

Skill Mix in Secondary Care: A scoping exercise

***Report to the National Co-ordinating Centre for
NHS Service Delivery and Organisation
R & D (NCCSDO)***

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prepared by

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Executive Summary

Introduction

This is the final report on the scoping review *Skill Mix in Secondary Care*.

In our agreed final proposal, we said that we would:

- 1 Carry out a comprehensive but not systematic literature review
- 2 Explore grey literature and current activity through:
 - distributing a questionnaire survey to all National Health Service (NHS) trusts (see Appendix 2)
 - contacting the Workforce Development Confederations (WDCs)
 - holding a seminar/workshop with leading experts in the field to obtain leads to additional material and discuss the policy context and implications.

We have carried out a comprehensive literature review, completed a questionnaire survey with all trusts and interviewed or received material from nearly all the WDCs. A seminar/workshop was held at the beginning of September 2003 to discuss these findings with experts in the field (see Appendix 6).

Literature review

Methodology

Searches were made of the following databases: MEDLINE, CINAHL, EMBASE, HMIC, SIGLE, CCTR, Sociological Abstracts, The British Nursing Index, Inside Conferences, the Cochrane Database of Systematic Reviews and the National Register Records. An initial research database of nearly 18 000 references has been compiled from these and has been manually searched by consulting both title and abstract for material relevant to the purview of this review. Records relating to the Cochrane Database of Systematic Reviews and National Register Records were searched separately for details of research projects currently in progress or recently concluded which may not yet have been formally published.

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References that were deemed to be potentially relevant have been assigned a series of keywords to provide a 'mapping' or classification of the literature.

Overview of the literature

Apart from a large body of mainly irrelevant material in the form of articles dealing with specific medical conditions (for example, the cancers), the literature - as anticipated - is dominated by topics relevant to nursing. A large proportion of these as well as other topics take the form of editorials, commentaries and general debate over health care and hospital reform, restructuring and new staff roles or training needs.

Health care reform and hospital restructuring

One whole section of the identified literature broadly addressed issues of health care service reform and restructuring including significant commentary and debates over the NHS Plan (Department of Health, 2000a) and patient-centred care. A large amount of this literature took the form of editorials, commentaries and general debate over health care and hospital reform as well as restructuring, new staff roles, training needs and the implications of these.

Workforce: general staffing, management and service provision issues

Another broad theme to emerge concerned hospital staffing and organisation of services. This literature - as anticipated - was dominated by topics relevant to nursing which included nursing models and workforce planning and trends (for example Project 2000 - an approach to pre-registration nursing education; in-house staffing agencies), collaborative nursing, nurse practitioners and leadership models, nursing roles (for example, nursing diagnoses; nurse-managed centres; nurse-led multidisciplinary care teams), nursing workload measurement systems and workload problems related to retention, nursing shortages and 'burnout', empowerment, job satisfaction, and professional governance. There was a certain amount concerning other clinical staffing issues such as ward staffing and ward rotas. Management issues also emerged in terms of staff planning or training for clinicians and nurses in delegation and leadership skills. There was also a moderate corpus of surveys of hospital personnel (such as nurses, junior doctors, paediatric specialists or others).

Skill mix

A considerable literature on skill mix emerged. A lot of it, however, was in the nature of general debate over what was actually meant by skill mix; what constituted an acceptable staff mix or how this was influenced by cost-containment issues. There was also much discussion about what ratio of (for example) qualified nurses to health care assistants (HCAs) should be employed.

Staffing roles

Staffing roles in terms of role substitution, development or change emerged as another important category. Although much of this literature related to debates surrounding the increasing delegation of duties to unlicensed clinical personnel or non-professional personnel (such as HCAs), a range of different nursing (for example, 'modern matrons', clinical nurse consultant; clinical nurse specialists) and physicians' roles were also well represented. Some debate surrounding problems with perceived structural and medical dominance was also observed including, for example, barriers to nurses' workplace satisfaction or the way in which traditional work culture, rituals, norms, and boundaries were perceived to stand in the way of the development of new working methods and roles.

Multi-/interdisciplinary teamworking or collaborative activities

Other important categories to emerge, particularly in the context of integrated care or critical pathways were inter- or multi-disciplinary care teams and teamwork, team building and collaboration. A great majority of these were patient group or condition-specific (for example intermediate care unit [ICU]; AIDS, cancer, diabetes, stroke management and pain management; elderly/geriatric/dementia; peri-operative and surgical care; trauma and wound care; ward rounds and record keeping.). Included within this context were papers addressing multi-skilling and cross-training initiatives.

Within these are a further hierarchy of categories, which include:

- staffing models or innovative strategies, addressing individual experiences or experiments within secondary care institutions
- staff education or training issues
- influence of workload on staffing and patient outcomes.

Current local and national initiatives

The survey of secondary care trusts

The overall aim of this survey was to summarise the types of activities that have been introduced to implement the approaches set out in the Changing Workforce Programme and 'skills escalator' strategy and, more generally, in the report on the human resources implications of the NHS Plan (National Health Service, 2002a). We wanted to hear about relevant aspects of workforce planning, local innovations and any related evaluation mechanisms; and about the details of any reports that have been produced or any literature/examples found helpful.

