical intervention

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

.ICP developed following literature review, discussion at team meetings and modification based on feedback received. Members of the development team encouraged use of the pathway throughout the hospital.

.

Main author conclusions:

Implementation of the ICP improved quality of care and justified the time and resources expended

Reported associations or causative links:

Implementation of ICP → Improved quality of care and dependable documentation for audit and further review .

Potential applicability considerations:

Rare condition, need for significant change in practice. ICP implemented at a regional centre rather than a local hospital

<table><tr><td>**Sex**</td><td>8/13 male (2000); 8/18 male (2004)</td></tr><tr><td>**Age**</td><td>Mean 3.6 (2000) and 5.1 (2004) years</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Regional paediatric centre. Need for multidisciplinary management of empyema and change of practice to reflect latest evidence		
Pearson 2011 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr></table>	Data collection method: Analysis of routine data from Devon Trusts. Compares two areas with integration to two areas with lesser integration of services. Outcome measures: <table><tr><td>Length of stay</td></tr><tr><td>Emergency readmission</td></tr><tr><td></td></tr></table>	Summary of results: The data are very limited with only partially explained graphs. The vertically integrated North Devon Trust had longer length of stay than other local trusts and longer than the national average (around 8 days versus national average of around 5 – these figures taken from the graph, precise data not reported). It also had a greater percentage of readmissions than other Trusts, just above the national average (no data provided).

Comparator: Compares data from two areas with integration to two areas with lesser integration of services. Length of follow up: Qualitative: Cross-sectional: X Other (specify): Sample size: Population characteristics: Type of group: Condition: Sex: Age: Other (specify):		The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign North Devon has an integrated primary/acute/social care Trust. Torbay area integrated community services but acute remain separate. South Devon developed an Integrated Care Network. Other areas have no or partially integrated services with separate community trusts and community hospitals.	Main author conclusions: The author argues that the data support the finding that Trusts with a separate community hospital provider tend to have longer length of stay than those which have integrated acute and community services. But then goes on to conclude that greater integration is of demonstrable benefit. Reported associations or causative links: Potential applicability considerations: None identified

<table>
<tr>
<td>Context: South West England which has a variety of models of integration.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pettie 2011

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td>X</td></tr>
<tr><td colspan="2">Comparator: Patients treated before introduction of the ICP</td></tr>
<tr><td colspan="2">Length of follow up: 3 months after introduction of the ICP</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>Data collection method: Retrospective review of patient records for 3-month periods before and after introduction of the ICP; staff questionnaire

Outcome measures:
<table>
<tr><td>Completeness of assessment documentation</td></tr>
<tr><td>Appropriate and timely blood sampling</td></tr>
<tr><td>Acetylcysteine administered if indicated; in a timely fashion; and at correct dosage</td></tr>
<tr><td></td></tr>
</table>
The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/</td>
<td>Summary of results:

The ICP was used in 77% of cases (137/177). Use was associated with improvements in initial documentation of patient assessment, and appropriate blood sampling but no change in timely blood sampling. All aspects of intravenous acetylcysteine administration significantly improved

Main author conclusions:

ICP implementation significantly improved patient management and helped to standardise inter-professional decision-making

Reported associations or causative links:

Implementation of ICP → junior medical and nursing staff empowered in an environment where staff rotation is common
.

Potential applicability considerations:

ICP was introduced within a specialist unit, results may not be typical of care elsewhere.</td>
</tr>
</table>

<table>
<tr>
<td>Sample size: 161 (pre-ICP); 113 (ICP)

Population characteristics:

<table>
<tr><td>Type of group</td><td>Patients</td></tr>
<tr><td>Condition/ department</td><td>Paracetamol poisoning</td></tr>
<tr><td>Sex</td><td>71/70% female</td></tr>
<tr><td>Age</td><td>Mean 33 years (both groups)</td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Context: Large tertiary acute teaching hospital. Management of paracetamol poisoning seen as challenging in the context of staff rotation through different departments. Management initiated in emergency department and continued in a specialist toxicology unit.</td>
<td>Location-focused/ General service redesign

Four separate ICPs depending on time from ingestion to presentation. ICP based on paracetamol poisoning entry on TOXBASE and the BNF

.</td>
<td></td>
</tr>
</table>

Richings 2011

Country: UK

RCT	
Non-RCT	
CBA	
BA	X
Comparator:	
Length of follow up: Compares first year of service to before	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 102 patients referred

Population characteristics:

Data collection method: Unclear

Outcome measures:

Referrals
Length of stay
In patient numbers

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Standard in patient ward changed to integrated assessment and treatment service comprising outreach, day assessment places and 6 inpatient beds. Functions as an extension of existing community teams. Referrals come from lead for community intellectual disability team, patients already receiving co-

Summary of results:

35% of those referred were not accepted on the full pathway, with 63% of these considered that the team would have only an advisory role and 26% signposted to other services.

The number of patients with an intellectual disability and mental health and behaviour problems treated increased from 22 to 40.

The proportion of patients who were treated as inpatients fell from 91% to 35% in the first year of the service compared to the year prior.

The number of patients who remained in or returned to their placement significantly increased from 60%, compared to 24% in the year before the service began (chi-square 3.15, p=0.076). This difference however, was not significant for patients if they had been admitted as inpatients (p=0.276).

The length of stay in the new model of service was significantly lower than in the previous model (74 days versus 198 days; chi-square 4.40, p= 0.036)

The frequency of all aggressive incidents was lower amongst inpatients under the new model (5 versus 15 per month).

The frequency of incidents involving physical violence was also lower (4 versus11 per month)

Main author conclusions:

The new model was able to prevent or reduce inpatient stays, prevent placement breakdown and reduce aggressive incidents. It

<table><tr><td>Type of group</td><td>Patients</td></tr><tr><td>Condition/ department</td><td>In patient mental health and behavioural problems, severe mental health needs</td></tr><tr><td>Sex</td><td>61% male</td></tr><tr><td>Age</td><td>nr</td></tr><tr><td>Other (specify)</td><td>48% autistic spectrum, 22% depression, 18% epilepsy, 53% mild intellectual disability, 51% living in own or family home, 42% residential home</td></tr></table> Context: Birmingham. Local long stay hospital closed. An inpatient ward set up to provide assessment and treatment. Delays in discharge and knock	ordinated care plan. Referrals discussed in a team meeting with both community and assessment and treatment service staff present. Community assessment and treatment pathway developed, enhanced response times for each discipline agreed. The average time spent on the BCATS pathway was 143 days (range 11–553 days) The average time spent as an inpatient was 103 days (range 16–553 days).	demonstrates the advantages of greater integration between community and inpatient services for people with intellectual disabilities. Reported associations or causative links: Integrated acute and community services → Reduced length of stay Potential applicability considerations: A third of those referred were not accepted into the model.

<table>
<tr>
<td>on admission delays, increasing number of beds, no alternatives available, high rates of aggression on ward.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roberts 2010

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td>X</td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up: One year</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>Data collection method: Health needs analysis, routine data, data from COPD registers, POINTS audit system

Outcome measures:
<table>
<tr><td>Unscheduled hospital admissions</td></tr>
<tr><td>Length of stay</td></tr>
<tr><td>Cost</td></tr>
<tr><td>Number completing rehabilitation</td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Redesign led by medical and nursing consultants. Local COPD treatment and</td>
<td>Summary of results:

The number of unscheduled hospital admissions for COPD, decreased from 935 in 2006-2007 to 840 in 2007-2008.

The mean length of stay decreased from 8.3 to 7.7 days.

The costs of COPD admissions decreased from £1,772,865 in 2006-2007 to £1,528,080 in 2007-2008.

The number of patients with moderate or severe COPD who completed pulmonary rehabilitation increased from 84 at baseline to 143 at 12 months.

Marked variation between practices.

Main author conclusions:

The integrated service model reduced service costs and increased access to rehabilitation.

Reported associations or causative links:

Service redesign → Reduced hospital resource (costs)

Service redesign → Increased access to community services</td>
</tr>
</table>

<table>
<tr>
<td>Sample size: 4438 patients, 55 GP practices

Population characteristics:

<table><tr><td>Type of group</td><td>Patients</td></tr><tr><td>Condition</td><td>COPD</td></tr><tr><td>Sex</td><td>49% female</td></tr><tr><td>Age</td><td>Mean 37 years, 19% over 60</td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Context: Salford - the inner city area is in the lowest quintile of socioeconomic deprivation, with the city as a whole having widely varying deprivation levels. Prior to the reconfiguration there was little service integration.</td>
<td>management guidelines, self-management plans, educational initiatives about COPD, clinical support to practices, improved diagnosis, stratification of general practice COPD registers. a focus on smoking cessation, appropriate pulmonary rehabilitation and end-of-life care, increased provision of specialist community services (consultant-led clinics, case note reviews and virtual multidisciplinary team meetings)</td>
<td>Potential applicability considerations:

Prevalence of COPD exceeds 2% (compared to England average of 1.4%)

Hospital admission rate for COPD higher than the national average (23.7 versus 23.1 per 10,000)</td>
</tr>
<tr>
<td>Roberts 2012

Country: UK</td>
<td>Data collection method: Survey of staff and patients, interviews, discussion at meetings described

Outcome measures:</td>
<td>Summary of results:

Four months after launch 767 care plans had been completed, 20 health networks had been set up, and 180 case conferences had been held, discussing 798 patients.</td>
</tr>
</table>

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	X
Other (specify)	

Sample size: Unclear

Population characteristics:

Type of group	Patients
Condition	Diabetic and/or elderly
Sex	nr
Age	Over 75

Staff views
Patient views

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Outer North West London Integrated Care Pilot. Services were arranged around multidisciplinary groups which covered a population of 50,000 ('health networks'). Staff involved included GPs, acute consultants, mental health consultants, social workers, district nurses and specialist nurses.

62% of GPs and practice nurses surveyed reported that their practice had an increased emphasis on identifying and managing high risk patients.

Patients were positive regarding care planning sessions.

91% of attendees at meetings reported that they had developed relationships that would improve or had improved patient care.

67% reported that the advice they gave or received at the case conferences helped (or would help) to reduce non-elective admissions.

Improvements that were requested by staff related to the care plans (widening access by staff, improving the patient focus, increasing specifics, having a generic plan), reducing the time spent in case conferences, integrate IT systems; and improve partnership working.

Main author conclusions:

Patients and practitioners found the system of benefit in improving communication and collaboration.

Reported associations or causative links:

Multidisciplinary care plans & meetings → Improved collaboration

<table><tr><td>Other (specify)</td><td></td></tr></table> Context: Four London boroughs, population area of 12 million	Components: holistic pathways using bespoke templates, and meetings to discuss complex cases twice a month. It had an independently chaired management board, four integrated management groups each co-chaired by a GP and a representative of social care, and 20 groups together with clinical and social care leaders. Clinical leaders and champions identified, shared governance, agreed protocols and pathways.	Potential applicability considerations: None reported
Roland et al. 2012 Same study as DoH report **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td>X</td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:** Patients in intervention group were matched to others from the database, and analysis</td></tr></table>	**Data collection method:** Questionnaires before and after, hospital data (hospital episode statistics) **Outcome measures:** <table><tr><td>Emergency admissions</td></tr><tr><td>Elective admissions</td></tr><tr><td>Out patient attendance</td></tr><tr><td>Ambulatory care sensitive admissions</td></tr><tr><td>Secondary care costs – payment by results tariffs or National reference costs</td></tr></table>	**Summary of results:** 59% of staff reported that team working had improved, 67% that communication had improved, 46% that their jobs were more interesting. Comparing before and after, patients were more likely to have been told that they had a care plan ($p<0.01$) but no more likely to report discussing with their doctor or nurse about how to deal with their problems. They reported being less able to see the GP or nurse that they preferred ($p<0.001$), and were less likely to rate the GP as good at listening ($p<0.001$). There was a significant increase in emergency admissions ($p=0.02$) and a significant reduction in elective admissions ($p<0.01$) and outpatient attendances ($p<0.01$), and no change in A&E attendance ($p=0.40$)when analysed at individual patient level. At a practice level

comparing intervention to comparator practices **Length of follow up:** 6 months **Qualitative** | **Cross-sectional** | **Other (specify)** **Sample size:** 6 sites, 117 practices, 3646 intervention patients and 17311 controls, 414 staff surveyed. **Population characteristics:** **Type of group**: Patients and staff **Condition/ department**: Over aged 65 **Sex**: 58% female	**The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Integrated Care Pilots in England. Risk profiling used to identify older people at risk of emergency hospital admission. Intensive case management for those identified as at risk, most commonly patients assigned a nurse.	there was a significant reduction in outpatient attendance ($p<0.01$) but no difference in emergency admissions ($p=0.77$), A&E attendance ($p=0.13$) elective admissions ($p=0.78$). Costs increased for emergency admissions but reduced for elective admissions with combined cost reduction in the 6 months following the pilot of around 9% (£223 per patient 95% CI £54-391 $p=0.01$). **Main author conclusions:** The intervention may or may not have increased emergency admissions but has the potential to reduce hospital costs. Staff perceived that care had improved however, patient perceptions were mixed. **Reported associations or causative links:** Case management → Hospital usage **Potential applicability considerations:** None identified

<table><tr><td>**Age**</td><td>Mean age 79</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** No details			
Rowlandson 2009 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator:</td></tr><tr><td colspan="2">Length of follow up:</td></tr><tr><td>Qualitative</td><td></td></tr><tr><td>Cross-sectional</td><td>X</td></tr><tr><td>Other (specify)</td><td></td></tr></table>	Data collection method: Unclear Outcome measures: <table><tr><td>Time to care plan</td></tr><tr><td></td></tr><tr><td></td></tr><tr><td></td></tr></table> The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign	Summary of results: The time taken for assessment/diagnosis to having a care plan has been reduced from 2 years to approximately 5–6 months. Positive feedback from parents (85% rated satisfactory). Main author conclusions: The inter-agency service reduced waiting times and increased user satisfaction Reported associations or causative links: Inter-agency assessment ⟶ Reduced waiting times Potential applicability considerations: None reported

<table>
<tr>
<td>Sample size: 1101 referrals

Population characteristics:

<table><tr><td>Type of group</td><td>Children</td></tr><tr><td>Condition</td><td>Autism, ADHD, development co-ordination disorder</td></tr><tr><td>Sex</td><td>nr</td></tr><tr><td>Age</td><td>nr</td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Context: Isle of Wight, population of 132 000 and 19 000 children of school age.</td>
<td>Multi-agency team with monthly meetings and filtering panels to direct referrals, and also an initial assessment clinic. All services share funding. The core team was co-located within one social services centre and other members of the team regularly attended the centre.</td>
<td></td>
</tr>
<tr>
<td>Ryan 2007

Country: UK

<table><tr><td>RCT</td><td></td></tr></table></td>
<td>Data collection method: Routine data, referral questionnaire

Outcome measures:

<table><tr><td>Number of referrals</td></tr><tr><td>Referral pathway</td></tr></table></td>
<td>Summary of results:

The number of referrals from outside the mental health system directly to the community mental health teams was low (n = 34; 7.2%).

15% of cases were inappropriate and either not accepted or referred back to the referring individual or agency.</td>
</tr>
</table>

Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	
Cross-sectional	X
Other (specify)	

Sample size: 471 patients

Population characteristics:

Type of group	Patients
Condition/ department	Severe mental illness
Sex	55% female

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Gateway worker role between primary care and community mental health teams comprising a team of three staff. 67% of referrals to gateway team came from GPs/primary care (20% not reported by authors)

48.8% of referrals were retained or referred on for mental health services input. There were 46 referrals to the CMHTs from the gateway team. Of these 56.5% were accepted by the team; six (13.0%) were not accepted; a further six (13.0%) were referred to another team; one case was referred back to the gateway team; two (4.3%) were referred to another agency; and there were five 'other' outcome.

Main author conclusions:

Restructuring the CMHTs and developing a team of gateway workers reduced inappropriate referrals to the CMTs. Some individuals were referred inappropriately from the gateway team indicating the complexity of the mental health system.

Reported associations or causative links:

Gateway team role → Reduction in inappropriate referrals to CMHTs

Potential applicability considerations:

An area with high rates of social deprivation, single parent households, people permanently sick or disabled, and mental illness.

<table><tr><td>Age</td><td>Mean age 36</td></tr><tr><td>Other (specify)</td><td>96% white ethnicity, 25% had previously used secondary mental health services</td></tr></table> Context: Three geographical areas across Knowsley (near Liverpool). Population of 150,459. Alongside the gateway worker role outreach and crisis resolution teams had been established and community mental health teams reconfigured.		Three quarters of those referred had not been assigned a level on the Care Programme Approach – suggesting not perceived to be in need of complex services
Simmons 2014 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td>X</td></tr><tr><td>BA</td><td></td></tr></table>	Data collection method: Routinely collected (SUS) NHS data Outcome measures: <table><tr><td>Hospital admissions</td></tr><tr><td>Tariff paid for in-patient treatment</td></tr><tr><td></td></tr></table>	Summary of results: Study ran from April 2007 to November 2010. Among fully engaged DICI practices the average hospital admission rate was 19% higher at the time of introducing the DICI (July 2009 to June 2010) compared with the pre-implementation period. The monthly tariff paid was 28.8% higher. These differences had fallen to 8.7% and 13.4% 12 months after the DICI was introduced. Comparable changes were not seen in those without diabetes, in less engaged practices or in areas using other models .

Comparator: Compares fully and less engaged practices with those in other areas using different service models Length of follow up: 43-month study Qualitative Cross-sectional Other (specify) Sample size: With diabetes fully engaged practices 3507; less engaged 4184; control areas 6484 and 8046 Population characteristics: Type of group: Patients Condition/: Diabetes		The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign Diabetes Integrated Care Initiative (DICI) with multiple components and an increased specialist team. Financial incentive (Local Enhanced Service agreement) to improve various aspects of diabetes care	Main author conclusions: Integrated care is a promising intervention to control diabetes-related hospital admissions and costs of in-patient care. Longer-term evaluation is needed to determine whether these trends are sustained. . Reported associations or causative links: Integrated diabetes care → Reduction in growth of admissions and hospital costs over 12 months Potential applicability considerations: Engagement influenced by many factors and some less engaged practices had GPs with special interest in diabetes

<table><tr><td>department</td><td></td></tr><tr><td>Sex</td><td>NR</td></tr><tr><td>Age</td><td>NR</td></tr><tr><td>Other (specify)</td><td></td></tr></table> Context: Rural area with above average health needs. GPs varied in speed of implementation and degree of engagement with the intervention		
Sinclair 2006 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td>X</td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator: No nurse service at comparator hospital. Cross over design.</td></tr></table>	Data collection method: Pre and post intervention surveys, routine data, case note review Outcome measures: <table><tr><td>Quality of assessment</td></tr><tr><td>Waiting time</td></tr><tr><td>Onward referral</td></tr><tr><td>Repeat presentations</td></tr><tr><td>Patient satisfaction</td></tr></table>	Summary of results: Average waiting times at each hospital were shorter during the intervention period however, not significantly different (hospital 1, p=0.763; hospital 2, p=0.076). There was no significant difference in the number of repeat attendances. There was no difference in patient ratings of services between intervention periods and no-intervention periods. A&E attendance in the intervention period and seeing a psychiatric nurse was however, significantly associated with shorter waiting times for patients with mental health problems (p=0.01, p<0.001, respectively).

Length of follow up: 12 months			
Qualitative			
Cross-sectional			
Other (specify)			

Sample size: 411 patients seen by nurse

Population characteristics:

Type of group	Patients
Condition/ department	Mental health concerns in accident and emergency
Sex	nr
Age	nr

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Psychiatric nurse service provided in accident and emergency department for three months. Four G- grade experienced psychiatric nurses worked together during each intervention period. Cover provided for around 130 hours per week.

Referral patterns differed during the intervention period from non-intervention period (hospital 1 $p<0.001$; hospital 2, $p<0.01$). Patients with mental health problems seen by a psychiatric nurse were more likely to be transferred to a mental health unit than (a) discharged against medical advice ($p=0.001$), (b) referred to an outpatient clinic ($p=0.027$), or (c) admitted to a general medical ward (p,0.001).

Staff perceptions were reported to be positive (no data).

Main author conclusions:

Experienced psychiatric nurses working in A&E may have a small impact on referral pathways but has little or no impact on waiting times to treatment or patient satisfaction.

Reported associations or causative links:

Additional specialist staff in A&E → No impact on waiting time/patient satisfaction

Potential applicability considerations:

<table><tr><td>Other (specify)</td><td></td></tr></table> Context: Two inner city Glasgow A&E departments seeing around 55000 and 70000 patients each year. No psychiatric nurse service was available outside the study period.			None reported
Smith 2012 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator:</td></tr><tr><td colspan="2">Length of follow up:</td></tr><tr><td>Qualitative</td><td></td></tr></table>		Data collection method: Unclear Outcome measures: <table><tr><td>Place of death</td></tr><tr><td>Use by staff</td></tr><tr><td></td></tr><tr><td></td></tr></table> The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/	Summary of results: 86% of records were entered by community professionals (67% GPs district nurse of community matron). 55% of patients with a CMC record died in their usual place of residence compared to Office for National Statistics data of 33% for all deaths. Only 34% of patients on CMC who chose hospice as their preferred place of death achieved this preference. Main author conclusions: The electronic system can deliver fully integrated, personalised end-of-life care. Reported associations or causative links:

<table>
<tr>
<td>
<table>
<tr><td>Cross-sectional</td><td>X</td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size: 1087 records

Population characteristics:
<table>
<tr><td>Type of group</td><td>Patients</td></tr>
<tr><td>Condition/ department</td><td>Palliative care</td></tr>
<tr><td>Sex</td><td>nr</td></tr>
<tr><td>Age</td><td>nr</td></tr>
<tr><td>Other (specify)</td><td>46% cancer diagnosis, 42% did not have palliative care involvement</td></tr>
</table>

Context: London, population 7.8 million, 31 PCTs, 14 hospices.
</td>
<td>Location-focused/ General service redesign

Co-ordinate My Care (CMC), an electronic password protected web based palliative care co-ordination system. Suitable patients are identified using the Scottish supportive and palliative care indicator tool. A CMC electronic record is created when a patient is identified as being in the last year of life. It includes: the patient’s diagnosis, prognosis, current problems, anticipated problems, advanced care plan, resuscitation status and patient’s wishes. The record can be accessed by health and social care professionals at all times via a secure network including NHS 111 operators. Users of the system receive workshop training.</td>
<td>Electronic information system → Patient preferences adhered to

Potential applicability considerations:

None identified</td>
</tr>
<tr>
<td>Soljak et al. 2013

Country: UK</td>
<td>Data collection method: Patient level data sets (secondary uses service, hospital episode statistics)</td>
<td>Summary of results:</td>
</tr>
</table>

RCT	
Non-RCT	
CBA	
BA	X
Comparator:	
Length of follow up:	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 35,000 patients

Population characteristics:

Type of group	Patients
Condition/ department	Over 75, diabetes
Sex	

Outcome measures:

Emergency admissions
Nursing home admissions
Attendances
Diabetes control
Blood pressure control
Cholesterol control

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Part of the evaluation of the North West London Integrated Care Pilot.

This report considers outcomes from the integrated care pathways, specifically the diabetes care pathway (package), the

There was a significant difference (p=0.0484) in the average HbA1c value before care plan creation compared to the average latest HbA1c value after being on a care plan for at least three months (average difference in means is 0.76). The mean HbA1c was lower prior to being on a care plan for at least three months, indicating better controlled diabetes. Control appeared worst in those with South Asian ethnicity.

For good blood pressure control – the before-after difference was not significant for those exposed to six months of the ICP (p=0.1249). 58.74% of intervention patients had their latest blood pressure under control within six months of the ICP compared to 57.63% who had their blood pressure under good control prior to the ICP.

For cholesterol control there had been previously some catch up to national standards however this had plateaued in the most recent two year period. Intervention patient level before-after ICP was not statistically different, and the proportion of patients with good cholesterol control did not change significantly from before the intervention.

There was no significant change in monthly rates of emergency admissions for diabetes patients (confidence intervals overlapped).Emergency admissions for conditions primarily related to the diabetes in diabetic patients appeared to show that rates in the intervention areas are rising compared to a national trend for falling rates. There was also some indication that the number of admissions

	Age		dementia pathway and the patient pathway for medicines management.	for patients with diabetes was higher in the intervention areas compared to these areas previously (p=0.014). The quarterly number of diagnoses of dementia was much higher in the year when the ICP was running compared to previously (p>0.001) 53% of patients with dementia had a care plan. There was no evidence of a change in the rate of admissions for fractures/falls in the elderly (confidence intervals overlap) or in the number of individuals who have falls or fractures in any one year. **Main author conclusions:** Apart from the creation of care plans, the study found little evidence of changes in intermediate outcomes, attendance/admission rates or adverse outcomes, with the possible exception of dementia diagnoses. ICP practices perform worse than the rest of England average in areas of plateau in patients with good cholesterol, admissions with diabetes as a primary diagnosis. **Reported associations or causative links:** →
	Other (specify)			
Context: National trend for decreasing proportion of patients with good control of diabetes. Across England a fall in diabetes emergency admissions over 5 years. Long standing trend for improved management of chronic diseases.			

<table>
<tr>
<td></td>
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<td>Potential applicability considerations:

Emergency admission rates were higher from those in deprived or very deprived areas.

Black and Mixed Ethnicity patients may have poorer control of blood pressure.

Control of diabetes appeared worst in those with South Asian ethnicity.

No evidence of a difference in emergency admission for fractures in different deprivation groups.</td>
</tr>
<tr>
<td>Steventon 2011

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td>X</td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator: Matched control patients</td></tr>
<tr><td colspan="2">Length of follow up:12 months</td></tr>
</table>
</td>
<td>Data collection method: Sites sent individual patient data which was linked to hospital episode statistics. Controls selected from national datasets. Used person-based risk-adjusted evaluation.

Outcome measures:

<table>
<tr><td>Emergency hospital admissions</td></tr>
<tr><td>Elective hospital admissions</td></tr>
<tr><td>Outpatient attendances</td></tr>
<tr><td></td></tr>
</table>

The intervention:</td>
<td>Summary of results:

Pre-post comparison suggested a reduction in admission rates for four of the eight interventions; however, this evaluation is misleading as there was a peak in hospital admissions prior to the intervention therefore the group would be expected to experience a regression to the mean. The control group experienced a similar pattern of reduction in admissions, to a greater extent than the intervention patients. Comparing the two, suggested an increase in the intervention group of 0.64 additional admissions over a 12 month intervention period.

The support workers interventions seemed to have no impact on hospital use.</td>
</tr>
</table>

		Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign	The intermediate care scheme with generic workers increased the number of emergency admissions and bed-days following emergency admissions, but reduced the number of outpatient attendances. The health and social care teams reduced the number of bed-days following emergency admissions, reduced elective admissions and reduced outpatient attendances. This intervention seemed to reduce emergency admissions for a particular high-risk subgroup. The rapid response service reduced outpatient attendances. One of the short-term assessment and signposting services increased the number of emergency hospital admissions, while another increased the number of outpatient attendances.
Qualitative				
Cross-sectional				
Other (specify)				
Sample size: 5146 intervention **Population characteristics:**		Evaluation of eight Partnership for Older People Projects. Encompassed a programme of support workers who worked alongside community matrons with people with long-term condition, an intermediate care scheme using generic workers supporting people on discharge from hospital, multi-dimensional integrated health and social care primary care teams, daytime and out-of-hours response services and assessment and signposting services.	**Main author conclusions:** The study found no evidence of a reduction in emergency hospital admissions six to 12 months following any of the POPP interventions studied. In some instances, there were more admissions in the intervention group than in the control group. One intervention reduced the number of bed-days, but overall the interventions did not appear to be associated with a reduction in the use of acute hospitals. The use of case finding may identify unmet needs. **Reported associations or causative links:**
Type of group	Patients			
Condition	Older adults - long term conditions at risk of deterioration, people discharged from hospital, older people, older people living in deprived areas. Included cancer, hypertension, injury, falls, atrial fibrillation, diabetes, mental			

	health, heart failure, COPD, cerebrovascular disease, angina, renal failure. Had experienced a hospital admission during the two years before the start of the interventions.		Range of interventions → No impact on emergency admission **Potential applicability considerations:** The 8 projects were selected from the 29 as it was felt they had a strong possibility of impacting hospital admissions. No details of location of studies, limited details on target populations.
Sex			
Age	55% aged over 85		
Other (specify)	Mean deprivation scores of 17.7/18.1 Average 1.1/1.0 emergency hospital admissions in previous 12 months		

<table>
<tr>
<td>Context: 29 Projects received ring fenced funding from the DoH over a two year period. Led by local authorities in partnership with PCTs and voluntary, community and independent sectors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stokes 2016

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td>X</td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>Data collection method: Analysis of an anonymised database “admitted patient care commissioning dataset”

Outcome measures:
<table>
<tr><td>Elective and non-elective admissions</td></tr>
<tr><td>Readmissions</td></tr>
<tr><td>A&E and outpatient visits</td></tr>
<tr><td>Costs</td></tr>
<tr><td>Length of stay</td></tr>
<tr><td>Patient satisfaction</td></tr>
</table>
The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service</td>
<td>Summary of results:

A slight increase was found in inpatient non-elective admissions (+0.01 admissions per patient per month; 95% CI 0.00 to 0.01. Effect size: 0.02).

Also a slight increase was found in 30-day re-admissions (+0.00; 95% CI 0.00 to 0.01. ES: 0.03).

There was a small decrease in inpatient non-elective admissions (−0.63 admissions per 1000 patients per month 95% CI −1.17 to −0.09. ES: −0.24)

There was no difference in outcomes for highest versus lower risk patients.</td>
</tr>
</table>

Sample size: 2049 intervention and 2049 control

Population characteristics:

Type of group	Patients
Condition/ department	High risk patients
Sex	44% male
Age	65/67
Other (specify)	Deprivation index 40

Context: Central Manchester, 30 GP practices. The intervention was introduced in stages with new practices joining over the five year time frame.

provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Practice Integrated Care Teams

Were introduced by the clinical commissioning group. Their role is to conduct case finding, assess the needs of an individual identified, prepare individualised care plans, co-ordinate care and conduct regular reviews, monitor and adapt the care plan. Team comprised a GP, practice nurse, district nurse, social worker and case manager. Case record could be viewed by all, care plan could be viewed and edited by all. Training provided for the case managers.

The clinical significance of these results is small. For an average practice of approximately 6000 patients, this would equate to an estimated difference (not an absolute reduction) of −45.6 (95% CI −84.0 to −6.6) inpatient non-elective admissions per year with an estimated cost saving of £67898 (95% CI £125076 to £9827) excluding intervention costs.

Main author conclusions:

The study provides evidence of the limited effectiveness of MDT case management for “at risk patients” in reducing healthcare usage.

Reported associations or causative links:

Teamworking → No impact on acute care usage

Potential applicability considerations:

The practices volunteered to take part and were from the same CCG.

Tucker 2009

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	
Cross-sectional	X
Other (specify)	

Sample size: 318

Population characteristics:

Type of group	Psychiatrists with older adult caseload

Data collection method:

Self-administered postal questionnaire

Outcome measures:

Perspectives of MH care provision based on NSFOP

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

National Service Framework for Older People (NSFOP) Model – focus on dementia and depression, specifying integrated community / hospital based services that ought to be available. SAP (Single Assessment Process) used. Highlights need for MH outreach.

Summary of results:

Community teams: Clinical psychologists not available (almost 20%); lack of dedicated social work time (over 33%), though some teams had MDTs that were well supported.

Hospital teams: Lack of MH rehab beds, many wards include patients with functional and organic conditions instead of separating

There was some training of care home staff in MH. Many care home residents have MH problems that go unnoticed or poorly managed.

Main author conclusions:

More than half thought services had improved and some reported services aligned with aspirations of the NSFOP, much service provision was reported to be patchy and inconsistent. NSFOP gives little guidance on how best to provide MH services in hospital for older adults.

May be a move from liaison based sector consultation to consultant psychiatrists pro-actively seeking referrals and support of hospital staff.

SAP may assist in co-ordinating care but this is currently at an early stage.

Reported associations or causative links:

<table><tr><td>Condition</td><td>Dementia / depression</td></tr><tr><td>Sex</td><td>NR</td></tr><tr><td>Age</td><td>NR</td></tr><tr><td>Other (specify)</td><td>NR</td></tr></table> Context: Community and hospital based MH services and the interface between them.		Potential applicability considerations: Historical - SAP progressed since this paper was published
Tucker 2012			
Waller 2007 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td>X</td></tr><tr><td colspan="2">Comparator:</td></tr><tr><td colspan="2">Length of follow up: Compares 13-month periods</td></tr></table>	Data collection method: Retrospective case note review Outcome measures: <table><tr><td>Primary: time from admission to initiation of IV fluid and insulin</td></tr><tr><td>Secondary: numerous outcomes, including length of stay and proportion of patients meeting specified targets for initiation of IV fluid and insulin and amount of IV fluid administered</td></tr><tr><td>Costs mentioned in discussion only</td></tr></table>	Summary of results: Introduction of the ICP was associated with reductions in time to initiate intravenous fluid and insulin infusions. The proportion of patients on intravenous insulin within 60 minutes increased from 48 to 77% and use of antibiotics and low molecular weight heparin decreased. Length of stay was not affected (median (range) 3 (3.8–7.2) before vs. 2 (1–6) after introduction of the ICP). An estimated cost reduction of £134 was mentioned in the discussion section. Main author conclusions: The ICP significantly improved key areas in the management of DKA

before and after implementation of the ICP (November 2004) Qualitative Cross-sectional Other (specify) Sample size: 27 control, 22 ICP. Population characteristics: Type of group: Patients Condition/ department: Diabetic ketoacidosis (DKA) Sex: Control 48% male; ICP 55% male Age: Median (range) Control 37 (14–60) ICP 27 (16–58)		The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign ICP for management of patients admitted with DKA. The ICP had four sections and provided a detailed management plan from admission to discharge.	Reported associations or causative links: ICP → Improved management and reduced use of antibiotics and heparin (potential cost savings) Potential applicability considerations: Based around a Scottish protocol.

<table><tr><td>Other (specify)</td><td></td></tr></table> Context: Teaching hospital. Introduction of ICP supported by Diabetes Specialist nurse and based around a new Scottish protocol for management of DKA			
Wilberforce 2016 Country: UK <table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td>X</td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator: High versus low integrated teams</td></tr><tr><td colspan="2">Length of follow up: 7 months</td></tr><tr><td>Qualitative</td><td></td></tr></table>	Data collection method: Routine data Outcome measures: <table><tr><td>Cost</td></tr><tr><td>Rate of admission (inpatient or care home)</td></tr><tr><td></td></tr><tr><td></td></tr></table> The intervention: Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/	Summary of results: Considerable variation was seen in the average monthly costs of social care support across the 8 teams (£575 to £920) and the number of patients who received this care varied between one-fifth to one half across the teams. Other service costs also had a considerable range (£15-£91 per patient per month). Monthly costs for team member visits, social care input and other services were greater in high integration teams (average monthly costs £762 across high integration teams versus £508 in low integration teams). Admission rates to both hospital and care home settings were greater in high than in low integration teams (7.9 and 12.5% of high integration team patients admitted to inpatient and care home beds respectively versus 3.6 and 6.4% in low integration teams). While there was variation associated with patients characteristics (such as those living alone or with more needs had higher service costs) the services received by people supported by high integration

<table><tr><td>Cross-sectional</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table> Sample size: 867 patients Population characteristics: <table><tr><td>Type of group</td><td>Older adults</td></tr><tr><td>Condition/ department</td><td>Community mental health teams, patients with functional and/or organic disorders</td></tr><tr><td>Sex</td><td>nr</td></tr><tr><td>Age</td><td>65 or over 31% 65-74, 23% 85+</td></tr><tr><td>Other (specify)</td><td>Receiving regular support from a team, 46% lived alone, 74% independent, 66% intact/mildly impaired</td></tr></table>	Factors enabling change/ Patient-focused/ Location-focused/ General service redesign Features of integration - A multidisciplinary core team including both health and social care professionals Team members directly line-managed within the team A single point of access for all or most referrals All professionals use the same structured assessment documentation All or most clients have a single care coordinator All or most clients have a single care plan. At least one health professional within the team can authorise services funded by the local authority The team and local social services can access each other's patient records All core team members share the same base.	teams cost an estimated 44% more than those provided to patients in low integration teams ($p<0.001$). Likelihood of patient admission was not significantly different between the teams. Main author conclusions: Highly integrated teams provide a broader range of community services, but incur 44% greater costs. This may be because integrated teams are able to provide more intensive support due to improved working between services, and by meeting additional support needs that would otherwise have gone unmet. Reported associations or causative links: Integrated teams → Greater access to services and greater cost Potential applicability considerations: Represented a spread of services across England with rural/urban/mixed areas and varied economic profiles

<table><tr><td></td><td>cognitive functioning, 81% no high risks</td></tr></table> Context: Eight community mental health teams in England. Four teams represented 'high' and four 'low' levels of integrated working. High integration defined as having seven of nine indicators of integration and staff from both health and social care.		
Windle 2009 Same study as Steventon **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td>X</td></tr><tr><td colspan="2">**Comparator:** Used British Household panel survey data, but limited reporting of this</td></tr></table>	**Data collection method:** Document analysis, questionnaires, interviews, focus groups, activity data, financial data **Outcome measures:** <table><tr><td>Views and perceptions</td></tr><tr><td>Costs</td></tr><tr><td>Emergency bed days</td></tr><tr><td>Hospital days</td></tr><tr><td>Outpatient and clinic appointments</td></tr></table>	**Summary of results:** 86% of questionnaire respondents agreed of strongly agreed that two or more organisations could jointly manage services in an effective way. 66% agreed that two or more statutory and non-statutory organisations could jointly share risks in an effective way. The partnerships which appeared to be the most strengthened were those between local authorities, PCTs and voluntary organisations. Among project managers in particular there was agreement that relationships had been on an equal footing with commitment and engagement from both parties. However, there was variation between the pilot sites in perceptions of engagement between PCTs and local authorities. The primary reason cited was financial constraint and

		The intervention:	differing funding priorities. The degree of partnership working before the start of the programme was influential. The length of time and effort needed to build relationships was often unexpected. Having shared aims and objectives, strong governance with clearly understood lines of responsibility and accountability was important. Paradoxes within the national policy agenda which produced conflicts between competition and partnership, and funding between acute and other sectors.
Length of follow up: 3 months		**Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ n**	Problems with staff recruitment and retention due to short term nature of the projects. Short lead in period meant little time to get agreements in place, staff needed time to find their feet and be trained. Doubts regarding sustainability of the programmes. National reconfiguration created uncertainty.
Qualitative		Partnership for Older People Projects. 29 projects focus on person centred and integrated care. Two thirds focused on reducing social isolation or promoting healthy living, one third focused on avoiding hospital admission or facilitating early discharge. Varying mix of initiatives including those focused on people with complex higher level needs, user involvement and relationship building, emphasis on prevention. Examples include clubs and navigator services, night support, mental health practice champions, emergency care practitioners, rapid response teams, and a specialist falls service. The majority of sites developed projects with integrated multi-agency teams, either virtual or co-located. A quarter were focused on	Cultural boundaries between professions and organisations are strong, and co-location may not be sufficient to overcome these. All team members being accountable to a single line manager is important. Key new linking roles are important. The level of resources required were initially underestimated, lack of administrative support. Sharing of electronic data a major obstacle. A key challenge in setting up the initiatives was the reluctance of GPs to be involved. GPs needed to recognise the value before routinely referring to them, need for publicity of services and their benefits.
Cross-sectional			Engagement of most professionals at a high level, readily became involved. Some sites did encounter lack of engagement. Relationship with existing services could be a concern.
Other (specify)			

Sample size: questionnaire n=756, 63 interviews. 264,637 used the services.

Population characteristics:

Type of group	Staff and patients
Condition	Older adults, at risk populations, older people with mental health needs, older people with long term conditions

	Sex 46% male **Age** Mean 77 **Other (specify)** Average needs rated 1-3 on Kaiser Permanente rating **Context:** 29 Projects received ring fenced funding from the DoH over a two year period. Grants varied from £796,000 to £4,046,000 median was £1.84 milliion. Overall spend £50.7m. Led by local authorities in partnership with PCTs and voluntary, community and independent sectors. Initiative ongoing for three years, with two rounds of pilot sites. Areas applied for grants, considered by a panel. Staff and service user consultation to design of each programme.	reducing hospital usage, the other three quarters were focused on building capacity in the community. 146 core projects across the sites. Some areas had only one, two areas had 14 projects each. In addition 530 low level prevention services.	81% of respondents agreed that the projects had delivered improvements in the quality of life and well-being of older service users. 3% viewed progress as not being achieved. 78% reported a greater range of services were offered and 71% that there was increased access to services. Reported mobility, self-care. usual activities, pain/discomfort and anxiety/depression did not change significantly before to after the interventions. Patients perceived that their "health was better today" following the POPP service (10% moved from much the same to better, 7% moved from worse to better). There was a non-significant reduction in health related quality of life comparing prior to after the intervention. However, compared to the wider population study participants had 6% higher score. Costs of intervention per person ranged from £4 to £7 per week. The projects appeared to have a significant effect on emergency bed days, Under an assumption of 10% management costs, a £1 additional spend on POPP projects would lead to approximately a £1.20 reduction in required spending on emergency bed occupants at the mean (range of an £0.80 to £1.60 saving on emergency bed days for every extra £1 spent on the projects). Larger projects produced lower potential savings on emergency bed days.

		There were challenges in moving cost savings to and from budgets, with inability to move budgets from health care budgets to local authority budgets. Wellbeing mental health interventions - The reduction in use of clinic or outpatient appointments was significant (p=0.04), estimated to be equivalent to a decrease of £52.14 per person. There was a rise in visits to GPs from mean 1.79 to mean 2.30 at an estimated cost of £21.98. Despite this the overall saving was £30.16 per person over 6 months. Wellbeing physical health interventions – There was a reduction in appointments for secondary care clinics and outpatients departments with estimated cost savings of £126.33 per person over 6 months. Case co-ordination interventions – Visits to A&E reduced by 69% and hospital overnight stays by 48%. Reported mean reduction of £235.23. Also a 10% reduction in GP appointments (p=0.009) 28% reduction in phone calls to GPs (p=0.014), 25% reduction in visits to a practice nurse (p=0.05). Discharge planning interventions – projects reduced visits to A&E (p=0.000) and hospital overnight stays (p=0.02) with estimated cost reduction of £1741.29. These figures however need to be treated with caution. Specialist falls service – Demonstrated a reduction in physiotherapy appointments (p=0.038), although an increase in visits to a specialist nurse (51%).

		Overall estimated reduction of £2180.43 secondary care costs, increase of £14.08 primary care costs, overall cost reduction of £2166.35. The majority of the projects were sustained, only 3% did not continue after the project completed. PCTs contributed to ongoing funding at all 29 sites, 20% entirely funding and 14% at least half funding. **Main author conclusions:** There was an 86% probability that the programme as a whole was cost-effective comparing areas involved in the programme with areas with no projects. Small projects to improve well-being were estimated as having a 98% probability of being cost-effective compared with usual care. There was considerable variability in impact on use of hospital services depending on the type of projects, the greatest impact seemed to be from projects focusing on hospital discharge, the lowest specialist falls services. Overall self-reported hospital overnight stays reduced by 47%, use of A&E reduced by 29% and physiotherapy or occupational therapy appointments and outpatient appointments reduced by around 10%. **Reported associations or causative links:**

		Interventions → Reduced health service usage/cost effectiveness. **Potential applicability considerations:** Projects had limited numbers of hard to reach and black and ethnic minority individuals. Older people involved in the projects tended to be newly retired, healthy and well educated. 29 sites spread across England including councils in London such as Brent and Camden, Northern cities such as Leeds and Bradford and Southern counties such as Somerset and Devon 65% of the sample were in deprived groupings. Those in the sample reported substantially lower quality of life than the national population.

UK qualitative studies

<table>
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Allan 2014

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size: 88 staff

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Data collection method: Three case studies

Outcome measures:

Staff views

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

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Summary of results:

The paper focuses on staff perceptions and responses to change in organisations.

The realignment of teams and professional roles can generate resistance and take time to be effective. The painful feelings involved in change should be recognised and staff supported during periods of uncertainty.

Different working practices across disciplines and sectors, different employers with competing priorities and agendas, physical separation of team members, managers not knowing people in new organisations, potential job losses and confusion over arrangements were described during organisational change.

Main author conclusions:

Integrating staff to work effectively in new interprofessional teams is a slow process with a need to recognise staff emotional responses to change.

Reported associations or causative links:

Organisational change → emotional impact on staff

Potential applicability considerations:

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</table>

<table>
<tr>
<td>Population characteristics:

<table><tr><td>Type of group</td><td>Managers and health and social care staff</td></tr><tr><td>Condition/ department</td><td>Complex physical and mental long term illness</td></tr><tr><td>Sex</td><td>nr</td></tr><tr><td>Age</td><td>nr</td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Context: Sites chosen to be representative of PCTs. Two cities and one semi-urban area. Participants were working in newly formed teams. Selected to ensure a range of disciplines and experience.</td>
<td></td>
<td>None described</td>
</tr>
<tr>
<td>Amador 2016

Country: UK

<table><tr><td>RCT</td><td></td></tr></table></td>
<td>Data collection method: Used an Appreciative Inquiry approach with group meetings and interviews</td>
<td>Summary of results:

Two mechanisms were identified as being important in integrated working</td>
</tr>
</table>

Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 15

Population characteristics:

Type of group	Staff (3 GPs, 3 district nurses, 5 care home staff 4 other visiting practitioners)
Condition/ department	People with dementia living in long term

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Firstly, the development of a shared group identity built on shared views and goals, but also recognition of knowledge and expertise specific to each staff group.

Secondly, the development and implementation of innovations in working practice to address challenges under which people work.

Main author conclusions:

Social identity is important in organisational change interventions

Reported associations or causative links:

Shared group identity → integrated working

Potential applicability considerations:

None described

	facilities, end of life care **Sex** nr **Age** nr **Other (specify)** **Context:** Six care homes.		
Anderson 2014 **Country: UK** **RCT** **Non-RCT** **CBA** **BA** **Comparator:** **Length of follow up:** **Qualitative** X		**Data collection method:** Focus group, interviews **Outcome measures:** Views and perceptions **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign**	**Summary of results:** Participants described forming and testing team alliances as they came to terms with new roles. They sought understanding of each other to develop trust and greater understanding of each other's work. They spoke of developing a team identity, with tension lack of trust and an inability to challenge each other. There were misunderstandings and tensions between medical staff and other members. **Main author conclusions:** The team were dealing with internal struggles and tensions and considerations of how to present themselves. Integrated services require time to evolve. **Reported associations or causative links:** Time for team processes to be resolved → Integrated working **Potential applicability considerations:** None identified

<table><tr><td>Cross-sectional</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table> **Sample size: 22** **Population characteristics:** <table><tr><td>Type of group</td><td>Practitioners, doctors, nurses, occupational therapist, physiotherapist</td></tr><tr><td>Condition/ department</td><td>Frail older people</td></tr><tr><td>Sex</td><td>nr</td></tr><tr><td>Age</td><td>nr</td></tr><tr><td>Other (specify)</td><td></td></tr></table> **Context:** Changes had been made to ensure all patients had a comprehensive assessment on hospital entry. None of the team had worked together on	Frail older people team established within an acute medical unit	

<table>
<tr>
<td>supporting discharge, some had worked together previously in the unit. Data collected in the first year of the team established.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachmann 2009

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
<tr><td>Cross-sectional</td><td>X (no data)</td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>Data collection method: Questionnaires to children’s trust managers at two time points, case studies, interviews at two time points 2005/6

Outcome measures:

<table>
<tr><td>Staff views</td></tr>
<tr><td>Description of changes</td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Children’s Trust Pathfinders - expected to pilot diverse ways of co-ordinating,</td>
<td>Summary of results:

Management structure - 29 of the 31 children’s trusts had established a board responsible for co-ordinating children’s services. One pathfinder had set up a joint commissioning unit, funded by and using pooled budgets, with a Public Health Director taking the lead role. Another had introduced a structure with NHS and local authority managers occupying similar positions within one organisation. Senior staff were responsible for co-ordinating all children’s services for geographically defined localities, and line-managing particular services in the area.

Planning - all the NHS organizations and local authority children’s services had joint plans in place and were jointly commissioning a range of services (typically multi-agency children’s centres, and mental health and disabilities services) however, health services such as GPs and hospitals were rarely covered by the plans.

Budgets - mechanisms for co-ordinating budgeting and accounting between organisations had been developed (pooling budgets through legal contracts, making informal or local area agreements, sharing information about budgets and expenditure but keeping their accounts separate).</td>
</tr>
</table>

Sample size: 31 managers responded to survey, 11 case study sites (including 3 non pathfinder sites) with data from 147 managers and professionals.

Population characteristics:

Type of group	Managers and healthcare professionals
Condition/ department	Children's services
Sex	nr
Age	nr
Other (specify)	

Context: 35 Children's Trust pathfinder sites. The case studies were purposively selected to include all English regions and types of local authority, and for a spread of different types of integration activities. Concurrent NHS reorganisation made it difficult to reorganise NHS staff.

commissioning and providing local children's services including changing interfaces between health services and local authorities which was intended to improve the quality of care.

Staff working - 450 services newly provided through inter-agency arrangements, typically the use of multi-disciplinary teams. Commonest were child and adolescent mental health services, child development centres and youth justice teams. Working in new teams could be stressful for staff with concerns regarding loss of status, role, or responsibilities. Learning jargon and inter-agency training were key. Most professionals however, supported greater inter-agency and inter-professional working as they believed children would benefit and there were fewer complaints reported at the second data collection time point. The Common Assessment Framework and Information Sharing Index policies had been implemented across all Trusts however, for few children and there were concerns regarding confidentiality.

Outcomes – There were no data regarding effectiveness however, staff perceived that there had been improvements in scope, accessibility and effectiveness of services, for example by reducing inappropriate referrals, eliminating managerial posts, reducing hiring of staff from private employment agencies and sharing accommodation and training

Main author conclusions:

There was considerable variation between areas in regard to the extent of integration activities and change. Enthusiastic local leaders were necessary for change, but so too were local cultures and experiences of co-operation and trust to overcome organisational and professional barriers. Children's trusts have generally brought changes in management structures and practices than radical service delivery. In most Trusts changes were more about local authority education and social care services integration than health services.

<table>
<tr>
<td>Budget deficits in NHS and Local Authorities hindered reorganisation.</td>
<td></td>
<td>Reported associations or causative links:

Local leaders → Change

Local culture (co-operation/trust) → Overcome professional barriers

Potential applicability considerations:

Local authorities and NHS primary care trusts shared geographical boundaries or had worked together in the past, this was described as making integration easier.</td>
</tr>
<tr>
<td>Baillie 2014

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
</table>
</td>
<td>Data collection method: Case study using interviews, focus groups

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

The integration included having a community liaison nurse at each acute</td>
<td>Summary of results:

The paper has a focus on care transitions. Staff described positive aspects of integration as facilitating transition, some participants considered further work was needed on the care pathways. A lack of capacity was highlighted as adversely effecting transitions. The lack of inclusion of mental health services and social care was highlighted as a limitation of the reconfiguration. The introduction of multidisciplinary meetings was reported to have been beneficial for communication and relationships between staff, although this view was not voiced by all, with some highlighting receiving incorrect information and losing trust in others, and limited understanding of each other’s roles. There appeared to be persisting divisions between “the acute” and other settings perceived by community staff, and a perception among acute staff that those in the community lacked understanding of their pressures.

Main author conclusions:</td>
</tr>
</table>

	Cross-sectional		hospital, care pathways, early supported discharge team for stroke.
	Other (specify)		

Sample size: 66

Population characteristics:

Type of group	Staff
Condition/ department	Frail older people
Sex	nr
Age	nr
Other (specify)	

Context: Rural areas, Southern England. Four acute hospital wards and two community hospital wards with vertically integrated services. Integration had taken place two years earlier.

Organisational barriers remained between acute and community services. Opportunities are needed for staff in each setting to gain a better understanding of each other's roles to build relationships.

Reported associations or causative links:

Understanding of each other's roles → Improved mutual trust and working relationships

Potential applicability considerations:

None identified

Barnett 2011

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 15

Population characteristics:

Data collection method: Interviews

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

A range of innovations including service redesign, overall organisational function change, patients safety, technology, patient access, patient-centred care, training programmes, workforce initiatives.

Summary of results:

Existing working relationships between organisations were often the starting point of an innovation, and were a driving force. The need for having evidence was important. Trust and mutual support were vital for cooperation to ensure commitment from all parties, particularly when there was uncertainty. Supportive partnerships were needed if projects were going to be sustainable. Proactive engagement and dialogue between partners was a key requirement. The importance of having champions was highlighted, and the role of management. Previous and ongoing changes could prepare the ground for further changes. Organisational culture a critical factor, in particular openness and having a fit between organisational values and beliefs and the innovation. Human and financial resources of great importance, together with the economic climate and political influences. The promotion of initiative such as winning awards and publicity was essential.

Main author conclusions:

A range of interpersonal and inter-organisational factors were identified as important in innovation

Reported associations or causative links:

Trust, support, co-operation → Innovation

Champions, management support → Innovation

Political, economic, organisational environment → Innovation

Potential applicability considerations:

<table><tr><td>**Type of group**</td><td>Staff leading service innovation</td></tr><tr><td>**Condition/ department**</td><td>Variety of organisations and departments</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Participants drawn from 5 primary and 10 secondary care organisations who were recipients of awards for innovation. They were people who were closely involved with the innovation, mostly generating the initial concept and leading implementation.		Views of individuals who had led innovation
Belling 2011 **Country: UK** <table><tr><td>**RCT**</td><td></td></tr></table>	**Data collection method:** **Outcome measures:** <table><tr><td>Views and perceptions</td></tr></table>	**Summary of results:** Supportive teams with equitable workloads and effective leadership were perceived as facilitating continuity of care. Concerns expressed at perceived erosion of professional roles and identities with reported lack of preparation for generic working and lack of training in new

Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 113

Population characteristics:

Type of group	Staff including health professionals, team and line managers
Condition/ department	Mental health

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Unclear regarding models of care in the teams investigated, mentions patients managed by a health professional key worker in association with a consultant psychiatrist, and also new models of team leadership.

skills. Regular team meetings, co-location enhanced communication were facilitators, together with adequate information technology which was compatible. Stability of the workforce was important with vacancies, turnover, use of temporary staff a barrier to continuity of care.

Main author conclusions:

Team support should be prioritised, with adequate IT provision, investment in education and training for role development, leadership, and workforce retention.

Reported associations or causative links:

Team leadership, support, face to face communication, workforce stability, training, clear role boundaries, adequate resources and IT continuity of care for patients

Potential applicability considerations:

None highlighted

<table><tr><td>**Sex**</td><td>nr</td></tr><tr><td>**Age**</td><td>nr</td></tr><tr><td>**Other (specify)**</td><td>46% nurses, 20% social workers, 1.7% not health professionals</td></tr></table> **Context:** Two mental health Trusts in Greater London with 8 community mental health teams. Data collected in 2005-6.		
Bouamrane 2014 **Country: UK (Scotland)** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:**</td></tr><tr><td colspan="2">**Length of follow up:**</td></tr></table>	**Data collection method:** Semi-structured interviews; focus group; workshops. Normalisation process theory was used as a framework for interpreting the findings. **Outcome measures:** <table><tr><td>Views and perceptions</td></tr></table> **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce**	**Summary of results:** Key factors for successful implementation were a favourable policy context; financial and organisational resources for service redesign supported by use of IT; sustained engagement with stakeholders; use of a pragmatic and 'domain-agnostic' (allowing different IT systems to work together?) technology solution; and implementation based on national guidelines as well as local clinical expertise and protocols. **Main author conclusions:** There were clear synergies between the PCIP and electronic patient record (eForm) programmes. **Reported associations or causative links:** See above

Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: Unclear

Population characteristics:

Type of group	Staff (health, IT and management)
Condition	
Sex	
Age	
Other (specify)	

Context: Implementation of preoperative assessment ICP in NHS Greater Glasgow and Clyde (GGC)

change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Implementation of pathway as part of Planned Care Improvement (PCIP) and Electronic Patient Record programmes, resulting in rationalisation of pre-assessment clinics and standardisation of pre-operative processes.

Key implementation factors → adoption of ICP into routine use

Potential applicability considerations:

Health board serving a large population (1.2 million)

Relevant to large projects involving use of IT to support service redesign

Policy context in Scotland may differ from other parts of the UK (devolution)

Bridges 2007

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator: None	
Length of follow up: None	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 4 IPCCs, 37 other staff

Population characteristics:

Type of group	Non clinical staff – Interprofessional

Data collection method: Action research - observation, interviews, document analysis

Outcome measures:

Staff views

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Four interprofessional care co-ordinators appointed, had held clerical positions in the hospital previously.

Role was to offer clerical support to the interprofessional team and help to remove non-clinical obstacles to patient progress (such as delayed test results). Encouraged to be flexible in the role.

Summary of results:

Role accepted and valued. Role however, had shifted to take on some of nursing role by managing discharge rather than admin. However, management and policies had not recognised this extended role and training/supervision was lacking. The role shift raised some issues of governance but there was little focus on addressing this. There was frequent change in management, and defining the role was often perceived to be outside the control of participants. The need to ensure efficient use of hospital beds distracted managerial attention from examining the role shift. Nurse managers adopted a passive role and acted as though they had no influence over the IPCC roles, even though they had taken over nursing duties. The desired flexibility of the role may have given implicit authority to the role shifts that occurred.

Main author conclusions:

A work role is related to attributes of both the innovation and its context. Innovations require attention not only at the time of introduction, but longer term monitoring. Clear arrangements are required for regulating and monitoring the emergence of new roles.

Reported associations or causative links:

Consistency of management staff → Effective management of change

Potential applicability considerations:

None reported

	Care Co-Ordinators (IPCCs) **Condition/ department**: General Medical Directorate **Sex**: nr **Age**: nr **Other (specify)**: **Context:** Large, inner London acute (tertiary) hospital. Service managers had introduced the IPCC role 2 years earlier	Management changed over time, from senior nurse to general medicine service manager for general medicine.	
Cheyne 2013 **Country: UK** **RCT** **Non-RCT** **CBA** **BA**	**Data collection method:** Interviews, focus groups **Outcome measures:** Views and perceptions **The intervention:** **Integrating services/ Integrated care pathway/ Role change/**	**Summary of results:** Describes the importance of high level management commitment to drive the initiative forward, also tailoring to the local context in response to differing cultures (such as medical domination). The appointment of consultant midwives signalled high level commitment. The new pathways legitimised decisions and actions in the context of medical pressure, and were reported to have increased efforts to support normal birth. In some sites the pathways were described as supporting and complimenting clinical judgement however, in another there was a perception that judgement was constrained. In settings where an unequal balance of power and	

Comparator: **Length of follow up:** **Qualitative** X **Cross-sectional** **Other (specify)** Realist evaluation **Sample size:** 25 **Population characteristics:** **Type of group** Midwives **Condition/ department** Obstetrics **Sex** nr **Age** nr **Other (specify)**	**Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Keeping childbirth natural and dynamic programme which included midwife-led care as the norm for all healthy women, together with multi-professional care pathways. Midwives would undertake early risk assessment and streaming on the care pathway.	authority existed between midwives and obstetricians strong resistance to the initiative was encountered. **Main author conclusions:** The levels of hierarchy within an organisation has an influence on change programmes. The process of change needed to be adapted to local contexts. **Reported associations or causative links:** **Culture** → Enabling or blocking change **Potential applicability considerations:** None highlighted

<table>
<tr>
<td>Context: Scotland. The programme was initiated by the Scottish government to improve the implementation of midwife-led childbirth and reduce interventions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleland 2012

Country: UK
<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
</table>
</td>
<td>Data collection method: Interviews, focus groups

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Community based anticipatory care service</td>
<td>Summary of results:

Perception that a community service could keep patients out of hospital or delay time to first admission, facilitate timely admission, provide patient education, and continuity of care. Also that it could co-ordinate services and provide effective communication between services.

Perceived role for pharmacists and physiotherapists in a new service, but less so for GPs and nurses although GPs perceived that their level of knowledge and skills was required so were unsure about other members leading.

Limited resources perceived as an obstacle, importance of team having admission decision-making power, social service assessment available, home assessments, and a named contact.

Main author conclusions:

A new service was mostly perceived as acceptable although a range of requirements was highlighted. The new service was not supported by nurses or GPs suggesting new ways of working can be challenging to implement.</td>
</tr>
</table>

Other (specify)			**Reported associations or causative links:** Views about professional role → acceptability of change **Potential applicability considerations:** None highlighted

Sample size: 64

Population characteristics:

Type of group	Staff
Condition/ department	COPD in community services
Sex	
Age	
Other (specify)	

Context: Three Community Health Partnerships in Scotland covering cities and more rural areas

Collins 2012

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 20

Population characteristics:

Data collection method:

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Teams were using the Common assessment framework (CAF)

Summary of results:

Participants recognised that the child was the focus for all members, but there were competing priorities and service specific objectives. Differing roles, organisations and agencies impeded working together. Practice was perceived as being constrained by target setting, and performance indicators, there was a feeling of powerlessness and inadequacy.

The CAF was described as useful to raise awareness of different contributions however there could be conflict impacting on team outcomes.

Main author conclusions:

Partnership working can be distorted with individual practitioner and agency interests prioritised over service user needs.

Reported associations or causative links:

Partnership working → Service user needs

Potential applicability considerations:

Participants from a county at the forefront of integrated working

<table><tr><td>**Type of group**</td><td>Staff working in a multi-agency team</td></tr><tr><td>**Condition/ department**</td><td>Children and Young People's services</td></tr><tr><td>**Sex**</td><td>nr</td></tr><tr><td>**Age**</td><td>nr</td></tr><tr><td>**Other (specify)**</td><td>4 vocationally qualified, all others professionally qualified</td></tr></table> **Context:** No information		

Curry 2013

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator: Compared to non-pilot practices in London	
Length of follow up: Data from first year of pilot	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 48 interviews, 456 surveyed, 50 hours observation

Data collection method: Interviews, focus groups, survey, observations

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

North West London Integrated Care Pilot. Operates as a network with providers working to common goals and contractual agreements. Monthly board meetings, multidisciplinary groups, shared care plans, data integration platform. Fund established for groups to draw on to commission new services.

Summary of results:

Concerns regarding lines of accountability and decision-making. Role and responsibilities of professionals could be unclear (27% of those surveyed). Engagement among clinicians varied, information technology system a challenge (57% reported frustration about access to information, 56% dissatisfied). Groups were dominated by GPs or consultants rather than multidisciplinary discussion. Spending of innovation fund differed substantially between groups. 30% of patients had a care plan, 58% of professionals reported dissatisfaction with time taken to prepare a plan.

Non-significant difference between areas in terms of emergency admissions during pilot. The pilot site patients did not exhibit any significant changes in emergency admission ($p = 0.056$), accident and emergency attendances ($p= 0.195$), costs of emergency admission ($p= 0.101$) or total inpatient costs (p-0.871) compared to matched control sites patients. Patients with a care plan were enthusiastic about the process. 60% reported the pilot improved communication, 54% reported an improved relationship with their GP. 54% reported that they had not experienced any changes.

Some improvement in clinical outcomes (marginally significant $p=0.0472$ increase in the percentage of those with good ($\leq$5 mmol/l) cholesterol control from 80% to 83% and a a significant decrease in the average cholesterol reading from4.28 to 4.17mmol/l, $p<0.0001$).

Rapid increase in registration of dementia patients in early phase of the pilot.

Population characteristics:

Type of group	Patients and staff
Condition/ department	People with diabetes and those over 75
Sex	
Age	
Other (specify)	

Context: North West London launched 2011. Two hospitals, two mental health providers, three community service providers, five social care providers, two non-governmental organisations, 103 GPs. Aim to reduced hospital admissions and improve health outcomes.15,200 patients with diabetes, 22,800 patients aged over 75.

Main author conclusions:

Professional experience was mixed, with some signs that the vision had not been embraced, and further work on patients engagement needed. The aim of reducing emergency admissions was not achieved and there was little change in clinical outcomes. Stronger accountability mechanisms were needed, strong vision and leadership, risk sharing needs to be across organisations, new ways of working need to be embedded, and IT systems fully operational.

Reported associations or causative links:

Reconfiguration → Lack of impact on emergency admissions/clinical outcomes

Accountability, leadership, shared risk, ~~IT~~ → Change

Potential applicability considerations:

None highlighted

Dattee 2010

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 6 acute hospitals in 5 health boards**.** N=49 interviewed

Data collection method: Interviews, document analysis, workshops, grounded theory approach

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Unscheduled Care Collaborative Programme – introduced in 2002 new performance targets for emergency care. Programme designed to be a system-wide approach to improve relationships across health and social care, with a system change emphasis. Included shifting balance of care into the community and tackling increasing accident and emergency attendance rates. Local

Summary of results:

Collaborative approaches could change a blame culture to one of better understanding and awareness of how the system linked. Whole system working improved the flow of patients in hospital. Out of hospital co-ordination proved more difficult with for example delay in social care packages being agreed and competition over resources. Local flexibility made it easier to test small change. Stakeholders outside the hospitals were harder to engage and co-ordinate, with challenges convincing them of their impact on the system. The targets were only set for emergency care therefore there was no incentive for other services. Dialogue between community and acute could be challenging in particular relationships with out of hours GPs.

Main author conclusions:

System approach was achieved to some extent in hospitals, but not with the entire health and social care system. There needs to be a stronger focus on interdependencies between different areas and health and social care systems. Change programmes will find it difficult to achieve whole system change by focusing on local, independent sub-system targets.

Reported associations or causative links:

Targets at a whole system (rather than sub-system) level → Whole system change

<table>
<tr>
<td>Population characteristics:

<table>
<tr><td>Type of group</td><td>Staff – programme leads, data managers, leads for programme elements, national team, national clinical leads</td></tr>
<tr><td>Condition/ department</td><td>Emergency care</td></tr>
<tr><td>Sex</td><td>nr</td></tr>
<tr><td>Age</td><td>nr</td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Context: Scotland. The Scottish programme drew on learning from the English programme implemented earlier and included out of hospital services and a series of changes piloted for short periods. The 6 hospitals reflected</td>
<td>freedom regarding choice of action, with support and oversight.

Examples - emergency nurse practitioners, minor injuries streaming, flow coordinators, improved communication with laboratories, and dedicated X-ray facilities in the emergency department, working with nursing homes, and working with social care.</td>
<td>Potential applicability considerations:

No details provided regarding the characteristics of the hospitals or the respondents</td>
</tr>
</table>

different demographics and levels of progress towards targets.		
Dent 2014 **Country: UK** **RCT** | **Non-RCT** | **CBA** | **BA** **Comparator:**	**Data collection method:** Interviews, observation, mapping pathways **Outcome measures:** Views and perceptions **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors**	**Summary of results:** NHS staff used a system known as Fusion, social services used a system known as Paris. General practice used a different system, and private providers of care beds. There had been attempts at integration which were not successful. Information had to be passed by fax/email or in person. There was delay in data from the paper-based single assessment process being entered on information systems which was too late to be of relevance to nurses. Progress tracking was implemented to overcome problems of patients with multiple conditions being overlooked. This role was taken on by nurses as "progress chasers" or alternatively there were "failsafe officers".

Length of follow up: **Qualitative** X **Cross-sectional** **Other (specify)** **Sample size:** Two PCTs, 44 interviews **Population characteristics:** **Type of group** **Condition/ department** **Sex** **Age** **Other (specify)**	**enabling change/ Patient-focused/ Location-focused/ General service redesign** 4 care pathways using electronic information technology systems in the process of being implemented. Selected to represent different types of task interdependency, crossing a range of organisational boundaries. Frail elderly care, stroke care, diabetic retinopathy screening, intermediate care.	**Main author conclusions:** Different organisations have differing institutional logics which shape the way systems are developed and used which are difficult to change. **Reported associations or causative links:** Institutional logics → resistance to change **Potential applicability considerations:** None identified

<table>
<tr>
<td>Context: PCTs in Northamptonshire and in Walsall with contrasting demographics. One industrial with economic deprivation, other more rural. Also differing organisational cultures, IT strategies and relationships with users. One more management led, the other more occupationally controlled.</td>
<td></td>
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<tr>
<td>Dickinson 2013

Country: UK
<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
</table>
</td>
<td>Data collection method: Interviews, focus groups, survey, evaluation questionnaire on commissioning, case study approach

Outcome measures:

Views and perceptions of joint commissioning

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/</td>
<td>Summary of results:

Sites had different ways of describing and perceiving joint commissioning, with different interpretations of what it meant based on local context. Many sites rejected the term joint commissioning, preferring terms such as integrated commissioning. Some participants described how when particular services are joined up it inevitably leaves out other bits creating new boundaries. The process of putting formal structures for working together in place could be seen as the outcome rather than improving services. Formal linkages were seen as important to protect new relationships although it was emphasised that joint working was not about these formal structures but about informal conversations and interactions. Participants struggled to describe what joint commissioning was that was different to joint working more generally. A process of risk taking and innovation was described with service users having an important role in the process. There seemed to be a difficulty in agreeing what joint commissioning should be aiming to achieve or the outcomes, although there was a perception that it was a “good thing”. Described aims included tackling health inequalities, improved productivity,</td>
</tr>
</table>

Cross-sectional	
Other (specify)	

Sample size: 5 case study sites, 105 individuals

Population characteristics:

Type of group	Staff (mentions some service user views but unclear how gained)
Condition/ department	Case studies were older people, learning disability, all population, public housing estate residents
Sex	nr
Age	nr
Other (specify)	

Location-focused/ General service redesign

Processes that had been put in place included pooled budgets, lead commissioning, co-location, integrated assessment, service user involvement and hybrid roles

service user at centre, merging providers, community empowerment. There seemed some difference between perception of empowerment between staff and service users.

Main author conclusions:

There is a lack of clarity about what joint commissioning means and the outcomes to be achieved.

Reported associations or causative links:

Lack of clarity regarding meaning and objectives → Lack of clarity regarding outcomes

Potential applicability considerations:

All sites were considered to be high performing or using best practice

<table>
<tr>
<td>Context: Two sites were joint commissioning units, two care trusts, one a partnership between an urban authority and a third sector organisation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dodds 2006

Country: UK
<table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator:</td></tr><tr><td colspan="2">Length of follow up:</td></tr></table></td>
<td>Data collection method: Focus groups, action research design, action group members self-assessed progress each month.

Outcome measures:
<table><tr><td>Views and perceptions</td></tr><tr><td>Patient journey times</td></tr><tr><td>Patient and carer experience</td></tr><tr><td>Waiting tie between departments</td></tr><tr><td>Transfer to ward</td></tr></table></td>
<td>Summary of results:

Much of the data in the paper relate to participant views regarding the existing service and areas for improvement.

The mean patient journey time was reduced from 10.5 days to 6 days (unclear exactly which periods were compared).

52% of patients were directly admitted to the emergency medical unit rather than waiting for a bed in the emergency department.

57% of COPD patients were transferred to the ward.

Main author conclusions:

Service redesign reduced average length of stay and admission to specialist unit/ward.</td>
</tr>
</table>

Qualitative	X
Cross-sectional	
Other (specify)	

Sample size:

Population characteristics:

Type of group	Staff and patients
Condition/ department	COPD emergency admissions
Sex	
Age	
Other (specify)	

Context: Emergency department and emergency medical unit in one Foundation Trust in the South West of England. Work led

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

A range of changes were made within the Ideal Design of Emergency Access project. Outlines that an Emergency Medical Admissions Co-ordinator was appointed, and a patient journey nurse, and a discharge summary secretary. That specialist nurses and senior staff widened their role to undertake arterial blood sampling. Trust wide discharge standards were introduced, with accompanying staff training. Joint assessments were carried out between nurses and discharge leads. Information management systems were improved.

Reported associations or causative links:

Service redesign → Reduced length of stay, improved patient pathway

Potential applicability considerations:

None identified

by an action group with a respiratory matron and a respiratory specialist nurse, and other clinicians from the two departments. Project Board with senior managers. A data collector and patient and carer experience facilitator were recruited.		
Erens 2015 **Country: UK** **RCT** **Non-RCT** **CBA** **BA** **Comparator:**	**Data collection method:** Interviews **Outcome measures:** Staff views **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/**	**Summary of results:** Role of history and existing relationships in developing initiatives, these laid the groundwork for collaboration. Perception that integration was a key mechanism for delivering care efficiently and effectively, and was essential in view of the ageing population so had to be taken forward. This provided motivation and hope for the initiatives. The opportunity for learning between localities was a driver, and being part of a larger group. Concerns regarding potential increases to work load and bureaucracy and that it might fail or that weaker services might adversely impact stronger ones. Many pioneers had a lead organisation (officially or nominally), important to strike a balance between driving and sharing ownership. Governance arrangements varied with many choosing to maintain

Length of follow up: **Qualitative** X **Cross-sectional** **Other (specify)** **Sample size:** 14 Pioneer sites **Population characteristics:** **Type of group** Patients and staff **Condition** People who need different parts of the NHS and local authority services to work together. Typically long term conditions, frail older, high service users, high risk, mental health, cancer. **Sex**	**Location-focused/ General service redesign** Integrated Care and Support Pioneers Programme, interim report. The Pioneers vary in their approach including vertical and horizontal integration, primary and secondary care and other local services. Include telehealth, discharge planning, wider range of services in the community, teams, rapid response services, budget changes, joint commissioning, carer support, single point of referral, single assessment, care pathways, case managers. Range of commissioning options, pooled budget infrequent.	existing arrangements. Informal groups often drove the work however, this could create tensions with governing bodies. The involvement of stakeholders appeared to have diminished following the award of Pioneer status. Challenge in splitting the vision of integrated care into practical activities, some parts of the system understood the vision less well and making strategic changes meaningful to patients could be difficult. The implications of the vision for changing power relationships was less expressed. Presumption that the best was to improve patient outcomes and experience and reduce costs was more care in the community and greater self-care. There was resistance among some service users to move away from condition-specific centralised services to generic long term care. Recognition of the importance of IT as essential building block however technical issues described. Recognition of the importance of workforce issues, with a need to embed changes, changes described as being long term. Differing opinions regarding new roles versus better co-ordination of existing professionals. Severe financial constraints reported, tensions between stakeholders at times, recognised that more work was needed around costs and benefits. Scepticism that providing care at home would be cost saving. Challenges of commissioning integrated services. Competitive tendering was an obstacle. Funding mechanisms could be counter-productive to integrated systems, new contracting models needed. Lack of control over primary care commissioning. Need to move to

<table><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Pioneers were announced following call for ambitious and visionary local areas. First wave in 2013, second wave in 2015. Pioneers aim to promote greater integration of care across health and care systems. Work alongside other national initiatives. Formed to have patient/user perspective at the centre.		outcomes-based commissioning, whole care pathway, personal health budgets. Need for success to be measured in terms of patient needs/wishes, also sustainability of services. Barriers to integrated care grouped into three broad themes (national; organisational/professional/cultural; and local issues). Facilitators included the national context, professional and cultural, local context including leadership and staff numbers, receiving advice and support. **Main author conclusions:** In general, the new roles, responsibilities and relationships were becoming established. Resource pressures impact on motivations to work collaboratively including incentives to pool, defend and expand budgets. The context of growing need and declining budgets is a strong driver for more effective integration however, this context is one in which it could (but not necessarily) become more difficult to make progress. The context of the Better Care Fund cost saving plans may be burdensome and a diversion from plans for integration. **Reported associations or causative links:** Policy background and local context → Integrated care implementation **Potential applicability considerations:**

<table>
<tr>
<td></td>
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<td>Pioneers have been given access to expertise and support from the national partners and international experts. Additional direct funding was provided initially (£20,000), with an additional £90,000 made available to each Pioneer in June 2014.</td>
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<tr>
<td>Evans 2013

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td>X</td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>Data collection method: Mixed methods, interviews and some service data. Data predominantly qualitative.

Outcome measures:

<table>
<tr><td>Referrals</td></tr>
<tr><td>Cost-effectiveness</td></tr>
<tr><td>Views of stakeholders</td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign</td>
<td>Summary of results: Whilst 30 care homes were initially recruited, requests from other homes resulted in an extension of CHST to all those in demand (110 over 2 years). 126 contacts were also made with the team about MH, dementia and behavioural problems.

Previously, DNs were not attending privately run homes; POPPS encouraged cross boundary knowledge sharing (training and attendance) including DNs, RGNs and RMNs (the latter would work together in some MH cases to prevent admissions). Homes that had been referred under POVA (protection of vulnerable adults) were given access to training to improve standards of care. Referrals to OTs, speech therapists and physiotherapists available on the CHST increased (250 to 1000 per year for physio), indicating a previously unmet need.

Ten care homes piloted 14 new services over the study period, including a “sitting service” to relieve carers who need to e.g. attend an appointment, a drop in café providing information on services / benefits, meeting groups for elderly people (facilitated at care homes), assisted bath / spa sessions and delivery of cooked meals from the care home to community dwellers. Initially, these efforts were resisted by care home staff, not least because of a concern that the CSCI (Commission for Social Care Inspection, now the Care</td>
</tr>
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Sample size: 29 POPPS

Population characteristics:

<table>
<tr><td>Type of group</td><td>Older adults
Care home / community staff / stakeholders</td></tr>
<tr><td>Condition</td><td></td></tr>
<tr><td>Sex</td><td></td></tr>
<tr><td>Age</td><td></td></tr>
<tr><td>Other (specify)</td><td>Care home residents / staff</td></tr>
</table>

Context: Health and Social Care. Gloucester POPPS led by County Council in collaboration with PCTs. Care homes.

</td>
<td>

Partnerships for older people (POPPS), based on the broad prevention agenda for older adults. Gloucester County Council and PCTs obtained a grant (£2,597,000) to improve the support received by care homes. Clinical support was the remit of a care home support team (CHST) which aimed to reduce crises interventions and emergency department admissions (budget £1.5m). The multidisciplinary team provided training for care home staff in a range of aspects such as nutrition, falls, dementia care, palliative care, infection control and medication management.

In parallel an outreach service aimed to increase capacity of care homes (who had obtained small grants) to provide new types of care and support to older adults in the local community. The design of such support was required prior to funding and was carried out in consultation with individuals and organisations in the community. An activity co-ordinator network was also set up to encourage activities to be brought to residents of care homes.

</td>
<td>

Quality Commission CQC) would object to deviations from their usual business. However this was resolved through an agreement given that homes were receiving small grants. Some initiatives were not evaluated though stakeholders reported that they provided a connection between care homes and their outside community. Funding was used to provide 21 PCs to care homes so that they could access activities co-ordinated through the network.

Stakeholders reported that successful outcomes were due to availability of resources within care homes. Whatever the initiative, successful ones all shared the characteristic of one individual who took charge and had the time and skills to do so. Teams had to gain the trust of care homes to facilitate engagement with initiatives.

Attempts by care homes to outreach to the community were less successful though improved with help from the voluntary sector.

Health economics: A reduction in emergency day bed use was calculated for the period that POPPS was operating, estimated at a saving of £1.20 for every £1 spent from the budget though without a controlled trial interpreting this figure requires caution.

Main author conclusions: Findings suggest that the project raised skill levels in the care homes as well as increasing contact between HPs and care home staff which resulted in more referrals and improved standards of care. Communication between homes and the community also increased though outreach from homes required additional input from the voluntary sector. This was a short study and changes were made late in the project. No control group was included therefore cost effectiveness figures require cautionary interpretation.

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<table>
<tr><td></td><td></td><td>Reported associations or causative links:
Dedicated individual with skills/time → Successful initiatives
Available resources
Potential applicability considerations: Mainly rural settings though in principle similar initiatives are feasible across the UK, given sufficient funding (so to some extent dependent on economic climate).</td></tr>
<tr><td>Farrington 2014
Country: UK<table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator:</td></tr></table></td><td>Data collection method: Interviews
Outcome measures:
Views and perceptions
The intervention:
Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/</td><td>Summary of results:
The focus of the paper is on knowledge exchange among the team members
Barriers to knowledge exchange – care records described as the most important way that information was exchanged however there were concerns regarding the reliability and accessibility of records. They could be incomplete or out of date, there was a lack of a shared IT system and staff in council rather than NHS buildings could not access NHS records. Team meetings perceived as an important means of exchanging knowledge. Informal exchanges such as emails or telephone calls were seen as supplementing team meetings.</td></tr>
</table>

Length of follow up: **Qualitative** X **Cross-sectional** **Other (specify)** **Sample size:** 25 **Population characteristics:** **Type of group**: Staff - social workers, therapists, psychologists, psychiatrists **Condition/ department**: Community disability service **Sex** **Age** **Other (specify)**	**Location-focused/ General service redesign** County-wide service integrated service, a number of multi-disciplinary teams. Combined commissioning and provision. Head of operations, two/three service managers oversee service.	**Main author conclusions:** The processes of knowledge exchange are important in integrated working. Processes of knowledge exchange need to ensure that there is not over-reliance on informal means. **Reported associations or causative links:** Knowledge exchange → Integrated working **Potential applicability considerations:** One rural team and one urban

<table>
<tr>
<td>Context: England, county with 500,000 people. Service established in 2001 partnership between local authority and mental health trust. Pooled budget, no formal governance agreement. Two teams selected for the study - one team serving an urban district (26 staff) and one serving a rural area (19 staff).</td>
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<td>Freeman 2006

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
</table>
</td>
<td>Data collection method: Interviews, and focus groups

Outcome measures:

Stakeholder views

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign</td>
<td>Summary of results:

For managers a range of pressures were identified pertaining to:

1. Fragmentation vs integration: spheres of interest – disagreements between health and social care personnel about how to deal with patients in MH crises; lack of evidence that integration was freeing up capacity;

2. Benefits vs difficulties: general services were relieved of pressure of dealing with MH crises, integration encouraged working relationships and informal communication of different perspectives as well as offering support. Concerns that some patients might play the system. 24 hour working and blurred roles might be a problem.

For service users and carers, integration was seen as positive as it combined sensitivity with trustworthiness, however for service users it could provide a threat to continuity of care by known members of staff. Avoiding inpatient stays – positive / negative for service users (asylum, sanctuary vs lack of privacy and safety, could be positive</td>
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<table>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
Sample size: 31 managers. Service users and carers (numbers not given).

Population characteristics:
<table>
<tr><td>Type of group</td><td>Managers, team leaders, service users and carers.</td></tr>
<tr><td>Condition</td><td>MH crises</td></tr>
<tr><td>Sex</td><td>NR</td></tr>
<tr><td>Age</td><td>NR</td></tr>
<tr><td>Other (specify)</td><td>NR</td></tr>
</table>
Context: Hertfordshire Local Authority and PCTs
</td>
<td>County wide partnerships between PCT, local authorities, MH and generalist health services and commissioners.</td>
<td>for carers – respite, not having to deal with MH crises; therefore some tension between user and carer perspectives).

A quantitative element of the evaluation was impeded methodologically. Given that teams were part of the intervention, the authors reflect that future evaluation should be carried out at team level. Further challenges were posed by staff turnover and recruitment issues.

Main author conclusions:

Evaluations of similar models require attention to the complexity of partnership working and contexts.

Reported associations or causative links:

Integration of health / social services → (+) Sensitivity + trustworthiness
→ (-) Blurred roles
→ (-) lack of continuity

Potential applicability considerations:

Infrastructure in terms of MH and generalist services.</td>
</tr>
<tr>
<td>Gambles 2006

Country: UK</td>
<td>Data collection method:

Outcome measures:</td>
<td>Summary of results:

The pathway was described as reflecting the standards of care being delivered rather than influencing or improving practice. It was</td>
</tr>
</table>

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 11

Population characteristics:

Type of group	Staff – doctors and nurses
Condition	
Sex	
Age	

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Liverpool Care Pathway

described as being a means to document all the elements required in care and providing a mechanism for streamlining documentation – and was thereby time saving for example by having less space for writing. It was also useful for reminding and prompting staff leading to greater consistency. Staff knew where other members of the team were up to and decisions made by the family were all documented. Staff recalled initial scepticism about why the document was needed.

Main author conclusions:

Benefits of the integrated pathway was perceived as improving documentation, promoting continuity of care and enhancing communication and the care of relatives.

Reported associations or causative links:

Care pathway → Consistency in care, streamlined documentation

Potential applicability considerations: None

Other (specify) In hospices **Context:**			
Greenhalgh 2009 **Country: UK** **RCT** **Non-RCT** **CBA** **BA** **Comparator:** **Length of follow up:** **Qualitative** X **Cross-sectional** **Other (specify)** **Sample size:**		**Data collection method:** Case study. Realist evaluation using interviews, observation, document analysis **Outcome measures:** Views Description of processes **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** The aim of the modernisation initiative was to produce "significant, tangible improvement" in the nature of services (e.g., new services, service options, or	**Summary of results:** Cross-boundary roles were created (project director, senior project managers, service improvement facilitators, clinical champions) but as outsiders, they had less power to make changes and rigid human resources policies blocked changes. Common guidelines and protocols proved difficult and time-consuming to achieve in practice with practical considerations, procedural or presentational issues. An online forum in one area helped expose differing views and expectations and break down barriers. While some progress was made with developing sharing of data, there were considerable difficulties, and no new shared IT system was able to be put in place. Factors enabling change – mutual trust, a history of collaboration, and compatibility of values across organisations, imaginative, locally responsive, and negotiable initiatives supported by technology. Having external incentives (e.g., policies) which are designed to reward collaborative performance and do not pit organizations against each other, integration includes both "soft" and "hard" approaches, and solutions are negotiated and owned by all stakeholders.

Population characteristics:

Type of group	Patients and staff
Condition	Stroke, kidney, sexual health
Sex	nr
Age	nr
Other (specify)	

Context: Two London Boroughs, both deprived inner-city areas. Both areas had two acute care teaching hospitals and two Primary Care Trusts. Historically, the relationship between the hospitals had been characterized by competition rather than collaboration.

Primary care services had limited funds and were of variable quality.

modes of delivery), also it was expected that there would be improvements in the care and safety, and the culture of services (behaviour, relationships, and balance of power among organisations, staff, and patients),

Main author conclusions:

The "same" approach unfolded differently in different initiatives because of the organisational structure and culture of existing services, the nature of the conditions being dealt with and their trajectories over time, the characteristics and circumstances of the patient groups involved.

Reported associations or causative links:

Organisational culture and systems → Change

Potential applicability considerations:

The three service areas chosen were seen to be particularly in need of improvement.

The modernisation initiative was externally funded but delivered largely by redeployed NHS staff.

Greenhalgh 2012

Follow up of Greenhalgh 2009 study, focus on sustainability of the intervention

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up: Two years	
Qualitative	X
Cross-sectional	
Other (specify)	

Data collection method: Case studies, interviews, observation

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Key elements were: collecting and

applying "best evidence" coordinating and streamlining services; recruiting, redeploying, and training staff; promoting and supporting self-management; involving patients and care givers in quality improvement; and ensuring diversity of provision

Summary of results:

Two years after the previous evaluation the program board and the project management structures had been dismantled, and the various activities they had overseen had either ceased or been transferred to new infrastructures and funding streams. Some of, but not all, the staff had been redeployed. A patient-centred culture and a culture of innovative ideas and practice had spread. Many staff, although not all reported that interpersonal relationships had been sustained with recognition of importance of whole pathway streamlining of services. Evidence of fundamental differences in stakeholders' interests and values. The meaning and significance of measures of effectiveness remained contested with new models not embedded in the commissioning process. Linking new models more closely to the mainstream-commissioning and business-planning infra- structure may mean slower initial progress but may ultimately prove more enduring.

Main author conclusions:

Sustainability influenced by: stakeholders' conflicting and changing interpretations of the targeted health need; change in how the quality cycle was implemented and monitored; and conflicts in stakeholders' values and what each stood to gain or lose.

The historical, economic, and sociocultural climate, and interpersonal influences are crucial to the sustainability of transformations. The notion of transferability for models is therefore challenging.

Sample size: 50 interviews, 48 patient questionnaires, 8 visits

Population characteristics:

Type of group	
Condition/ department	Stroke, kidney and sexual health services
Sex	
Age	
Other (specify)	

Context: Two London Boroughs, both deprived inner-city areas. Both areas had two acute care teaching hospitals and two Primary Care Trusts. Charity provided £15 million to support the four year partnership project, services chosen by competitive bidding.

Reported associations or causative links:

Organisational climate → sustainability of change

Potential applicability considerations:

None highlighted

Griffiths 2008

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 14 focus groups and 19 interviews n=122

Population characteristics:

Data collection method: Interviews

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

One stop shop for contraception and general genitourinary medicine in a GP practice

Summary of results:

There were differing views between groups of different ethnicity regarding the acceptability of a one stop shop model. There was some reported distrust of GPs and a preference for a specifically young people or conventional model however, also some preference for the general practice one stop shop model. Respondents reported that a single provider/session for contraceptive care and genitourinary medicine would be preferable.

Main author conclusions:

Local assessment is required to determine whether and how this model should be introduced.

Reported associations or causative links:

Variation in service users views → Re-location/integration of services

Potential applicability considerations:

None identified

<table><tr><td>**Type of group**</td><td>Young men, minority ethnic young women</td></tr><tr><td>**Condition/ department**</td><td>Sexual health service provision</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td>Included heterosexual men and men who have sex with men</td></tr></table> **Context:** England		

Haddow 2007

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 26

Population characteristics:

Type of group	Stakeholders from organisations including

Data collection method: Realistic evaluation, interviews

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

NHS 24 integrated nurse-led telephone advice service

Summary of results:

There were concerns regarding increasing workloads from GP co-operatives and perceptions of inappropriate triaging decisions being made. The GP out of hours co-operative was the most negative to the reconfigured service. There were workload increases also for ambulances and A&E over the first 7 months but this was reportedly beginning to reduce. There was a perception of lack of communication between NHS 24 and partners.

Main author conclusions:

New ways of partnership working are required to develop trust and confidence. Professional identity and sense of ownership is a key factor in partnership working.

Reported associations or causative links:

Professional identity/ownership → Partnership working

Potential applicability considerations:

None identified

	ambulance service, A&E, GPs		
Condition/ department	Unscheduled care		
Sex	nr		
Age	nr		
Other (specify)			

Context: North East Scotland, two call centres, neither located with GP out of hours services

Hamilton 2008

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 30 representatives from 30 organisations

Population characteristics:

Type of group	Staff – individuals responsible for

Data collection method: Interviews

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

9 organisations involved GPs, 5 were considering or developing GP with special interest services, 16 had or were developing a community matron role, 15 had nurse-led models, 7 included nurses in multi-disciplinary teams, 3 were developing consultant community outreach models.

Summary of results:

The need for change and impact of change were key themes. The need to achieve financial balance was described as a driver for change. Financial restrictions impacted on design of services, with choice of model dictated by funding stream. Alignment of perspectives could enable change and professional support/opposition was an important factor. Previous experience with models, and chaos and uncertainty as a result of reorganisation were important factors. Policies and frameworks influenced redesign although policies could work against service redesign and cause tension between acute and community trusts.

Main author conclusions:

The type and effectiveness of service development are influenced by perceived local need, professional attitudes and workforce issues such as availability of GPs with a special interest. Financial deficit, organisational uncertainty, disengaged clinicians, and contradictory policies can present barriers to new models of care.

Reported associations or causative links:

Local context → Type of service reorganisation

Potential applicability considerations:

None identified

	driving service reconfiguration		
Condition/ department	Long term respiratory conditions		
Sex	nr		
Age	nr		
Other (specify)			

Context: Primary care organisations in England and Wales which had GPs with special interest or GP involvement in respiratory service reconfiguration

Harris 2013

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: Observed 23 case discussions, number present between 11-15 at each

Population characteristics:

Data collection method: Observation

Outcome measures:

Conversational integration

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

North West London Integrated care pilot. This paper focusses on multidisciplinary team meetings.

Summary of results:

Case discussions were dominated by consultants or the GP presenting the case. Presentation of the case comprised a large amount of the talk. Plans of action typically focused on individual patients rather than on integration of services.

Main author conclusions:

Traditional communication patterns of medical dominance persisted in multi-disciplinary group discussions.

Reported associations or causative links:

Medical dominance → Limited integrative discussion

Potential applicability considerations:

None identified

Type of group Staff **Condition/ department** Over 75 and diabetes **Sex** nr **Age** nr **Other (specify)** **Context:** North West London integrated care pilot (see other papers for full details)		
Heenan 2006 **Country: UK** **RCT** **Non-RCT** **CBA** **BA** **Comparator:**	**Data collection method:** Interviews and focus groups **Outcome measures:** Views and perceptions **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/**	**Summary of results:** Participants perceived that the programme of care approach resulted in integrated services with no health/social care boundaries or debates over budgets. One point of entry was an advantage, one employer and one source of funding. Integrated management was valuable in order to ensure all professions had equal respect and influence. Advisory groups or forums for each professional grouping was described as essential to integrated working. Some interprofessional tensions could surface however, participants perceived that the open management structure encouraged a wider mix of professionals in management roles. There was the suggestion that more joint training would be beneficial. The approach was perceived to lead to efficient and timely discharge from hospital. Use of a single assessment was also highlighted as key

Length of follow up: **Qualitative** X **Cross-sectional** **Other (specify)** **Sample size:** 40 **Population characteristics:** **Type of group**: Senior managers in four health boards and community service trusts, professionals who were leaders of integrated care programmes **Condition/ department**: **Sex**:		**Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Programme of care approach – divisions of health and social care with assigned activity and finance in each trust. Operate on an interdisciplinary basis, with varying levels of integration. Mental health and learning disability most and childcare least. Named key worker for each individual.	to discharge. Whilst views were generally positive there was a perceived dominance of health over social care and hospital over community. **Main author conclusions:** Northern Ireland has a successful model of an integrated system. Key features are all professionals being employed by the same organisation, same funding, sharing goals and objectives and working alongside each other. **Reported associations or causative links:** Single employer, single point of entry → Integrated working Integrated working → Efficient discharge **Potential applicability considerations:** Northern Ireland described by the authors as having a unique structure but with the same difficulties as the rest of the UK. Two tier structure of boards (commissioners) and trusts (providers).

<table><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Northern Ireland. Several reorganisations and policy shifts.			
Hendy 2012 **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:**</td></tr><tr><td colspan="2">**Length of follow up:**</td></tr><tr><td>**Qualitative**</td><td>X</td></tr><tr><td>**Cross-sectional**</td><td></td></tr></table>	**Data collection method:** Observations, interviews, ethnography and case study approach **Outcome measures:** Views and perceptions **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign**	**Summary of results:** The champions appeared to be beneficial in early stages of adoption of remote care innovations. As projects moved from trials to wider roll out, needing to involve new stakeholders was challenging, and champions could struggle as they no longer had exclusive rights to the work. There could be tension between champions, their supporters and other staff and a reluctance to change following implementation and a perceived threat to the status of the champion. **Main author conclusions:** Champions may not always have a positive influence on change. The role may lead to identity issues later in the change process. They may be most useful at an early stage to lead the vision but need to hand over the implementation to others. **Reported associations or causative links:** Role of champion → Positive or negative effect

Other (specify)		Organisational champions	**Potential applicability considerations:** Organisations chosen as being "front runners" with a dedicated and experienced champion, organisational and financial support for change.

Sample size: unclear, three sites,159 hours of data collection

Population characteristics:

Type of group	Staff – champions and those in their work group
Condition/ department	Remote care services
Sex	nr
Age	nr
Other (specify)	

Context: Not reported

Hewison et al. 2015 **Country: UK**		**Data collection method:** Interviews within a realist case study design **Outcome measures:**	**Summary of results:** Effective leadership from senior staff and the presence of a facilitator crucial to introduction. Leadership included modelling role and being an enthusiastic advocator, but also challenging and debating with staff.

RCT	
Non-RCT	

Views and perceptions

CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 21

Population characteristics:

Type of group	Staff – consultants, nurses, ward staff, managers
Condition/ department	Acute and community End of life
Sex	

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

End of life care pathway adopted in the three Trusts. One used the Liverpool Care Pathway, the other two used the Supportive Care Pathway (shapes delivery over longer than the 72 hours of the Liverpool pathway)

Was recognised that all staff needed to be involved.

Training was essential if it was to become part of routine practice to be familiar with the purpose of the pathway and confident in its use. Training took a variety of forms, staff turnover was a challenge. Uncertainty and anxiety about the pathway and "diagnosing dying" with different perspectives within the team. Information systems and communication networks were incompatible and did not support care. Effective communication facilitated the pathway, efforts relied on individuals and links with other staff, with problems sharing information, substantial barriers to communication were identified.

Main author conclusions:

Implementation was challenging, even when there was effective leadership and an extensive programme of staff education barriers to introduction in the form of staff anxiety and communication remained.

Reported associations or causative links:

Effective leadership and staff training → Improved care

Potential applicability considerations:

Trusts had funding to employ facilitators, they trained ward staff to use the pathways, this became difficult when funding was withdrawn.

<table><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Three trusts where there was evaluation and redesign as part of the CLAHRC programme. Studies were ongoing to investigate service re-design.			
Hu 2014 **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:**</td></tr><tr><td colspan="2">**Length of follow up:**</td></tr><tr><td>**Qualitative**</td><td>X</td></tr></table>	**Data collection method:** Interviews and survey **Outcome measures:** <table><tr><td>Views and perceptions of service users</td></tr></table> **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/**	**Summary of results:** 70% rated their satisfaction with assessments as satisfied or very satisfied. 75% reported that they had received the appropriate services they needed. 89% rated their overall experience as satisfactory, good or excellent 25 had used services previously and were asked to compare, 7 said they were better, 7 the same, 2 worse, and 9 were not sure. 54% recalled being assessed within two weeks (national average 59%), and 70% within four weeks (national average 75%). 69% recalled receiving services within two weeks (national average 75%) and 86% within four weeks (national average 87%).

Cross-sectional	X
Other (specify)	

Sample size: 127

Population characteristics:

Type of group	Patients
Condition/ department	Older adults
Sex	
Age	
Other (specify)	

Context: Cambridgeshire, four PCTs

Location-focused/ General service redesign

Older people's service - four PCTs pooled budgets and commissioning for all older people's health and social care. The integrated service employed all staff in social care, community nursing, therapy and intermediate care (900). Locality teams formed.

Few of those surveyed were aware of the self-referral route to services.

Occupational health services integration reduced duplication, increased efficiency, saved staff time and money and brought shorter waiting times (no data presented to support this). Some users described having more control over life and services and being treated as an individual and with respect. Social care service users had a lower level of satisfaction than other user groups.

Main author conclusions:

The integration led to increased satisfaction in health but not social care services. Waiting times were below national averages.

Reported associations or causative links:

Integration of services → Increased user satisfaction with health services

Potential applicability considerations:

None identified

Huby 2014

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: Four primary care organisations, 73 individuals

Population characteristics:

Data collection method: case studies, interviews, notes from meetings, workshop to discuss findings

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Varying types of reconfiguration -

GPwSI service driven by a team led by local GPwSI.

GPwSI service on the model of one pre-merger PCO introduced across the new merged PCO.

Nurse-led and management-backed team set up to prevent hospital admissions.

Summary of results:

The GPwSI services demonstrated the most obvious progress and momentum. The services were built around collaborations between a GP hospital manager and a consultant. There was resistance from hospital consultants but professional boundaries were negotiated and adjusted.

The other two nurse-led service developments had less momentum, for one GPs did not appear to engage and the service lacked personnel and resources, for the other consultants and GPs did not engage and boundaries between acute and community did not change.

Relationships made over time within and between organisations and professions were important at a time of changing budgets, resources, posts, and mergers.

The GPwSIs' position, between hospital and primary care and between clinicians and managers, gave them access to a range of relationships and could cross professional boundaries, through which they could exert influence.

The position of the nurses in their organisations and the clinical and professional hierarchy denied them access to the kind of influence the GPwSIs could enjoy. They struggled to establish relationships with GPs and consultants, the nurse had to ask the GP to make referrals on her behalf.

Adjustments to role boundaries could suit the interests of both GPs and Consultants. The respiratory consultant welcomed the GPwSI service as a means of managing the less acute and less specialist cases which enabled him to diversify into new specialist areas within

	Type of group Consultants, GPs, nurses, managers **Condition/ department** Respiratory services **Sex** **Age** **Other (specify)** **Context:** Case study sites selected on basis of (i) the impact of reorganisation; (ii) the model of respiratory service development (respiratory GPwSI versus nurse-led service); (iii) the maturity of the service (planning phase, new or established service) and (iv) the nature of professional boundary work in terms of contests and collaboration across boundaries. England and Wales. Context of increased emphasis on cost containment	Community respiratory nurse in one rural part of the PCO area set up to change practice arrangements between acute and primary care.	the acute hospital trust which was a priority for the acute Trust. The GPwSI service aligned with community trust priorities of reducing pressure on acute care and reducing costs. Resistance to change because of professional boundary changes did not always present a barrier to change, it could lead to greater engagement in the process, and result in changes to plans. Lack of engagement was more of a threat than active resistance. **Main author conclusions:** The adjustment of professional boundaries is important in service change. Clinical hierarchies persist in new organisational contexts. Good cross-boundary relationships and access to sources of power and political leverage are important for organisational change and carving out new professional territories **Reported associations or causative links:** Relationships, professional boundaries → Organisational change **Potential applicability considerations:** Purposively sampled a range of organisations for variation in impact of merger (modest or high or no merger), GPwSI or nurse led, how long the initiative had been in operation (two were four years, one recently established and one two years), and the nature of the boundary work (two boundaries re-drawn two boundaries unchallenged), differing levels of conflict and engagement of GPs and hospital services, and two services expanding, two service not expanding.

<table>
<tr>
<td>through budget controls and the drive to shift care into the community</td>
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<td>Hudson 2006

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
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<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
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</td>
<td>Data collection method: Action research approach including scrutiny of documents, questionnaires, observation, interviews with staff and service users. Data collected shortly after establishment of team and 9 months later.

Outcome measures:

Staff and patient views

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign</td>
<td>Summary of results:

Examines three “positive hypotheses” about team working – shared values of service to users should form the basis of partnerships, socialisation is able to overcome professional differences and hierarchies, inter-professional working can be of benefit to service delivery and users.

Some differences in culture were reported but co-location had led to a mutual understanding of each other’s roles. This understanding was perceived to have led to more rapid service delivery. Participants were positive regarding the need for integration, with comments rooted in a social rather than clinical model. There was no evidence to suggest any status or importance differences in perceptions of team members. Rather than losing district nurse access, GPs were persuaded of the value of gaining social work and housing support, and the nurses also convinced GPs of the advantages of the new model.

Co-location underpinned the positive elements.

Service users were positive regarding the new way of working. The process of service delivery looked simple to them.</td>
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<table>
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Sample size: 27 staff

Population characteristics:
<table>
<tr><td>Type of group</td><td>Staff – district nurses, social workers, housing support officer, administrator, team manager</td></tr>
<tr><td>Condition/ department</td><td>Adult care (18+) including mental health for older adults, services for physical disability and sensory impairment</td></tr>
<tr><td>Sex</td><td></td></tr>
<tr><td>Age</td><td></td></tr>
<tr><td>Other (specify)</td><td>Including housing and accommodation services</td></tr>
</table>
</td>
<td>Five locality-based co-located teams established. Located in a sheltered housing premises. Consisted of social workers, district nurses and housing officers. Single budget, single management system. Referrals were made to the team. Team members used same information systems (the social services database).</td>
<td>Participants reported improved speed of undertaking tasks, a willingness to problem-solve, working flexibly, and crossing role boundaries. Also, being creative when exploring options.

Main author conclusions:

Where there is willingness and capacity to establish co-located integrated teams then it can succeed.

Reported associations or causative links:

Co-location → Improved care processes such as speed, problem-solving, crossing role boundaries.

Co-location → Improved understanding of roles

Potential applicability considerations:

Staff in the team were largely individuals who had volunteered for secondment. The inclusion of GPs in the integrated teams “was never a serious option”. The area had few district nurses based in GP practices.</td>
</tr>
</table>

Context: Sedgefield, Country Durham, population of around 88,000 with four main towns. Three partners in initiative: PCT, Borough Council, and County Council. Initiative developed in response to the NHS Plan. Local partnership boards to oversee the arrangements. Covered health, social care and housing, with a large number of agencies. Integration was comprehensive including strategies, operational and collaborative activities. Integration took place at the same time as localisation		
Ignatowicz 2014 **Country: UK** **RCT** **Non-RCT** **CBA** **BA** **Comparator:**	**Data collection method:** Observations, interviews **Outcome measures:** Views and perceptions **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce**	**Summary of results:** Distinct stages of engagement were identified, from initial enthusiasm about the vision of improving care and willingness to be involved, to antipathy and withdrawal of involvement as the focus on service efficiency and reorganisation became apparent, to ambivalence in the later stages with a perceived focus only on potential financial gains to services. The context of financial challenges shifted perceptions of the pilot from improving patient care to economic and political imperatives, with top down decisions and a perception of being dragged along among clinicians and poor communication rather than being involved and having ownership. There was scepticism about the pilot not

Length of follow up: **Qualitative** X **Cross-sectional** **Other (specify)** **Sample size:** 25 **Population characteristics:** **Type of group**: Staff – GPs nurses, community matrons, social workers, practice managers **Condition/ department**: Service providers taking part in pilot; Services for those aged over 75 or diabetes **Sex**: nr	**change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** North West London Integrated care pilot	living up to professional expectations, barriers between providers and disillusionment. Clinicians became preoccupied with additional administrative burdens/time in meeting/time completing care plans. **Main author conclusions:** Engagement in initiatives changes over time, with a need to focus on common values of improving quality of care via improved coordination rather than top down organisational change. **Reported associations or causative links:** Level of professional engagement → Change **Potential applicability considerations:** Population in a fast growing and economically diverse area.

<table><tr><td>**Age**</td><td>nr</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** North West London, see other papers for details			
Kassianos 2015 **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:**</td></tr><tr><td colspan="2">**Length of follow up:**</td></tr><tr><td>**Qualitative**</td><td>X</td></tr><tr><td>**Cross-sectional**</td><td></td></tr></table>	**Data collection method:** Interviews **Outcome measures:** Views and perceptions **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign**	**Summary of results:** Benefits of team meetings were reported to be shared learning (which added to professional knowledge) and the integration of services and professionals which fostered relationships. Challenges were time constraints (meetings long and time consuming), group dynamics (overly medical focused), and the process (poor quality of discussion). There were reported doubts whether the benefits extended to patient care. It was suggested that the frequency of meetings be reduced, they could be done virtually or use technology. **Main author conclusions:** Meetings may be beneficial but the impact on patient care is unclear. **Reported associations or causative links:** Multidisciplinary meetings → Unclear impact on care **Potential applicability considerations:** Professionals involved in an integrated care pilot

<table><tr><td>Other (specify)</td><td></td></tr></table> **Sample size:** 16 **Population characteristics:** <table><tr><td>Type of group</td><td>Staff including GPs, specialists, social worker and a practice manager</td></tr><tr><td>Condition/ department</td><td>Diabetes</td></tr><tr><td>Sex</td><td></td></tr><tr><td>Age</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table> **Context:** North West London see other papers for further details	North West London Integrated Care Pilot, this paper focuses on multidisciplinary team meetings	

Knowles 2013

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 18

Population characteristics:

Type of group	Practice nurses and psychological

Data collection method: Interviews

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Training package for psychological wellbeing practitioners (case managers) and practice nurses in collaborative care for patients with mental health problems and other long term conditions

Summary of results:

Participants recognised the value of integrated care but there was a division between role boundaries around mental and physical health, perceiving each as offering different help. There was a lack of clarity about the collaborative model and roles. Co-location was beneficial with integrated care perceived to have benefits in terms of increased co-ordination and continuity of care. Lack of shared resources and IT access, and other staff not being aware of the practitioners hindered integration.

Main author conclusions:

A perceived distinction between physical and mental health impacts on collaborative working. Professionals adopt limited elements of collaborative working in practice.

Reported associations or causative links:

Perception of value of integrated care → Not translated into working practice.

Potential applicability considerations:

Part of a randomised trial.

	wellbeing practitioners		
Condition/ department	Mental health and other long term conditions		
Sex			
Age			
Other (specify)			
Context: North West England, 13 GP practices, traditionally the two staff groups work separately both geographically and focus of work.			
Lhussier 2007 **Country: UK** **RCT** / **Non-RCT** / **CBA** / **BA** / **Comparator:**		**Data collection method:** Participatory Action Research (5 collaborative learning groups, meetings, stakeholder interviews). **Outcome measures:** Views and perceptions of staff **The intervention:**	**Summary of results:** **Previous care** -Palliative care perceived as variable ("*patchy*"). Training an issue – often difficult to get time out particularly in groups. Culture of prioritising "cure" and acute care, especially in secondary care which raised issues for discussing discontinuation of treatment. **Initial challenges to ICP** – putting timeframe to dying ("diagnosing dying"), discussing dying with family members (lack of knowledge). Linked to culture of seeing dying as failing to cure. Poor attendance for training (reticence of staff). Generalist staff lacked confidence to

		Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign End of life Integrated Care Pathway, based on the Liverpool Care Pathway (LCP) in primary and secondary care settings. The LCP emphasises openness and honesty between professional carers, patients and family and authorises the discontinuation of active treatment.	address spirituality – not easy to learn without observing hospice staff – and tended to focus on physical care / medication. **Changes since implementation** – staff became more confident to communicate about and deal with the diagnosis of dying. Collaboration between staff improved (including shared written reports when visiting patients). Being able to explain that the ICP helps staff to do their best for the patient. Being able to document more positive aspects of the patient's care. Increasing patient dignity (e.g. by allowing discontinuation of active treatment). Staff tended to ask more about symptoms and think more about prescribing as well as take more time to explain care to patients and relatives. **Ongoing challenges –** resistance among staff to change practice e.g. to prescribing pro-actively (rather than waiting for symptoms to arise); fear of providing large amounts of strong medication etc. ICP is implemented in last few days of life when sometimes it could be beneficial to introduce earlier (e.g. when no expectation of cure). Documentation tends to "tick box" which prevents more nuanced communication (e.g. of "presencing") between professionals. **Main author conclusions:** The ICP facilitated care that was consistent, continuous, collaborative and pro-active. Provided a structure that was well received even where care was perceived as previously good. **Reported associations or causative links:** Supportive infrastructure → Provision of ICP Provision of ICP → Quality end of life care

Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 32

Population characteristics:

Type of group	ICP facilitators (10); medical and nursing staff (12); bereaved carers (10).
Condition	Palliative / end of life
Sex	na
Age	na
Other (specify)	**na**

<table>
<tr>
<td>Context: Three Trusts in North England (Primary / secondary care)</td>
<td></td>
<td>Potential applicability considerations:

Success of the ICP is dependent on some aspects of care structure already being in place. In primary care two sites were involved and the model differed between these to reflect local needs and resources. This did not impact on implementation. Mechanisms and consequences are reported elsewhere (Carr 2005).</td>
</tr>
<tr>
<td>Ling 2012

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
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</td>
<td>Data collection method: Interviews

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Integrated care pilots, interventions varied and included case management,</td>
<td>Summary of results:

Pilots with multiple intervention components faced more challenges than those with fewer components. Simple single faceted interventions with a small central team made more rapid progress. Multi-partner sites took longer to implement change. IT system difficulties with duplication of effort and privacy concerns. Some sites were unable to achieve shared data. Good existing relationships were beneficial with clear communication and agreement over potential benefits needed. Having senior managers of team leaders with strong commitment to implementing lasting change was beneficial. Co-location in buildings enhanced relationships.

Professional engagement was key, with sometimes groups feeling side lined, uninvolved, or demotivated. Clear communication about what was needed was required, A lack of GP engagement could be a major barrier. There was a need to develop shared belief about the benefits of change and have strong leadership. The adoption of new roles and responsibilities sometimes led to erosion of professional identity, specific training was needed.

Main author conclusions:</td>
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Sample size: 213

Population characteristics:

<table>
<tr><td>Type of group</td><td>Staff – clinicians and managers from 10 sites</td></tr>
<tr><td>Condition/ department</td><td>Various, most commonly elderly</td></tr>
<tr><td>Sex</td><td></td></tr>
<tr><td>Age</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Context: 16 integrated care pilots

</td>
<td>team working, new organisational structures</td>
<td>Issues and facilitators varied between contexts. Main issues related to leadership, organisational culture, information technology, physician involvement, and availability of resources. Important elements were personal relationships between leaders in different organisations, the scale of planned innovations, governance and finance arrangements, support for staff in new roles, and organisational and staff stability.

Reported associations or causative links:

Large scale organisational change barriers → Outcomes

Potential applicability considerations:

All sites had support from a team of management consultants and regular learning events were held.</td>
</tr>
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<td>

Lunts 2012

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
</table>

</td>
<td>

Data collection method:

Outcome measures:

Views and perceptions

The intervention:

</td>
<td>

Summary of results:

The project was described as not delivering its original intentions or following correct management processes. Participants demonstrated a good understanding of project management and change management.

Concerns were expressed regarding lack of stakeholder engagement in the project. They reported the need to understand the human aspects of change (such as selling the project to staff) and being clear about aims and objectives. Different organisational cultures were a

</td>
</tr>
</table>

Comparator: **Length of follow up:** **Qualitative** X **Cross-sectional** **Other (specify)** **Sample size: 8** **Population characteristics:** **Type of group**: Middle managers – social work, professional lead, project managers, operational (at least 2 levels below Chief Executive and one above professional staff)	**Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Ward at local community hospital closed and replaced by a new assessment and intermediate care facility at a local care home. Work on integrating teams planned.	challenge, with staff working to different care models. Social work may have had clearer but more restrictive processes compared to health, and professional culture in the NHS was recognised as a challenge. However, there was little evidence provided of how cultural differences had exerted a significant impact on the project. Greatest challenge knowing who to approach for decisions, need for a single accountable officer. Differing priorities in each organisation. Lack of capacity described as hindering their ability to undertake change, other projects getting in the way. Critical importance of leadership and vision from senior leaders and senior level buy-in, participants appeared unclear about their own role. Importance of trust and respect between individuals and organisations. Importance of building informal networks. **Main author conclusions:** Middle managers within the project demonstrated a comprehensive understanding of the challenges in delivery of an integration project and the skills to deliver effective projects. A perceived lack of authority and the uncertainty surrounding their roles were the major hindrances. Middle managers should be given time and focus to concentrate on a project and be given a central role in leading change. **Reported associations or causative links:** Managerial role ⟶ Change

<table><tr><td>**Condition/ department**</td><td>Social work department of local authority and primary and community division of health board</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Scottish Borders, project initiated in response to the opportunity for central funding, led by a small number of middle managers. At the time of the study a scoping exercise had been completed and infrastructure red-designed by community teams were yet to be integrated. Senior manager appointed as lead but left after 6 months and was not replaced. Project had received negative and positive comments in both organisations.		**Potential applicability considerations:** Interviewees were involved in an ongoing project to develop integrated care. Site was a high profile, flagship project focused on delivering integration. Surprisingly, the majority of participants did not consider they were integrally involved in the project despite being selected because they were involved.

MacFarlane 2011 Same study as Greenhalgh

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 100 interviews

Population characteristics:

Data collection method: Realist approach, organisational case study design, interviews.

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Whole scale transformation with multiple work streams. Included developing new partnerships and networks. Included staff taking on new tasks, moving towards a more patient-centred approach with staff as educators and supporters of patients. Also encompassed developing common standards and guidelines and staff role development including a generic qualification and training. Included

Summary of results: This paper focuses on human resource management within the initiative. The frontline workforce included a high proportion on healthcare assistants, who had a high turnover, low levels of training and varied supervision and employment/managerial structures. Initiatives often required additional training for staff to undertake new tasks, and a need for leadership and change management training for senior professional staff. Organisations differed in their ability to implement changes, difficulties were often attributed to problems with human resources strategy and infrastructure. The success of the projects was often due to the appointment of individuals with both hard and soft skills in transformative change, with multiple and flexible skills. A particular Director with credibility, vision, energy, emotional intelligence and sheer ability was admired. The service improvement facilitator role made a major contribution to the process, although senior managers needed to provide a focused programme to address each individual's training needs. The clinical champion role had worked well in some cases but some had personal agendas and there could be a problem back filling their time. All were doctors and their recruitment was unsystematic.

Successful role redesign depended on staff being willing to take them on, timely training and acceptance of the role by all. New roles could conflict with individual identity or skills.

Participants reported insufficient workforce planning taking place. It needed to be very early as changes to service occurred. Progress on staff competency assessment was slower than hoped with some staff unhappy that it did not fully capture their role, an important part of the initiatives was identifying and providing training.

<table><tr><td>**Type of group**</td><td>Staff, middle managers and clinicians</td></tr><tr><td>**Condition**</td><td>Stroke, kidney and sexual health</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Two adjacent inner London Boroughs, deprived areas. Borough had two teaching hospitals and two PCTs. Services included were stroke, kidney and sexual health, selected by competitive bidding process. Delivered by staff seconded from NHS. Management mechanisms complex.	linking of staff development to service needs and priorities and creating opportunities for shared learning and knowledge exchange. Service improvement facilitators appointed to bring people together and undertake and evaluate new ways of working. Also clinical champions identified.	A key achievement perceived by participants was bringing groups together via formal meetings and away days and seminars and also joint visits to other centres. General climate of unwanted externally opposed change caused frozen posts and job uncertainty led to challenges in people accepting new roles and retention or staff. Local bureaucracy such as job descriptions and employment policies could block attempts to introduce inter-organisational roles. Also national workforce policies such as staff grading bands held up projects. Staff were often unable to take up training provided as they could not be released, unless it was designated as mandatory. Some funding arrangements placed services in competition with each other e.g. the two hospitals. Professional bodies could place obstacles in the way of new generic qualifications. Some parts of the services were highly resistant to change despite an overall climate of risk-taking and experimentation. Influencing these individuals was more difficult than anticipated and slowed progress. **Main author conclusions:** Staff were mostly keen, creative, comfortable with new ways of working if these improved patient care, and receptive to training and development that would help them do their jobs better. But structural barriers (national and local) accounted for most delays or diversions in the initiatives. Whole-scale transformation was hampered by prevailing policies and politics; by crucial shortages in the availability of staff and by the

		pressure of resources in a cash-constrained health economy resulting in some individuals' primary concern to protect their jobs. Highlights need for – adequate pool of skilled staff, good human resources support and a culture supporting role re-design, role changes enhancing staff roles and identities, a policy context that allows local development, and skills and responsibility for change embedded throughout the workforce. Also highlights the key role of good leadership. **Reported associations or causative links:** Leadership, staff training, structural barriers → Organisational change **Potential applicability considerations:** Health care services were cash-constrained and of variable quality, with pockets of excellence coexisting with substandard practice. Funded by a charitable sponsor (£15 million). Posts generously funded, at often more than the going rate.

Manley 2016

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	X
Other (specify)	

Sample size: 150

Population characteristics:

Type of group	Stakeholders including GPs, pharmacists, ambulance staff,

Data collection method: stakeholder events, survey, interviews, multiple case study approach

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Summary of results:

Key themes related to: the perception that fragmented working without clinical systems leadership causes duplication and waste; there was a need for an integrated competence framework to enable staff recruitment, development and retention; there was a lack of team approach to the competences needed. Commissioners were perceived to be gatekeepers for integrated working, there should be an emphasis on leadership rather than management. Work-place learning would enable role clarity, trust, and a team approach.

Main author conclusions:

Service redesign is needed in urgent and emergency care with attention paid to the elements identified.

Reported associations or causative links:

Workforce interventions → system change

Potential applicability considerations:

None identified

	nursing homes, patient groups, service leads		
Condition/ department	Urgent and emergency care		
Sex	nr		
Age	nr		
Other (specify)			

Context: South East England, single trust

McDowell 2009

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	

Data collection method: interviews, focus groups

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/

Summary of results:

Within the new model of care, participants perceived healthcare staff as familiar and holistic in their approach, and they felt more able to ask questions and discuss concerns. The new service was reported to be more convenient, with smaller numbers present at the clinics and more time available for each consultation. There were some concerns regarding the hospital having more expertise than the community, and written test results were not available unless they consulted their GP. Patients suggested the need for a named person to consult.

Main author conclusions:

Length of follow up: **Qualitative** X **Cross-sectional** **Other (specify)** **Sample size:** 35 **Population characteristics:** **Type of group** Patients **Condition/ department** Type 2 diabetes **Sex** 19 women and 16 men **Age** nr **Other (specify)** Time living with diabetes was 4.6 years mean for women, 9.3 years for men	**Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Lead responsibility for management of people with type 2 diabetes moved from secondary care to primary care multi-professional teams. All staff providing community healthcare required to undertake diabetes training. Annual patient review with GPs and other members of team.	Patients preferred their management in primary care and valued the holistic care and close working relationships with staff whom they knew and who also knew them. **Reported associations or causative links:** Transfer of service to community → Improved patient experience **Potential applicability considerations:** None identified

Context: Glasgow, 15 local health care co-operatives, project initiated in one and then rolled out across all. At time of data collection patients had 2 years of experience of new service. Redesign of hospitals at same time.		
McKenna 2006 **Country: UK** **RCT** **Non-RCT** **CBA** **BA** **Comparator:** **Length of follow up:** **Qualitative** X **Cross-sectional**	**Data collection method:** Semi-structured interviews **Outcome measures:** Views of staff **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Introduction of innovative nursing and midwifery roles (those that that "function	**Summary of results:** Participants were positive about the evolution of roles and had been involved in obtaining funding to develop such roles (therefore had vested interests). Barriers included lack of supportive infrastructure and problems ensuring adequate supervision. There was some concern about the overlap of roles blurring distinct professions such as nursing and midwifery and a desire to keep these separate. Also, as nurses and midwives take on more medical tasks, the healthcare assistant takes on more nursing activities. This could impact patient safety at the boundaries of care. Benefits of innovative roles were particularly evident in the care of chronic conditions as well as reducing waiting times and inpatient days. **Main author conclusions:**

Other (specify)		outside the traditional hospital and community nursing and midwifery clinical structures"	The above impacts suggest that further evolving roles are evaluated to ensure quality and safe care. Also, to identify the reason for championing these shifts (developing nursing or cutting costs). **Reported associations or causative links:** Shifts in role → impact on other roles / pt care **Potential applicability considerations:** Impact of role changes in other professions and in other regions.
Sample size: 26 **Population characteristics:** **Type of group**: Healthcare managers **Condition**: **Sex**: **Age**: **Other (specify)**: **Context:** Northern Ireland's healthcare organisations			
Oborn 2010 **Country: UK** **RCT**: **Non-RCT**: **CBA**: **BA**:		**Data collection method:** Field work (participant observation, interviews) **Outcome measures:** Views and perceptions **The intervention:**	**Summary of results:** Team members assist others in understanding new knowledge drawing on seminal texts. Different disciplines have their own way of constructing the patient (nursing; patient is suffering and needs counselling; surgeon: patient is a collection of organs that need sorting; oncologist: patient as evolving malignancy). Both existing power hierarchies and new solutions used to interpret each other's understanding in order to act.

Comparator: **Length of follow up:** **Qualitative** X **Cross-sectional** **Other (specify)** **Sample size: 26** **Population characteristics:** **Type of group** HCPs **Condition** Urology cancer **Sex** **Age** **Other (specify)** **Context:** One large UK hospital.	**Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Diagnosis and care management plan meetings across disciplines.	Evidence-based medicine (EBM) was related to access to research funding and tended to be used by medics (relating to chemo effectiveness for example) than surgeons. Nurse knowledge (patient experience) was subjugated by EBM but nurses did not challenge this. All MDT knowledge was accepted in a dignified way. **Main author conclusions:** Some groups were more effective in establishing knowledge and action than others, with hierarchies of privilege (language of science). Teams need an ongoing process of blending individual and MDT decision making. **Reported associations or causative links:** Landscape of power → Privileging particular knowledge **Potential applicability considerations:** This study focusses on urology oncology, so that other conditions and disciplines might have different MDT interactions (and power differentials). MDTs also could include different specialisms which are more social care oriented.

Ovseiko 2015

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	X
Other (specify)	

Sample size: 24 qualitative, 38 survey.

Population characteristics:

Data collection method: Focus group and interviews; questionnaires

Outcome measures:

Views and perceptions

Theory: Competing Values Framework (CVF)

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Merger of NHS Trusts.

Summary of results:

Clinical collaboration had been limited prior to the merger though both Trusts had connections with Oxford University and had been beneficiaries of Lord Nuffield.

Key similarities in culture: Paid attention to staff development, working in partnership with managers and overcoming effects of financial adversity. Clinical culture differs from the academic enterprise.

Key differences: NOC was perceived as more entrepreneurial, team oriented and less hierarchical.

A Joint Working Agreement allowed amelioration pre-merger and will continue to be used post-merger (E.g. ONC is a much smaller organisation so need for its academic enterprise to have similar influence to ORH).

Fears persisted that ONC would lose its identity and lack support.

History of separateness and lack of collaboration affected staff attitudes but history of collaboration with University holds.

Policy agenda was influential as this was at a time when Trusts were encouraged to reach Foundation Trust status but within a shifting landscape of rules and deadlines.

Main author conclusions:

The two cultures differed from each other and from academia. There are challenges in preserving desirable culture at one Trust but could

<table><tr><td>**Type of group**</td><td>Senior managers and scientist-physicians</td></tr><tr><td>**Condition**</td><td>NR</td></tr><tr><td>**Sex**</td><td>NR</td></tr><tr><td>**Age**</td><td>NR</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Two merging NHS Trusts one orthopaedic, one general)		rely on current best practice and good will. Strong and fair leadership is required pre and post-merger. **Reported associations or causative links:** Historical extent of collaboration → can influence attitudes **Potential applicability considerations:** Mergers are at least partly dependant on cultural aspects at each site.
Pappas, 2012 **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:**</td></tr><tr><td colspan="2">**Length of follow up:**</td></tr></table>	**Data collection method:** Interviews and survey, focus groups, analysis of team and Board meeting interactions **Outcome measures:** Staff and patient views **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/**	**Summary of results:** There was some lack of perceived clarity around accountability due to working across traditional boundaries. Three were ongoing concerns regarding the performance of the IT tool. There was criticism of the tool used for evaluating the pilot study. Participants voiced concerns regarding the sustainability of the project, and the incentives offered to GPs. There were concerns regarding having sufficient management skills and resources available, potential conflicts of interest and spending of pilot resources. Most participants recognised the need for a holistic approach to addressing patient needs in a joined up system. There was a sense of pride and commitment from some who had been involved in the initial setting up. There was a lack of clarity among some regarding

Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 75 interviewed, 51 professionals and 405 patients returned questionnaires. 65% of staff questionnaires from GPs.

Population characteristics:

Type of group	Patients and staff
Condition/ department	Over 75s, diabetes
Sex	
Age	
Other (specify)	

Context:

Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

North West London Integrated Care Pilot

the rationale and goals of the pilot, and also the leadership and governance. The sharing of clear objectives and processes of the ICP as well as the establishment of a culture of collaborative working were seen as important drivers for success. The pilot was viewed as having political or ideological drivers, with financial benefits seen as a key driver in judging outcomes. Team meetings were perceived as valuable to staff personally and professionally, facilitating networking, education, working relationships, knowledge-sharing and best practice. Experiences were variable however, some expressed concerns regarding time, costs, quality of learning and value for money. There were perceptions that more needed to be done to make meetings more efficient. The majority of interviewees although not all were optimistic about the potential for the changes to positively impact on patient care. Frustration at the data sharing system was strongly felt. The care planning process received mixed views. Willingness to be involved in the work going forward was linked to communication, sense of engagement.

Patient understanding of the pilot was vague, not all those registered to be part of the programme had a care plan, although some were fully aware of it. Those patients who identified changes were positive about the sharing of information, minimising of bureaucracy, increasing co-operation and better communication.

The survey of professionals indicated positive views that integrated care could be beneficial but highlighted the need to simplify processes and facilitate care planning. It enhanced communication and collaborative working but could be extra work and frustrating.

Main author conclusions:

<table>
<tr>
<td></td>
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<td>There was widespread frustration about the IT system. Perceptions of the changes were mostly positive but little work had been done to plan beyond the pilot stage. Culture change, provider and patient involvement would enable the staff to develop pathways that met patient needs. Effective communications in relation to strategic, operational, technical and clinical matters, timely sharing of information, as well as cultural change in the way care is provided are crucial.

Reported associations or causative links:

Integrated care → Positive staff perceptions

Culture change, involvement and engagement → Change

Potential applicability considerations: None identified</td>
</tr>
<tr>
<td>Petch 2013

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
</table>
</td>
<td>Data collection method: Interviews

Outcome measures:

<table>
<tr><td>Outcomes important to service users</td></tr>
<tr><td>Extent to which valued aspects of service are delivered</td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/</td>
<td>Summary of results:

Aspects important to service users:

Co-location of health and social care – enabled access, communication and communication between services.

MDT – allows holistic care

Main author conclusions:

Important aspects of care to service users are associated with holistic care, improved process outcomes and being responded to, highlighting effective integration at frontline services.

Reported associations or causative links:</td>
</tr>
</table>

Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 20

Population characteristics:

Type of group	Service users
Condition	Older people, mental health, learning disability
Sex	
Age	
Other (specify)	

Context: Health and social care, NW England

Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Partnership working; no specific intervention.

Effective integration of services → Aspects of importance to service users

Potential applicability considerations:

Ability to provide co-location for health and social care service management.

Pinnock 2009

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 30 primary care organisations (PCOs)

Population characteristics:

Data collection method: Telephone interviews draws on Long term condition pyramid for analysis

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Summary of results:

28 managers described PCOs that had developed services to address the neds of people with long term respiratory disease and educational needs but few described clearly developed plans. Most were designed to meet the needs of the most complex cases and the priority was to reduce hospital stays. The approach varied across areas though generally were led by one or a combination of specialist nurse, community matron, GPwSI, acute trust respiratory nurses, practice leads and nurse educators. PCO managers were regarded as having a facilitating role, especially at the start of the programme. Clinicians from primary or secondary care often fulfilled the champion role. Tensions between these two groups arose due to the manager's focus on financial savings compared to HCPs on improved services.

Main author conclusions:

Few PCOs are taking into account broader strategic issues or educational needs.

Reported associations or causative links:

MDT: Primary and secondary care → comprehensive service provision

Potential applicability considerations:

Existing service provision, existence of potential "champions".

<table><tr><td>**Type of group**</td><td>Primary Care Organisation staff</td></tr><tr><td>**Condition**</td><td>Long term respiratory disease</td></tr><tr><td>**Sex**</td><td>NR</td></tr><tr><td>**Age**</td><td>NR</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** PCOs in England and Wales		
Pollard 2011 **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:**</td></tr></table>	**Data collection method:** Focus groups and interviews **Outcome measures:** <table><tr><td>Views and perceptions</td></tr></table> **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/**	**Summary of results:** Barriers reported: Patients: Delays in referral to specialist. Need for access to HCP when RA flares up. Need for good relationship with specialist. Perceived lack of experience or knowledge of GP. Specialists: Delays in referral to specialist. GPs: Delays due to trying treatments first then awaiting blood test results. Influenced by role as gatekeeper. **Main author conclusions:** Identified limitations to management of RA that could be resolved by changes to services such as GPwSI in

Length of follow up: **Qualitative** X **Cross-sectional** **Other (specify)** **Sample size: 79** **Population characteristics:** **Type of group** Medical, nursing, carers and patients **Condition** Rheumatoid arthritis **Sex** NR **Age** NR **Other (specify)** **Context:** Hospitals and PCTs		**Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/** General service redesign Sought views on barriers to providing integrated care	RA, closer collaboration between primary and secondary care and better follow up for patients with established RA by specialists. **Reported associations or causative links:** Barriers → Integrated care provision **Potential applicability considerations:** None identified

Pollard 2014

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 13 GP practices

Population characteristics:

Type of group	GPwSIs
Condition	Cardiology

Data collection method: Interviews, survey, case note review and referral analysis.

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Pilot of new GP role in cardiology (GPwSI); short course with clinical supervision. It was initially developed to manage heart failure and atrial fibrillation in primary care.

Summary of results:

The new role was welcomed by GPs (including partners of GPwSIs) as an extra resource and opportunity for professional development. However there were concerns about GPwSI, that it could distract from other GP work. Workload increased to the point where GPs used their own time and there was underestimation of administration tasks.

Patient views about the ECR were positive in terms of accessibility, convenience and continuity of care. The model changed the patient pathway temporarily with reduced referrals to specialist care.

Process: some data (GP records) was not reported in a systematic way and the research patient tracker form did not include clinical information.

Main author conclusions:

The pilot was generally received well and could potentially reduce costs, though more research is needed with other stakeholders.

Reported associations or causative links:

Extended GP role → potential cost reduction

Increased acceptability

Potential applicability considerations:

Willingness of GPs and practices to take interest in Cardiology.

<table><tr><td>**Sex**</td><td>NR</td></tr><tr><td>**Age**</td><td>NR</td></tr><tr><td>**Other (specify)**</td><td>NR</td></tr></table> **Context:** East Midlands primary care		
Roberts 2014 **Country: UK** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:**</td></tr><tr><td colspan="2">**Length of follow up:**</td></tr><tr><td>**Qualitative**</td><td>X</td></tr><tr><td>**Cross-sectional**</td><td></td></tr></table>	**Data collection method:** Document analysis, observation of meetings, interviews with programme leads and other stakeholders, form to capture economic data. **Outcome measures:** Views and perceptions **The intervention:** **Integrating services/ Integrated care pathway/ Role change/** Multidisciplinary team/ **Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/**	**Summary of results:** The main focus of the work is on evaluating the programme of support that the initiatives received and how well the programme delivered enabled the participating areas to achieve integrated care. However, it includes data relating to perceived key aspects of implementing integrated care initiatives. Effective senior leadership is a critical factor for success, with a clear shared vision and protected staff time, a programme manager, and formal roles and accountability. Having named leads in all partner organisations helps with accountability and momentum. Effective governance is a key enabler of integration, with a health and wellbeing board assisting the focus on integration. Having a named person who has overall responsibility for allocation of a pooled budget reduces tensions about spending. Frequent meetings and clear lines of reporting are important. Barriers to changing culture require levering of existing partnerships and perseverance. Service user and carer engagement has been an important part of all initiatives. Less progress across the sites in the area of financial and contractual mechanisms, external support is valuable and alliance contracts are seen to support risk and benefit sharing. Limited

	Other (specify)		**Location-focused/ General service redesign** The programme was delivered by AQuA and The Kings Fund and aimed to support sites in exploring how the theory of integration could be applied in different areas. The initiatives included an intermediate care allocation team, a virtual ward, heatlhy ageing partnership, integrated neighbourhood team, clinical integrated care model, integrated care models and programmes, training the workforce in partnership.	progress also in IT and information sharing across the sites, having a dedicated project team and long term plan may be beneficial. Engagement with frontline staff is critical, helped by working with trade unions, co-location, multi-disciplinary teams, and training. Standardised processes and documentation important to ease the burden on practitioners and ensure consistency. Pooling of budgets and funding of services often highlighted as an area of tension. Use of patient case studies useful to break down barriers between services. Importance of engaging GPs at the outset and ensuring continued buy-in, ownership in developing and implementing risk stratification tools. Some areas experienced issues with data governance. Outcomes may only be seen in the longer term. There are challenges in unpicking and allocating costs and obtaining data from multiple sources. Some sites have focused on team or service integration rather than whole system. **Main author conclusions:** Outlines elements on enablers and challenges within a System Integration Framework: *leadership; governance; workforce; culture; financial and contractual mechanisms; IT and information sharing; service user and carer engagement; service redesign.* Change may be only perceivable in the longer terms, outcomes are complex to measure. **Reported associations or causative links:** Elements of integration → Change
	Sample size: Unclear **Population characteristics:** **Type of group**: Staff involved in Integrated Care Communities Programme **Condition**: Variety of initiatives **Sex**: **Age**: **Other (specify)**: **Context:** The Advancing Quality Alliance (AQuA) commissioned the evaluation of the programme of support for sites taking part in the Integration Discovery Community and Integrated Care Communities Programme. The sites were Salford, Central Manchester, East Cheshire,		

<table>
<tr>
<td>Oldham, East Lancashire, Sout Sefton, Warrington, Wirral, Liverpool and three other locations whose identity was not disclosed.</td>
<td></td>
<td>Potential applicability considerations:

Range of different services and locations included</td>
</tr>
<tr>
<td>Rothera 2008

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size: 82</td>
<td>Data collection method: Interviews

Outcome measures:

Experience of delivering / receiving new services

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Specialist service for older people with dementia:

Care-workers given training in dementia care to be able to give flexible care e.g. respite.</td>
<td>Summary of results:

Care-workers had to be responsive to the needs of clients which led to flexibility of shifts, enhanced communication and staff covering for each other. This compared to usual care where tasks were pre-scheduled.

Clients were encouraged to become involved in decisions and carry out particular tasks. Care-workers were regarded as experts in the client’s care so that seeking medical help was direct rather than through the office (as in usual care).

Relationships were built by care-workers understanding the client’s past history so that their routines could be continued and built upon. It was important to build trust to enable long term objectives to be reached. In the standard service, care workers would move around between clients, thus losing continuity.

Care workers also supported carers and their needs, which was not an aspect included in standard care.

Main author conclusions:

Service users, carers and care workers viewed the service as more appropriate and individualised than standard care. The authors acknowledge that some biases (researcher, acquiescence etc.) may have entered into the evaluation. Qualitative methods provided more</td>
</tr>
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<td>Population characteristics:

<table><tr><td>Type of group</td><td>Service users, carers, HCPs, care workers</td></tr><tr><td>Condition</td><td>Dementia</td></tr><tr><td>Sex</td><td></td></tr><tr><td>Age</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Context: Nottingham health and social services</td>
<td>Care individually designed around client’s needs and preferences (‘needs-led’).</td>
<td>information than would quantitative and the authors suggest that the new service was deemed superior to standard services.

Reported associations or causative links:

Individualised, flexible care → continuity, trust, enabling for clients

Potential applicability considerations:

Existing infrastructure of health and social care services.

Resources for training etc.</td>
</tr>
<tr>
<td>Scragg 2006

Country: UK

<table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator:</td></tr></table></td>
<td>Data collection method: Survey, interviews, focus groups

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/</td>
<td>Summary of results:

60% of staff understood the new structure, effectiveness of communication was reported to be uneven. 43% reported greater clarity in roles and responsibilities. Responses regarding opportunities for closer working were balanced between those who perceived improvement and those how perceived no change. 52% reported morale was unchanged, and 12% that it was worse. The management role was at an early stage with a mixed picture regarding relationships. The area of budgets was yet to be resolved. Social workers had been seconded to the Trust and a range of problems were apparent including employment contracts, access to resources and the perceived value of the social model. Commissioners perceived that the team manager role had not been</td>
</tr>
</table>

Length of follow up:		**Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign**	sufficiently developed. Service users were unable to identify a relationship between their experiences and management arrangements. **Main author conclusions:** Integrated team management was becoming very slowly established, and some professionals still had a detached role. A shared culture was at an early stage with profession still the main grouping. Learning opportunities for team managers were patchy, with considerable demands placed on them. Social work staff had concerns. **Reported associations or causative links:** → **Potential applicability considerations:** None identified
Qualitative	X		
Cross-sectional	X		
Other (specify)			
Sample size: **Population characteristics:**		Health and social care professionals had been brought together into single community teams. It covered all secondary and specialist services provided by the Trust, including working age mental health services, services for older people, learning disabilities service, child and adolescent mental health, substance misuse services and forensic services. Team managers were responsible for the delivery of service, managed staff and workload allocation. Some but not all had budget responsibility. Consultant psychiatrists acted as clinical leader and led the team in clinical matters, each profession had a lead professional to provide clinical supervision and professional development.	
Type of group	Staff, lead clinicians and managers		
Condition			
Sex			
Age			
Other (specify)			
Context: West Sussex had introduced a new structure based on integrated team management in 2003. It had followed a period			

<table>
<tr>
<td>of consultation with stakeholders and staff. The evaluation was carried out in 2004.</td>
<td></td>
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<td>Sheaff 2009

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up:</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size: 231</td>
<td>Data collection method: Qualitative case studies, interviews, content analysis of documents, observation of meetings

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Evercare Case management, comparators were a locally devised model (three sites) and a community matron model (one site). Managers were mainly nurses, in two sites they were social workers. The intervention included structured assessment, arranging and co-ordinating</td>
<td>Summary of results:

GPs varied in their involvement and enthusiasm, the service was perceived to have led to a reduction in GP visits to patients under the service, and medicines were altered in collaboration with the GP. Employment conditions were not altered and case management was a relatively self-contained activity. Care pathways beyond those used by the managers appeared to be unaltered. The service appeared to be regarded as an “add on” rather than part of the infrastructure. Communication between staff was often patchy and managers found it difficult to influence hospital procedures. Patients and carers described having a longer time with the case manager than their GP, and the instant access via telephone. Patient and carer satisfaction was high for both Evercare and the comparator models.

Main author conclusions:

All the sites had implemented the service but there was no evidence of major service reorganisation or savings across the healthcare system. There was a perception that the approach had prevented admissions but admissions did not reduced, potentially due to increased identification of cases. Service users valued the approach with a perception that it increased access to healthcare, improved support and communication with professionals.

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<td>Population characteristics:

<table><tr><td>Type of group</td><td>Patients, carers</td></tr><tr><td>Condition</td><td></td></tr><tr><td>Sex</td><td></td></tr><tr><td>Age</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Context: Nine English PCTs piloting the model, compared to four sites implementing alternative forms of case management 2003-2005. High political profile, received some central financial and managerial support from United Health Europe.</td>
<td>services and took on some roles that had previously been undertaken by other staff such as blood pressure checks. Managers called for support from a variety of health and social care staff.</td>
<td>Reported associations or causative links:

Case management → No impact on system

Potential applicability considerations:

Included range of sites – outer London suburb, inner London area, city centre West of England, industrial towns in the North and South East, rural area. Sites were selected by NHS managers “for practical reasons”. The implementation differed from the USA model in that patients were included who lived in their own homes not just nursing homes. General practices were self-selected apart from one comparator site which invited areas with high admission rates.

The intervention only partially covered the target population in each area.</td>
</tr>
<tr>
<td>Sleeman 2015

Country: UK

<table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr></table></td>
<td>Data collection method: Interviews

Outcome measures:

<table><tr><td>Views and perceptions</td></tr></table></td>
<td>Summary of results:

Benefits:

Single structured record with prompts for care and clarity about what care was being provided.</td>
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</table>

	CBA		**The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** End of life pathways	Consistent, continuous care especially out of hours when it could otherwise be fragmented. Care pathways could be useful for junior staff, to provide guidance, but could also be used too rigidly by them. Potential harms: Susceptible to poor use, no positive responses about patient outcomes, instead, the word "danger" was used. There was therefore a distinction / tension between processes of care (tick-box, documentation) and patient outcomes (thoughtful, individualised care). Change in focus: The documentation was a sign that the focus of care for a patient had changed from active to palliative. This could however present as a binary (dying/not dying) situation. This may give clinicians a reason to switch off or distance themselves from the care. There were concerns that the LCP was not validated, not evidenced based. **Main author conclusions:**
	BA			
	Comparator:			
	Length of follow up:			
	Qualitative	X		
	Cross-sectional			
	Other (specify)			
	Sample size: 25 **Population characteristics:**			
	Type of group	HCPs		
	Condition	End of life		
	Sex			
	Age			
	Other (specify)			

<table>
<tr>
<td>Context: South London hospital.</td>
<td></td>
<td>HCPs using the LCP or similar may lose sight of the ultimate goal for patients: a good death.

Reported associations or causative links:

Pathways → can lead to tick-box care

Potential applicability considerations:

Infrastructure, experience of staff.</td>
</tr>
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<td>Smith 2013

Country: UK

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
<tr><td colspan="2">Length of follow up: 24 months</td></tr>
<tr><td>Qualitative</td><td>X</td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>Data collection method:

Quality of life questionnaires and workshop / focus group / interviews at baseline and 6-8 months later.

Outcome measures:

Experiences of providing and receiving POPP

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign</td>
<td>Summary of results:

Challenges of the model related to inter-professional / partnership working issues. Members of staff employed by different agencies were expected to work as a team. There were issues with supervision and the voluntary sector as employers of CPT staff. There were disagreements about ways of working and responsibilities. The voluntary sector exhibited an open door policy for clients whilst other agencies were more restrictive. Voluntary organisations were expected to tender for services which created competition and division for NNs.

Positive aspects were that the public sector (regarded as more bureaucratic) learned from the voluntary sector (more client-centred). Commitment of all involved encouraged an appreciation of interdependency. The importance of providing those little things that older people need such as information to connect them with a mobile library. The Community Link Worker and Community Engagement Worker roles were regarded as key to connecting individuals with services (“eyes and ears on the ground”). It took some time for these two roles to be distinguished from each other (CLWs dealt with individuals and CEWs with groups) and situated within the model.</td>
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</table>

Sample size:

93 (21) questionnaires at baseline (follow-up)

Six workshops and follow up group interviews with CPT members and five with Community Engagement staff.

44 (16) interviews at baseline (follow-up) with POPP users

29 (15) interviews at baseline (follow-up) with NN members

12 (11) interviews at baseline (follow-up) with stakeholders

Population characteristics:

Type of group	Stakeholders, CPT and NN members, older people.
Condition	Older people
Sex	N/A
Age	N/A

Partnerships for Older People Projects (POPP) – whole system, cross sectoral (includes health, social and voluntary sectors).

Community Partnership Team (CPT) offer one-stop advice and support as well as access to services.

Neighbourhood Network (NN) brings services together at neighbourhood level

Most confusion came about due to time taken to enrol people for these roles and therefore dual roles being taken on for a while.

Although some roles were regarded as "new" they were also seen as re-introducing services that had been pushed out due to previous reconfigurations (such as tightening criteria for access to services). Findings emphasise the important role of the voluntary sector, though these roles are similar to previous statutory sector roles.

Main author conclusions:

Responses to increased demands in caring for older people (due to the increase in this population) have been to specialise services. The emphasis on community rather than hospital services has increased demand for direct health care at home, with an impact on broader service provision. Funding for voluntary provision to oversee the wellbeing of older people has reduced, resulting in more isolation.

Pre-existing connections to the community network by involved groups was a key to the success of POPP, combining individual and collective responses to cater holistically for older people's needs. Despite early issues because of over-ambitious aims, the whole-system approach appears to have benefitted the needs of older people. Voluntary sector involvement in such support looks like increasing to meet the needs that the statutory sector cannot fulfil.

Reported associations or causative links:

Combining ethos of voluntary and statutory sectors → Shared learning

	Other (specify) | **N/A** **Context:** Local neighbourhoods		Bottom up holistic care **Potential applicability considerations:** Short term pilot study; not certain about maintenance. Heavily reliant on voluntary organisation involvement.
	Stuart 2014 **Country: UK** **RCT** | **Non-RCT** | **CBA** | **BA** | **Comparator:** **Length of follow up:** **Qualitative** | X **Cross-sectional** | **Other (specify)** |	**Data collection method:** Action research approach using an autoethnography diary **Outcome measures:** Researcher perceptions **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** An interprofessional group providing services. Mentions education, health,	**Summary of results:** While on the surface there appeared to be lengthy and pleasant debate but negligible output from meetings and there was an undercurrent of professional mistrust and criticism. Difference between espoused practice and real practice. Divided the data into sayings, doings and relatings. The poor relationships and lack of trust led to collective inertia. Some members "played at getting on" but were critical of the team and other individuals. Poor interpersonal relationships led to covert conversations and a breakdown of open communication. Professional identities were a considerable challenge with an apparent privileging of one professional discourse over another. The privileging did not seem to relate to type of profession but related to how much influence the professions had in their organisations. There was an expectation that team members needed to lead within their own and across organisations, with lack of leadership creating tensions and questioning of legitimacy, organisational boundaries creating obstacles and individuals not having required skill sets or power/agency to enact change. **Main author conclusions:** Trust and relationships are central to effective multidisciplinary team functioning. Boundary spanning individuals need not only experience

<table>
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<td>Sample size: Unclear

Population characteristics:
<table><tr><td>Type of group</td><td>Staff</td></tr><tr><td>Condition/ department</td><td>Children’s services</td></tr><tr><td>Sex</td><td>nr</td></tr><tr><td>Age</td><td>nr</td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Context: staff had worked together in the team for one year. No details regarding the location of team or the clients.</td>
<td>social work and justice professionals but unclear who exactly formed the team.</td>
<td>and an adequate skill set, but a legitimate source of power in their own and other organisations, and agency in order to gain advantage from collaborative working.

Reported associations or causative links:

Trust and relationships → Integrated working

Potential applicability consideration: None identified</td>
</tr>
</table>

Syson 2010

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 20 users completed survey, staff participants unclear

Population characteristics:

Data collection method: Interviews and focus groups, patients and staff survey

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Integrated health and social care team established. Served one GP-registered population, single office refurbished, access to multiple ICT systems set up and staff development put in place. The team comprised team manager, district nurses, social workers, occupational therapist, assistant practitioners, customer care assistants.

Summary of results:

Very limited data presented. There was a perception that the waiting time for allocation to a social worker had reduced, reduced mileage claims, single assessment process perceived to have improved efficiency but no perceptible impact on hospital admissions. User perceptions positive in regard to care received and needs being met. Co-location and proximity described as a key element of team working. Initially wariness and friction reported over professional boundaries initially but commitment to taking over some of others roles. Need for forging a new integrated team identity. Initial IT and accommodation issues had been overcome, training however, was not felt to have met their needs.

Main author conclusions:

There were perceptions of greater co-ordination of services.

Reported associations or causative links:

Co-location → Improved joint working

Joint working → Improved care co-ordination

Potential applicability considerations:

Largely deprived area

<table><tr><td>**Type of group**</td><td>Staff</td></tr><tr><td>**Condition/ department**</td><td>Older people and vulnerable adults</td></tr><tr><td>**Sex**</td><td>nr</td></tr><tr><td>**Age**</td><td>nr</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Salford, population 218000, 15th most deprived local authority in the country but pockets of affluence. Long history of partnership working.		

Thiel 2013

Country: UK

RCT	
Non-RCT	
CBA	
BA	X (limited data)
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size:

Population characteristics:

Type of group	Older adults

Data collection method: Interviews, observation, analysis of documents.

Outcome measures:

Views and perceptions
Limited data on length of stay, admissions, waiting times

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Three community teams based in the emergency department of the general hospital – joint discharge team, multi-agency support team, acute response team. Care co-ordinator assigned, grading of three levels of risk, assigns tasks to team members and specialist staff. Weekly meetings to discuss cases. Teams do not have a dedicated budget.

Summary of results: Limited data provided much of the report describes the setting up and characteristics of the initiative.

Comparing 2012 to 2013 admissions for chronic heart disease reduced by around 24% (data taken from chart so not precise), admission rates for COPD and diabetes fluctuated, but returned to the baseline level after one year.

Average length of stay for patients reduced for two of the three conditions: COPD 5.8 days at baseline and 5.1 days at one year; CHD 4.1 days at baseline to 4.4 days at one year; and diabetes 5.1 days to 4.8 days.

There was a reduction in waiting times for assessment (no other details) from up to three weeks to a maximum of four days.

Patient and carers reported an increase in or restoration of confidence and independence following the team involvement.

Limited qualitative data describe staff increasing working hours to meet patient needs and a lack of understanding from secondary services. Also productive and supportive working relationships. The lines of communication between management and practitioners could be improved. Co-location made communication easier and in-person communication was described as being far easier than using the slow and cumbersome IT system. GP engagement was problematic with time constraints and a lack of incentives for involvement. There was some perceived uncertainty regarding the authority of the care co-ordinator. Involvement of the voluntary sector a key aspect.

Main author conclusions:

<table><tr><td>**Condition**</td><td></td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Pembrokeshire, part of a research project by the Kings Fund and funded by Aetna and the Aetna Foundation in the USA as one of five successful models in the UK. Integrated social and healthcare management structure, dedicated project manager. Joint head of health and social services holds organisational and managerial accountability. Project board provides strategic overview. Management structures integrated in 2010. Recurring investment by the Welsh government.	Pioneer team – inspired by the North Devon model.	Key lessons were: voluntary sector involvement; clear patient targeting strategies; co-operation with acute care with a joint vision and shared understanding; a culture of learning and improvement; understanding and appreciating the roles of others; key performance indicators should be introduced. **Reported associations or causative links:**  **Potential applicability considerations:** None

Tucker 2013

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 48 hospitals

Population characteristics:

Type of group	Community hospital staff
Condition	Range

Data collection method: Questionnaires used the 7S Framework (Shared ethos, skills, style, staff, structure, strategy) for analysis.

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Integrated care in community hospitals

Summary of results:

92% of services showed evidence of multidisciplinary working. Staff cited trust, transferable learning and communication through regular meetings as facilitators.

Vertical integration with secondary care was reported in 77% of services and was evident in all diagnostic, maternity, palliative care and long term condition services as well as most emergency and intermediate care services.

Integration with patient groups was reported in 69% of services.

Horizontal integration with primary care was reported in 65% of services, particularly palliative care and emergency services (e.g. the MIU formed close links with local GPs).

The community was reported to be proactively involved in promoting 52% of services, especially through fundraising and volunteering.

Joint working with the third sector was reported in 42% of services and integrated health and social care in 29%, in particular intermediate and long term condition services.

19% of services involved LA services such as housing and leisure

Integrated services were more highly correlated with integrated care pathways such as long term conditions than for episodic care such as emergency services.

Main author conclusions:

The strongest cited positive factors reported were shared ethos and commitment. Skills came next which was manifested through

Sex NR **Age** NR **Other (specify)** **Context:** Community hospitals		education and training. A facilitating style of management was one that encouraged innovation. The least facilitating factor was staff – insufficient staffing was a hindrance. Community hospitals have been described as networked and this study shows integrated working associated with a wide range of services. **Reported associations or causative links:** Positive elements of integration (7S) → More integration of services **Potential applicability considerations:** Infrastructure around community hospitals, commitment to integrated services.
Waterson 2012 **Country: UK** **RCT** **Non-RCT** **CBA** **BA** **Comparator:** **Length of follow up:**	**Data collection method:** Mapping IT pathways Attending meetings Semi-structured interviews Action research workshops **Outcome measures:** Views and perceptions **Theory:** Not reported	**Summary of results:** In practice the FEP co-ordinator contacts the Community Matron or Integrated Care Team (ICT) nurse to inform of a patient that could benefit from a visit. The assessing nurse uses technology ("FUSION") to access existing information on the patient. Often the system has a lot of information to examine on previous admissions ("jigsaw puzzle"). The Community Matron was faxed by A&E whenever a "frequent flyer" patient on her caseload was admitted. Often the Matron could intervene and avoid an admission. For the co-ordinator, the creation of a rapid response team threw up challenges:

3 years	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 40

Population characteristics:

Type of group	ICT and FEP teams
Condition	Frail elderly
Sex	
Age	
Other (specify)	

Context: Two NHS Trusts (Northants and Walsall).

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

The Frail elderly Pathway (FEP) began in 2010. Integrating nurse services in A&E discharge with hospital, ICT and Community Matrons in order to avoid hospital admissions. Community Matrons identified older patients through GP etc. who might be at risk of admission. Where possible an alternate pathway and care plan was developed. They also visited A&E and admitting wards to try and intercept arrange early discharge. They worked with co-ordinators for the FEP.

A rapid response team was also set up to reach patients before they were sent to hospital and a Single Assessment Process (SAP) consisting of the patient's HCP contact list allowed the team of carers attending the patient to record visits in

a) A larger team to co-ordinate

b) Shorter, faster throughput of more patients

c) Need for fast response during rapid response phase

As a result some staff felt they couldn't cope and were afraid that they may miss elements of the patient's care. A call for an electronic whiteboard at A&E to keep up with patient pathways. Documentation took time which added to the pressure of faster working with a larger patient caseload. There was hope for communication by mobile ("on the road") but the technology was not yet available. Some used laptops for this (though these could be heavy to transport) or computers in some clinics ("you know how to get around").

Communication with social care services was more successful where care managers were part of the ICT and documentation could be shared on the SAP. Otherwise social care was more distantly managed and information difficult to share. Because social care records are held on the "Paris" system there was a recognised need to share information between "FUSION" and "Paris" systems. There was some reported progress in this direction.

Main author conclusions:

Whilst there is recognised benefit from sharing information across care boundaries within the NHS the entire FEP could not share information. The e-health landscape is evolving and a result of several forces:

a) "Top-down" national IT initiatives

	one document (with a carbon copy taken back to the office and added to the IT patient record).	b) Local Trust priorities c) "Bottom-up" pressures through growing awareness d) Local policies and flexible strategies that can cope with growing demands **Reported associations or causative links:** Recognised need for information → Evolving IT system theories Increasing rapid response Challenges for co-ordination **Potential applicability considerations:** Integrated strategies that use information sharing are dependent on national / local IT infra-structure.
Wilson 2007 **Country: UK** **RCT** **Non-RCT** **CBA** **BA** **Comparator:**	**Data collection method:** Meetings transcripts; field work; document analysis, participant observation of meetings; participation in awareness raising events; document analysis. **Outcome measures:** Views and perceptions **The intervention:**	**Summary of results:** Challenges of local authority / NHS cross boundary working. Need for champions to oversee and motivate. ''*You would never do it if you did not have project champions*''. Pilots successful in maintaining relationships but not in engaging front line staff. Some reticence among staff to use NHS IT because of the time required to enter information. Referrals from third parties were taken to the patient for consent to share personal information across boundaries. **Main author conclusions:** In the UK, integrated care has moved from a multi-agency, single service, single locality model to the provision of re-usable tools for assessment. Challenges have been addressed by broadening to

Length of follow up: **Qualitative** X **Cross-sectional** **Other (specify)** **Sample size: NR** **Population characteristics:** **Type of group** Older adults **Condition** NA **Sex** NA **Age** NA **Other (specify)** NA **Context:** NHS, Local Authority co-working. IT system development.	**Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Framework for Multi-agency Environments (FAME) and Single Assessment Process (SAP) pilots: Electronic assessment tools to improve how older people are assessed for health, social and housing needs.	"whole system integration". Using the jigsaw metaphor the authors conclude that integration is less like a puzzle that has a definite solution and more like bricolage; the system consists of a range of elements that may not fit neatly together but need to be understood and potentially adapted to enhance the fit. **Reported associations or causative links:** Understanding individual elements → Enhance integration of care **Potential applicability considerations:** Historical context – the study was carried out at a time when NHS IT was a potential way of better integrating services by sharing information. However almost 10 years later the IT project has not lived up to its expectations, and a system through which different care agencies can share information is still being developed.

Wistow et al. 2015

Country: UK

RCT	
Non-RCT	
CBA	
BA	
Comparator:	
Length of follow up:	
Qualitative	X
Cross-sectional	
Other (specify)	

Sample size: 73 interviews, 120 hours of meetings

Population characteristics:

Data collection method: Document analysis, observation, interviews, workshops, focus groups, survey of steering committee members and GPs

Outcome measures:

Views and perceptions

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Loc7ation-focused/ General service redesign

North West London Whole Systems Integrated Care programme. Follow on from the North West London integrated care pilots.

Programme aims to improve quality of life and empower and support people to maintain independence. Programme developed by a co-design process. Nine

Summary of results:

Programme was a year behind planned timescale and at just over one year had not delivered significant change.

National barriers slowed progress including difficulties obtaining data-sharing agreements, and clarifying and establishing the necessary information governance arrangements; separate payment systems and governance structures between sectors; and organisational fragmentation.

The programme was led by NHS commissioners tended to reflect their agendas and interests.

Transparent and robust governance and accountability arrangements are required to accompany accountable care partnerships.

There is a need to ensure that there is a balance between central and local support and resources, and that the complexities of the approach do not outweigh its advantages.

There was some confusion regarding how the programme aligned with wider health and social care plans. While aiming to be at a whole system level most of the services operated at the boundary of hospital and the community.

The programme was perceived to have clear leadership, management and governance structures. Relative absence of frontline staff in co-design. Some GPs highly committed whereas other had a sense of detachment. Only 30% of those surveyed perceived that GPs had been extremely or very involved in the programme. 50% of GPs reported that they had not been involved. There were concerns

<table><tr><td>**Type of group**</td><td>Staff – managers and professional staff</td></tr><tr><td>**Condition**</td><td>Most targeted people over 65 or 75 with one or two long term conditions</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Population of over 2 million. Largest of the 14 integrated care pioneers launched in 2013. Evaluation of the first 14 months. Programme well-resourced with pooled budgets of the North West London Collaboration of Clinical Commissioning Groups. The eight commissioning groups, eight local authorities and the NHS area services including a Foundation Trust, four	sites were early adopters, most included multi-disciplinary teams, also self-management and care plans, in addition a virtual ward, care-co-ordinator, home care team, use of wellbeing mapping, integrated GP hubs.	whether social service involvement could be sustained due to financial constraints. Information sharing was a barrier to progress with challenges securing agreements for sharing data and ensuring operability between systems. The initial co-design phase attracted enthusiasm and succeeded in producing outputs roughly to time and, extended working relationships and demonstrated the value of involvement of lay partners. **Main author conclusions:** The early energy and pace that goes into the design and planning phases of large-scale change, is often followed by struggles and delays with implementation. **Reported associations or causative links:** Challenges in implementation → Change initiatives **Potential applicability considerations:** Significant resourcing enabled significant investment in co-design and planning before the pilot schemes. Significant variations in deprivation and population health status across the area.

Community Healthcare services and Mental Health Trusts pooled their 2.5% transformation budgets to pay for the programme.		

Alexander 2012

Country: USA

Systematic review	X
Realist review	
Meta-analysis	
Other (specify)	

Population inclusion criteria:

Type of group	Any
Condition	Any
Sex	Either
Age	Any
Other (specify)	N/A

Years included: Not reported

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Patient centred medical home (PCMH)

Study design inclusion: Quantitative or qualitative evaluations

Comparator: Not reported

Outcomes of interest:

Based on interest in patient access to appropriate care at appropriate time:

Access to care
Service utilisation
Quality; patient satisfaction
Multiple outcomes

Summary of results:

18 studies examined access to care, mainly medical homes for children Access was less likely in those medically uninsured, more serious conditions, non-white and lower income families, particularly the combination of low income and no insurance.

Findings supported greater use of appropriate (and less use of inappropriate services) for PCMH patients relative to comparators (adult and paediatric).

Three evaluations examined PCMH and patient satisfaction and seven PMCH and quality (mostly cross-sectional). Positive aspects reported included care and interactions. Less positive aspects were referral co-ordination, connection to external resources, waiting times and cultural sensitivity. Satisfaction was lower for more serious conditions and parents of older children. Findings relating to quality were mixed with half reporting positive findings and half no association.

11 studies evaluated multiple outcomes (holistic care) using longitudinal, experimental / quasi-experimental designs. Generally, PCMH is associated with higher / improved outcomes compared to non-PCMH across age groups. Most of these studies also reported higher patient satisfaction.

Main author conclusions:

<table>
<tr>
<td>Countries included: Not reported but PCMH piloted in the US.</td>
<td>Number of studies included: 61</td>
<td>PCMH can improve patient outcomes and satisfaction. Results for quality are mixed. Certain patient characteristics make access to PCMH less likely. Caution is required interpreting results as a number of studies use cross-sectional designs.

Potential applicability considerations:

Many included studies had small samples of primary care practices, mainly demonstration sites. Context also differs between practices which, using this model, engage with an array of external services. Short duration of studies limits the usefulness of findings in terms of sustainability.</td>
</tr>
<tr>
<td>Allen 2008 (Section of larger review – Allen 2009)

Country: Wales, UK

<table>
<tr><td>Systematic review</td><td>X</td></tr>
<tr><td>Realist review</td><td></td></tr>
<tr><td>Meta-analysis</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Population inclusion criteria:

<table>
<tr><td>Type of group</td><td>Adult patients accessing ICP</td></tr>
</table>
</td>
<td>Years included: 1980 - 2006

Intervention inclusion: Link between ICP and service integration

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Study design inclusion: RCTs, quasi-experimental, qualitative and economic

Comparator: Any, where available

Outcomes of interest:

<table>
<tr><td>Effects on service integration</td></tr>
</table>
</td>
<td>Summary of results:

All included studies had methodological challenges. ICPs can improve access to clinical assessments / interventions, though it could be that improved documentation (of rehabilitation aims, communication with patients and carers and discharge notification) are actually being reflected. Improved documentation carries the burden of increased workload. ICPs may be effective in mobilising hospital resources for patients (length of stay has reduced but not necessarily due to ICP). ICPs associated with reduced urinary tract infections but it is unclear whether this is due to service integration. ICP may not be flexible enough for diverse needs. ICP can assist in clarifying role boundaries, though possibly at the expense of certain roles not featuring in documentation. Positive effects of ICP on professional behaviours can be limited. It is unclear what the effective aspects of ICP are. There was no evidence on costs and benefits of ICP.</td>
</tr>
</table>

	Condition Stroke **Sex** Either **Age** Adult **Other (specify)** N/A **Countries included:** Any	**Number of studies included:** Five (seven papers)	**Main author conclusions:** Some evidence that ICP may support some elements of service integration for stroke care, particularly in acute care which is more predictable. **Potential applicability considerations:** Flexibility of ICP to meet diverse needs.
Allen 2009 (same study as Allen 2008 but includes broader range of conditions and only RCTs) **Country:** UK **Systematic review** X **Realist review** **Meta-analysis** **Other (specify)** **Population inclusion criteria:**	**Years included:** 1980 - 2008 **Intervention inclusion:** ICP **Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** **Study design inclusion:** RCTs **Comparator:** Any, where available **Outcomes of interest:** System, process and clinical (defined by included studies)	**Summary of results:** Positive: For predictable trajectories ICP can support proactive care management and ensure assessments and interventions are timely, meaning that efficiency and care quality are improved. ICPs can also enhance adherence to guidance leading to better consistency of care. There was evidence for improved documentation and agreement between clinicians about treatment. When ICPs include a decision aid, decision making can be enhanced. Where improvement is required, ICPs can change practitioner behaviour; ICPs can help direct professional practice even where a pathway already existed. Negative: ICPs are less effective where trajectories are less predictable or where best evidence-based practice and MDT working is already being carried out. The benefits of ICP can vary across subgroups

<table><tr><td>**Type of group**</td><td>Adults and children accessing ICP</td></tr><tr><td>**Condition**</td><td>Any</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td>Any</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Countries included:** Any	**Number of studies included:** Seven (reported in nine papers).	of patients. ICPs may need supporting mechanisms to ensure their adoption. ICP documentation can lead to new kinds of error being introduced. **Main author conclusions:** ICPs are a classic example of complex intervention, where the effective component(s) are difficult to define. The included studies did not provide this information. **Potential applicability considerations:** ICP effectiveness varies across patient subgroups and strengthens when the care trajectory is less predictable and where deficiencies in services have been identified.
Beland 2011 **Country:** Canada <table><tr><td>**Systematic review**</td><td>X</td></tr><tr><td>**Realist review**</td><td></td></tr><tr><td>**Meta-analysis**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Population inclusion criteria:**	**Years included:** 1997-2010 **Intervention inclusion:** **Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** **Study design inclusion:** Robust evaluations	**Summary of results:** Models were clustered into two groups: *Small community based* PACE (Program of All-Inclusive Care of the Elderly): Full range of community resources funded on capitation (incentive to reduce costs by delivering care in community) based in Day Care Unit. Compared with The Wisconsin Partnership Programme (WPP) it showed lower admissions, hospital days, length of stay and emergency attendances. SIPA (System of Integrated Care for Older Persons): Canadian variation of PACE, based in community centre. RCT found SIPA to be cost neutral but it decreased the use of all hospital based

<table><tr><td>**Type of group**</td><td>Elderly patients</td></tr><tr><td>**Condition**</td><td>Frailty</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td>Elderly</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Countries included:** Any	**Comparator:** Usual care or a different model. **Outcomes of interest:** <table><tr><td>Hospital / ED / Nursing home admissions, length of stay.</td></tr><tr><td>Costs.</td></tr></table> **Number of studies included:** 9	services but mainly acute beds that can become blocked, as well as nursing home beds. PRISMA (Programme of Reach to Integrate the Services for Maintenance of Autonomy). Existing services are voluntarily co-ordinated with collaboration from senior researchers. A nRCT showed (statistically significant) less functional decline compared to control, at 12 and 24 months. Reduced costs were implied due to reduced utilisation of services from less functional decline. Illawarra: Australian model of co-ordinated care by one stand-alone agency having its own funding based on expected health care costs. However there was an increase (x2 compared to control) of people admitted to nursing homes and a deficit in the budget attributed to the cost of care co-ordinators. High Intensity Case Management: Clinical nurse Case Manager and Geriatrician co-ordinated care and case management to integrate acute and long term care. An RCT showed no significant difference in hospital admissions, length of stay or expenditure at 18 months compared to control (though intervention accrued more costs at 6 months this levelled out). Rovereto: Based on a shared care model, RCT showed later hospital admissions, significantly less ED visits, and less stay in acute or long term facilities as well as reduced costs than for the control. Hong Kong: Case management and home care. RCT showed significantly reduced hospital stay and cost savings at 6 months compared to control.

		Larger, state based models British Columbia: Wide range of services provided under one umbrella. In patients with lower care needs this was shown to be cost-effective as it reduced the number of admissions. Arizona: State funded care for older people (who were means tested) with complex needs. This had run for a while until extended to Arizona Long Term Care System (ALTCS) which couldn't be trialled. From computer simulation it was estimated that over 270,000 nursing home days were avoided with associated reduced costs. **Main author conclusions:** It is difficult to determine what mechanisms lead to positive outcomes but two ingredients in the smaller community models may be the cooperation between care organisations and successful implementation of integration between health and social care at clinical level. Capitation funding (as in PACE) and system overview (as in PRISMA) could enhance adherence with system level requirements and assist in issues being resolved as they come up. Community models are easier to set up as they do not require changes to legislation. However, Large, state models have one source of funding and single authority to administer the policy. There is direct control over a wide range of services and standardisation of which patients receive which type of care, leading to continuity of care across regions. Whilst the models were different they were all based on the principles of integrated care. To consider is how this can best be implemented across a range of services and organisations.

<table>
<tr><td></td><td></td><td>Potential applicability considerations:

Types of services and organisations that are being integrated.</td></tr>
<tr><td>Belanger 2008

Country: Canada

<table>
<tr><td>Systematic review</td><td></td></tr>
<tr><td>Realist review</td><td></td></tr>
<tr><td>Meta-analysis</td><td></td></tr>
<tr><td>Other (specify)</td><td>Qualitative synthesis</td></tr>
</table>

Population inclusion criteria:

<table>
<tr><td>Type of group</td><td>HCPs</td></tr>
<tr><td>Condition</td><td>Primary care</td></tr>
<tr><td>Sex</td><td></td></tr>
<tr><td>Age</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td><td>Years included: 2001 to 2008

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

MD primary care teams

Study design inclusion:

Using at least one qualitative method

Comparator: N/A

Outcomes of interest:

Organisation of multidisciplinary primary care teams

Number of studies included: 19</td><td>Summary of results:

Strategies for change

Investing time and resources toward team building

Developing local, flexible structures

Developing clear roles and effective communication

Involvement of all HCPs to share control.

Team interactions and work relations

Trust and respect among HCPs

GPs playing central role

Potential challenge around professional identities

New collective identity

Main author conclusions:

Whilst strategies have been identified, there is a need to re-visit and assess the usefulness of these strategies, as contexts change over time. Teams are of interest as it useful to assess whether they are more than the sum of their parts.</td></tr>
</table>

<table>
<tr>
<td>Countries included: Not reported</td>
<td></td>
<td>Potential applicability considerations:

Existing infrastructure, resources and relationships in primary care.</td>
</tr>
<tr>
<td>Best 2012

Country: Canada

<table>
<tr><td>Systematic review</td><td></td></tr>
<tr><td>Realist review</td><td>X</td></tr>
<tr><td>Meta-analysis</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Population inclusion criteria:

<table>
<tr><td>Type of group</td><td>Any</td></tr>
<tr><td>Condition</td><td></td></tr>
<tr><td>Sex</td><td></td></tr>
<tr><td>Age</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>Years included: 2000-2010

Intervention inclusion: Successful transformations.

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Large System Transformation (LST)

Study design inclusion: Any

Comparator: N/A

Outcomes of interest:

<table>
<tr><td>Role of provincial government</td></tr>
<tr><td>Mechanisms of LST in different contexts</td></tr>
<tr><td>Barriers to implementing LST</td></tr>
</table>
</td>
<td>Summary of results:

Five “Simple Rules” of LST were identified which would be applied depending upon the context:

1. Engage individuals at all levels in leading change (designated and distributed). This requires: a). Alignment of goals with available resources and actions across the system. b). Active management of the change strategy. c). Small scale pilot to encourage larger scale adoption. d) Assurance that people will not be penalised for adopting the change.

2. Establish feedback loops using measures that are decided upon by relevant stakeholders. Measures need to be trusted and understood; actors need to be able to change them if unfit for purpose and know that the same measures are being used across the system. There need to be (penalties or) incentives for (not) acting on feedback.

3. Attend to history but with discussion rather than using the past for prediction of the future. Educate leadership about past change efforts and outcomes / relationship to current change. Build on familiar / valued ideas and activities to reduce likelihood of resistance.</td>
</tr>
</table>

<table>
<tr>
<td>Countries included: Any</td>
<td>Options for monitoring and evaluating LST

Number of studies included: 84</td>
<td>4. Engage physicians as they are more likely to have reasons for resistance. Influences on their engagement include: alignment of professional and regulatory drivers; strength of incentives; facilitation and guidance through change process; professional directives and examples.
5. Involve patients and families. This raises awareness of the priorities of patients and families, and including these priorities increases the perceived validity and sense of equity of the change.

Main author conclusions:

There is a need to better understand the political context of transformational change.

Potential applicability considerations:

Political and historical context in which change is being implemented.</td>
</tr>
<tr>
<td>Boult 2009

Country: USA

<table><tr><td>Systematic review</td><td>X</td></tr><tr><td>Realist review</td><td></td></tr><tr><td>Meta-analysis</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table></td>
<td>Years included: 1987-2008

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign</td>
<td>Summary of results:

Fifteen models were identified. O

1. Interdisciplinary Primary Care (1 meta-analysis, 2 reviews 9 RCTs, 3 quasi experimental studies 1 XS time series). Physician plus team of, for example nurses, social workers, rehabilitation therapists in regular communication. Only heart failure studies showed evidence of improved mortality (2 of 14 studies). Other outcomes - lower use (9/12 studies) Lower costs (2/8 studies), higher costs (1/7 studies)</td>
</tr>
</table>

Population inclusion criteria:

Type of group	Elderly patients
Condition	Chronic conditions
Sex	N/A
Age	Older
Other (specify)	

Countries included: USA

Study design inclusion: Systematic review, RCT, nRCT, cross sectional.

Comparator: Usual care

Outcomes of interest:

Successful models (led to increased care quality, QoL or functional autonomy, decreased mortality)

Number of studies included: 123

2. Care or case management 13 studies: Collaborative model usually including nurses/social workers assisting patient and families solve problems and access health care. Lower use (6/10), more use (4/10), lower costs (1/3).
3. Disease Management (DM): Focus on self-management with primary care supplemented by information.
4. Preventive Home Visits: Visits at home by qualified staff.
5. Outpatient Comprehensive Geriatric Assessment (CGA) and
6. Geriatric Evaluation and Management (GEM) 11 studies: Aim to identify all individuals' health conditions and create and implement care plan for all the conditions. Lower use (4/9) more use (3/9), higher costs (1/5)
7. Pharmaceutical Care: Programmes where pharmacists provide medication advice to patients or MDTs have shown greater adherence to medication, improved prescribing, disease specific outcomes and sometimes, survival, use of hospital was reduced in one study.
8. Chronic Disease Self-management (CDSM): Interventions with a time limit. Associated with improved QoL, functional autonomy and efficiency and lower costs of health service use.
9. Proactive rehabilitation: Assessments by rehabilitation therapists. Studies show potential for improved function and remaining at home. Survival outcomes were mixed.

		10. Caregiver Support: Training and support for carers by rehabilitation therapists, psychologists and social workers. Studies show significantly delayed nursing home placement and benefit to QoL but not survival. 11. Transitional care: Aim for smooth, safe and efficient transitions between hospital and other care provision, led by a nurse who oversees the transition. Lower use (2/3), lower costs (3/3) 12. Hospital-at-home (HaH) 6 studies: Care for acute conditions that would usually take place in hospital. Shorter LOS (3/3), lower costs (5/5). 13. Nursing Home: Nurses or assistant physicians who work closely with a physician. Attend the nursing home, assess patients, train staff and communicate with carers. This model can improve quality of care and reduce use of hospitals and ED. 14. Prevention / management of delirium: N/A 15. Comprehensive hospital care: interdisciplinary teams, generally for older patients, can improve health and functional autonomy, lower use (2/8), more use (1/8). **Main author conclusions:** All models included at least one robust study that showed successful outcomes. Several models showed significantly better care than usual care. However, few of the models have been

		adapted widely across the US. "Real world" adoption of such models involves operational and financial complexity as well as having to fit in with existing organisational cultures. There are barriers to scaling up study scale models to wider health systems and in developing collaborations between stakeholders, as well as obtaining technical support. Financial barriers include the differing incentives and disincentives across organisations (where one might save money another will lose money). There is also a dearth of experts available to provide chronic care. Many of the statutes of Medicare do not allow many of the models to be supported, e.g. Medicare does not pay unqualified staff, or staff performing new roles, which form part of many new models. **Potential applicability considerations:** Existing infrastructure of care delivery and financial incentives. Availability of specialised staff. Health care system dictates on payment / accountability where roles are extended or changed.
Cameron 2014a **Country:** UK **Systematic review**: X **Realist review**: **Meta-analysis**: **Other (specify)**:	**Years included:** 2000-2012 **Intervention inclusion: Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Integration of health and social care services	**Summary of results:** *Effectiveness* Most effectiveness studies were descriptive and did not define outcomes relevant to effectiveness. Few were comparative so difficult to ascertain success. The large number of different models made it difficult to compare them. However there were trends toward improved QoL, health, wellbeing and every day coping. In comparative studies there were no significant differences. Studies assessing reductions inappropriate hospital or nursing home admissions reported such reductions. A study of rapid response teams reported that this model resulted in more

Population inclusion criteria:

Type of group	Older patients
Condition	Health and social care /mental health
Sex	
Age	
Other (specify)	

Countries included: UK

Study design inclusion: Any evaluation

Comparator: Any

Outcomes of interest:

Effectiveness
Cost-effectiveness
Patient satisfaction and views

Number of studies included: 30 (46 papers)

patients remaining at home. The general findings are that re-organisation of services does not increase the likelihood of patients living in the community and that the key is for patients to access support at home.

Cost-effectiveness

Similar issues were found in reporting of costs, making it difficult to draw conclusions about single models. There was some evidence that intermediate care can reduce costs, and that hospital admission reduction approaches were less costly and more effective (in improving functional autonomy) than discharge planning services.

Service user views

Views were rarely sought in the included evaluations and where they were, aggregated views were reported and many details of interest were not available. Samples were small and homogenous (e.g. mainly white British) or with diversity not reported.

High rates of satisfaction were reported especially where services were structurally integrated. Valued elements were responsiveness to needs, timely initial assessment, partnership working, trusting relationships with key named workers, improved inter-agency communication, support with interpreting and navigating systems and support to remain independent within the community. These views were mirrored by carers who also valued the support in terms of relieving their own stress of responsibilities.

Linking views to impact

		This was difficult as participants rarely made such links or described services in such detail that inferences could be made about successful components. One study found a statistically significant difference in integrated districts on patient satisfaction. Users felt they were more able to state their aims and were less limited in care choices, were better informed about medication and less negative about family involvement. This could be due to the holistic basis of the integrated model. *Dissatisfactions* Areas that were less positively reported were continuing issues in communication between agencies, particularly around admission to respite or when continuity of care is broken. Some voiced difficulty becoming involved in their care planning or choosing care options. In one study half of participants reported having no written care plan, a shortfall which was taken seriously. **Main author conclusions:** Despite limitations of available evidence there is tentative identification of issues associated with non-integrated services, such as timely assessments and better communication. However, larger scale studies are required to make firmer conclusions. There was scepticism, protectionism and a lack of awareness of the aims and objectives evident in staff that has been reported in previous studies. **Potential applicability considerations:**

<table>
<tr><td></td><td></td><td>Whether integrated services are well established or newly formed. Difficult to comment on individual components as little detail given.</td></tr>
<tr>
<td>Cameron 2014b (same study as Cameron 2014a)

Country: UK

<table>
<tr><td>Systematic review</td><td>X</td></tr>
<tr><td>Realist review</td><td></td></tr>
<tr><td>Meta-analysis</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Population inclusion criteria:

<table>
<tr><td>Type of group</td><td>Adult patients</td></tr>
<tr><td>Condition</td><td>Health and social care</td></tr>
<tr><td>Sex</td><td></td></tr>
<tr><td>Age</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>Years included: 2000-2012

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Models of joint working

Study design inclusion: Evaluations

Comparator: Any

Outcomes of interest:

<table>
<tr><td>Effectiveness</td></tr>
<tr><td></td></tr>
<tr><td></td></tr>
<tr><td></td></tr>
</table>

Number of studies included: 30 (46 papers)</td>
<td>Summary of results: (in addition to above study)

Teams: Covered range of services and organisations. In MH, usually combination of community and health / social care. For older people teams had a range of functions, e.g. rapid response, assessment, care planning, care delivery.

Placement schemes: Staff from one agency are placed with another agency, usually social work laced within health, but also nurses running a day centre or district nurses working with general practitioners to carry out care assessments.

Organisational issues

Aims and objectives: Importance of joint understanding of aims but difficulty developing shared purpose at operational level. Including staff in developing policies and staff training were suggested facilitators.

Roles and responsibilities: Studies showed lack of appreciation of roles regarding referral procedures and eligibility criteria. Having a service level agreement can assist in understanding riles at strategic level.

Flexibility: Having a flexible approach can enhance responsiveness of services in multiagency teams, ensuring needs and preferences of older people are met. Work flexibility was not viewed as positively as role boundaries can become blurred.</td>
</tr>
</table>

Countries included:		*Organisational difference:* At strategic level, visions and leadership agendas can compete and undermine initiatives. At operational level differences in attitudes to risk management between GPs and social workers led to inappropriate referrals to residential care. Differences were also found between health and safety policies. *Communication and information sharing:* Effective communication enhanced joint working, leading to improved outcomes. This was undermined by difficulty sharing information, getting access to information (incompatible IT systems). *Co-location*: Important, allows informal contact, quicker and easier communication and learning across professional boundaries. Sometimes though, it could lead to informality that could undermine professional practice. *Strong management and appropriate support:* Contributed to staff feeling more confident in new role, helped improve understanding of aims and led to improved outcomes for service users. Joint working could be undermined by separate management structures. *Past history of joint working*: Fosters goodwill which can be embraced in new initiatives. *Adequate resources*: For example, to cover sickness and holiday cover for placements. A unified budget to cover joint working was important. Partnership working can increase access for agencies to each other's resources e.g. training.

		Cultural / professional *Different professional philosophies and ideologies:* For example, social work vales might not be respected by health professionals, leading to their lack of appreciation within the team. Different attitudes to risk could impact outcomes. *Trust, respect, control*: Professionals sometimes lack trust in assessments made by others. Professionals may seek support from members of their own profession rather than the team lead. *Team building, meetings, training:* Fosters professional understanding and overcomes differences, builds trust and rapport. Meetings build a common sense of purpose and a platform to share information. Training was requested to assist in filling knowledge gaps. *Contextual* *Relationships, re-organisations:* Drive to reform health and social care added complexity of new development. *Financial uncertainty:* Lack of designated funding or underfunding could undermine initiatives. **Main author conclusions:** Direction of travel is that integration can improve outcomes but more robust research is needed. **Potential applicability considerations:** Whether integrated services are well established and trust / rapport is developed.

Davies 2011

Country: UK

Systematic review	X
Realist review	
Meta-analysis	
Other (specify)	

Population inclusion criteria:

Type of group	Elderly, staff healthcare staff, residents, relatives
Condition	
Sex	
Age	
Other (specify)	In residential or nursing homes

Countries included: English Language

Years included: Up to 2009

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Interventions to develop, promote or facilitate integrated working between care homes and nursing staff or nursing staff and health care practitioners. Many used MDTs, three studies included the use of integrated care pathways.

Study design inclusion: Included an element of evaluation (10 quantitative including four RCTs, three qualitative).

Comparator: Any

Outcomes of interest:

Any

Summary of results:

The majority of studies indicated mixed effects or no effect when compared with another outcome, and no effect when compared with a control group. There was insufficient data regarding cost outcomes. There was considerable variation in the way that staff worked together for example weekly or monthly meetings. Most studies showed closer collaboration at the clinician level, with five studies showing greater complexity or more complete integration at funding or organisational level. Three studies evaluated MDTs and two of these found a reduction in unnecessary hospitalisation. Studies describing higher levels of integration tended to provide staff with ongoing support or training, rather than at periodic intervals.

Recurring themes: care home access to services and the different working cultures of care home staff and health care professionals acted as barriers and facilitators. Care home staff identified a lack of support from health care professionals and a failure to recognise their knowledge and skills, with negative perceptions of other staff groupings on each side. High staff turnover and access to training in care homes was challenging.

Main author conclusions:

For integrated working to be successful, formal structures may need to be in place for health service delivery and organisation of care for care homes. There is limited evidence regarding the outcomes of different approaches. Barriers to integrated working included a failure to acknowledge the expertise of care home staff, their lack of access to health care services, as well as high care home staff turnover and limited availability of training.

<table>
<tr>
<td></td>
<td>Number of studies included: 17</td>
<td>Facilitators to integrated working were the care home manager’s support for the intervention, protected time and the inclusion of all levels of care home staff for training and support by health care professionals.

Potential applicability considerations: Nine studies from UK, five Australia, two USA, one Sweden.</td>
</tr>
<tr>
<td>De Bruin et al. 2012

Country: Netherlands

<table>
<tr><td>Systematic review</td><td>X</td></tr>
<tr><td>Realist review</td><td></td></tr>
<tr><td>Meta-analysis</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Population inclusion criteria:
<table>
<tr><td>Type of group</td><td>Patients and carers</td></tr>
<tr><td>Condition</td><td>Multiple chronic conditions</td></tr>
</table>
</td>
<td>Years included: 1995 to 2011

Intervention inclusion:
Comprehensive care programmes including interventions related to at least two components of the Chronic Care Model (CCM)

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Study design inclusion: Intervention study evaluating the impact of a comprehensive care programme</td>
<td>Summary of results: Intervention programmes varied in target patient groups, settings, number of interventions and number of CCM components. Moderate evidence was found that comprehensive care can improve inpatient healthcare utilisation and healthcare costs, patients’ health behaviour, perceived quality of care and patient and carer satisfaction. There was insufficient evidence for mental functioning, medication use and outpatient healthcare utilisation and costs. No evidence was found for a range of other outcomes.

Main author conclusions: Heterogeneity of comprehensive care programmes makes it difficult to draw firm conclusions about their effectiveness

Potential applicability considerations: Authors stated that diversity in terms of patient groups, intervention design and</td>
</tr>
</table>

<table><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Countries included:** USA; Canada; Australia; Netherlands; UK; Norway	**Comparator:** Usual care **Outcomes of interest:** <table><tr><td>Not specified (authors described outcomes reported in included studies)</td></tr><tr><td></td></tr></table> **Number of studies included:** 33 (42 publications)	setting makes it difficult to identify under what circumstances comprehensive care programmes may be most effective.
Eklund et al. 2009 **Country: Sweden** <table><tr><td>**Systematic review**</td><td>X</td></tr><tr><td>**Realist review**</td><td></td></tr><tr><td>**Meta-analysis**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Population inclusion criteria:** <table><tr><td>**Type of group**</td><td>Patients and carers</td></tr></table>	**Years included:** 1997 to 2007 **Intervention inclusion:** Integrated intervention including case management or equivalent co-ordinated organisation **Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** **Study design inclusion:** RCTs **Comparator:** Not specified	**Summary of results:** Overall, seven studies reported at least one outcome significantly in favour of the intervention, one found no difference and one favoured the control. Five studies reported at least one patient outcome favouring the intervention. Two studies reported carer outcomes, both favouring the intervention for carer satisfaction but with no effect on carer burden. Outcomes related to healthcare utilisation significantly favoured the intervention in five studies. . **Main author conclusions:** There is some evidence that integrated and co-ordinated care is beneficial for frail elderly people and can reduce healthcare resource use. Evidence about effects on carers is more limited. Researchers should use valid

<table>
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<table>
<tr><td>Condition</td><td>Frail elderly people living in the community</td></tr>
<tr><td>Sex</td><td></td></tr>
<tr><td>Age</td><td>≥65 years</td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
Countries included: Italy; USA; Canada
</td>
<td>
Outcomes of interest:
<table>
<tr><td>Patient and carer outcomes</td></tr>
<tr><td>Healthcare utilisation</td></tr>
</table>
Number of studies included: 9
</td>
<td>outcome measurements and describe both the content and implementation of the intervention.

Potential applicability considerations: Studies with positive results came from all three countries , suggesting that integrated interventions can be successful in different healthcare systems</td>
</tr>
<tr>
<td>
Footman et al 2014

Country: UK
<table>
<tr><td>Systematic review</td><td></td></tr>
<tr><td>Realist review</td><td></td></tr>
<tr><td>Meta-analysis</td><td></td></tr>
<tr><td>Other (specify)</td><td>Review of systematic reviews</td></tr>
</table>
</td>
<td>
Years included: Inception to March 2013

Intervention inclusion: General health system financing, funding allocations,

direct purchasing arrangements, organisation of service provision and health service

integration

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-</td>
<td>Summary of results: Evidence on financial incentives to providers was inconclusive. Five low quality systematic reviews examined changes to organisation of service provision; three reviewed commissioning, general practice fundholding and internal markets, one reviewed privatisation and one reviewed competition. Findings

suggested that structural changes, such as the creation of new purchasing organisations, had very little impact on patients or frontline providers, and any changes were short-lived. In contrast, six reviews of integrated care found some evidence of benefit to quality of patient care from interventions including multidisciplinary teams, case management and provision of primary care in or alongside emergency departments.</td>
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<table>
<tr>
<td>Population inclusion criteria:

<table><tr><td>Type of group</td><td>Patients</td></tr><tr><td>Condition</td><td>Any</td></tr><tr><td>Sex</td><td>Any</td></tr><tr><td>Age</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Countries included: High-income countries, details not reported</td>
<td>focused/ Location-focused/ General service redesign

Study design inclusion: Systematic reviews

Comparator: Not specified

Outcomes of interest:

<table><tr><td>Professional performance</td></tr><tr><td>Efficient treatment and care</td></tr><tr><td>Clinical outcomes</td></tr><tr><td>Person-centred and holistic care</td></tr><tr><td>Patient satisfaction</td></tr></table>
Number of studies included: 19</td>
<td>Main author conclusions: Introduction of markets and competition into health care systems does not improve quality, while most financial and organisational system-level reforms have inconclusive or negative effects. There is some evidence that integration of services can improve care, but outcomes vary according to the type of intervention.

Potential applicability considerations: Authors stated that influence of broader environment and culture on health systems may limit generalisability of findings to different settings. System-level changes in the UK took place alongside other initiatives, making it difficult to identify specific intervention effects</td>
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<td>Genet 2011

Country: Netherlands

<table><tr><td>Systematic review</td><td>X</td></tr><tr><td>Realist review</td><td></td></tr></table></td>
<td>Years included: 1998-2009

Intervention inclusion: Home care

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-</td>
<td>Summary of results:

Over a third of European countries were not represented in the evidence base and evidence was not evenly distributed across the18 countries represented. Most were small scale and lacking sufficient detail to provide a comprehensive account of home care in Europe.</td>
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Meta-analysis	
Other (specify)	

Population inclusion criteria:

Type of group	Patients and home carers
Condition	Range of conditions
Sex	
Age	Mainly elderly
Other (specify)	

Countries included: European (18)
</td>
<td>

focused/ Location-focused/ General service redesign

Study design inclusion: Any

Comparator: Any / none

Outcomes of interest:

What is known about Home Care

Number of studies included: 74
</td>
<td>

Prioritisation of home care differed between countries. General policy of trying to allow people to live at home for as long as possible. Policy tended to vary across nations, as does eligibility criteria, which could be on age, means tests and needs assessment. Quality assessment and regulation were introduced in some countries. Financing information focussed on funding mechanisms and shortages. A range of providers was identified and regulations benefitted traditional and new organisations differently. Informal and formal care arrangements were both represented.

There were also differences within countries with local governments commissioning different types of service. Lack of coordination and service integration were reported, especially between health and social services.

Main author conclusions:

Better understanding requires standardized frameworks to research home care across countries.

Potential applicability considerations:
</td>
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<td>

Homer 2008

Country: USA

Systematic review	X
Realist review	
</td>
<td>

Years included: 1986-2006

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-
</td>
<td>

Summary of results:

Outcomes with most positive results were family centeredness, effectiveness, timeliness, health status, and family functioning.

Generally however, the findings were inconsistent, probably due to variations in defining medical home and in assessing outcomes. Some studies assessed change in primary care and
</td>
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</table>

<table><tr><td>**Meta-analysis**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Population inclusion criteria:** <table><tr><td>**Type of group**</td><td>Children</td></tr><tr><td>**Condition**</td><td>Special care needs</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Countries included:** US only	**focused/ Location-focused/ General service redesign** Medical health care home (mental health related activities) **Study design inclusion:** Quantitative; primary or secondary data. **Comparator:** Any / none **Outcomes of interest:** <table><tr><td>Effectiveness</td></tr><tr><td>Efficiency</td></tr><tr><td>Timeliness</td></tr><tr><td>Family centred</td></tr><tr><td>Family functioning</td></tr><tr><td>Costs</td></tr></table> **Number of studies included:** 33	others more direct intervention such as providing a care coordinator or extending access to services. **Main author conclusions:** Even with limitations (for example the challenge distinguishing the difference between medical home and primary care definitions) the review findings suggest that incorporating at least one element of the medical home strategy can have positive effects more broadly. More mixed methods research needed to identify successful components of medical home care. **Potential applicability considerations:** Range of definitions for “medical home“.
Huntley 2013 **Country: UK** <table><tr><td>**Systematic review**</td><td>X</td></tr><tr><td>**Realist review**</td><td></td></tr></table>	**Years included:** Up to 2010 **Intervention inclusion:** **Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-**	**Summary of results:** Hospital initiated case management reported in six trials - there was no statistically significant reduction in unplanned admissions [relative rate: 0.71 (95% confidence interval, CI: 0.49 to 1.03) p=0.07]. Community initiated case management reported in five studies - none showed a reduction in unplanned admissions. Three were

<table><tr><td>**Meta-analysis**</td><td>X</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Population inclusion criteria:** <table><tr><td>**Type of group**</td><td>Older adults</td></tr><tr><td>**Condition**</td><td></td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td>65 and over</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Countries included:** OECD countries, in English or with an English abstract	**focused/ Location-focused/ General service redesign** Case management defined as – a collaborative process of assessment, planning, facilitation, care coordination, evaluation, and advocacy **Study design inclusion:** RCTs **Comparator:** Usual care **Outcomes of interest:** <table><tr><td>Unplanned hospital admission or re-admission (admission with an overnight stay that is not scheduled or elective).</td></tr><tr><td>Costs</td></tr></table> **Number of studies included:** 11	suitable for meta-analysis [mean difference in unplanned admissions: 0.05 (95% CI: −0.04 to 0.15)]. Three of the studies provided evidence of increased cost effectiveness associated with shorter length of stay (reduction from 760 to 270 days; 42.7 days versus 33.5 days $p<0.05$; 5.2 days versus 3 days $p<0.06$). One study reported reduced days until admission $p=0.011$) and another a reduction in admissions to the emergency department $p<0.025$). **Main author conclusions:** Nine of the 11 trials showed no reduction in unplanned admissions compared to usual care. **Potential applicability considerations:** Four studies USA, one Canada, two Australia, two Denmark, one Sweden, one Germany
Hussain et al. 2014 **Country: USA** <table><tr><td>**Systematic review**</td><td>X</td></tr><tr><td>**Realist review**</td><td></td></tr></table>	**Years included:** Inception to May 2012 **Intervention inclusion:** Integrated models of care (IMCs) defined as psychiatrists and general medical physicians, either in isolation or in combination with other healthcare staff, were integrated in a single team to	**Summary of results:** Four studies involving 716 participants were included. Studies differed in design, details of the IMC and outcomes reported. The authors stated that two studies reported reductions in length of stay with IMCs compared with usual care but there were discrepancies between the text and tables. Only one study reported on costs, with unclear results

Meta-analysis	
Other (specify)	

Population inclusion criteria:

Type of group	Patients
Condition	Medical inpatients with psychiatric disorders
Sex	
Age	≥18 years
Other (specify)	

Countries included: Netherlands; USA; UK

provide care to an entire inpatient population

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Study design inclusion: RCTs and other quasi-experimental studies

Comparator: Usual medical care or another model of psychiatric care for medical inpatients

Outcomes of interest:

Psychiatric outcomes (e.g. change in depression symptoms)
Medical outcomes (e.g. mortality, physical functioning)
Health service outcomes (e.g. length of stay, costs)

Main author conclusions: There is preliminary evidence that IMCs may improve outcomes for medical inpatients with psychiatric disorders.

Potential applicability considerations: Small number of included studies and clinical heterogeneity makes applicability difficult to assess.

<table>
<tr><td></td><td>Number of studies included: 4</td><td></td></tr>
<tr><td>Jackson et al. 2013

Country: USA

<table><tr><td>Systematic review</td><td>X</td></tr><tr><td>Realist review</td><td></td></tr><tr><td>Meta-analysis</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Population inclusion criteria:

<table><tr><td>Type of group</td><td>Patients, carers and staff</td></tr><tr><td>Condition</td><td>At least two conditions</td></tr><tr><td>Sex</td><td></td></tr><tr><td>Age</td><td>Any</td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Countries included: USA; Canada</td><td>Years included: Inception to 2012

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Patient-centred medical home (PCMH) defined as primary care involving team-based care; at least two of enhanced access, co-ordinated care, comprehensiveness and a systems-based approach to improving quality and safety; a sustained partnership; and intervention involves structural changes to traditional practice

Study design inclusion: RCTs or observational studies; studies of effectiveness had to have a comparison group

Comparator: Usual care</td><td>Summary of results: PCMH interventions had small positive effects on patient experience and small to moderate positive effects on delivery of preventive care services. Strength of evidence was rated as moderate. Staff experiences were improved to a small to moderate extent (low strength of evidence). Meta-analysis indicated that in older adults PCMH interventions reduced emergency department visits (risk ratio 0.81, 95% CI 0.67 to 0.98) but not hospital admissions. There was no evidence of overall cost savings.

Main author conclusions: The PCMH model is promising for improving patient and staff experience and potentially for improving care processes. There is insufficient for effects on clinical and most economic outcomes

Potential applicability considerations: Authors noted lack of consistent definitions and nomenclature for PCMH. Most studies involved elderly people rather than children or general primary care populations. All effectiveness studies were performed in the USA, except for one in Canada.</td></tr>
</table>

<table>
<tr>
<td></td>
<td>Outcomes of interest:
<table><tr><td>Patient, carer and staff experiences</td></tr><tr><td>Process of care outcomes</td></tr><tr><td>Clinical outcomes</td></tr><tr><td>Economic outcomes</td></tr></table>
Number of studies included: 31 (19 evaluating effectiveness)</td>
<td></td>
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<tr>
<td>Johansson 2010

Country: Sweden

<table><tr><td>Systematic review</td><td>X</td></tr><tr><td>Realist review</td><td></td></tr><tr><td>Meta-analysis</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Population inclusion criteria:
<table><tr><td>Type of group</td><td></td></tr><tr><td>Condition</td><td>Multiple diseases, not</td></tr></table></td>
<td>Years included: 1995 to 2008

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Multi-disciplinary team working, not case management

Study design inclusion: Any - 5 were qualitative and 13 were RCTs, 9 were descriptive

Comparator: Any</td>
<td>Summary of results:

Five of six RCT studies reported benefits from using a multidisciplinary assessment in hospital followed by multidisciplinary intervention at home. Three of these found shorter hospital stays or delayed need for readmission in intervention groups, the other two reported favourable outcomes such as fewer falls or improved health.

Five RCTs considered team assessment and intervention in primary care, and reported beneficial impacts on healthy status and health perceptions.

One RCT evaluating a multi-component home intervention reported improvements in daily life activities and significant positive effect on survival.</td>
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</table>

	mental health or terminal care
Sex	
Age	Elderly
Other (specify)	Living in the community

Countries included: English Language and articles available at the local library

Outcomes of interest:

Any

Number of studies included: 37

Three studies reported the use of care pathways and guidelines and discharge planning promoted interdisciplinary working. One study reported an increase in screening rates.

There were many obstacles to team co-operation at individual, group and organisational level. These included differing attitudes, degree of commitment, gaps in communication, and gaps in documentation. A lack of engagement by management was also described. Change was affected by power, culture and structure and differing values and beliefs and ways of thinking.

Main author conclusions:

Multi-disciplinary assessment and intervention has been reported as beneficial for “promoting improved capacity”.

Honest, ongoing communication with clear goal setting enhance the participation of patient and families.

Agreed documentation, common goals and clear guidelines are important.

Close working relationships, good communication and sharing of knowledge may improve team performance.

Team process mechanisms are important.

Potential applicability considerations: 16 studies from USA, 12 from UK, 3 from Canada, 2 from Germany, 2 from Netherlands, one from Sweden, one from Australia

Kammerlander 2010

Country: Austria

Systematic review	X
Realist review	
Meta-analysis	
Other (specify)	

Population inclusion criteria:

Type of group	Elderly patients
Condition	Hip fracture
Sex	Any
Age	Over 60 , mean age of study participants 81
Other (specify)	Acute in-hospital treatment only

Countries included: English language

Years included: to 2009

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Multi-disciplinary approach including at least a geriatrician and an orthopaedic surgeon. Four new models classified including orthopaedic ward and integrated care with treatment by a multi-professional group. Two studies took place in a specialist geriatric fracture centre, one of the studies from Taiwan included a rehabilitation programme and discharge planning, the other interventions were just described as a “multidisciplinary” or “interdisciplinary” intervention or care.

Study design inclusion: Not specified, eight prospective randomised, nine prospective cohort with different control groups, four retrospective chart reviews.

Summary of results: Data relating to the orthopaedic ward and integrated care model. Included five trials and one uncontrolled study, two studies included patients over 65 and four included patients over 60. Three trials found no significant different for in-hospital mortality, one found a significant reduction in the intervention group. One year mortality was 16% in the intervention group and 20.97% in the control group. The length of stay reported across five studies was average 8.17 in the intervention group compared to 11.74 days in the control groups. Time to surgery was significantly shorter for the intervention group in one of three studies which the review authors attribute to a low medical complication rate in the study population. Three studies reported medical complication rates that were lower for the intervention than control patients. Intervention patients 30.3%, 45.2% and 36% versus one study not reported, second study 61.7%, and third study 51%).

.

Main author conclusions:

The integrated care interventions showed lowest in-hospital mortality rate, the lowest length of stay and the lowest time to surgery of any of the models of care. No clear statements could be made about medical complication rates or activities of daily living.

Potential applicability considerations:

<table>
<tr>
<td></td>
<td>Comparator: Not specified, studies with control group had standard care comparator.

Outcomes of interest:
<table><tr><td>Length of stay</td></tr><tr><td>Mortality</td></tr><tr><td>Complications</td></tr><tr><td>Time to surgery</td></tr></table>
Number of studies included: 21, of these 6 related to the integrated care model</td>
<td>Three studies from USA, one from Spain, two from Taiwan. Two of the USA studies took place in a geriatric fracture centre.</td>
</tr>
<tr>
<td>Kinley 2013

Country: UK
<table><tr><td>Systematic review</td><td>X</td></tr><tr><td>Realist review</td><td></td></tr><tr><td>Meta-analysis</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table></td>
<td>Years included: 2000 to 2010

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Integrated care pathway and Gold Standards Framework</td>
<td>Summary of results:

For the Gold Standards Framework intervention both studies reported there was an increase in the documentation of plans for ‘do not attempt resuscitation’ and there was increased use of the last days of life pathway. There was a reduction in hospital admissions from 31% to 24%, and a reduction in number of inappropriate days in hospital of 38% and inappropriate hospital deaths (8% reduction). The use of a protocol in the last days of life increased and staff reported an increase in “very good support”. The one study evaluating the Liverpool care pathway</td>
</tr>
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<table>
<tr>
<td>Population inclusion criteria:

<table><tr><td>Type of group</td><td>Patients in nursing care homes</td></tr><tr><td>Condition</td><td>End of life</td></tr><tr><td>Sex</td><td></td></tr><tr><td>Age</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Countries included: UK</td>
<td>Study design inclusion: randomized con-trolled trials, meta-analyses, systematic reviews, cohort studies, case control studies or case series with a comparator. All included studies were non-analytical case series.

Outcomes of interest:

<table><tr><td>Hospital admission</td></tr><tr><td>Place of death</td></tr><tr><td>Perceptions of care</td></tr></table>
Number of studies included: 8 papers from 3 studies</td>
<td>reported an increase in discontinuation of unnecessary medication.

Main author conclusions:

Improvements occurred in resident outcomes and in relation to staff recognising, managing and meeting residents need for end of life care although the evidence is limited.

Potential applicability considerations:

None

Note: One of studies included in our review as a UK paper, others outside inclusion criteria (date/design).</td>
</tr>
<tr>
<td>Laver 2014

Country: Australia

<table><tr><td>Systematic review</td><td>X</td></tr><tr><td>Realist review</td><td></td></tr><tr><td>Meta-analysis</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table></td>
<td>Years included: 1980 - 2013

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign</td>
<td>Summary of results:

Three RCTs examined the effectiveness of integrated care. Two examined care between acute stroke units and community/outreach teams and compared to usual care, one compared stroke unit care to a mobile team on general wards and also a home stroke team. One of the RCT studies reported reduced odds of mortality in the integrated care group at three, six and 12 months (OR 0.37; 95%CI 0.21 to 0.66 at 12 months) the other RCT found that there were similar levels of mortality between groups. One found intervention patients had greater levels of independence six month post-stroke, another however,</td>
</tr>
</table>

Population inclusion criteria:

Type of group	Patients
Condition	Acquired brain injury (trauma, stroke, lack of oxygen, tumours, infection, poisoning, substance abuse). All included studies were in stroke patients.
Sex	
Age	Over 16
Other (specify)	Organisational interventions in acute care or rehabilitation services

Countries included: In English

(1) formal integration of services versus non-integrated care

(2) care based on integrated care pathways versus usual care

(3) a program of continuity of care including case management versus no follow up, usual care or a lower quality model of continuity of care. Categorised into continuity of care – case management, continuity of care – early supported discharge, continuity of care – short term programme.

Study design inclusion: systematic reviews, randomised controlled trials, non-randomised controlled trials, controlled before after studies or interrupted time series

Comparator: Usual care or non-integrated care, or lower quality model of care

Outcomes of interest:

Resource use
Quality of care

found no significant difference. One reported higher quality of life measures, another no significant difference.

There was similar variability in regard to length of stay, with one study finding similar results between groups, while the other two found positive effects (mean 14 days versus 29 days, and mean 19 days versus 31 days).

One study reported higher participant satisfaction in the integrated care groups.

One review and one RCT related to care pathways, with the review finding no effect on mortality, whereas the RCT found a reduction in death and dependency in intervention patients (42% vs 58%, difference in absolute change = 15.7% (95% CI 5.8 to 25.4). The review found one primary study reporting readmissions to hospital were lower in the intervention group (OR 0.11, 95% CI 0.03 to 0.39), and conflicting evidence in regard to length of stay. The included RCT in the current review found no significant difference in length of stay. The included review found one study reporting lower patient satisfaction in patients receiving integrated pathway care (Weighted Mean Difference -1.1, 95% CI −1.91 to −0.29).

14 studies related to continuity of care, 7 to case management. One systematic review containing 16 RCTs and one RCT suggested that there are few overall significant benefits in providing case management services for people with stroke (apart potentially from people with mild to moderate levels of disability). One systematic review and four RCTS found inconclusive evidence of effectiveness. Case management may increase satisfaction with care. One review was found on early

	Participant views **Number of studies included:** 26, 3 integrated care 2 care pathways, 14 continuity of care, 7 quality monitoring	supported discharge, this found a significant reduction in length of stay in acute care equivalent to approximately seven days (Mean Difference -6.84 (95% CI −11.20 to −2.49). Intervention patients were significantly more likely to report satisfaction with care services (OR 1.60, 95% CI 1.08 to 2.38, P = 0.02). There were few significant findings in favour of short term programmes of continuity of care. **Main author conclusions:** The review found evidence to support integrated care resulting in similar or reduced levels of mortality and similar or reduced length of stay, and improved functional outcomes. The authors concluded that there is a lack of evidence supporting integrated pathways having a positive effect on patient outcomes and conflicting evidence that integrated pathways can improve mortality or dependence compared with usual care. The authors concluded there was some evidence for the use of early supported discharge teams after stroke but little evidence to support case management services. **Potential applicability considerations:** The primary studies included originated from - 10 USA, one Netherlands, one Sweden, one Denmark, three UK, one Canada, one Australia **Note:** None of the UK studies met our inclusion criteria (date/primary focus).

Low 2011

Country: Australia

Systematic review	X
Realist review	
Meta-analysis	
Other (specify)	

Population inclusion criteria:

Type of group	Patients
Condition	Services not limited to exclusively medical care
Sex	
Age	Older people, most aged 65 or over
Other (specify)	Community dwelling

Years included: 1994 to 2094

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Case managed, integrated or consumer directed home and community services.

services

Study design inclusion: Unclear, included randomised, non-randomised and observational studies studies

Comparator: Usual care

Outcomes of interest:

Service use
Clinical outcomes

Number of studies included: 35

Summary of results:

Twelve studies including seven RCTs on case management were identified.

One RCT found no difference in risk of nursing home admission, two reported a medium effect size, two a small effect size of lower admission. One RCT found no effect on hospital admissions, one reported a large effect size and one a small effect size (all reduction in hospital admissions). One RCT reported a higher risk of emergency admission (small effect size), one RCT and one observational study found no effect, and one RCT found a medium effect of lower risk of emergency admission. Two RCTs reported an increased risk of community service use in intervention groups (medium and large effect sizes). Two studies (a RCT and an observational study) reported no effect on length of hospital stay, one RCT reported a large effect size for lower hospital stay.

Three studies reported results regarding user satisfaction (two increased satisfaction with one a large and one a medium effect, and one study no effect).

For integrated care fully integrated care programs (such as the Program of All Inclusive Care and the Kaiser Permanente Northwest) were associated with greater use of community and hospital services (but were low quality studies). Higher quality studies evaluated partially integrated services however more found significant effects on clinical outcomes or service use. For risk of nursing home admission three studies reported no effect (two RCT one non-RCT), one observational study reported lower admission rates (small effect). For hospital admissions three

Countries included: In English Language.		studies reported lower admissions (two observational studies and one non-RCT with one a medium effect size), and two RCTs reported no effect. For risk of emergency admissions two studies reported a lowering and one no effect. For community use two studies reported a lowering (including one RCT which found a medium effect size). One study found a lower length of hospital stay and one found no effect. **Main author conclusions:** Good quality RCT evidence indicates that case management interventions can improve function and appropriate use of medications, and may reduce nursing home admission and hospital use. Poorer quality evidence suggested that integrated care may increase service use and higher quality evidence that integrated care may have no effect on clinical outcomes. Evidence, mostly from non-randomized trials, indicated that integrated care may increase service use. Outcomes differ according to the type of model put in place. **Potential applicability considerations:** 13 studies from USA, two Finland, one Spain, three Canada, one Australia, one Italy, one Europe wide, two UK. **Note:** One of the UK studies included in our review
Mackie 2016	**Years included:** 2006 onwards	**Summary of results:**

Country: UK

Systematic review	X
Realist review	
Meta-analysis	
Other (specify)	

Population inclusion criteria:

Type of group	Patients
Condition	Long term conditions
Sex	
Age	Over 18
Other (specify)	In the community

Countries included: UK only

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Integrated health and social care – defined as a co-ordinated and collaborative approach

Study design inclusion: Doesn't specify but all were qualitative or reviews.

Comparator:

Outcomes of interest:

Themes

Number of studies included: 7

Co-location of teams – identified as important in 5 of 7 studies, described as facilitating relationships and communication and learning.

Communication – clear communication within teams to aid understanding of roles, and between partner organisations. Co-location, teamwork and communication are inextricably linked.

Integrated organisations – recognition that integration takes time, organisational separation can pose barriers to communication.

Management and leadership – identified as an enabler in 4 of the studies. Change management is complex, a common understanding, beliefs and expectation was important.

Capacity and resources – identified as a key enabler in 5 of the studies. Studies described financial pressures and resource implications of integration.

National policy – described as an enabler in four studies. Payment systems could conflict with aims of integration with the encouraging of competition being directly in opposition to integration.

Information technology – described as an enabler in 2 studies. The feasibility of data sharing requires further exploration.

.

Main author conclusions:

Enablers for integrated care include: co-location of teams; communication; integrated organisations; management and leadership; capacity and resources; and information technology.

<table>
<tr><td></td><td></td><td>There is limited evidence regarding integrated health and social care teams.

Potential applicability considerations: None

Note: all studies included in our review</td></tr>
<tr><td>Martinez-Gonzalez 2014

Country: Switzerland

<table><tr><td>Systematic review</td><td></td></tr><tr><td>Realist review</td><td></td></tr><tr><td>Meta-analysis</td><td></td></tr><tr><td>Other (specify)</td><td>X review of reviews</td></tr></table>
Population inclusion criteria:

<table><tr><td>Type of group</td><td>Patients</td></tr><tr><td>Condition</td><td>Chronically ill, non-communicable diseases, not addiction or</td></tr></table></td><td>Years included: Any year up to 2012 (those included were 1997 onwards)

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Interventions defined as the provision of multidisciplinary interventions at different stages of the care process in two or more different institutional areas including transition of services and end of life care.

Used 10 principles of integrated care to analyse the data: 1. Comprehensive services across the continuum of care; 2. Patient focus; 3. Geographic coverage and rostering; 4. Standardized care</td><td>Summary of results:

Diabetes mellitus (7 reviews) - improved adherence to treatment guide-lines reported in 4 of 6, improved quality of life in 4 of 5, higher patient satisfaction in 4 of 4, reduced hospital admissions in 2 of 3, reduced length of stay in one of one, reduced number of ED visits in one of 3 and reduced cost of services in one of 4..

COPD (7 reviews) – reduced mortality none of 3, improvement in adherence to treatment guidelines reported in 3 of 3, a reduction in hospital readmissions in 2 of 5, reduced readmission in 2 of 3, reduced length of hospital stay in 4 of 4, visits to the emergency department reduction in 2 of 3, and reduced costs none of 3.

Asthma (5 reviews) - reviews indicated an improvement in adherence to treatment guidelines (5 of 5), 2 of 3 reported a reduction in hospital admissions, one of 2 a reduction in ED visits, one of 2 reduced costs.

Heart failure (12 reviews) – reduced mortality 5 of 8 studies, improved quality of life 4 of 8, higher satisfaction none of 2, improved adherence to guidelines 2 of 5, reduced admissions 4 of 6, reduced readmissions 5 of 9, reduced length of stay 4 of 8,</td></tr>
</table>

	mental health – diabetes, heart failure, COPD, asthma
Sex	
Age	
Other (specify)	

Countries included: Any, no language restriction

delivery through inter-professional teams; 5. Performance monitoring; 6. Information systems.

Study design inclusion: Systematic reviews and meta-analyses

Comparator: Not stated/any

Outcomes of interest:

Use of healthcare resources
Process related outcomes
Patient reported outcomes
Clinical and functional outcomes
Costs

Number of studies included: 27 reviews including 824 primary studies

reduced ED visits 2 of 3, increased use of appropriate medicine none of 2, reduced costs one of 8.

Totals across conditions – adherence to guidelines improved 14 of 19 studies, hospital admissions reduced of 10 of 17 studies, reduced length of stay 9 of 13 studies, reduced ED visits 6 of 11 studies, reduced costs 3 of 17 studies.

No review found any evidence of harm.

Main author conclusions:

The majority of reviews found beneficial effects of integration, including reduced hospital admissions and re-admissions (in CHF and DM), improved adherence to treatment guidelines (DM, COPD and asthma) or quality of life (DM). Few reviews showed reductions in costs. Unclear which components of integrated care maximize benefit.

Potential applicability considerations: Authors report that settings varied from inpatient to outpatient care, and included home care, nursing home rehabilitation centre, community hospital and secondary settings. The paper states further details of the studies are available as a supplementary file, but this data is not included in the supplementary files. No information provided on country of origin of papers. 96% of included reviews assessed comprehensive services, 93% care provided by teams, none assessed financial management, one study examined governance structure, one geographic structure.

Maslin-Prothero 2010

Country: UK

Systematic review	X
Realist review	
Meta-analysis	
Other (specify)	

Population inclusion criteria:

Type of group	Any
Condition	Any
Sex	
Age	
Other (specify)	

Countries included: UK

Years included: 2000 to 2010

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Integrated health and social care teams

Study design inclusion: Not stated, included papers were reviews, qualitative studies, surveys, one non-RCT.

Comparator: Not stated/any

Outcomes of interest:

Policy drivers
Perceptions of barriers & benefits

Number of studies included: 18

Summary of results:

Policy drivers – clear governance arrangements an important factor, successful management of the tension between structure and culture, and need for shared understanding of the purpose and vision. Effective IT systems, the development of a shared culture, new roles, co-terminosity of role boundaries, recognition of grey areas in policy, the promotion of professional values, mixed evidence regarding co-location.

Barriers – divide between disciplines, mismatch in cultures and behaviours, organisational boundaries, lack of clarity of purpose, lack of understanding of roles, lack of clarity regarding management, ambivalence of medical staff, personnel concerns.

Benefits – benefits for service users and staff include increased job satisfaction, shared culture, improved communication and co-operation, meeting client needs more easily. [1]

Staff development – need for managers to be aware of defences, use of joint training and secondments, provide personal and organisational development opportunities, specific skills need to be rewarded in pay and career structures.

Service users – services may be more responsive, need for services to be embedded and to have efficient and effective information systems.

Main author conclusions:

<table>
<tr><td></td><td></td><td>There is a need to focus on the management of integrated teams and a need to invest in resources for the successful integration of teams. There may be benefits for staff and service users.

Potential applicability considerations:

None, all studies UK</td></tr>
<tr><td>Mason 2015

Country: UK

<table><tr><td>Systematic review</td><td>X</td></tr><tr><td>Realist review</td><td></td></tr><tr><td>Meta-analysis</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Population inclusion criteria:

<table><tr><td>Type of group</td><td>Any</td></tr><tr><td>Condition</td><td>Any</td></tr><tr><td>Sex</td><td></td></tr><tr><td>Age</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table></td><td>Years included: 1999 to 2015

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Schemes that integrate financial or resource flows across both health and social care. Payment reimbursement schemes excluded.

38 schemes identified.

Types of financial integration found were: cross charging (one scheme); aligned budgets (3); lead commissioning (3); pooled funds (31); integrated management provision with pooled funds (20); structural integration</td><td>Summary of results:

Health effects – In 6 of 18 controlled studies evaluating Australian schemes and one Canadian trial there was no health benefit demonstrated compared to standard care. One controlled study in the USA found a case management intervention with pooled funds had health benefits, another study evaluating a follow on from this scheme however had ambiguous results. Positive health impacts were found in studies that generally had well-developed and comprehensive pooling arrangements across a range of sources, creating large health and social care budgets such as merging Medicare and Medicaid, or all major providers in one country.

Service use and costs – Eleven schemes of 34 had no significant effect on hospital costs or utilisation, three schemes reported a significant reduction in utilisation or costs. Admission rates were higher in one Australian scheme, the remaining studies had mixed (14 of 34) or unclear (5 of 34) findings regarding costs.

The authors highlighted that even where budgets are pooled widely, total resources remain limited and there may be incentives to define eligibility in ways that are more likely to produce positive results for the scheme.</td></tr>
</table>

Countries included: Low income countries excluded. English language.	(9); lead commissioning with aligned incentives (1). **Study design inclusion:** Not clearly specified/any. Six schemes were evaluated by RCTs, 12 by non-RCTs, 6 by qualitative studies, 10 by mixed methods studies, 15 by uncontrolled studies, 10 by analysis of administrative data. **Comparator:** Not defined/any **Outcomes of interest:** Health effects Cost Service use **Number of studies included:** 122	The studies highlighted the difficulties of achieving financial integration, with a failure to break down service boundaries or take overall control over service use from individual providers. Problems with relations and physician engagement were identified and fully operational IT systems were required; data confidentiality concerns were reported. **Main author conclusions:** There is largely positive evidence that interventions can improve access to care, and that there can be an increase in community care. There was evidence that cross charging and pooled funding could reduce length of stay in the short term (but not sustained). The impact on service users was largely positive. There is conflicting/limited evidence that there is a reduction in unplanned admissions and readmissions, and a lack of evidence/neutral evidence regarding total cost reduction, improved health outcomes, quality of care or reduced residential care. The authors concluded that the case for integrated funding had not been demonstrated as no scheme demonstrated a sustained reduction in hospital use. The nature of integrated care means that overall system costs may increase as unmet need is identified.

<table>
<tr>
<td></td>
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<td>Potential applicability considerations: Papers from eight countries, apart from one Canadian trial all the randomised studies were from Australia.

Note: much of the UK literature included already</td>
</tr>
<tr>
<td>McAdam 2008

Country: Canada

<table>
<tr><td>Systematic review</td><td>X</td></tr>
<tr><td>Realist review</td><td></td></tr>
<tr><td>Meta-analysis</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Population inclusion criteria:

<table>
<tr><td>Type of group</td><td>Older adults</td></tr>
<tr><td>Condition</td><td>Any</td></tr>
<tr><td>Sex</td><td></td></tr>
<tr><td>Age</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>Years included: 1990-2007

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Study design inclusion: Effectiveness, surveys, models.

Comparator: Not reported

Outcomes of interest:

<table>
<tr><td>Reductions in hospital and nursing home use</td></tr>
<tr><td>Cost-effectiveness or cost savings</td></tr>
</table>

Number of studies included: 6</td>
<td>Summary of results:

Successful projects used case management and facilitated access to a range of health / social care services. Physicians play a crucial role in achieving outcomes. The most successful projects engaged specialists, GPs or both. A larger percentage of a physician’s case load recruited to the project is likely to influence positively their involvement. Increased involvement of physicians in care planning was important to success.

Other features:

Targeted selection of elderly people.

Contractual responsibility for package of care.

Pooling of multiple funding streams.

Closed network of providers.

Micro-management to improve quality and limit costs.

MDT care

Efficiency and effectiveness affected by:

Longitudinal care management</td>
</tr>
</table>

Countries included: OECD		Intensive interdisciplinary team care Commitment to holistic approach to care of elderly Organised provider – vertical and horizontal arrangements Appropriate targeting Mechanisms to pool funding streams These features need to be supportive of each other. Four frameworks are presented to organise the data. **Main author conclusions:** Findings showed promising models of integration that could improve outcomes, patient satisfaction and reduced costs or better cost-effectiveness. Four frameworks were identified, the common links between them were: • Umbrella organisational structures to guide integration • Multidisciplinary case management with single entry point • Organised provider networks with standard procedures, service agreements, joint training, shared information systems

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<td>

Financial incentives that promote prevention, rehabilitation and downward substitution of services.

No single element was shown to be effective alone.

Potential applicability considerations:

Different ways of organising key elements across studies and settings
</td>
</tr>
<tr>
<td>
McConnell 2013

Country: UK

<table>
<tr><td>Systematic review</td><td></td></tr>
<tr><td>Realist review</td><td>X</td></tr>
<tr><td>Meta-analysis</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
Population inclusion criteria:

<table>
<tr><td>Type of group</td><td></td></tr>
<tr><td>Condition</td><td>End of life</td></tr>
<tr><td>Sex</td><td></td></tr>
</table>
</td>
<td>
Years included: 1950 to 2011 (all included 1998 onwards)

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Integrated care pathways, in particular the Liverpool Care Pathway

Study design inclusion: Opinion pieces, policy documents, research studies

Comparator:
</td>
<td>
Summary of results:

Having a facilitator was found to be an essential programme input explaining success or failure of LCP implementation and sustainability (59% of included studies contributed data to support this theory and none refuted it). They provided training, feedback, and motivated staff.

Change was brought about by the development of new competencies and beliefs among staff in response to education on why and how to use the pathway. Education increased confidence and openness which improved communication and collaboration.

Positive feedback from national audit on service improvements helped sustainability. Audits which identified areas of need could facilitate change.

A major cultural shift in the organisational context was needed for professionals to modify their thinking from a curative focus towards palliative care.
</td>
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<table>
<tr>
<td>
<table>
<tr><td>Age</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
Countries included: English Language
</td>
<td>
Outcomes of interest:
<table>
<tr><td>Explanatory theories</td></tr>
<tr><td></td></tr>
</table>
Number of studies included: 58
</td>
<td>
Resources were needed to support facilitation and training and audit.

Main author conclusions:

Key factors identified for successful implementation were: a dedicated facilitator, education and training, audit and feedback, organisational culture, and adequate resources. The support of senior managers is key, together with an appropriate culture.

Potential applicability considerations: Majority of papers from the UK, one Netherlands, three Australia/New Zealand, one USA
</td>
</tr>
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<td>
Myors 2013

Country: Australia
<table>
<tr><td>Systematic review</td><td>X</td></tr>
<tr><td>Realist review</td><td></td></tr>
<tr><td>Meta-analysis</td><td></td></tr>
<tr><td>Other (specify)</td><td>Described as an integrative review</td></tr>
</table>
Population inclusion criteria:
</td>
<td>
Years included: 2000 to 2010

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Collaboration and integration – defined as co-ordinated care provided by agencies and professionals in consultation with each other

Study design inclusion: Any

Comparator: Any
</td>
<td>
Summary of results: The overarching theme identified in the review related to the process of ‘making it happen’. Benefits reported of enhanced confidence and communication between professionals and reduced service overlaps and wasted resources. Benefits for patients reported were individualised care, flexible and innovative delivery, more thorough assessment and case planning and improved co-ordination. Eight key elements were identified as central components to integration: funding and resources for collaboration to enable joint visits and reduce caseloads and for practical resources such as IT and infrastructure to enable joint meetings; shared vision, aims and goals to ensure smooth processes and to break down “us and them” mentalities; pathways and guidelines including formal communication guidelines to ensure consistency and pathways to track patients and for managing confidentiality; continuity of care provided via a link worker or identified contact; building relationships and trust are pivotal to informal networking and information sharing
</td>
</tr>
</table>

<table><tr><td>**Type of group**</td><td>Staff providing mental health services</td></tr><tr><td>**Condition**</td><td>Mental health</td></tr><tr><td>**Sex**</td><td>Women</td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td>Perinatal or infant</td></tr></table> **Countries included:** English language	**Outcomes of interest:** <table><tr><td>Views and perceptions</td></tr><tr><td></td></tr></table> **Number of studies included:** 14	with co-location increasing informal communication; role clarity; training and education of staff not only relating to clinical issues but how to work collaboratively to support working in new ways. **Main author conclusions:** The majority of staff were supportive of increased collaboration however, a range of processes need to be in place to enable staff to work in more collaborative ways. **Potential applicability considerations:** Six papers were from Australia, seven from the UK and one from Belgium. Not all the papers had a focus on integration and collaboration, but instead may have referred to it within other data.
Nicholson 2013 **Country:** Australia <table><tr><td>**Systematic review**</td><td>X</td></tr><tr><td>**Realist review**</td><td></td></tr><tr><td>**Meta-analysis**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Population inclusion criteria:**	**Years included:** 2006-2013 **Intervention inclusion:** **Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Governance systems in integrated healthcare	**Summary of results:** Identified ten elements that are necessary for integrated governance across primary/secondary care. Joint planning – goals and strategies are jointly agreed with formal agreements in place to manage deliverables, risk and process. Also joint board members with directors on each other's boards to facilitate a shared vision and trust and collaboration. Shared planning should preserve the organisational autonomy of each institution but decisions should be in the best interests of the system. Goodwill and a focus on patient-centric care gets stakeholders to the table, understanding need is the starting point and a shared vision of optimal healthcare. Multi-level

<table><tr><td>**Type of group**</td><td>Any</td></tr><tr><td>**Condition**</td><td>Any</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Countries included:** English language	**Study design inclusion:** Not specified, included case studies, cross sectional, reviews, but also some discussion papers **Comparator:** Not specified/any **Outcomes of interest:** <table><tr><td>Recurring themes in the studies</td></tr><tr><td></td></tr></table> **Number of studies included:** 21	partnerships are required including between clinicians and management and planning for integrated services. Integrated information technology – a key element and significant enabler. Can enable providers to focus and manage risk, provides accurate and detailed information to inform clinical decision-making, is essential infrastructure, supports change management and allows tracking of high risk patients and outcomes. Change management – having an effective change management strategy underpin integration work. It requires time and committed resources, strong leadership, and stepping outside traditional boundaries. Change should be linked to improved quality with shared and clear purpose and goals. Organisational support is required to enable clinicians and managers to develop the ability to make change happen. Shared clinical priorities – derived from community assessment or panel identification of priority areas most likely to have real impact. Incentives – need to align incentives, such as indicators to measure goals and results, new financing, enabling delegation of tasks freeing up time. Aligning incentives to performance needs mechanisms for reporting and auditing. Population focus – change from organisation focus to care for a whole population, such as have a regional rather than individual practice focus.

		Measurement – importance of adopting an improvement methodology that evaluates and creates a learning tool, is data driven. Continuing professional development – training important to support new ways of working and align cultures, also required to address need for measurement and leadership. Patient/community engagement – importance of involving communities. Innovation – need for adequate resources to support innovation including flexible funding and processes to encourage innovation. **Main author conclusions:** Multiple elements are required to support and sustain integration initiatives. Leadership at all levels, a willingness to invest and share risk together with incentives are key. **Potential applicability considerations:** 6 studies from Australia, 4 from Canada, 5 from UK, 4 from USA, one from New Zealand and Sweden **Note**: 3 of 5 UK studies included in our review other 2 excluded
Peikes 2009 **Country:** USA	**Years included:** 2003-2005 **Intervention inclusion:**	**Summary of results:** A range of hosts provided the interventions, including commercial companies, community hospitals, academic medical

Systematic review	X
Realist review	
Meta-analysis	
Other (specify)	

Population inclusion criteria:

Type of group	Any
Condition	Chronic conditions
Sex	
Age	
Other (specify)	

Countries included: USA only

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Care coordination and lifestyle change / self-care education via registered or licensed practical nurses. Nurses assessed needs and developed care plans.

Study design inclusion: RCTs

Comparator:

Outcomes of interest:

Hospitalisation
Quality of care
Health care expenditure

Number of studies included: 15

centres, a hospice, a long-term care facility, an integrated system and a retirement community.

Two programmes showed reduced hospitalisation for intervention group (by 17% and 19% more than their control groups) at a significant level (p=0.02 and p=0.04 respectively). Another programme reduced hospitalisation by 24% but at p=0.07.

Two programmes showed significant difference in expenditure between intervention and control groups and in both the intervention was more expensive (one by $186 per member per month [19%, P=.03] and another by $61 per member per month [9%, P=.08]). The two programmes that showed less expenditure for the intervention were not statistically significant.

Despite being more likely to recall receiving patient education on lifestyle and self-care than control groups, the intervention groups were no more likely to remember the information they received.

Physicians believed that the intervention had positive effects such as reducing paperwork and telephone calls, and increasing care quality. They appreciated the communications received about patients and found programmes helpful for organising transport, meals and therapies. They did not think the programmes fostered increased communication between physicians or with family, or continuity of care. Neither did they think they enhanced self-care behaviours.

Main author conclusions:

<table>
<tr>
<td></td>
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<td>The authors suggest that evidence for reducing Medicare expenditure through care coordination has not been found, with only two programmes having favourable results on hospitalization and expenditure. One of these did not have sufficient power (n=230 over 3 years).

Potential applicability considerations:

Funding (Medicare).</td>
</tr>
<tr>
<td>Powell Davies 2008

Country: Australia

<table>
<tr><td>Systematic review</td><td>X</td></tr>
<tr><td>Realist review</td><td></td></tr>
<tr><td>Meta-analysis</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Population inclusion criteria:

<table>
<tr><td>Type of group</td><td>Any</td></tr>
<tr><td>Condition</td><td>Most concerned chronic disease, mental health or</td></tr>
</table>
</td>
<td>Years included: 1995 to 2006

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Co-ordination of care involving the primary health care sector most studies related to coordination between primary care and specialist services or hospitals or within primary care.

Study design inclusion: Experimental or evaluation and systematic reviews

Comparator: Any</td>
<td>Summary of results:

Nine types of strategies –Patient and provider level

Arrangements to improve communication between service providers, including case conferencing (56 studies). Twenty six of 47 studies reported positive health outcomes and 12 of 22 positive patient satisfaction outcomes.

Using systems to support care coordination, including care plans, shared decision support, patient-held or shared records, shared information or communication systems, and a register of patients (47 studies). Positive statistically significant health outcomes were reported in 23 of 38 studies and positive patient satisfaction outcomes in 8 of 12 studies.

Structured arrangements for coordinating service provision between providers, including coordinated or joint consultations, shared assessments, and arrangements for priority access to another service (37 studies). Nineteen of 31 studies reported positive health outcomes and four of 12 positive patient satisfaction outcomes.</td>
</tr>
</table>

	aged/palliative care
Sex	
Age	Any
Other (specify)	Primary care

Countries included: Australia, Canada, New Zealand, UK, USA, The Netherlands

Outcomes of interest:

Different types of strategies

Number of studies included: 80

Providing support for service providers, including support/ supervision for clinicians, training (joint or relating to collaboration), reminders, and arrangements for facilitating communication (33 studies). Structuring the relationships between service providers and with patients, including co-location, case management, multidisciplinary teams or assigning patients to a particular primary health care provider (33 studies). Nineteen of 29 reported positive health outcomes and 8 of 12 positive patient satisfaction outcomes.

Providing support for patients, including education (joint or relating to sharing care), reminders, and assistance in accessing care (19 studies). Six of 17 reported positive health outcomes and 3 of 6 positive patient satisfaction outcomes.

Organisational level

Joint planning, funding and/or management of a program or service (7 studies).

Formal agreements between organisations (3 studies)

System level

Changes to funding arrangements (1 study)

Most studies used a combination of strategy types (range 1 to 6 median 3). There were some variations in the types of strategy used in different contexts with studies of mental health and aged/palliative care often attempting to improve communication between service providers, while chronic disease studies developed structured co-ordination arrangements and systems. Only five studies reported economic outcomes so were not

		analysed in depth. Structuring relationships between providers and between providers and patients (such as by case management, multidisciplinary teams or assigning patients to a particular provider) may have particular potential. **Main author conclusions:** At least half the studies within each strategy type that measured health or patient satisfaction outcomes reported statistically significant positive results. The more effective for health outcomes, the less effective for patient satisfaction. effective for patient satisfaction, and vice versa **Potential applicability considerations:** Apart from USA countries with similar health systems to UK. 36 studies from USA, 16 from UK.
Stewart 2013 **Country:** Australia **Systematic review** X **Realist review** **Meta-analysis** **Other (specify)**	**Years included:** 1988-2012 **Intervention inclusion:** **Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** PRISMA (Program of Research to Integrate Services for the Maintenance of Autonomy) project. The programme	**Summary of results:** The articles identified described how the project was organised, how the project worked and outcomes. The PRISMA group was reported to have a reduced prevalence and incidence of functional decline in one study (from source paper lower prevalence in the study group in the fourth year 254% versus 391% $p < 0.001$). Two studies reported decreased prevalence of unmet need in the community ($p<0.001$). Two studies reported significantly ($p<0.001$) increased user satisfaction or empowerment.

Population inclusion criteria:

Type of group	Patients
Condition	Frail older people (not specified in any further detail)
Sex	
Age	75 years or older. Average 83 years when joined the 4 year study
Other (specify)	

Countries included: Canada and France

aims to co-ordinate hospital, respite, residential and community based care. All organisations co-ordinated under one umbrella organisation, each keeps own structure and governance but works within same structure. Aim is both horizontal and vertical integration. Includes single entry point, single assessment, individual plan, case management, computerised chart, co-ordination between decision-makers and managers, multidisciplinary teams, Boards at a governance and service management level, multidisciplinary advisory group at a clinical level.

Study design inclusion: Not specified, presumably any. Review included academic articles, conference presentations, websites, submissions and reports. Seven quasi-experimental papers.

Comparator: Any/none

Outcomes of interest:

Clinical outcomes
Service utilisation

There was evidence from one study that the proportion of clients in the PRISMA group consulting with a medical specialist once a year reduced from 60% to 50% ($p<0.001$). The comparative groups remained unchanged at 60%. (Note: the original source reports that this difference was not significant $p=0.182$ and also reports that the intervention group had higher usage of other health professionals at baseline which was not significantly different at study end from the control group p value not reported).

One study also reported no significant difference in rates of hospitalisations (original source - $p=0.113$), length of stay, or readmissions, use of home-care or volunteer services.

Two studies found that there was a decreased desire to enter residential aged care facilities and caregiver burden initially reduced, but the effect faded across the study duration.

Qualitative studies reported family physicians having a strong interest in participating in the initiative, a tendency for organisations to protect their individual identities, and the importance of strong leadership.

Main author conclusions:

The authors highlighted the importance of context and need to adapt projects to local contexts, and programmes took advantage of existing structures. Evaluation tools were specifically developed for the population.

	User views **Number of studies included:** 45 articles (and 2 books)	**Potential applicability considerations:** The Prisma project originates from Quebec Canada and has been run since 1988. Has also been trialled in France. Case managers worked in existing local community centres and co-ordinated providers, but providers were not in a single organisation. Entry point linked to an existing 24 hour health information telephone service. Little detail provided regarding technology underpinning project. Note: One service use study referenced is a book. The chapter in the book relating to outcomes (at four years) details that the experimental group had higher use of ED at baseline (46% versus 32% visiting once per year) but over time they increased more steadily to 49% versus 54% in comparator group (p<0.001). There was no difference between groups in the average number of visits per year or re-visits within ten days.
Stokes 2015 **Country: UK** **Systematic review**: X **Realist review**: **Meta-analysis**: X **Other (specify)**:	**Years included:** Unclear **Intervention inclusion:** **Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Case management including case finding, care planning, regular review.	**Summary of results:** Meta-analyses showed no significant differences in total cost, utilisation of primary or secondary care cost. Total cost of services short-term: -0.00, 95% CI -0.07 to 0.06, p = 0.784; long-term: 0.03, 95% CI -0.16 to 0.10, I2 = 46.0%, p = 0.116. Utilisation of primary and non-specialist care short-term: -0.08, 95% CI -0.22 to 0.05, p<0.001; long-term: -0.10, 95% CI -0.29 to 0.09, p<0.001.

Population inclusion criteria:

Type of group	Patients
Condition	At risk, with long term condition
Sex	
Age	Over 18
Other (specify)	In primary care or community

Countries included: English language

Could be carried out by single case manager or an MDT.

Study design inclusion: Controlled studies

Comparator: Usual care or no case management

Outcomes of interest:

Health
Cost
Satisfaction

Number of studies included: 50 papers **(**36 studies)

Secondary care cost short-term: 0.04, 95% CI -0.02 to 0.10, p = 0.027; long-term: -0.02, 95% CI -0.08 to 0.04, p = 0.194.

Patient satisfaction showed a statistically significant beneficial effect in the case management group in the short-term (0.26, 95% CI 0.16 to 0.36, p = 0.465), increasing in the long-term (0.35, 95% CI 0.04 to 0.66, p<0.001).

A very small significant effect favouring case management was found for self-reported health status in the short-term (0.07, 95% CI 0.00 to 0.14).

Secondary subgroup analyses suggested the effectiveness of case management may be increased when delivered by a multidisciplinary team, when a social worker was involved, and when delivered in a setting rated as low in initial 'strength' of primary care. However, the estimated effect was extremely small.

Main author conclusions:

Current results do not support case management as an effective model, particularly in regard to reduction of secondary care use or total costs. There may be an effect on patient satisfaction.

Potential applicability considerations: Mean age 75, 14% of studies had more than 90% male participants, 58% from USA. Majority of studies targeted broad populations such as frailty, chronic illness or high utilisation rather than clinical conditions. Social worker involved in 33% of studies, 58% used team case management.

Suter et al. 2009

Country: Canada

Systematic review	X
Realist review	
Meta-analysis	
Other (specify)	

Population inclusion criteria:

Type of group	Unclear
Condition	Any/unclear
Sex	
Age	
Other (specify)	

Countries included: Unclear

Years included: 2001-2006

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Health and business integration literature (no further details)

Study design inclusion: Unclear

Comparator: Unclear

Outcomes of interest:

Any

Number of studies included: 190 health, 29 business

Summary of results:

The authors identify ten elements of successfully integrated healthcare systems.

Comprehensive services – a population focus is important, with the degree of integration determined by a range of factors.

Patient focus – integration should be based on population-needs assessment that drives service planning, should be easy for patients to navigate and should have a patient focus and patient involvement.

Geographic coverage – this is often the central element of integration, however this may only be achieved in areas of more dense population and not possible in rural or remote areas.

Interprofessional teams delivering standardised care – important to provide continuity. Barriers such as role confusion, professional self-interest and different ideologies exist.

Performance management – performance monitoring systems are key to measure outcomes at different levels.

Information systems – Other processes are only possible with computerised information systems which are accessible in any location.

Organisational culture and leadership – leadership with vision and an [2]

Physician integration – physicians need to be integrated at all levels and have leadership roles. Using existing networks, informal links and a strong patient focus may overcome

		perceived loss of power and resistance to change. Also compensation mechanisms financial incentives and ways to improve quality of working life may be strong levers. Governance structure – a flatter more responsive organisational structure facilitates integration, strategic alliances with external stakeholders and the public. Need for effect mechanisms of accountability and decision-making. Financial management – integration may increase costs. Different service funding is a major barrier to integration. Financing mechanisms require pooling of resources, and a population focus. **Main author conclusions:** A number of key areas need to be considered, the principles and areas for restructuring will vary by local context. **Potential applicability considerations:** Detail of source literature unclear
Tieman 2006 **Country:** Australia **Systematic review**: X **Realist review**:	**Years included:** 1990-2006 **Intervention inclusion:** **Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign**	**Summary of results:** Case conferences – case conferences were acceptable to GPs and were generally perceived as valuable to improve communication, increase team building and knowledge of roles as were a learning opportunity. Barriers were organisational, and related to legislative and remuneration requirements such as paperwork, also workload and timing issues. A range of perceived benefits were reported including assisting discharge, improving practice, reducing primary care visits, increased use of services. Not

Meta-analysis	
Other (specify)	Reviews of particular condition/intervention combined

Population inclusion criteria:

Type of group	
Condition	COPD, diabetes, stroke, frail elderly, palliative
Sex	
Age	
Other (specify)	

Countries included: Countries with comparable health systems (Australia, New Zealand, Canada, UK, USA [recognised as limited applicability])

Care plans, case conferencing, multidisciplinary team approaches, where initiatives were not solely in acute care, social care or community care. GP was a member of the team.

Study design inclusion: varied by each review

Comparator: Any

Outcomes of interest:

Service use
Clinical outcomes
Views and perceptions

Number of studies included: Three of the reviews contained 26, 60, 23 studies, others unclear.

reported to improve quality of life or survival in one study. Seven studies examined a potential impact on hospitalisation, reporting no clear benefit on length of stay but a reduction in planned and unplanned hospitalisation. Two studies recommended targeting case conferences to only more complex conditions.

Interventions for frail elderly (75 and older) – case conferences may improve medication appropriateness (one study), team case management was associated with reduced hospital days and home help hours (one study), comprehensive assessment and home follow up by a multi-disciplinary team reduced re-admission to EDs (one study). Some programmes were associated with cost-effectiveness (five studies). One study reported teams often failed due to poor management.

Care planning in diabetes – a high level of acceptability to patients and service providers was reported in 12 studies. Interventions appeared to lead to favourable clinical outcomes, with poorly controlled patients having the best outcomes.

Care planning in COPD – some clinical benefit reported, use of health services did not change or increased. Patient knowledge increased, frequency of GP or nurse visits, in one study ambulance use increased but ED use did not. Two studies found mixed evidence relating to bed days.

Care planning in stroke – mixed results regarding earlier discharge and achievement of independent functioning. No difference in mortality in three studies, mixed evidence regarding quality of life. One study reported reduced bed days in the 12

		months following discharge. One study reported a reduction of 60% in costs. **Main author conclusions:** Limited evidence indicates that co-ordination does appear to improve outcomes although this varied according to the mechanisms used, active co-ordination in the form of positive interactions between participants was critical. The mix of populations and focus creates difficulties in making direct comparisons. Most approaches are multi-component. Approaches may not reduce costs as additional needs can be identified. As many patients may have supportive rather than curative care needs identifying clear goals is important. Interventions may need to be tailored to particular populations and disease. **Potential applicability considerations:** Included evidence of relevance to the UK
Trivedi 2013 **Country: UK** **Systematic review**: X **Realist review**: **Meta-analysis**: **Other (specify)**:	**Years included:** 1990-2010 **Intervention inclusion:** **Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign**	**Summary of results:** Three models of care developed based on how the delivery of care was organised and the intervention. Case management model, integrated team model, collaboration model. Case management - four of four studies indicated improvement in health outcomes and patient satisfaction, mixed evidence regarding service costs. None of five studies showed a difference in mortality. Two studies reported overall service cost savings, one increased costs, two no effect.

Population inclusion criteria:

Type of group	Older people
Condition	Multiple long term conditions
Sex	
Age	65 and over
Other (specify)	Living in community Excluded studies of specific diseases and solely in-patient care, or nursing homes unless GP was involved

Countries included: English Language

Inter-professional working (case management and collaboration and integrated team). Excluded hospital at home studies.

Study design inclusion: RCTs

Comparator: Unclear

Outcomes of interest:

Health status, quality of life, mortality
Service utilisation
User satisfaction/experiences

Number of studies included: 37

Collaboration model – around half of 11 reported improved health/functional outcomes and most improved processes or service user satisfaction, mixed evidence regarding service use and costs.

Integrated team model – Most of the 19 studies reported improved health or functional ability, reduced caregiver burden and increased user satisfaction and improved processes. Around half showed reduced hospital or nursing home use, with overall mixed evidence regarding service use and costs.

Training and preparation for inter-professional working mentioned as an important component contributing to better outcomes.

Main author conclusions:

Well integrated and shared care models my improve processes of care and have the potential to reduce hospital and/or nursing home use but overall there is mixed evidence regarding effectiveness and cost effectiveness. More than half of studies reported improved health/functional/clinical and process outcomes. Differences in local context raise questions regarding applicability.

Potential applicability considerations: Almost half the studies were from the USA.

Xyrichis 2008	**Years included:** 1994 onwards	**Summary of results:**

Country: UK

Systematic review	X
Realist review	
Meta-analysis	
Other (specify)	

Population inclusion criteria:

Type of group	
Condition	
Sex	
Age	
Other (specify)	Any healthcare area

Countries included: Written in English, 7 UK, one Canada, one USA, one Ireland

Intervention inclusion:

Integrating services/ Integrated care pathway/ Workforce change/ New service provision/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Interprofessional teamworking

Study design inclusion: Quantitative and qualitative studies, most qualitative

Comparator: N/A

Outcomes of interest:

Themes

Number of studies included: 10

Team structure was important for effective teamworking. Team members having separate bases or buildings could result in less integration. Larger teams appeared to have lower levels of participation compared with smaller, with participation being linked to team effectiveness, although one study reported the opposite. Status of team members was an influencing factor, and having clear leadership. Teams with a higher proportion of full time staff and who had been working together longer were more effective. Organisational support was influential particularly the encouragement of innovation and implementation of change.

Team process factors were team meetings, goals and objectives and audit. There was mixed data regarding team meetings with most studies reporting them to be a key element of effectiveness in particular to enhance communication, whereas others reported difficulties finding time. Positive interpersonal relationships were important, and team goals which were clear and shared. Blurring and misunderstanding of professional roles were common and a key barrier which could lead to professional conflict and intractable differences. Audit was important for providing effective feedback on performance, although only one study examined this aspect.

Main author conclusions:

Teamworking is influenced by many inter-relating fators.

Potential applicability considerations:

None: most studies UK

Non-UK studies with a comparator group

Aiken 2006

Country: USA

RCT	X
Non-RCT	
CBA	
BA	
Comparator: Usual care provided by managed care organisation (MCO)	
Length of follow up: Up to 2 years	
Qualitative	
Cross-sectional	
Other (specify)	

Data collection method: Interviews and claims data

Outcome measures:

Service use (ED visits)
Physical and mental functioning (SF-36)

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Intensive home-based case management provided by registered nurses in

Summary of results: The intervention group had superior outcomes for physical and mental functioning and clinical outcomes such as symptom distress. There were no differences between groups for ED use

Main author conclusions: The intervention enhanced quality of care by adding palliative care to MCO-based treatment and this improved patients' functioning

.

Reported associations or causative links:

Home-based case management → No effect on ED use

Potential applicability considerations:

Authors stated that the intervention and associated training can be applied in other settings

<table>
<tr>
<td>
Sample size: 192 (101 intervention, 91 control)

Population characteristics:
<table>
<tr><td>Type of group</td><td>Patients</td></tr>
<tr><td>Condition/ department</td><td>COPD or heart failure with estimated 2-year life expectancy</td></tr>
<tr><td>Sex</td><td>Female 58% (I)/70% (C)</td></tr>
<tr><td>Age</td><td>Mean 68 (I)/70 (C)</td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
Context: Hospice providing home palliative care services
</td>
<td>coordination with patients’ existing source of medical care (including primary care physician and community agencies),</td>
<td></td>
</tr>
<tr>
<td>Battersby 2007

Country: Australia</td>
<td>Data collection method: Questionnaires

Outcome measures:</td>
<td>Summary of results:

61% of recruited patients remained in the trial at 12 months.</td>
</tr>
</table>

RCT	**X**
Non-RCT	
CBA	
BA	
Comparator: Usual care	
Length of follow up: 12 months and 24 months Intention to treat analysis	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 4603 patients

Population characteristics:

Type of group	Any

Improved patient outcomes
Resources required
Change in hospital admission rate

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

SA HealthPlus: change from funding based to outcomes based model of delivering services. This means that improved health outcomes are the aim and finances are pooled across primary and secondary care etc. to achieve this for particular groups of patients. The incentive shifts from reactive to proactive care.

Funds were obtained from public hospitals, the Medical Benefits Schedule, Pharmaceutical Benefits Schedule, Dept. of Veterans Affairs and regional

Wellbeing: Whilst changes in wellbeing (SF-36 scores) were not expected to show improvement over time in this population, there was a marked difference in favour of the intervention group.

Care planning: Intervention patients received more lipid and bowel screening tests over the 12 months than did the control group.

The patients that were estimated by service co-ordinators to *benefit most* were those that lived in difficult circumstances, were not previously linked to both health and social services, were depressed and had lower levels of knowledge about their condition (about 25% of the intervention group).

Unintended consequence: development of the Flinders Model of Self-Management Support (Regan-Smith et al. 2006).this came about because it was identified that service co-ordinators were allocating time according to patients self-management capacity rather than disease severity, the aim of the model.

Effect on service use: Inpatient usage accounted for 52% of all service costs. Eyre – reduction in intervention group admission rates and increase in emergency admissions for controls, reflecting the complex conditions. Western – increase in intervention group admission rates, mainly due to increased elective admission for respiratory problems and diabetes compared with controls in northern suburbs.

No overall change in use of Medical Benefits Schedule (MBS) or Pharmaceutical Benefits Schedule (PBS) in either intervention or control group although 45% less PBS (drug) use in somatization project intervention group compared to controls.

<table><tr><td>**Condition/ department**</td><td>COPD, cardiac, T2DM and complex T2DM</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Whole system services in four locations (Eyre, Southern, Central and Western Australia). Each area comprised a "sub-trial", each focussing on one of the four health conditions.	domiciliary services provided by nursing and allied health professions. The model requires adequate information systems to support shared learning for managers and clinicians. A central training unit supported service co-ordinators in training team members. Care planning was around the patient's defined problems and goals (P&G). Clearly defined roles for service co-ordinator, GP and project lead.	Where data was available, domiciliary use of services increased in intervention groups due to increased access, *Resource use*: In 2 years prior to trial the interventions did not match controls in terms of resource use due to differing access and co-ordination of services. Because of this discrepancy, results were adjusted, showing an intervention group deficit of AUS$4,842,898 compared with the control group (usual care). Savings due to reduced admissions did not compensate for this deficit. Recruitment criteria were changed so that patients at risk of hospitalisation were included. This reduced the actual rate of baseline hospitalisation at the start of the trial, so that the comparison was 58% having at least one hospitalisation in 2 years prior to baseline to 51.7% during trial period. Combining all savings from hospital admissions changed net hospital savings from AUS$252,584 (2.7 percent) to AUS$958,470 (12.2 percent). Overall deficit fell from AUS$4.8 million to AUS$1.7 million. This demonstrates the importance of appropriately targeting a particular patient group for coordinated care. **Main author conclusions:** The SA HealthPlus trial showed that health and wellbeing in some patients with complex and chronic conditions can be improved by GPs working with service co-ordinators using a problems and goal (P&G) approach and evidence based care plan. Two years was insufficient time to assess the effects. Service co-ordination and better targeting was critical to success. **Reported associations or causative links:**

		Preventive care planning → improved health and wellbeing Reduced disabilities **Potential applicability considerations:** Funding – pooling from different sources.
Beland 2006a **Beland 2006b** **Country:** Canada **RCT** X **Non-RCT** **CBA** **BA** **Comparator:** Usual care **Length of follow up:** 22 months **Qualitative** **Cross-sectional** **Other (specify)**	**Data collection method:** Administrative records **Outcome measures:** Differences in service utilisation (hospitals, nursing homes, sheltered housing: admissions and length of stay). Extent of home care required. Costs **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign**	**Summary of results:** All intervention and control group patients used at least one community based service during the trial period and 80% used an institutional service. Average cost of SIPA community-based services was $12,695, ($3,394 higher than the average costs in control group).This was offset by higher institutional costs incurred by control group ($4,270 more than intervention group). Total costs were in both groups were comparable, around $36,000. An average $4000 per patient institutional costs were transferred to community based services (without funding via capitation or primary care assuming full responsibility for frail elderly care). Intervention patients visited emergency rooms 10% less frequently than controls (non-significant). Reductions in waiting times and nursing home placements in the intervention group reached statistical significance ($p \leq 0.05$). Effects of SIPA were not consistent among sub-groups. Effect on costs was more likely in patients with severe chronic diseases, several disabilities or living alone. Institutionalization costs reduced for

Sample size: 1230 (606 Intervention; 624 Control)

Population characteristics:

Type of group	Vulnerable / frail older adults
Condition/ department	Functional disabilities (higher SMAF score).
Sex	
Age	Over 65 years
Other (specify)	Not in nursing home

Context: Two Montreal CLSCs (public community organizations responsible for home care). Each site had a designated programme director.

SIPA (System of Integrated Care for Older Persons) model: Primary / community responsible for delivery of all services (health, social, acute, long-term, nursing homes, community, institutional). Integration of health and social care through case management, MDTs, application of guidelines. Quality assessment. Person-centred care. Capitation funding.

Demonstration study (not fully SIPA)

Case managers (nurses, social workers, OTs) responsible for 35-45 cases each.

Patients encouraged to see their family physician.

patients with fewer chronic illnesses. Total duration of hospital stays reduced for patients with highest number of functional disabilities.

Insignificant increase in patient satisfaction in intervention group at 12 months. Significant satisfaction for caregivers at 12 months. No differences in caregiver burden or out-of-pocket costs.

Case managers spent a lot of time dealing with hospitalisation and discharge issues and were able to call upon additional care resources.

Barriers to implementation: GPs not responding to case managers' requests; lack of communication skills in case managers; lack of incentives to encourage physicians to participate; lack of adjustment time for personnel; funding uncertainty (leading to some project manager resignations); possible contamination between intervention and comparator sites, some of which were co-located; lack of statistical power (double the sample size would be required for full power).

Main author conclusions:

Despite limitations, integrated care for frail elderly patients can be expected to reduce costs and usage of hospitals and nursing homes without an increase in overall costs, reduction in care quality or increased burden to patients and carers.

Reported associations or causative links:

Integrated care → Reduced institutional usage and costs

Potential applicability considerations:

<table>
<tr><td></td><td></td><td>Risk profiles vary according to society and health system in which the patients live.</td></tr>
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<td>

Bird 2007 / 2010

Country: Australia

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td>X</td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator: Eligible but non-participating “dummy” control</td></tr>
<tr><td colspan="2">Length of follow up:
227-253 days (minimum 90 days)</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

</td>
<td>

Data collection method: Patient activity records

Outcome measures:

<table>
<tr><td>ED presentation rates</td></tr>
<tr><td>Admissions and bed days</td></tr>
<tr><td>Cost savings</td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

“Patients First Model of Care” HARP-CNP

Project team including a manager, facilitators with nursing, psychology, gerontology, case management,

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Summary of results:

Intervention participant ED attendance reduced by 20.8%, admissions by 27.9%, bed days by 19.2% (statistically significant at p=0.001). No significant changes were found in the control group, which increased ED attendances of 5.2%, and bed days of 15.3%, and a reduction of 4.4% admissions.

Differences by disease group were as follows:

COPD: intervention group (analysed for 204±92 days) showed a reduction of 10% in ED presentation, 25% in admissions and 18% in inpatient bed days compared to the control group (analysed for 322±84 days), which showed increases of 45%, 41% and 51% respectively (P=0.006; p=0.002; p=0.026).

CHF: intervention group (analysed for 219±99 days) showed a reduction of 39% in ED presentation, 36% in admissions and 33% in inpatient bed days compared to the control group (analysed for 218±140 days), which showed decreases of 26%, 20% and an increase of15% respectively (P=0.006; p=0.002; p<0.001).

Subgroup analyses showed no outstanding effects by gender. Age related differences were only shown in bed days which reduced more in younger age groups and increased for older age groups. The latter finding held true for both intervention groups, whilst all other comparisons favoured the intervention.

It is estimated that annual savings attributable to the project were ~250 ED presentations, ~125 hospital admissions and 1700 bed-days.

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</table>

Sample size: 231 intervention, 85 comparator

Population characteristics:

Type of group	Older adults
Condition/ department	Complex health needs
Sex	
Age	Over 55 years
Other (specify)	At least 3 ED presentations in previous 12 months.

Context: Communities in Australia

community or social work skills and a specialist geriatrician.

Key elements:

Gateway system of recruitment

Needs assessment by care facilitator

Disease specific streams

Care co-ordination and facilitation based on needs assessment.

Range of services

This equates to annual cost savings of around $2 million, compared to the $1 million costs of the project.

Main author conclusions:

The findings indicate that participants of the model used less services than before the intervention. The authors are cautious in concluding cause and effect given the biases in the study. However they are confident that the intervention had a positive effect, particularly as pre-intervention hospital usage may not have been fully accounted for.

Key factors to success also include engagement of stakeholders from development stage through implementation, which allowed a sense of ownership. Continuity of engagement with patients allowed care facilitators to better understand the needs of patients and provide a point of contact. They also acted as links between different services and between patients and services.

Limitations include self-selection of patients and changes to recruitment criteria during the study period.

Reported associations or causative links:

Integrated, patient focused model → reduction in hospital service use

Potential applicability considerations:

Bird 2012

Country: Australia

RCT	
Non-RCT	**X**
CBA	
BA	
Comparator: Matched group who attended hospital in 3 years up to intervention: "dummy" control.	
Length of follow up: Mean 252.6 days	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 223 intervention, 72 control

Population characteristics:

Data collection method: Patient activity records

Outcome measures:

Usage of acute hospital services
Costs

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

HARP-Asthma

Project team including a manager,

Six key elements:

Gateway system of recruitment

Disease specific streams

Needs assessment

Summary of results:

Post-intervention, ED presentations reduced by 57%, admissions by 74%, bed days by 71.4% (p=0.001) compared to increases of 26.5%, 32.1% and 14.3% respectively in control group (statistically non-significant).

Per patient, the authors state that intervention findings equate to annual reductions in usage of around 1.8 ED presentations, 0.7 admissions and 1.1 bed-days.

Financial outcome was cost neutral.

Limitations include lack of randomisation and variability in hospital services across time and place.

Main author conclusions:

Overall, the participants of the model reduced usage of hospital services compared to controls. Though cause cannot be attributed to the intervention, the authors relate the reduction to carer's being more in control and better educated about the condition due to contribution of the model.

Reported associations or causative links:

Improved carer/self-management → reduction in hospital service use

Potential applicability considerations:

<table><tr><td>**Type of group**</td><td>Children</td></tr><tr><td>**Condition/ department**</td><td>Asthma</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td>Under 18 years</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Australian paediatric services	Care co-ordination and facilitation based on needs assessment. Education and action plans Range of services	
Boult 2008/2011/2013 **Country:** USA <table><tr><td>**RCT**</td><td>**X** cluster</td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:** Matched with usual care practices</td></tr></table>	**Data collection method:** Face-to-face and telephone interviews **Outcome measures:** <table><tr><td>Quality of care</td></tr><tr><td>Health care service utilisation</td></tr></table> **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/**	**Summary of results:** 2013: 274 intervention and 203 control patients completed the trial. Adjusted results showed significantly higher reported quality of care for the intervention compared to control (difference = 0.27; 95 % CI: 0.08–0.45). Reported important aspects of care were goal setting, care co-ordination and decision support. Intervention patients were more likely to report receiving “excellent” or “very good” access to telephone advice (OR=1.66; 95 % CI: 1.02–2.73). PCAS communication and integration scores, access to “same day” appointments, satisfaction with primary care, and “wait time” for

Length of follow up: 32 months **Qualitative** **Cross-sectional** **Other (specify)** **Sample size:** 485 intervention; 419 control randomised; 408 / 359 analysed in 2008. **Population characteristics:** **Type of group**: Adults **Condition/ department**: Chronic conditions **Sex**: **Age**: Over 65 years **Other (specify)**:	**Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Guided Care: Combination of successful innovative models Primary care based interdisciplinary team providing eight services to multi-morbid high risk patients: Home based assessment, evidence-based care planning, monitoring, co-ordination, transitional care, self-management training, caregiver support, access to community services.	appointments all favoured the intervention but comparisons were not significant. 2011: Those receiving GC and insured by Kaiser Permanente (KPMAS) appeared to reduce their health service use with adjusted differences between skilled nursing facility admissions (OR, 0.53; 95% CI, 0.31-0.89) and days (OR, 0.48; 95% CI 0.28-0.84) being statistically significant. There was less effect observed in those insured by other companies (Medicare and TRICARE/USFHP). The intervention group used home care at a lower rate (29%) than the control group rate (ratio=0.71; 95 % CI: 0.51–0.97), had 6% fewer hospital admissions, 13% reduced 30-day hospital re-admissions, 26% reduced skilled nursing facility days and 1% reduction in primary care visits. The intervention group also had 2 % more specialist visits and emergency department visits. None of these results were statistically significant. , **Main author conclusions:** The results show that Guided Care patients perceive their quality of care as higher, access more telephone advice and use less home care than in usual care. The potential reasons for non-significant results may be inadequate power of the study as well as heterogeneity of implementation of the model by HCPs. **Reported associations or causative links:** Tested core elements of care → successful models **Potential applicability considerations:** Carried out in urban and suburban mid-US communities.

<table>
<tr>
<td>Context: Eight community care practices in Baltimore / Washington DC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>
Brannstrom 2014

Country: Sweden

<table>
<tr><td>RCT</td><td>X</td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator: Usual care</td></tr>
<tr><td colspan="2">Length of follow up:
Six months</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size: 36 intervention, 36 control
</td>
<td>
Data collection method: Questionnaires

Outcome measures:

<table>
<tr><td>Hospitalisations</td></tr>
<tr><td>Resource use</td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

PREFER intervention:

Patient education - self-management

Advanced care planning designed with patient and family member
</td>
<td>
Summary of results:

Mean number of hospitalisations for intervention group reduced (0.42 ±0.60) compared to control (1.47±1.81) p=0.009. The total number was 15 for PREFER group and 53 for controls. Total bed days in the intervention group was 103 compared to 305 in control group (mean 2.9 vs 8.5 p=0.011).

Resource utilisation was significantly higher in the PREFER group, for example nurse visits (*though in the article the text, which states this finding contradicts the table in which figures are presented to show higher resource use in usual care group ? in error*).

Limitations: Lack of blinding, small sample, single organisation.

Main author conclusions:

The authors attribute frequent visits, continuity of care and ease of access to staff to the ability to deliver structured care at home, thereby reducing hospital usage.

Reported associations or causative links:

Structured home care → Reduced hospital usage
</td>
</tr>
</table>

<table>
<tr>
<td>Population characteristics:

<table><tr><td>Type of group</td><td>Adults</td></tr><tr><td>Condition/ department</td><td>Severe heart failure</td></tr><tr><td>Sex</td><td></td></tr><tr><td>Age</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Context: Advanced home care unit based in a county hospital in the north of Sweden.</td>
<td>Organisation of services (MDT, out-of-hours care, key point of contact, link between services).</td>
<td>Potential applicability considerations:</td>
</tr>
<tr>
<td>Brown 2012

Country: USA

<table><tr><td>RCT</td><td>X</td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator:</td></tr></table></td>
<td>Data collection method: Medicare claims

Outcome measures:

<table><tr><td>Hospitalisations</td></tr><tr><td>Costs</td></tr></table>
The intervention:</td>
<td>Summary of results:

A reduction in hospitalisations was shown at various stages of the study, including 11% reduction at six years (statistically significant)

Limitations:

Low statistical power to detect expenditure reductions.

Non-specific sub-groups identified.

Main author conclusions:</td>
</tr>
</table>

Not clear		**Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Co-ordinated care: Frequent meetings as well as telephone support Meeting with providers Communication hub for providers Evidence based education for patients Support for medication management Transitional care	Care co-ordination programmes can reduce the need for hospitalisation in targeted populations. Four of the 11 programmes reduced hospitalisations by 8-33% in high risk groups (other programmes did not achieve this and one increased expenditure). *Common features of success*: Frequency of face-to-face contact between care co-ordinators and patients Co-location of care co-ordinator and patients Communication between care co-ordinators and physicians, with same co-ordinator for one physician caseload. Physicians willingness to work with care co-ordinator Care co-ordinator as communications hub, making few demands on physicians but keeping them informed of patient circumstances Evidence based patient education and training for care co-ordinators in behaviour change and motivational psychology Comprehensive medical management Timely, comprehensive response to patient transitions (especially from hospital) **Reported associations or causative links:** Appropriate design, targeting and fee structure → n Net savings on costs **Potential applicability considerations:**
Length of follow up: Six years			
Qualitative			
Cross-sectional			
Other (specify)			
Sample size: 4290 **Population characteristics:**			
Type of group			
Condition/ department	Chronic conditions		
Sex			
Age			
Other (specify)			
Context: 11 extended programmes hosted by a range of			

<table>
<tr>
<td>commercial, quality improvement, academic, community and long-term providers.</td>
<td></td>
<td>Authors suggest that applying the factors associated with success above can be transferred to most settings and organisations.</td>
</tr>
<tr>
<td>Callahan 2006

Country: USA

<table>
<tr><td>RCT</td><td>X</td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:
Usual care</td></tr>
<tr><td colspan="2">Length of follow up:
32 months</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>Data collection method: Face-to-face meetings

Outcome measures:

Resource use

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Collaborative Care Model:

Interdisciplinary team with advanced practice nurse:

Minimum intervention received:</td>
<td>Summary of results:

The control group reported fewer mean (SD) clinician visits than the intervention group (5.6 [5.1]; median, 4 [range, 0-27] vs 9.3 [13.4]; median, 5 [range, 0-67]) over 12 months (p=0.03). The differences were maintained at 18 months (7.5 [median, 5.5; range, 0-36] vs 12.9 [median, 9.0; range, 0-127]; p=0.02).

There was no difference between usual care and intervention for hospitalization rates at 12 months (18.8% vs 22.6%, p=0.69) or at 18 months (24.6% vs 29.8%; P=.59) or in 12 month or 18 month mean hospital days (1.0 vs 1.7; p=0.34) and (1.5 vs 2.6; p=0.28).

Rates of nursing home placement did not differ between control and intervention groups at 12 months (1.5% vs 6.0%; p=0.22) or at 18 months (2.9% vs8.3%; p=0.19).

Main author conclusions:

The intervention can be implemented in primary care without significant changes to the system.

Reported associations or causative links:

→</td>
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</table>

<table>
<tr>
<td>Sample size: 153 (84 intervention, 69 control)

Population characteristics:

<table>
<tr><td>Type of group</td><td>Older adults</td></tr>
<tr><td>Condition/ department</td><td>Dementia</td></tr>
<tr><td>Sex</td><td></td></tr>
<tr><td>Age</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Context: Primary care</td>
<td>Education on communication skills; caregiver coping skills; legal and financial advice; patient exercise, guidelines with a book and videotape; caregiver guide.

Caregivers and patients seen every 2 months to begin with then less frequently over `12 months. Memory and behaviour was assessed and monitored. Checklists activated eight components for assessment.</td>
<td>Potential applicability considerations:</td>
</tr>
<tr>
<td>Colla 2012/2016

Country: USA

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td>X</td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:</td></tr>
</table>
</td>
<td>Data collection method: Administrative data

Outcome measures:

Annual spending per Medicare fee-for-service beneficiary

The intervention:</td>
<td>Summary of results:

2012 (2001 – 2009 data):

Mean annual Medicare payments increased by $1206 (15.2%) post intervention compared to $1230 (16.5%) for controls.

An estimated saving of $114 per beneficiary was made, though for the most vulnerable the saving was over $500. For non-dually eligible patients (enrolled in both Medicare and Medicaid programmes) the savings were not significant.</td>
</tr>
</table>

Care delivered by non-PGPD physician **Length of follow up:** 8 years (2012) and five years (2016) **Qualitative** **Cross-sectional** **Other (specify)** **Sample size:** 10 PGPD and 10 control groups **Population characteristics:** **Type of group**: Medicare eligible patients **Condition/ department**: Older adults, disabilities, end stage renal (any age) **Sex**: **Age**: Mainly over 65	**Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Medicare Physician Group Practice Demonstration (PGPD). The intervention is based on the Accountable Care Organisation (ACO) model.	There were also differences in savings across the 10 sites, associated with different financial incentives. **2016 (2009-2013 data):** Prior to ACOs, mean annual spending on clinically vulnerable groups was 114% more than mean total spend ($22,235 vs. $10,378 per beneficiary). This decreased by 1.3% ($136) per beneficiary, and 2% ($456) in vulnerable groups. Other spending decreased as follows: Acute care by $46, or 1.4% generally, and by $192 or 2.3% in vulnerable groups. Skilled-nursing facility by $40, or 5% generally, and $120, or 5% [*is this correct?*] in vulnerable groups. Annual hospitalisations and ED visits per 1,000 beneficiaries decreased by 5.1 and 12.2 events respectively (11.6 and 16.5 events in vulnerable groups). **Main author conclusions:** The savings associated with PGPD are modest, though further analysis showed greater savings for dually eligible (vulnerable) patients and variation in savings associated with adopted payment system. **Reported associations or causative links:**

<table>
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<tr><td>Other (specify)</td><td></td></tr>
</table>
Context: Primary care physician groups.
</td>
<td></td>
<td>Dually eligible (vulnerable) patients → Greater cost savings of PDGD

Potential applicability considerations:

Savings vary according to payment system (e.g. fee-for-service or other).</td>
</tr>
<tr>
<td>
Counsell 2007/2009

Country: US

<table>
<tr><td>RCT</td><td>X</td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator: Usual care</td></tr>
<tr><td colspan="2">Length of follow up:
24 months</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>
Data collection method: Regional health information exchange

Outcome measures:

<table>
<tr><td>ED visits, hospitalisation, bed days</td></tr>
<tr><td>Patient satisfaction</td></tr>
<tr><td>Costs (2009)</td></tr>
</table>
The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign
</td>
<td>
Summary of results:

Hospitalisation (per 1000 visits):

Cumulatively, fewer ED visits were made by the intervention group (1445 [n=474] compared to control 1748 [n=477]) at 24 months (p=.03).

There was no significant difference between intervention and control groups for hospital admissions or bed days (700 vs 740, p=0.66; 3759 vs 4069, p=0.66 respectively). There were no significant differences between groups on 30 day hospital re-admission rates (26% vs 32% p=0.24).

ED visits and hospital admission rates were significantly lower in year 2 than in year 1 for the intervention group (846 vs 1314 p=0.03 and 396 vs 705 p=0.03 respectively).
</td>
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</table>

<table>
<tr>
<td>Sample size: 951

Population characteristics:

<table>
<tr><td>Type of group</td><td>Older Adults</td></tr>
<tr><td>Condition/ department</td><td>Any</td></tr>
<tr><td>Sex</td><td></td></tr>
<tr><td>Age</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Context: Six primary care health centres.</td>
<td>Geriatric Resources for Assessment and Care of Elders (GRACE) model of primary care:

Home based integrated care:

In-home assessment, care management provided by specialist nurse and social workers, use of specific protocols for conditions related to older adults, electronic medical records and web based management tracking tool, integration with other services (pharmacy, mental health, community and inpatient older adult services).</td>
<td>66% intervention patients rated their overall satisfaction with care as very good or excellent compared with 63% of those receiving usual care (p=.31).

2009: It was estimated that costs associated with the GRACE intervention were $1,260 per patient per year or $105 per patient per month. The estimated cost of providing the intervention was $1,432 per year ($119 per month) to high-risk patients and $1,207 per year ($101 per month) to low-risk patients. This was higher than costs for usual care, though the difference was not significant. In patients at high risk of hospitalisation the costs were reduced in year 3, suggesting that savings were made later.

Main author conclusions:

Close collaboration between primary care and specialists can optimise outcomes for these patients. The GRACE intervention was found to be feasible within a public health system serving older adults on low income as well as delivering quality care. Associated costs could possibly be reimbursed from savings on hospitalisation.

Reported associations or causative links:

Integrated pathway for older adults → Reduction in hospitalisation

Potential applicability considerations:</td>
</tr>
<tr>
<td>Dorr 2008</td>
<td>Data collection method: Not reported</td>
<td>Summary of results:</td>
</tr>
</table>

Country: USA

RCT	**X**
Non-RCT	
CBA	
BA	
Comparator: Usual care (matched)	
Length of follow up: 2 years	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 1144 intervention and 2288 control

Population characteristics:

Type of group	Older adults
Condition/	Chronically ill

Outcome measures:

Hospitalisation
ED visits

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Care Management Plus (CMP):

Management of chronically ill patients by nurse care managers with IT resources in primary care. Patients are referred to care managers by their physician.

Care managers assessed patients and used a series of tools such as motivational interviewing, goal setting and patient education. They also screened for e.g. smoking cessation needs and depression and addressed barriers using the IT tool.

Hospitalisations were slightly (non-significant) lower in intervention group (CMP 22.2% vs control 23.3%, OR=0.94, P=0.55 at year one; CMP 31.8% vs control 34.7%, OR=0.88, P0.23 at year two).

For patients with diabetes the respective figures were 21.2% in the CMP group, versus 25.7% (OR=0.78, P=0.07) at one year, 30.5% in the CMP group, versus 39.2% (OR=0.68, P=0.01) at two years. Incremental benefit of the intervention for patients with diabetes showed adjusted ORs of 0.65 (P=0.04) at 1 year and 0.56 (P=0.01) at 2 years.

Higher hospitalisation was associated with higher age at one year but not at two years, and with multiple morbidities throughout (higher scores of multiple morbidity had 6.5 times odds of hospitalisation at 2 years.

Patients had no fewer ED visits at one year (unadjusted OR=1.04, P=0.51), and significantly more visits at 2 years (OR=1.28;P=0.02), than did controls. Patients with diabetes has fewer visits at one year (32.8% vs 35.3%, OR=0.89, P=.037), whilst at 2 years they had more (51.3% CMP, vs 48.5% controls, OR=1.12, P=0.43).

Main author conclusions:

A subgroup of CMP patients with diabetes and complex morbidities had significantly fewer hospitalisations than usual care patients. ED use was greater for intervention patients.

Care for diabetes may be affected differently by CMP than in other groups. Given the enhanced organisational and clinical support that comes with CMP, the authors state that co-ordinated care could be an investment for the future in caring for chronically ill patients.

	department		**Reported associations or causative links:** Clinical and organisational support → reduced hospitalisation in chronic illness **Potential applicability considerations:**
	Sex		
	Age	Over 65 years	
	Other (specify)		
	Context: Primary care		
Ettner 2006 **Country:** USA **RCT** X **Non-RCT** **CBA** **BA** **Comparator:** Usual care **Length of follow up:** 25 months **Qualitative** **Cross-sectional**		**Data collection method:** Administrative and survey data **Outcome measures:** Costs of NPs, medical director and other providers. **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign**	**Summary of results:** Mean cost of intervention per patient was $1187 ($785 without overheads). Most of the expenditure was on NPs and in the first month. The authors estimate that the intervention saved $978 per patient. Patient satisfaction was at least as good as for usual care. **Main author conclusions:** The key element may be restructuring of hospital care rather than use of hospitalists. The findings are supportive of other cost savings following MDTs, care management, discharge planning, improved communication between clinicians etc. **Reported associations or causative links:** MDT with NP and MD → Cost savings per patient **Potential applicability considerations:** Findings (costs) could differ in community hospitals and with a different personnel profile.

	Other (specify)		Multi-Disciplinary Doctor-Nurse Practitioner (MDNP) Protocols to prevent overuse of services, e.g. cardiac monitoring and antibiotic treatment. Use of disease specific pathways. NPs kept in contact with discharged patients weekly for first 4 weeks. Overseen by medical director who was in close contact with NPs and attended ward rounds.	
	Sample size: 1207 **Population characteristics:** **Type of group**: General acute medical patients **Condition/ department**: **Sex**: **Age**: **Other (specify)**: **Context:** Hospitals			
	Fagan 2010 **Country:** USA **RCT**: **Non-RCT**: **X** **CBA**: **BA**:		**Data collection method:** Administrative claims and files **Outcome measures:** Resource use Quality of care **The intervention:**	**Summary of results:** Patients in both intervention and control groups experienced increased quality of care across arrange of indicators. This could be due to a third party incentive (Agency for Healthcare Research and Quality 2005) that affected both groups. There was no difference in non-incentivised indicators between groups. It was not possible to identify a consistent effect on diabetes care or resource use. There were weak or mixed effects across indicators with only 1/5 showing significant improvement. It could be that P4P

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<tr><td colspan="2">Comparator: Comparison practices with no intervention</td></tr>
<tr><td colspan="2">Length of follow up:
38 months</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size: 1587 intervention; 19,356 control

Population characteristics:
<table>
<tr><td>Type of group</td><td>Older adults</td></tr>
<tr><td>Condition/ department</td><td>Diabetes</td></tr>
<tr><td>Sex</td><td></td></tr>
<tr><td>Age</td><td></td></tr>
</table>
</td>
<td>Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Pay for Performance (P4P) practice based care co-ordination:

On-site care co-ordinator

P4P program providing bonuses for meeting specific goals (25 in total, mainly preventative measures)

Disease management programme with Call centre nurses</td>
<td>bonus payments are not large enough compared to salaries to effect change.

There was some reported variation to the protocol and in working relationships between practices and call centres.

Main author conclusions:

The study did not support care co-ordination with P4P incentives. It complemented third party incentives for care quality. Use of a comparator and longitudinal design essential for this work.

Reported associations or causative links:

→

Potential applicability considerations:

Differences between practices (physician to patient ratio, support staff). Variation in structure of practice / call centre.</td>
</tr>
</table>

Other (specify)			
Context: Nine primary care practices in Alabama, Tennessee and Texas			
Farmer 2011 **Country:** USA **RCT** X **Non-RCT** **CBA** **BA** **Comparator:** Waiting list control **Length of follow up:** 6 months **Qualitative** **Cross-sectional** **Other (specify)**		**Data collection method:** Parent / physician reports and medical notes. **Outcome measures:** Satisfaction Useful components **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Medical home: Care co-ordination	**Summary of results:** Parents with children in group 1 reported greater satisfaction with mental health services (1.3 ± 0.5 vs. 1.5 ± 0.7; p = 0.004), therapies (1.6 ± 0.6 vs. 1.8 ± 0.7; p = 0.03) and care co-ordination (2.2 ± .95 vs. 2.7 ± 1.4; p = 0.058) compared to control. Mothers from group 1 also reported less need for information after the intervention (2.2 ± 2.3 vs 3.6 ± 2.0; p = 0.04). There were no differences in outcomes between group 1 and group 2 following intervention for both. Combined results show mother's improved satisfaction with mental health services and care co-ordination following the intervention compared to pre-intervention. More mothers reported having a written care plan (pre: 59%; post: 80%; p = 0.007) and that mental health services were more co-ordinated with primary care and medical services following the intervention (pre: 50%; post: 80%; p =0 .003). 62% children were up-to-date with health visits before the intervention compared to 77% following the intervention (p=0.08).

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Sample size: 100 randomised

Completed: 36 intervention, 34 control

Population characteristics:

Type of group	Children
Condition/ department	Special health care needs
Sex	
Age	Under 18 years
Other (specify)	

Context: 32 general practices in 16 areas of Midwest Central US.

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<td>

Key members of care team include GP, designated nurse, Family Support Specialist and a paid parent consultant.

Key components: Home needs assessment, goal-setting, health plan, information, educational and community resources, advocacy.

Group 1: received intervention for first six months.

Group 2: received no intervention for first six months, then intervention for following six months.

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Components rated as helpful or extremely helpful included the written carte plan (81%), referrals to resources (68%), support from FSS (64%), and the newsletter (62%), assistance communicating with physicians (65%) and educators (60%).

Over 85% of GPs reported that the home visit by the FSS, the identification of unmet child and family needs, problem solving about complex needs, and linking families to needed resources were either helpful or extremely helpful.

Main author conclusions:

An increasing body of evidence supports the use of care co-ordination via the medical home for children with special health care needs.

Reported associations or causative links:

→

Potential applicability considerations:

Requires adequate funding for widespread roll out of the intervention.

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Gray 2010 / Hogg 2009

Country: Canada

RCT	**X**
Non-RCT	

</td>
<td>

Data collection method: Costs; RCT data

Outcome measures:

Cost-effectiveness
Quality of Care (QOC)

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Summary of results:

QOC rose from baseline in both arms, but more in the intervention arm (from 74.1% to 83.9% compared to 76.4% to 77.2%). The 9.1% improvement in AptCare over 12 months was significant (95% CI 3.7% to 14.4%). The adjusted rise was greater, at 9.2%.

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CBA	
BA	
Comparator: Usual care	
Length of follow up: 12 months	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 152

Population characteristics:

Type of group	Older adults
Condition/ department	High risk
Sex	
Age	Over 50 years

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

[FHN is based on hybrid of capitation and fee for service payments].

Anticipatory and Preventive Team Care (APTCare)

Intense management of patients with chronic conditions.

Baseline costs were similar in both groups. Cost of programme and control care was $12,923 and $9,222 respectively. Therefore APTCare was both more expensive and more effective than usual care. The authors calculate that for each 1% increase in QOL, $407 spend is required.

Main author conclusions:

The authors caution that this study is evaluating a new service that could take time to become productive. Also, some costs were based on self-reported data. Though APTCare was shown to improve care quality, it did not meet cost-effectiveness thresholds. It is possible that other benefits from team care might be cost-effective.

Reported associations or causative links:

Intense case management → Improved quality of Care

BUT also increased costs

Potential applicability considerations:

Results may depend on funding schemes across different health systems.

<table><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Semi-rural Family Health Network (FHN)			
Hajewski 2014 **Country:** USA <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td>**X** Pilot</td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:** Matched unit</td></tr><tr><td colspan="2">**Length of follow up:** 3 months</td></tr><tr><td>**Qualitative**</td><td></td></tr><tr><td>**Cross-sectional**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table>	**Data collection method:** Not clear **Outcome measures:** <table><tr><td>Length of stay (LOS)</td></tr><tr><td>30 bed re-admission rates</td></tr><tr><td>Patient satisfaction</td></tr><tr><td>Costs</td></tr></table> **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Patient Care Delivery Model (PCDM):	**Summary of results:** Mean LOS significantly decreased for the intervention over the study quarter (6.02 to 5.02 compared to 5.19 to 5.11) p=0.031. However this was not associated with a decrease in costs (no data). Both groups showed a non-significant decrease in re-admissions for the last quarter of 2010 and 2012. Both groups showed a trend for better self-reported communication with nurses during the study period, though the control started with a higher negative score. The difference between groups was statistically significant in favour of the intervention at p=0.048. **Main author conclusions:** Applying a care co-ordination model can improve outcomes in the acute inpatient setting as well as addressing fragmented care. **Reported associations or causative links:** Care co-ordination → Improved outcomes **Potential applicability considerations:**

<table>
<tr>
<td>Sample size: Two units; 60 bed (intervention) and 44 bed (control).

Population characteristics:
<table><tr><td>Type of group</td><td></td></tr><tr><td>Condition/ department</td><td></td></tr><tr><td>Sex</td><td></td></tr><tr><td>Age</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Context: Hospital medico-surgical unit.</td>
<td>Key components:

Assessment, planning, advocacy, and evaluation to improve patient centred care and communication around discharge planning.

Complex cases are referred to a Nurse Case manager (NCM). A team, comprising the NCM and care staff meet weekly.</td>
<td></td>
</tr>
<tr>
<td>Hammar 2009

Country: Finland
<table><tr><td>RCT</td><td>X cluster</td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr></table></td>
<td>Data collection method: Interviews, medical records and care register data.

Outcome measures:
<table><tr><td>Use of services</td></tr><tr><td>Cost effectiveness</td></tr></table></td>
<td>Summary of results:

At 6 months the intervention group had made less visits to a physician than the control group (1.1 vs 1.6 p<0.001) and use of laboratory testing was also lower (1.0 vs 2.1 p<<0.001). This had an impact on costs which were also reduced (mean overall costs after intervention £6773.5 (€5582) vs £8000.9 (€7090) for control; non-significant).</td>
</tr>
</table>

Comparator: Usual care **Length of follow up:** 6 months **Qualitative** | **Cross-sectional** | **Other (specify)** **Sample size:** 668 (354 intervention vs 314 control) **Population characteristics:** **Type of group**: Home and hospital staff **Condition/ department**: Older adult care **Sex** **Age**: Mean 81.7 **Other (specify)**	**The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Integrated home care and discharge practice (IHCaD practice): Standardise practice Agreed practices between hospital and home care. Patient trajectory from home to hospital and discharge to home again recorded and shared among carers. MDT emphasised. Team comprising home nurse and home aid / helper assigned to all patients receiving regular home care. The team plan and integrate services and assist in discharge.	Use of outpatient clinics and emergency department were not reduced in the intervention, or from baseline. Evidence for cost-effectiveness varied depending upon the instrument used (NPH or EQ-5D). The intervention maintains HRQoL whist reducing costs, making its use feasible. **Main author conclusions:** Findings suggest that the IHCaD practice may be a cost-effective alternative to usual care. **Reported associations or causative links:** HCaD practice ⟶ can reduce some service use and associated costs **Potential applicability considerations:** The authors state that the IHCaD practice is generic, making it suitable for all patient groups, settings and organisations.

<table>
<tr>
<td>Context: Finnish municipalities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hebert 2010

Country: Canada

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td>X</td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator:
Usual care</td></tr>
<tr><td colspan="2">Length of follow up:
4 years</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size: 920 (501 intervention vs 419 control)

Population characteristics:</td>
<td>Data collection method: Interviews and questionnaires

Outcome measures:

ED and other health care use

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

PRISMA Model:

Co-ordination between managers and decision makers (local and regional)

Single entry point

Standardised assessment and case-mix management

Case management</td>
<td>Summary of results:

More intervention patients visited ED in the first year than did controls (46% vs 32% p<0.001), though these were less likely to result in hospitalisation (41.8% vs 56.6% p<0.001). The authors suggest that this may indicate inappropriate use of ED. Over 4 years, use of ED increases as would be expected in this population, from 32% to 54% in the control group (P<0.001). The increase in the intervention group stabilises at 50% (p=0.300).

There was an increase in intervention and decrease in control patient hospitalisation after ED visits over 4 years.

30% of patients from both groups were hospitalised within year one. This proportion rose in the control group to 37% (p=0.006) but remained stable in the intervention group (non-significant).

There was no difference found in changes between intervention and controls returning to ED within 10 days, in number of admissions, length of stay, re-admission at 30 or 60 days, visits to GPs or specialists.

Intervention patients used HCPs, voluntary and home help services more than controls. A lower proportion of intervention patients than control met with a nurse in year 3 (39% vs. 51%, p < .001) and 4 (32% vs. 62%, p < .001).</td>
</tr>
</table>

<table><tr><td>**Type of group**</td><td>Older adults</td></tr><tr><td>**Condition/ department**</td><td>Frail</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td>Over 75 years</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Three areas in Eastern Townships, Quebec.	Individualised care plans Digital clinical records	**Main author conclusions:** The authors suggest that the study adds to the evidence on integrated services. **Reported associations or causative links:** → **Potential applicability considerations:** The authors state that the PRISMA Model is being rolled out to more provinces within Canada and could theoretically be transferred to health systems such as in the UK and Scandinavia. The study also assessed other outcomes such as functionality that are not included in the scope for this review.
Hildebrandt, 2012 **Country:** Germany <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td>**X**</td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:** Usual care</td></tr></table>	**Data collection method:** Insurance claims, patient records **Outcome measures:** Fractures, costs, admissions **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors**	**Summary of results:** Limited data and analysis Osteoporosis - among all patients with osteoporosis the number of fractures was around 5 % lower in the intervention group compared with the controls. For other conditions in addition to osteoporosis - chronic coronary heart disease, heart failure, diabetes, affective disorder (including depression), dementia; and chronic back pain. “Intervention patients receives more care, and of a higher quality, compared to those in the comparison group”. No data provided.

Length of follow up: 2005 to 2008 **Qualitative** **Cross-sectional** **Other (specify)** **Sample size:** varied for different calculations – 55 in one 1,800 in another **Population characteristics:** **Type of group**: Patients **Condition/ department**: Chronic disease, **Sex**: **Age**: **Other (specify)**: Those insured by 2 companies aged over 18	**enabling change/ Patient-focused/ Location-focused/ General service redesign** A population-based integrated care approach which organises care across all health service sectors and indications within a specified region. Includes 20 programmes with increased preventive and health promotion elements from that available previously. Core elements - Individual treatment plans and goal-setting agreements between doctor and patient. Enhancing patient self-management and shared decision-making). Chronic care model elements including patient coaching and follow-up care. Providing the right care at the right time. Using a system-wide electronic patient record. Shared decision-making between staff and management. Providers include clinicians, hospitals, nursing homes, pharmacies, gyms, health	Higher rate of patients with heart failure had a prescription of at least one drug recommended by the treatment guideline (75.6% versus 68.8%). Average cost 1.243 euros in intervention group compared to 1.538 in controls. Saving of 16.9% over four years. Trend for reduced hospitalisation (286.1 per 1000 interventions versus 316.7 control). Increase in both groups over time but less increase in intervention group (10.2% versus 33.1%). **Main author conclusions:** The initiative has led to improved health and reduced healthcare costs (a smaller increase). **Reported associations or causative links:** Integrated care ⟶ Less increase in costs, less increase in admissions. **Potential applicability considerations:** The existing model in the country had wide division between hospital and non-hospital clinicians “stricter than in other countries”. 68% of primary care physicians work in solo practices. Company not penalised by loss but rewarded by gain. Income is derived from the shared gains from the sickness funds (with marginal surplus money from foundations and ministries) and it is dependent on the success of its work. Profit is the money they receive from a central health care fund based on mean costs of care adjusted for morbidity, age, and sex compared to the actual costs of care for the population.

Context: South West Germany. Has a long-running contract (10 years) with an adequate amount of investment. Started in 2006, It serves around half of the population of the region, run by a regional health management company in cooperation with the local physicians' network, a German health care management company with a background in medical sociology and health economics, and two statutory health insurers. Lack of incentives for prevention, hospital fee for service, non hospital services reimbursement with a budget. Health insurance companies able to spend 1% of budget on integrated care programmes. Virtual budget of 62 million euros. Basic fee-for-service reimbursement system continues to be the main source of providers' income alongside the shared savings contract.	and sports clubs, workplaces, adult education, self-help groups. Patients may seek care from any provider not only those within the scheme.	80% of physicians are shareholders of the company driving involvement and energy of physicians. Plans to provide incentive payments for clinicians and other providers.

Hullick 2016

Country: Australia

RCT	
Non-RCT	
CBA	**X**
BA	
Comparator: Usual care	
Length of follow up: 9 months	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 12 Residential Aged Care Facilities (RACFs). Four of these were intervention sites, matched with other sites for bed numbers etc.

Population characteristics:

Data collection method: Hospital records

Outcome measures:

ED presentations,

ED and hospital length of stay (LOS),

Hospital admission

28-day readmission

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Aged Care Emergency Service (ACE):

Advanced practitioner nurse with aged care skills co-ordinated the service.

Summary of results:

The intervention shows lack of efficacy in reducing ED admissions compared to controls (OR = 1.17, p = 0.56).

Though both groups ED LOS reduced over time, the intervention ED LOS reduced from 496.3 min to 435.7 min, a 45 minute greater reduction than the control (496.7 min to 481.7 min) (p=0.0575).

Intervention patients had approx. 59% greater odds of hospital admission than controls (p = 0.0002). The odds in both groups increased by about 35% (p=0.01). However, Group x Time analysis showed that the increase in intervention groups was around 40% less than in controls, suggesting efficacy in reducing the odds of hospitalisation in the intervention group compared to controls.

Hospital LOS tended to reduce in both groups post-intervention, with intervention reducing more than controls (9.4 days to 6.3 days vs 10.0 days to 8.0 days). Group x Time analysis showed a greater reduction in the intervention of 1.36 days (non-significant).

Changes in 28 day readmission was negligible and non-significant in both groups (OR = 1.18, p = 0.49). re-admission decreased in both groups, but to a lesser extent in the intervention group.

Main author conclusions:

The authors conclude that a complex care co-ordinated management strategy can reduce hospitalisation in elderly adults living in residential facilities.

Reported associations or causative links:

<table><tr><td>**Type of group**</td><td>Older adults</td></tr><tr><td>**Condition/ department**</td><td></td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td>Mean > 80 years</td></tr><tr><td>**Other (specify)**</td><td>Living in Residential facilities</td></tr></table> **Context:** Local Health District, New South Wales, Australia	Use and testing of a range of evidence based algorithms for e.g. falls, SOB, catheter issues. Staff education programme Clinical telephone support from registered nurses in ED. Establish purpose of ED transfer based on patient care goals (RACF and ED staff). Pro-active case management. Collaborative respectful relationship between GPs, Ambulance, RACF and ED staff.	Co-ordinated care management → Reduction in hospital use **Potential applicability considerations:**
Jack 2009 **Country:** USA <table><tr><td>**RCT**</td><td>**X**</td></tr><tr><td>**Non-RCT**</td><td></td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:** Usual care</td></tr></table>	**Data collection method:** Medical records **Outcome measures:** <table><tr><td>ED visits</td></tr><tr><td>Hospitalisation within 30 days discharge</td></tr><tr><td>Costs</td></tr></table>	**Summary of results:** Data were collected for 83% of the sample. Intervention: 15.1% of patients had one hospitalisation, 6.5% had more than one. A total of 116 hospitalisations (61 ED visits; 55 readmissions) were made during 370 person-months (0.314 visits per person per month). Control: 18.8% had one hospitalisation and 8.1% more than one. A total of 166 visits (90 ED visits and 76 readmissions) were made during 368 person-months (0.451 visits per person per month).

Length of follow up: **Qualitative** **Cross-sectional** **Other (specify)** **Sample size:** 370 intervention, 368 control **Population characteristics:** **Type of group** Adults **Condition/ department** **Sex** **Age** Over 18 years **Other (specify)** **Context:** One hospital in Boston, Massachusetts	**The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Reengineered discharge (RED) hospital discharge programme: Nurse discharge advocates (DAs): • co-ordinate discharge plan with hospital team; • prepare and educate patient for discharge; • create after hospital care plan that was made accessible to patient (hard copy in lay language and in a folder) 2-4 days post-discharge: Clinical pharmacist (who has computer access to the care plan) contacts the patient (up to 3 times over first week) to	Intervention group had lower hospitalisation rate than control (incidence rate ratio, 0.695 [95% CI, 0.515 to 0.937]); P =0.009). One control participant had more than eight hospitalisations; analysis excluding this participant remained statistically significant (P= 0.028). Approximately 30% of each group having previous significant hospitalisation had more than one subsequent hospital utilization. The difference between groups in total cost (combined actual hospital utilization cost and estimated outpatient cost) for 738 participants = $149.995. This represented a mean $412 per intervention patient and 33.9% lower observed cost over the intervention group. **Main author conclusions:** The intervention was effective in reducing hospitalisations in those who were particularly at risk of hospitalisation from previous 6 month data. It also improved patient perceptions of their readiness for discharge. **Reported associations or causative links:** Hospital discharge programme → Reduces hospitalisation in high risk patients **Potential applicability considerations:** The study (both arms) was carried out in one site.

<table>
<tr><td></td><td>re-inforce the care plan and carry out an over-the-telephone medication review.</td><td></td></tr>
<tr><td>Janse 2014 a/b

Country: Netherlands

<table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td>X</td></tr><tr><td>BA</td><td></td></tr><tr><td colspan="2">Comparator:
Usual care</td></tr><tr><td colspan="2">Length of follow up:
12 months</td></tr><tr><td>Qualitative</td><td></td></tr><tr><td>Cross-sectional</td><td></td></tr><tr><td>Other (specify)</td><td></td></tr></table></td><td>Data collection method: Questionnaire based on Dutch Consumer Quality Index

Outcome measures:

Patient and informal caregiver satisfaction

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Walcheren Integrated Care Model (WICM):

Preventive screening</td><td>Summary of results:

The WICM had no impact on informal caregiver satisfaction with care and support services. There was an increase in satisfaction with care given according to patient need.

The intervention resulted in decreased satisfaction with the extent of support given by HCPs with admin tasks, how understandable the information provided was perceived to be, and degree to which caregivers knew which services to contact.

Main author conclusions:

WICM appears to be successful in delivering care according to patient need. The negative results were a surprise given the aims of the intervention to maintain transparency. The contrast between these findings and those of similar studies may be due to the inclusion of informal caregivers in the survey, who may have regarded some of the model components as intrusive (e.g. information overload). Including a case manager may have been confusing for caregivers seeking an appropriate service (i.e. need to interact with yet another professional). Also, the satisfaction tool used may not be the most appropriate.</td></tr>
</table>

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Sample size: 3 intervention and 5 control GP practices

377 patients

Population characteristics:

Type of group	Older adults and their caregivers
Condition/ department	Frail
Sex	
Age	
Other (specify)	

Context: Eight GP practices in Walcheren region of Netherlands

</td>
<td>

Needs assessment of elderly person and caregiver (EasyCare)

Single entry point (GP practice)

MDT care plan

MDT meetings (with other sectors)

Case management (specialist GP and nurse)

Protocols

Integrated information system

</td>
<td>

The authors suggest that expectations raised by integrated care might not be borne out in practice.

Reported associations or causative links:

Assessing patient need → tailored care

Potential applicability considerations:

Questioning formal caregivers as well as patients for satisfaction ratings.

</td>
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<td>

Martinussen 2012

Country: Norway

RCT	
Non-RCT	
CBA	**X**

</td>
<td>

Data collection method: Questionnaires

Outcome measures:

HCP burnout, work engagement, perceived service quality

</td>
<td>

Summary of results:

The Model area scored higher on collaboration, though there were no differences in perceived service quality, exhaustion or work engagement.

Main author conclusions:

</td>
</tr>
</table>

<table><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:** Matched municipalities (4)</td></tr><tr><td colspan="2">**Length of follow up:** 3 years</td></tr><tr><td>**Qualitative**</td><td></td></tr><tr><td>**Cross-sectional**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Sample size**: 93 intervention, 53 comparator **Population characteristics:** <table><tr><td>**Type of group**</td><td>HCPs</td></tr><tr><td>**Condition/ department**</td><td>Children and families</td></tr><tr><td>**Sex**</td><td></td></tr><tr><td>**Age**</td><td></td></tr></table>	**The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Model District Project: HCP courses on collaboration and formation of MDTs in each municipality and networks between municipalities.	Despite limitations (non-random design, self-reported data), the authors suggest that the study contributes to better understanding of collaboration. **Reported associations or causative links:** → **Potential applicability considerations:**

Other (specify)			
Context: Six municipalities in North Norway			
McGregor 2011 and Katon 2012 **Country: USA** **RCT** X **Non-RCT** **CBA** **BA** **Comparator:** Usual care **Length of follow up:** 2 years **Qualitative** **Cross-sectional** **Other (specify)**		**Data collection method:** Clinical and laboratory assessments. Cost data from HMO system **Outcome measures:** Costs and cost-effectiveness Clinical outcomes **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign**	**Summary of results:** The intervention group had significantly more depression-free days (primary outcome) compared with controls (114 days, 95% CI 79 to 149). Total outpatient costs were also lower, although the confidence interval was wide (cost difference -$594, 95% CI -3421 to 2053). The intervention group gained an estimated 0,335 QALYs over 24 months (95% CI -0.18 to 0.85). **Main author conclusions:** The TEAMcare intervention seemed to be cost-effective and should be considered for adoption in primary care . **Reported associations or causative links:** Nurse care co-ordination → Improved clinical outcomes for no or modest additional cost **Potential applicability considerations:** Intervention may be more difficult to implement in other healthcare systems. Usual care was of a high standard and differences may be greater in other settings

Sample size: 214

Population characteristics:

Type of group	Patients
Condition/ department	Depression and poorly controlled diabetes or coronary heart disease (CHD)
Sex	48% /56% (I/C) female
Age	Mean 57/56
Other (specify)	

Context: Large health maintenance organisation (HMO) in Washington State. Intervention delivered in 14 primary care clinics

TEAMcare involved adding a nurse care manager to the primary care team. The care manager worked with the primary care physician to support patient self-management, treatment intensification, co-ordination and continuity of care. Individualised care plans and weekly systematic case reviews were key features of the intervention

Morales-Asencio 2008

Country: Spain

RCT	
Non-RCT	X
CBA	
BA	
Comparator: Usual care	
Length of follow up: Up to 12 months	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 463 (247 intervention; 216 control)

Population characteristics:

Data collection method:
Patient/caregiver interviews and routinely collected health system data

Outcome measures:

Resource use
Patient satisfaction

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Addition of nurse case manager to primary care team. The case manager took part in home visits on request; co-ordinated care with other institutions and professionals; arranged technical assistance at home; worked with

Summary of results: Functional capacity was lower in the intervention group at baseline but the difference was no longer present at 6 months. Patients in the intervention group received more physiotherapy but required fewer home visits. There were no differences for emergency department visits or hospital readmissions. The intervention group reported significantly higher patient satisfaction and lower caregiver burden.

Main author conclusions: A home care service with nurse-led case management streamlines access to services and has a beneficial effect on functional capacity, burden on carers and patient satisfaction

.

Reported associations or causative links:

Nurse-led case management → Improved satisfaction and reduced caregiver burden

Nurse-led case management → No difference in ED visits or hospital admissions

Potential applicability considerations: Patients allocated based on availability of services in their district

<table><tr><td>**Type of group**</td><td>Patients and caregivers</td></tr><tr><td>**Condition/ department**</td><td>People receiving home care services</td></tr><tr><td>**Sex**</td><td>41/33% male</td></tr><tr><td>**Age**</td><td>Mean 75.3/77.2</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Introduction of new model within primary care in southern Spain	caregivers; and provided telephone follow-up .	
Olsson 2009 **Country: Sweden** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td>X</td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:** Usual care</td></tr></table>	**Data collection method:** Hospital financial database and assessment of activities of daily living (ADL) index at discharge. Cost of developing the ICP was estimated from salaries and time spent **Outcome measures:** <table><tr><td>Hospital costs</td></tr><tr><td>ADL index</td></tr><tr><td></td></tr></table>	**Summary of results:** Average total treatment cost was €9685 for the ICP group compared with €15, 984 for the control group. The rate of successful rehabilitation was higher in the ICP group (75% vs. 55%). The average cost per successful rehabilitation was €14,840 for the ICP group and €31,908 for usual care **Main author conclusions:** An ICP with individualised care appears to improve rehabilitation outcomes and reduce costs . **Reported associations or causative links:**

Length of follow up: 18-month study; follow-up in hospital only **Qualitative** | **Cross-sectional** | **Other (specify)** **Sample size:** 112 (56 intervention, 56 control) **Population characteristics:** **Type of group**: Patients **Condition/ department**: Hip fracture **Sex**: 83/112 (74%) female **Age**: Mean 84 (SD 7) **Other (specify)**		**The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** ICP focused on individual patients' motivation and needs for rehabilitation. Patients remained on the orthopaedic ward until their ADL index had returned to pre-fracture level or they were making no further progress .	Implementation of ICP → Reduced hospital costs **Potential applicability considerations:** Study adopted hospital perspective, i.e. only direct healthcare costs were included. Data specific to Swedish healthcare system

<table>
<tr>
<td>Context: Swedish university hospital</td>
<td></td>
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</tr>
<tr>
<td>
Parsons 2012

Country: New Zealand

<table>
<tr><td>RCT</td><td>X (cluster)</td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator: Usual care with centralised needs assessment</td></tr>
<tr><td colspan="2">Length of follow up: 2 years</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>
</td>
<td>
Data collection method: Interviews and routinely collected health service data

Outcome measures:
<table>
<tr><td>Care home admission</td></tr>
<tr><td>Mortality</td></tr>
<tr><td>Service use</td></tr>
<tr><td>Activities of daily living, quality of life</td></tr>
<tr><td>Caregiver outcomes</td></tr>
</table>
The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign
</td>
<td>
Summary of results: Risk of care home admission or death was significantly lower in the intervention group (hazard ratio 0.67, 95% CI 0.45 to 0.99). The intervention was associated with an 8.7% absolute reduction in risk of care home admission. Intervention group participants made greater use of day care, day centres, meals on wheels, and respite care.

Main author conclusions: A primary care-based community care management approach reduces frail older adults' risk of mortality and care home admission.

.

Reported associations or causative links:

Co-ordination of services by care manager → Reduced risk of care home admission and increased use of day and respite services

Potential applicability considerations: Care manager worked closely with primary care physician and covered a defined geographical area, allowing familiarity with available services
</td>
</tr>
</table>

<table>
<tr>
<td>Sample size: 351 (169 intervention, 182 control)

Population characteristics:

<table>
<tr><td>Type of group</td><td>Patients</td></tr>
<tr><td>Condition/ department</td><td>Older people at high risk of residential care admission</td></tr>
<tr><td>Sex</td><td>243/351 (69%) female</td></tr>
<tr><td>Age</td><td>Mean 81</td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Context: 55 primary care practices in New Zealand</td>
<td>Co-ordinator of Services for the Elderly (COSE) initiative. Care manager who co-ordinated services and acted as a point of contact for the patient, family and primary care physician. The care manager could also purchase specialist health services if required</td>
<td></td>
</tr>
<tr>
<td>Paulus 2008a/b

Country: Netherlands

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td>X</td></tr>
</table>
</td>
<td>Data collection method: Forms recording type and duration of activities performed by carers. Costs based on personnel costs for the Netherlands

Outcome measures:

<table>
<tr><td>Resource use</td></tr>
</table>
</td>
<td>Summary of results: The overall average frequency and total duration of most activities were higher for integrated care than for traditional and hybrid care. The average duration per activity was generally higher for traditional care. The (total) average frequency of most direct care activities at most measurement points and the total average duration per resident per day were higher for physical health care than for psycho-geriatric care. Compared to traditional care, integrated care had lower informal direct care costs. The total average</td>
</tr>
</table>

BA	
Comparator: 'Traditional' nursing home care	
Length of follow up: 4-year study; follow-up 6 and 14 months after implementation of 'integrated' care	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: Three nursing homes with 121, 141 and 88 beds

Population characteristics:

Type of group	Patients and staff
Condition/ department	Nursing home residents with physical or

Costs

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

.Integrated care was characterised by a 'home-like' atmosphere and co-ordinated care delivered by multidisciplinary teams. Hybrid care included some components of the integrated model

costs per resident per day and the costs of formal direct care, however, were higher

Main author conclusions: Integrated care had mixed impacts on the frequency and duration of care activities. The authors attributed this to the routine nature of many activities, which limits their susceptibility to change. The assumption that integrated nursing home care may reduce costs was only partially supported. The type of care patients required (physical or psycho-geriatric) was a major factor

.

Reported associations or causative links:

Integration of nursing home care → Mixed impact on costs and resource use

Potential applicability considerations: None reported

	psycho-geriatric conditions; formal and informal carers **Sex** NR **Age** NR **Other (specify)** **Context:** Nursing homes offering 'traditional',' integrated' and 'hybrid' care. The hybrid home implemented integrated care during the study		
Rosenheck 2016 **Country: USA** **RCT** X (cluster) **Non-RCT** **CBA** **BA** **Comparator:** Usual community care		**Data collection method:** Interviews (QoL and service use) and published/administrative data (costs) **Outcome measures:** Quality of life Healthcare costs and cost-effectiveness	**Summary of results:** The intervention group showed significantly greater improvement on the Quality of Life Scale (QLS) compared with the control group. Outpatient mental health costs and total medication costs were significantly higher for the NAV group. The incremental cost-effectiveness ratio was $12,081 per one standard deviation change on the QLS (QLS-SD). This equated to $84,567 per QALY. **Main author conclusions:** The NAV intervention for FEP can improve quality of life, albeit at increased costs. The clinical benefit

Length of follow up: 2 years		**The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign**	appears to justify the additional expenditure for selected patients . . **Reported associations or causative links:** Integrated service package ⟶ Increased quality of life and costs **Potential applicability considerations:** Usual care in trial centres may not be representative of normal US practice. In-patient service use is influenced by the local availability of beds and practice patterns
Qualitative			
Cross-sectional			
Other (specify)			
Sample size: 223 intervention; 181 comparator **Population characteristics:**		.The Navigate (NAV) intervention involved personalised medication management; family psychoeducation; individual illness self-management therapy; and supported education and employment. Weekly team meetings facilitated communication and co-ordination and clinicians received training, onsite supervision, and external expert consultation.	
Type of group	Patients		
Condition/ department	First episode psychosis		
Sex	NR		
Age	Average 23		
Other (specify)			

<table>
<tr>
<td>Context: Selected community mental health treatment centres throughout the USA</td>
<td></td>
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</tr>
<tr>
<td>Sahlen 2016

Country: Sweden

<table>
<tr><td>RCT</td><td>X</td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator: Usual care</td></tr>
<tr><td colspan="2">Length of follow up: 6 months</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size: 72 (36 in each group)</td>
<td>Data collection method: Assessment of QoL at baseline and end of study. Costs based on salary and time spent

Outcome measures:

<table>
<tr><td>Healthcare costs</td></tr>
<tr><td>Quality of life</td></tr>
<tr><td></td></tr>
<tr><td></td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Intervention group were offered care at home by a multidisciplinary team involving collaboration between</td>
<td>Summary of results: The intervention resulted in a gain of 0.25 QALYs compared with usual care and total healthcare costs were lower in the intervention group (€140,000 vs.205,000). Higher staffing costs were outweighed by reduced costs for emergency care and hospital transport

Main author conclusions: The integrated model of palliative care and heart failure care at home saves money and should be regarded as highly cost-effective

.

Reported associations or causative links:

Integration home and palliative care → Reduced costs and improved quality of life

Potential applicability considerations: Findings likely to be specific to context, i.e. availability of a range of specialist staff and services for home care</td>
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</table>

<table>
<tr>
<td>Population characteristics:

<table><tr><td>Type of group</td><td>Patients</td></tr><tr><td>Condition/ department</td><td>Severe chronic heart failure</td></tr><tr><td>Sex</td><td>NR</td></tr><tr><td>Age</td><td>NR</td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Context: Specialist home care unit based in a county hospital in northern Sweden</td>
<td>specialists in palliative and heart failure care, i.e. specialized nurses, palliative care nurses, cardiologist, palliative care physician, physiotherapist, and occupational therapist.

.</td>
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<tr>
<td>Salmon 2012

Country: USA

<table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td></td></tr><tr><td>CBA</td><td></td></tr><tr><td>BA</td><td></td></tr></table></td>
<td>Data collection method: Analysis of routinely collected data

Outcome measures:

<table><tr><td>Medical costs</td></tr><tr><td>Compliance with standards of care</td></tr><tr><td></td></tr><tr><td></td></tr></table></td>
<td>Summary of results: Total medical costs did not differ significantly between study and comparison practices. The three study practices were superior to comparators for all except one of 15 quality measure comparisons

Main author conclusions: A shared-savings accountable care model with support from the payer can help to make practices accountable for care quality and efficiency

.</td>
</tr>
</table>

Comparator: Practices in the same area not participating in the initiative **Length of follow up:** 1-year study **Qualitative** | **Cross-sectional** | X **Other (specify)** | **Sample size**: Practices in New Hampshire/Vermont (16,654 patients); Texas (8,753); and Arizona (14,575) **Population characteristics:** **Type of group** | Patients **Condition/ department** | NR **Sex** | NR	**The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign** Cigna Accountable Care Initiative. Care co-ordinators employed by participating practices use patient-specific reports and practice reports provided by Cigna to improve care co-ordination and quality .	**Reported associations or causative links:** Collaborative accountable care → Better compliance with care quality standards and trend towards lower costs **Potential applicability considerations:** Specific to US-type healthcare system (insurance-funded)

<table><tr><td>**Age**</td><td>NR</td></tr><tr><td>**Other (specify)**</td><td></td></tr></table> **Context:** Diverse medical practices in three regions of the USA			
Stampa 2014 **Country: France** <table><tr><td>**RCT**</td><td></td></tr><tr><td>**Non-RCT**</td><td>X</td></tr><tr><td>**CBA**</td><td></td></tr><tr><td>**BA**</td><td></td></tr><tr><td colspan="2">**Comparator:** Usual care</td></tr><tr><td colspan="2">**Length of follow up:** One-year study</td></tr><tr><td>**Qualitative**</td><td></td></tr><tr><td>**Cross-sectional**</td><td></td></tr><tr><td>**Other (specify)**</td><td></td></tr></table>	**Data collection method:** Medical records and assessment at baseline, 6 and 12 months **Outcome measures:** <table><tr><td>Hospital admission</td></tr><tr><td>Health outcomes (various)</td></tr><tr><td></td></tr><tr><td></td></tr></table> **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/**	**Summary of results:** The risk of unplanned hospital admission was lower in the COPA group and these patients were more likely to have only planned admissions. Total hospital admissions did not differ significantly between groups. Some health outcomes (depression and breathlessness) improved in the COPA group. **Main author conclusions:** The COPA model improves the quality of care provided to frail elderly patients by reducing unplanned hospitalizations and improving some health parameters. . **Reported associations or causative links:** Integration of care → shift from unplanned to planned hospital admission for very frail elderly people **Potential applicability considerations:** None reported

<table>
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Sample size: 105 intervention, 323 control

Population characteristics:

<table>
<tr><td>Type of group</td><td>Patients</td></tr>
<tr><td>Condition/ department</td><td>Frail elderly people with complex needs</td></tr>
<tr><td>Sex</td><td>74/72% female</td></tr>
<tr><td>Age</td><td>Mean 85.9/87.3</td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Context: Urban district of Paris with 150,000 inhabitants; control group recruited from two other similar districts

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Location-focused/ General service redesign

COPA (co-ordination of care for the elderly) involves collaboration between a case manager and the patient's primary care physician supported by geriatricians as needed

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Stewart 2010

Country: Canada

<table>
<tr><td>RCT</td><td></td></tr>
<tr><td>Non-RCT</td><td>X</td></tr>
</table>

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<td>

Data collection method: Chart review, interviews and surveys

Outcome measures:

<table>
<tr><td>ED visits</td></tr>
</table>

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<td>

Summary of results: Controlling for symptom severity, a significantly smaller proportion of IPSITH patients had ED visits (3.7% versus 20.7%; P = .002), and IPSITH patients and their caregivers, family physicians, and community nurses had significantly higher levels of satisfaction (P < .05). There was no

</td>
</tr>
</table>

CBA	
BA	
Comparator: Usual care	
Length of follow up: 2-year study. Patients were followed up 2 weeks and 6 weeks after the treatment period	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 82 intervention, 82 control

Population characteristics:

Type of group	Patients, physicians, community

Patient, caregiver and health professional satisfaction

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Integrating Patient Services in the Home (IPSITH) provided patients with enhanced home-based care from a multidisciplinary team including their own family physicians. Services were co-ordinated by a family physician (part-time) and a full-time nurse practitioner

.

difference in caregiver burden. IPSITH required resources for home visits and the salary of the nurse practitioner

Main author conclusions: Family physicians can be integrated into

acute home care when appropriately supported by a team including a nurse practitioner.

.

Reported associations or causative links:

Integration of home care services → Reduced ED visits and increased satisfaction

Potential applicability considerations: IPSITH family physicians may not be representative; early adopters with positive attitude to home care

	nurses and caregivers		
Condition/ department	Patients with acute or complex illness		
Sex	49% male		
Age	Mean 65.5/6.3		
Other (specify)			

Context: London, Ontario and the surrounding area. Home care co-ordinated through a regional provincially funded agency

Taylor 2013

Country: USA

RCT	
Non-RCT	
CBA	
BA	
Comparator: Information only (Care binder)	

Data collection method: Cross-sectional survey

Outcome measures:

Perceived quality of care co-ordination

Summary of results: Compared with patients who only received the Care Binder (n=50), those who saw the counsellor (n=25) were more positive about co-ordination of the patient's care (3-question composite score 83.5 vs. 56%, $p<0.001$). The proportion reporting improved care co-ordination over the last 6 months was 66.6% for those seeing the counsellor and 46.9% for the Care Binder group (not significant)

Length of follow up:			
Qualitative			
Cross-sectional	X		
Other (specify)			

Sample size: 75

Population characteristics:

Type of group	Family members/carers
Condition/ department	Children with special healthcare needs
Sex	
Age	
Other (specify)	

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

.Care Co-ordination Counsellor available to patients and families that saw three or more care providers. The counsellor was supported by related tools including Care Binders, a Community Resources for Families database and a Care Coordination Network Committee

Main author conclusions: Care Co-ordination counsellor role and associated tools offers an integrative way to connect families with services and resources to support co-ordination and continuity of care

.

Reported associations or causative links:

Care Co-ordination counsellor → Perceived improvement in care co-ordination

Potential applicability considerations: Specialist children's hospital in USA. Survey anonymous so no adjustment for differences between groups

<table>
<tr>
<td>Context: Children’s hospital with 430 beds and approximately 50 outpatient care sites</td>
<td></td>
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<tr>
<td>Theodoridou 2015

Country: Switzerland

<table>
<tr><td>RCT</td><td>X</td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
<tr><td>BA</td><td></td></tr>
<tr><td colspan="2">Comparator: Standard care</td></tr>
<tr><td colspan="2">Length of follow up: 12 months</td></tr>
<tr><td>Qualitative</td><td></td></tr>
<tr><td>Cross-sectional</td><td></td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Sample size: 178</td>
<td>Data collection method: Assessment at baseline and follow-up

Outcome measures:

<table>
<tr><td>Length of stay</td></tr>
<tr><td>Number and length of readmissions</td></tr>
<tr><td>Satisfaction</td></tr>
<tr><td>Psychopathology</td></tr>
</table>

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

.Multidisciplinary team offering a range of different care settings ranging from inpatient care through acute day hospital</td>
<td>Summary of results: Patients were randomised to units offering integrated or standard care. The integrated care group showed a significant reduction in psychopathological impairment (20.7%) and an improvement of psychosocial functioning (36.8%) compared with the control group. The mean number of days before re-admission was higher in the control group when compared to the integrated care group (156.8 vs. 91.5). There was no difference in the number of re-admissions and days spent in hospital.

Main author conclusions: The integrated care model facilitates continuity of care while improving psychopathological outcome measures and psychosocial functioning

.

Reported associations or causative links:

Integrated care by MDT ⟶ Decreased time to readmission

Potential applicability considerations: Intervention delivered at a single site.</td>
</tr>
</table>

<table>
<tr>
<td>Population characteristics:

<table><tr><td>Type of group</td><td>Patients</td></tr><tr><td>Condition/ department</td><td>Any psychiatric diagnosis except substance use or organic</td></tr><tr><td>Sex</td><td>98/178 (55%) male</td></tr><tr><td>Age</td><td>Mean 40, SD 12</td></tr><tr><td>Other (specify)</td><td></td></tr></table>
Context: University hospital with six units providing psychiatric care</td>
<td>treatment to outpatient care. Patients can move between settings as their needs change and remain under the care of the same team, ensuring continuity of care</td>
<td></td>
</tr>
<tr>
<td>van der Marck 2013

Country: Netherlands

<table><tr><td>RCT</td><td></td></tr><tr><td>Non-RCT</td><td>X</td></tr><tr><td>CBA</td><td></td></tr></table></td>
<td>Data collection method: Assessment at baseline and every 2 months

Outcome measures:

<table><tr><td>Activities of daily living</td></tr><tr><td>Quality of life</td></tr></table></td>
<td>Summary of results: Small benefits of the intervention for primary outcomes disappeared after correction for baseline disease severity. Costs did not differ between groups (cost difference €742, 95% CI –€489 to €1950)

Main author conclusions: Results suggest that different approaches are needed to obtain more substantial health benefits</td>
</tr>
</table>

BA	
Comparator: Usual care	
Length of follow up: 8 months	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 301

Population characteristics:

Type of group	Patients
Condition/ department	Parkinson's disease
Sex	188/301 (62%) male
Age	Mean 68, SD 8

Healthcare costs (secondary outcome)

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Patients in intervention group were assessed by a multidisciplinary team to develop a comprehensive treatment plan that was delivered by a network of trained allied health professionals supervised by the referring neurologist. Care in the control regions was not changed for the study

.

.

Reported associations or causative links:

Integrated care by multidisciplinary team → No difference in costs

Potential applicability considerations: Cost data specific to Netherlands healthcare system

Other (specify)			
Context: Community hospitals in regions where the intervention was/was not available			
van Gils 2013 **Country: Netherlands** **RCT** X **Non-RCT** **CBA** **BA** **Comparator:** Usual care **Length of follow up: 52 weeks** **Qualitative** **Cross-sectional** **Other (specify)**		**Data collection method:** Assessment at baseline and follow-up **Outcome measures:** Costs (societal perspective) Clinical outcomes **The intervention:** **Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign**	**Summary of results:** Mean total costs were higher for the intervention than usual care. The difference in QALYs at 12 months was 0,04 in favour of the usual care group **Main author conclusions:** Integrated care was neither cost-effective nor effective after 12 months . **Reported associations or causative links:** Integrated team → not-cost-effective vs. usual care **Potential applicability considerations:** Data specific to Netherlands

<table>
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Sample size: 196

Population characteristics:

<table>
<tr><td>Type of group</td><td>Patients</td></tr>
<tr><td>Condition/ department</td><td>Hand dermatitis</td></tr>
<tr><td>Sex</td><td>94/196 (48%) male</td></tr>
<tr><td>Age</td><td>Mean 43, SD 14</td></tr>
<tr><td>Other (specify)</td><td></td></tr>
</table>

Context: Three university medical centres

</td>
<td>3-month intervention by a multidisciplinary team (dermatologist, specialist nurse and if required clinical occupational physician). Objective was to integrate clinical and occupational care

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<td>

Wennberg 2010

Country: USA

<table>
<tr><td>RCT</td><td>X</td></tr>
<tr><td>Non-RCT</td><td></td></tr>
<tr><td>CBA</td><td></td></tr>
</table>

</td>
<td>**Data collection method:** Insurance claims data

Outcome measures:

<table>
<tr><td>Use of hospital services</td></tr>
<tr><td>Costs</td></tr>
</table>

</td>
<td>**Summary of results:**

Costs for services were $8.48 per person per month lower in the intervention group than in the control, representing a 4.4% reduction in health care costs compared to controls (p = 0.03). Pharmacy costs were higher in the intervention group ($0.52 per person per month higher than controls).

Overall reduction in costs amounted to $7.96 per person per month (p = 0.05). as the intervention cost less than $2.00 per person per month,</td>
</tr>
</table>

BA	
Comparator: Usual care management	
Length of follow up: 12 months	
Qualitative	
Cross-sectional	
Other (specify)	

Sample size: 86,877 enhanced support, 87,243 usual management

Population characteristics:

Type of group	Employees
Condition/ department	High risk of surgery / High risk conditions / chronic conditions.
Sex	

The intervention:

Integrating services/ Integrated care pathway/ Role change/ Multidisciplinary team/ Workforce change/ New service provision/ Technology/ Financial change/ Factors enabling change/ Patient-focused/ Location-focused/ General service redesign

Enhanced care management strategy;

Health coach team (nurses, dieticians, respiratory therapists, pharmacists) provide outreach self-care coaching over the telephone. This can include post-discharge planning or lifestyle behaviour change.

Coaches use person-centred software and send patients supplementary materials via web-links and DVDs.

the net saving was $6.00 per person per month. These reductions were mainly due to reduced inpatient and outpatient hospital utilisation (reductions of $6.04 and $1.61 per person per month, respectively, based on over 10% reductions in hospitalisation in the intervention group compared to the control group ($p<0.001$). Reductions were greater in chronic disease (13.7%, $p = 0.02$) and high-risk conditions (11.8%, $p = 0.04$) sub-sets.

Main author conclusions:

Savings of 3.6% health care costs were observed through the enhanced care management strategy, based on hospital reductions compared to usual care.

Reported associations or causative links:

Targeted telephone care management → reduced health care costs

Potential applicability considerations:

The study population were employees of organisations so could have different impact on other groups (e.g. different organisations, retired, unemployed).

Age Any **Other (specify)** **Context:** Outreach; employees of seven geographically and occupationally diverse organizations			

Non-UK studies with no comparator group

Author/date	Study population Country/characteristics Intervention	Supporting existing model	Addition to model/applicability
Berry 2013	USA, patients with most complex needs and multi-morbid chronic health profiles. Gundersen Health programme – team based approach with shared electronic records, patient involvement in care, social workers and care-co-ordinators (nurses) work proactively. Referrals by	Unplanned charges (emergency care/admissions) reduced 51% at 12 months, 64% at 24 months). Total charges reduced by 39% 12 months and 60% at 24 months. Hospitalisations decreased by more than half by 24 months.	Proactive interventions struggle in a fee-for-service payment model, need for alternative payment systems to reward co-ordinated care. Practitioners when surveyed reported care co-ordination was time saving

	phone or via the electronic record. Operates in hospital and community.	Length of stay decreased by average 39% at 12 months and 46% at 24 months.	(at least 30 minutes per month per patient). The rigorous tiering protocol selects only those patients with most complex needs including psychosocial factors. Care co-ordinators promote medication adherence, avoid mistakes due to missing information, encourage self-management, and efficiency. They should be experienced staff (average 27 years in this programme). Care co-ordinators should be presented as complementary not competitive to clinicians. Independent system employing 5000 staff with a 325 bed hospital, trauma unit and 35 outpatient clinics across 3 states. Running since 2003, does

			not have a primarily cost reduction focus as offered at no additional cost to patients.
Blewett 2015	USA, Medicaid patients. Community health workers co-ordinate team-based care and focus on prevention with data sharing system.	Reduction in emergency department visits. Increased use of outpatient primary care.	
Brawer 2010.	USA, veterans, intervention comprised psychologists being co-located to be part of a community team. Included a shared information system and mentions training for team members and identification of shared goals for the new service.	Co-location important for integration, with Psychologist offices next door to other team members. Access to a mental health provider was increased with a 39% increase from the previous year. Referrals to mental health specialists decreased (the most frequently referring primary care physicians reduced their referrals by 50%) Dedicated support from leaders in primary care was important.	There was an increase in primary care physician prescribing of antidepressant medication, with those least likely to prescribe increasing rates and those most likely to prescribe reducing rates. This was attributed to increased confidence working in a team for the first group, and increased knowledge from working in the team for the second. Female veterans were more likely than males to seek input via the programme. There was poor understanding and appreciation of integrated care amongst staff, creating some confusion regarding where to refer

			leading to delay and confusion for some patients.
Breton 2013	Canada, two reform policies - Family medicine groups and local health networks, which aim to improve collaboration between organisations.	Contractual agreement formalised collaboration and sharing of resources. Major barrier was gap in information sharing and information technology. Consideration of staff institutional/ employment links encourages collaboration.	Horizontal collaboration - Newly formed Family medicine groups collaborated more within their local health networks (organisations reporting having a formal or informal arrangement with another organisation rose from 31% to 76% in a five year period). Local network clinics also reported an increase in formal or informal links from 22% to 45% within their networks. Vertical collaboration - medical clinics newly accredited as FMGs or network clinics improved their collaborations with hospitals within their local health network, from 41.4% to 69.0% (FMGs) and 33.3% to 61.1% for network clinics. Main collaboration was access to technical services and planning

			services rather than sharing resources. Collaboration with other organisations in the areas external to the network areas decreased (15% to 4% collaboration with other primary care organisations, 21% to 15% hospitals outside network). There was less collaboration with private medical clinics both within and outside networks (from 40% to 20% reported arrangements). Overall the reform had a "territorialising effect".
Brokel 2009	USA, implementation of an electronic health record in a hospital.	Several years of planning required. Several years of planning required. Work flows for different types of patients designed to ensure the system supported clinical interactions. Redesign of the system requires customisation to local needs and standards, communication between	

		staff and implementation teams, and training for clinicians.	
Callaly 2011	Australia, integrated services for young people via agency partnerships	While attention to structural and organisational aspects is important, culture change and staff engagement are key.	
Chen 2009	USA, HealthConnect system which includes an electronic health record across inpatient and outpatient services, decision support and connection to support services such as pharmacy and radiology, and an email messaging facility between patients and providers and between staff. Kaiser Permanente – a not for profit integrated healthcare system, study carried out in Hawaii. A team management system (total panel management) was initiated around the same time in 10% of locations, and a different system was already in full use at 30% of sites.	Total patient in-person contacts across all professions reduced by 26% over a three year period following introduction ($p<0.001$) in both primary care (25% reduction) and specialist services (21% reduction). Emergency department attendances increased by 11% and urgent care visits by 19% ($p<0.001$) Patient satisfaction was largely unchanged. Financial incentives should be re-aligned to the provision of efficient care rather than face to face visits.	The increase in urgent and emergency care contacts represents 5% of the decrease in non-emergency/urgent care visits which suggests that the new system had not just shifted contacts to a different location of care. Patient telephone contacts increased substantially resulting in an overall increase of 8% in all patient contacts ($p<0.001$) accounting for 30% of patient contacts. Electronic records may increase the time it takes to document a patient visit.
Cohen 2011	Canada, a clinic for children with complex needs (family needs, functional limitations, complex or	Median total costs across the sites decreased from $244 per patient per	Family expenses while increasing initially then reduced ($p<0.0001$)

	chronic conditions, high healthcare use) located in the community and affiliated (co-managed) by a hospital with staff from here teleconferencing in if unable to attend in person. Care plan developed, electronic shared records, emphasis on holistic care.	month to $131 (p=0.007) at 12 months. There was an increase in outpatient costs (p=0.0008). The overall decline was driven mainly by a reduction in overall inpatient hospital days (p=.0005).	Medication costs reduced (p<0.001) Costs of diagnostic tests reduced (p-0.008) Families received more state benefit payments (p<0.0001)
Epstein 2014	USA, describes the characteristics of patient in ACOs		ACO patients were more likely to be older than age eighty and have higher incomes. ACO patients were less likely than non-ACO patients to be black, covered by Medicaid, or disabled. The cost of care for ACO patients was slightly lower than that for non-ACO patients. Hospitals that were in ACOs were more likely to be large, teaching, and not-for-profit. There was little difference between ACO and non ACO hospitals in terms of quality measures.
Fuller 2010	USA, outlines a pilot model for a new payment system, in particular for	Chronically ill offer greatest opportunity to benefit in terms of cost	Performance improvement payment provided as an alternative incentive

	chronically ill patients within the patient centred medical home model.	reduction from improved service co-ordination.	to the existing fee for service system. Based on premise that many costly hospital admissions, ED attendance and use of tests and investigations can be avoided by primary care physician intervention. Data from two group practices, estimated that there would be 23% potentially avoidable inpatient admissions. It was estimated that there would be a saving of $522 564 in averted medical cost. GPs should be rewarded for interventions that avoid potentially preventable admissions/contacts. Current payment schemes focus on physician effort rather than patient characteristics or outcomes.
Guerrero 2014	USA, addiction services, associations between integration and service features.	Motivational readiness and organizational climate for change were associated with higher odds of coordination.	
Hartgerink 2014	Netherlands, investigation of co-ordination for in-patient older patients in a geriatric unit.	On a 1–4 scale, the mean overall relational coordination was 2.57 (±0.95). Relational coordination (the interaction between communication	Relational coordination and integrated care delivery were significantly higher in geriatric units than other locations ($p<0.001$).

		and relationships) was positively related to integrated care delivery ($P \leq 0.05$). No significant relationship was found between occupation/number of years working in the current organisation and integrated care. Relational coordination plays a larger role among healthcare professionals in the same discipline than among those in different disciplines.	
Hébert 2008	Canada, evaluation of PRISMA (programme of research to integrate services for the elderly). Model is not fully integrated as organisations keep own structure but are part of an umbrella system with common requirements and processes embedded at every level of organisations. Includes case management, single entry point, individual care plans, single assessment, electronic records.	The case manager role was important requiring training. The joint assessment tool enabled agreement on a common philosophy.	Introduced in 2001 in an urban area, and two rural areas. The Joint Governing Board and the Single Entry Point were perceived as key to setting up the model.
Kautz 2007	USA, evaluation of integrated delivery systems for knee arthroplasty in a hospital.		Patients who had received care from an integrated delivery system did not perceive care to be superior. Those receiving rehabilitation from providers within a network experienced fewer problems than those with out of network providers,

			although if the rehabilitation was provided at home the reverse was true, and more problems were experienced from within network providers.
Khanna 2014.	USA, evaluation of patient centred medical home transformation on 52 practices.	After 18 months participants reported improved patient access to care, improved care coordination, and increased health information technology optimization ($p > 0.001$).	
Ouwens 2009	Netherlands, patients with head and neck cancer. Evaluation of an integrated care programme.	Waiting time for diagnostic procedures reduced (37%).	
Pineault 2014	Canada, exploration of the impact of healthcare reforms In primary care including the creation of Health and Social Service Centres.	Organisational receptivity was the main variable which influenced organisational change. There were few changes at a system level but there were new forms of primary care organisations.	Imitation between local organisations (mimetic isomorphism) was less important in driving change than externally decreed reforms.
Veerbeek 2008.	Netherlands, impact of the Liverpool Care Pathway in palliative care.	The pathway was used for 197 of 255 patients. The documentation was more comprehensive compared to before the pathway.	

Weaver 2008	USA, frail elderly veterans, compares three models of long term medical centre care including PACE and care manager models.	Nursing home days increased but permanent admission to a nursing home was low with 92% remaining in the community. There was no difference in outpatient or in-patient hospital use before/after the models were introduced.	
Wedel 2007	Canada, rural area, explores effect of Taber Integrated Primary Healthcare Project.	Main factors enabling integration were: community assessment and shared planning; evidence-based, interdisciplinary care; an integrated electronic information system; and investment in processes and structures that support change.	

Non UK qualitative studies summary

Author/date	Study population Country/characteristics Intervention	Supporting existing model	Addition to model/applicability
Ahgren 2007	Sweden, exploration of factors underpinning slow progress of integrated care development. Case studies of three health authorities with	*Aims of service development* - Improving service delivery - Improving efficiency of services	None of the successful cases had initiatives focussed on management change, all had a focus on improving the quality of services (but two less

	more progress, and three with less progress.	-Target-oriented change of management system *Development opportunities* -Supportive policy environments -Sufficient development resources -Existence of prime movers *Organizational structure facilitators* -Adequate formation of the development work -Bottom-up approach -Appointed managers of integration -Incorporated in wider integrated networks *Organizational culture facilitators* - Development perceived as desirable and appropriate - Backing from management - Trust between participating organizations - Acceptance from the body of physicians	successful cases also had a focus on quality change). Need for change to be aligned with local organisational culture If the implementation of local health care allows for a high degree of local initiatives then professional dedication, legitimacy and confidence is likely to increase the chances of a successful result.

		Health care managers do not have the management systems necessary to oversee new clinical networks, mainly due to a lack of acceptance from the medical profession.	
Ahgren 2012.	Sweden, any citizens. Integrated primary care.	None	Examines potential dissonance between patient choice and integration in primary care. While the two would seem to be incompatible, choice regarding services is based on accessibility, continuity and treatment offered which are the guiding principles of local integrated care, so they do seem to be compatible.
Alexander 2013.	USA, practitioners and staff at physician practices. Patient centred medical home.	Barriers to implementation of PCMG - misalignment of reimbursement schemes, administrative burden, conflicting criteria for designation, workforce policy issues, uncertainty of health care reform. Influence of external environment and need for policies to facilitate change.	

Anderson 2011	Australia, views of community members, managers and staff members who had been involved in the process of developing a multi-purpose service in rural areas.	Important role of trust and perceptions of risk in developing new forms of working. Participants who had trust in other stakeholders were more likely to embrace an integrated health service identity. Those participants, who were suspicious that they would lose status or power, maintained that the previous hospital services provided a better health service and described a coexistence of services within the multi-purpose service.	
Banfield 2013	Australia, managers and decision-makers from organisations with initiatives aimed at improving co-ordination. One case study programme had a liaison nurse in chronic disease management and included case conferences and active case management. Second case study was a new regional electronic record. Third case study was also a shared electronic record, for a rural and mobile community. Fourth case study was a telephone triage system provided by a private company. Aim to explore the role of information continuity in co-ordination.	Having accessible information and continuity of information was important in effective care, It was perceived to reduce repetition and provide shared access to records. Issues regarding confidentiality, multiple and/or incompatible data systems, and data ownership (governance) were apparent.	Continuity is one aspect of co-ordinated care that can be measured, and reflects the service received by the patient rather than reflecting the system. Three elements - information continuity, management continuity and relational continuity. In one case study financial incentives were not perceived as important for involving GPs, but they were reported to be interested in involvement for the benefit of patients. In the second it was perceived that use of an electronic

			record had been hampered by a lack of incentive payment for doctors. In the third it was reported that incentive payments made it difficult to attract GPs initially but efficiency gains overcame this. New software was used to trigger payments for care rather than to manage patient care. Despite the shared electronic record information flow was still patchy and dependent on staff active management practices to co-ordinate care. Improved information sharing was not sufficient for effective co-ordinated care of complex conditions. Information sharing needs to be tailored to local systems and responsive to the needs of patients, carers and providers as information exchange is shaped by local factors.

			GPs in disadvantaged areas were often not IT connected and did not have an intention of becoming connected.
Berendsen 2006	Netherlands, GPs and medical specialists. Views of working more collaboratively.	Lack of time, lack of financial compensation and lack of support from colleagues were barriers to collaborative practice. The establishment of good personal relationships was important.	Teaching GPs and regulating referral flow were the main motivators for specialists to work more collaboratively. Collaborative initiatives were perceived as overly time consuming, and using guidelines as too restrictive. Negative views appeared to outweigh perceptions of potential advantages.
Birken 2013	USA, Middle managers in health centres. Explored potential association between manager commitment and implementation of innovation		Survey data suggested a weak association, but qualitative interview data suggested that commitment of proactive managers could influence the implementation of new initiatives.
Brousselle 2010.	Canada, staff and patients in integrated mental health and substance abuse units. Explores factors influencing integration of the two services in two case studies - a new joint clinic, and a new service	Influencing factors. Organizational characteristics – leadership, external accreditation processes, staff retention, use of evaluation tools, prior informal links.	Definition - Integration of care consists of sustained coordination of clinical practices to deal with each patient's health problems in a comprehensive way.

	with a contractual agreement between an addiction rehabilitation centre and a psychiatric hospital.	Clinical norms of practice – differing culture, philosophies, knowledge and practice standards, changing professional boundaries, need for rules for sharing responsibilities, development of trust, provision of training, communication an important element. Staff reported increased information and links with other staff. Need for recognition change takes time, integration is complex and dynamic, importance of organisational characteristics. Provides a cogs diagram similar to the elements of the logic model. Importance of normative integration.	Four levels of integration Clinical teams refers to effective and continuous multidisciplinary professional work within and between organizations involved. Functional integration involves coordination between support activities (finance, management, and information systems) and clinical activities. Normative integration aims at ensuring coherence within the collective system of values and representations. Systemic integration refers to the coherence among the different dimensions of integration, such that the integrated system may function in a sustainable way (Contandriopoulos, 2001). Contandriopoulos AP, Denis JL, Touati N, Rodriguez R. Intégration des soins: Dimensions et mise en œuvre. Ruptures. 2001;8(2):38–52. Effects of integrating services –

			Two sub-teams based on clinical areas emerged leading to independent process, specialisation and loss of versatility. Little functional or systemic integration achieved in the two cases studied. Patient Characteristics – patients with severe conditions needed a large number of professionals. Co-occurring disorders and variety in patient profiles had a negative influence on integration.
Camden 2011	Canada, range of stakeholders involved in paediatric service reorganisation. Explores facilitators and barriers to change.	The programme structure (such as funding), the actors (staff involved), and the change management process are important in the change process. There is a need to examine interactions between intentions, actions and consequences.	It is important to recognise that elements will change across the process of change elements which may have been facilitators can become barriers.
Carter 2006	USA, staff in substance abuse treatment units. Explores inter-agency linkages.	Communication and co-ordination between agencies are important	

		influences which moderate the effectiveness of interventions.	
Collinsworth 2014.	USA, patients and staff in diabetes primary care in local area of health disparity. Explores the integration of community health workers into teams.	The new role enabled more proactive identification of needs.	Integration of the community worker into the care team was perceived to have improved patient knowledge and engagement.
Costich 2015.	USA, staff from accountable care organisations. Aimed to explore working relationships between ACOs and public health agencies.	Barriers to collaboration between public health agencies and commercial ACOs like Medicare included cost, risk requirement, data sharing issues, and differing income requirements. Having common objectives, contractual relationships, representation on ACO board, and the ACO having large market share facilitated collaboration.	Relationship between collaboration and accessing new revenue streams.
DeMiglio 2012	Canada, staff involved in palliative primary care. Aim to explore how teams share responsibility for patients.	Team characteristics, geography, the adaptation of practice, and relationship building were core elements of developing a shared care service. Funding uncertainty, difference in service models between geographical areas, key informants maintaining autonomy, lack of buy in from family physicians, conflicting views of a shared care model	Lack of data to demonstrate effectiveness which could validate the model was a barrier perceived by staff.

Donnelly 2013	Canada, staff involved in family health teams in primary care. Aim to explore how occupational therapists have been integrated into the teams.	Communication, trust, understanding of the occupational therapy role were key elements. Integration was supported by co-location, shared electronic records and team meetings.	
Fagnan 2011	USA, staff in rural primary care practices. Aim to explore the implementation of a medical home model for complex patients.	Elements which influenced implementation were: having a proven care coordination program; adequate staffing; practice buy-in; adequate time; measurement; practice facilitation; and functional information technology.	
Gaboury 2009	Canada, staff working in integrative healthcare clinics. Aim to explore element important in integrative working.	Elements influencing collaboration were: practitioners' attitudes and educational background; external factors such as the healthcare system and financial pressures. Communication, patient referral and power relationships were important.	Integration was reported to have modified work burden, and resulted in higher commitment towards the clinic amongst staff.
Hadjistavropoulos 2008	Canada, staff working with patients who have chronic heart conditions. Aim to explore views of integrated care pathways.	Perceived strengths were: improved communication; exchange of knowledge, and patient involvement. The need for education, the timelines involved, complexity, competing interests, need for ownership, and aspects of the documentation and co-ordination could prove challenging.	

Hogan 2011	Ireland, staff working in two acute hospitals. Aim to explore views of implementation of integrated care pathways.	There is a need for buy-in from all disciplines, leadership from senior management, support such as a facilitator and training. Pathways enabled multidisciplinary communication and service-user involvement. Audit was an important tool in implementation.	
Hroscikoski 2006	USA, staff in a large primary care healthcare organisation implementing a chronic care model of practice. Aim to explore potential issues in implementation.	Competing priorities, and a lack of clarity regarding the process change, and a lack of engagement from physicians were barriers.	Only small process changes were achieved.
Jove 2014	Spain, community pharmacists and GPs in two regions. Aim to explore views of collaboration.	Perceived benefits of collaboration included increased efficiency, improved job satisfaction, and improved patient safety.	Individuals who did not have experience of collaboration could have negative views of its usefulness.
Kathol 2010	USA, staff providing care for patients with both chronic conditions and mental health difficulties in primary care. Aim to explore challenge encountered in models of integrated care.	A large barrier was differing financial reimbursement systems. Need for a culture shift led by a clinical champion together with training, cross-disciplinary accountability, shared clinical record systems and active respectful co-ordination.	

Kilbourne 2012	USA, staff providing services to patients with severe mental illness. Aim to explore barriers and facilitators to integrated care.	The study reports the importance of in-person contact between staff and communication in integrated care.	
Kilbourne 2008	USA, staff in community mental health services. Aim to examine strategies to improve integration of services.	Key barriers were administrative (such as a lack of common medical records), financial, and clinical (such as a lack of an integrated care protocol). The use of templates/protocols was recommended, a common medical record across agencies, and more guidance to avoid duplication. Co-operation is required at an organisational level.	An obstacle was a lack of reimbursement codes to bill for mental health and general medical care in the same setting. A common billing code system was recommended.
Kreindler 2012	USA, staff in accountable care organisations. Aim to explore how staff view integration.		The new organisation was viewed differently within each site and the model permitted flexibility within areas so it was not seen as a new overarching and uniting organisation. There was a perceived emphasis on co-ordination and equal partnership rather than integration, to avoid a perception of reducing autonomy and to overcome mistrust amongst

			physicians. The new organisation was presented as a cultural rather than structural change. There is a need for “soft integration”.
Lewis 2014	USA, staff in accountable care organisations which include community health centres. Aim to explore partnerships between these two types of organisation.		Many ACOs include community health providers within them. The organisations typically have formed a new relationship or formal partnership between themselves and other healthcare providers. The community health centres are perceived as adding value by expanding primary care capacity and expertise. The new collaborations have facilitated integration of community health centres in mainstream health care.
Lukas 2007	USA, case studies of 12 health care systems. Aim to develop a conceptual model of system redesign.	Elements driving change (1) Impetus to transform; (2) Leadership commitment to quality; (3) Improvement initiatives that actively engage staff (4) Consistency of goals with resource allocation and actions	

		(5) Bridging of traditional intra-organizational boundaries Need for a clear mission and vision, a culture that reflects values and norms, adequate operational functions and processes, and adequate information technology and staffing.	
Lyngso 2016	Denmark, staff providing care for patients with COPD. Aim to explore staff perceptions of inter-organisational integration.	Factors perceived as influencing integration were: communication and information transfer; having committed leadership; patient engagement, the role and competencies of the general practitioner; and the organisational culture.	
Minkman 2009	Netherlands, mangers and case managers in case management programmes for patients with dementia. Aim to explore the characteristics of the programmes.	Need for a strong provider network and supportive organisational conditions for co-operation. Patient and carer satisfaction with the services was high. Need to develop incentives for financial collaboration.	
Ortiz 2013	USA, staff in rural health clinics in areas of medically underserved populations. Aim to explore perceptions	Barriers to becoming part of an ACO were predominantly finance related, with clinics citing a lack of funding to	

	of staff regarding the accountable care organisation model.	provide adequate information technology systems. Legal and regulatory barriers were also reported.	
Ottevanger 2013	Netherlands, staff in hospitals attending multi-disciplinary team meetings, in general and cancer care. To evaluate the quality of team meetings.		Attendance from core disciplines was below the recommended 100% level, the role of the chair of the meetings needed attention. The meetings often had interruptions, and key information was not available in 4-5% of cases discussed. Only a quarter of meetings recorded discussion on a specific form. The organisation of meetings was generally satisfactory although few had administrative support.
Ruppert 2016	Germany, staff working in mental health services with a new integrated model of home treatment, case management and 24 hour telephone hotline. Aim to explore staff views regarding the level of co-operation.		Co-operation between staff based in the service was reported as excellent however, relationships with other external services were less satisfactory.
Rosen 2011	Four case studies of integration. Two in USA (a community care network and an independent practice association), an organisation providing support to GPs delivering integrated diabetes care, and	Clinical (multi-professional teams, uptake by physicians, trusted clinical leaders, high levels of trust, involvement of professionals and patients, joint training, standardised	Development of single condition services can be problematic for patients with chronic and/or multiple conditions.

	a health and social care partnership in Scotland.	guidelines, clinical prompts, care co-ordination), informational systems (data sharing, performance review, patient access to part of records), organisational (performance and line management authorities, joint vision, effective leadership), financial (such as incentives, adequate resources and time), administrative and normative processes are key to enabling co-ordinated care. Leadership and effective governance together with the effective use of information technology systems including electronic records and web-based portals are critical. The external context including national policy, regulation and payment systems could act as either a stimulus and enabler or a barrier, with bundled payment across pathways recommended.	Peer review and professional incentives to change practice are an enabler. Shared administrative processes can be useful for small GP practices, also the provision of centralised management support. Need for standard contracts and outcome measures to encourage integration and commissioning between providers. There should be a requirement to demonstrate improved patient experience and clinical outcomes in regulation of integrated care initiatives. The pricing strategy need to incentivise integration. Bundled payments and local tariffs for particular conditions and pathways should be developed. Integrated care pathways and provider networks should be developed.

Tousijn 2012	Italy, staff working in multi-professional community teams. Explores views of integration.		A more balanced role of medicine was described since the reforms. The traditional distinction between management and professionalism had been eroded, with a new concept of professionalism incorporating management.
Tummers 2013	The Netherlands, staff working in stroke care at all phases (acute, rehabilitative and chronic). Aim to examine views of integrated financing systems.		Fee for service systems lead to inappropriate incentives for not co-operating, an inability to influence the service, a service which is not patient-centred, and inflexibility. Integrated financing however, was perceived to be incompatible with the present financing system, and was problematic for patients with co-morbidity and lacked evidence. Stroke care is challenging for integrated financing as there is a diverse patient population, varying care, differing requirements at points in the pathway of care, and has a lack of clarity regarding who has principle responsibility for care.

Walker 2013	USA, patients. Aim to describe patient understanding and views of integrated care.		Patients were unclear about the meaning of the term integrated care. They were supportive of the need for continuity and sharing of information and patient engagement.
Wang 2006	USA, health care providers and researchers. Aim to explore progress in regard to healthcare transformation.	Success factors were: involving middle and top managers; aligning initiatives with organisational priorities; establishing infrastructure, processes and performance appraisal systems; developing champions, developing teams and developing staff.	
Wodskou 2014	Denmark, patients with COPD. To evaluate patient views of a disease management integrated care programme.	Most patients were satisfied with their care. There was a need for better information technology to support co-operation, and a flexible system to involve patients and provide easy access. Patients suggested the need for a care co-ordinator to improve communication and information and professional co-operation.	