A short questionnaire was developed around the main themes of the project, specifically related to recent English NHS workforce initiatives. The questionnaire was piloted with five potential respondents and considerable design changes were made for the final version (see Appendix 2).

The sample

The sampling frame was derived from Binleys NHS database and consisted of all people in England who fell into the following four job groupings on the database:

- directorate nurse manager
- head of nursing
- personnel
- medical staffing officer.

These four groups comprise people with many job titles, though most had some senior management responsibility in nursing or human resources. The selection produced 1393 names at 416 institutions belonging to 247 trusts. We decided on an initial mailing to all 1393, recognising that this involved several questionnaires going to most institutions and the likelihood that individual response rates would be low if several people collaborated on a single reply. We preferred this model to the more conventional strategy of sending a single questionnaire to a senior figure, hoping that it would be forwarded appropriately.

By mid-July, after follow-up phone calls, 131 completed questionnaires had been returned. As anticipated, the individual response rate was low (approximately ten per cent); however the institutional coverage was encouraging with replies from 99 (40 per cent) of the 247 trusts.

Replies to the survey

The geographical base of responses is good. The 82 trusts replying, prior to reminders, were well-distributed across the English regions.

Directorate nurse managers and directors of nursing were most likely to reply although respondents were not limited to those with prime responsibility for nursing.

Although we encouraged people to return questionnaires even if there were no or few relevant initiatives, the replies received had a good deal to report. The questionnaire and covering letter (see Appendix 2) also encouraged people to supply job descriptions and other material relating to initiatives they felt had been particularly successful.

Main findings

Although the survey did not generate much additional material for the central review, there are several very interesting findings in the survey. A few of the highlights are:

- A majority reported a high level of devolution of responsibility to units or wards, though the extent and meaning of devolution clearly differed between institutions. Mechanisms for overseeing the devolution varied from very loose to quite formal arrangements. In addition, several respondents described how the role of modern matron fitted into devolved structures.
- There were few mentions of proprietary systems (amounting to no more than one or two references to the GRASP and NICS systems). In addition, two institutions reported having developed their own paediatric dependency assessment protocols and another mentioned a similar planning tool for maternity care.
- Few formal mechanisms or tools were reported as aids to planning and varying staff numbers and composition to match dependency. However, the majority of respondents reported that arrangements were in place to vary staffing as necessary and identified the group of people (usually ward managers or matrons) with the relevant responsibility. Variation in staffing was, on the whole, limited to rearranging the work patterns of existing unit staff; for example, by changing shift arrangements. Indeed, flexible working – in a number of forms – was reported to be widespread.
- There was an emphasis on efforts to identify and standardise core competencies and review job descriptions. In relation to shifting job boundaries, many specific examples were cited but most involved some method of developing the nurse's role to support junior doctors, a variety of nurse practitioner models and the development of the role of HCAs into nursing areas. Many respondents referred to

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the training to national vocational qualification (NVQ) Levels 2 and 3, especially Level 3, and other mechanisms for expanding the role of HCAs. Several other types of support roles were described, including: team support workers, ward housekeepers and patient liaison transfer assistants.

- There was consensus on what had been the greatest changes in ways of deploying nurses and nursing support staff in their local institution over the past five years. The most frequently mentioned activities were: creation of specialist posts, especially nurse consultants and nurse practitioners; the development of the HCA role; and the introduction of NVQs. A number of other posts and activities were also described, these included: ward housekeepers and support technicians.
- A significant minority of responses mentioned new educational and training posts for example clinical teachers, clinical education advisors and educational facilitators. Although the skills escalator initiatives were only mentioned by just over half of the respondents, they were often enthusiastic. Schemes mentioned included: IT and basic skills training; rotational programmes for new starters; Royal College of Nursing leadership training; nurse cadet programmes; schemes to encourage domestic staff into HCA roles and then undertake NVQ Level 3; training for managers; and competency-led development programmes.
- Most monitoring efforts related to rather general evaluation tools such as staff and patient satisfaction surveys and audits. Other reported activities included patient focus groups, risk management, incident monitoring, annual reports, local evaluation tools and a 24-hour helpline. It was not always clear whether they were being used to monitor care more widely or the specific effects of workforce deployment initiatives.
- Under a quarter had personally attended events relating to the Changing Workforce Programme. While opinions were generally enthusiastic, there were a few comments on the events being poorly organised and too basic. Only a limited number knew of anyone who had attended the 'Toolkit for Local Change' workshops.
- In the descriptions and names of specific initiatives, the level of activity was moderate: on most topics 30 per cent or less had something to report. However, when we asked a question that could be more easily be answered from a trust or institution-wide perspective, a much higher level of activity was reported. The implication that workforce development is limited to certain units within trusts raises further questions, for example are some settings more amenable to these initiatives, or is the need greater in some areas?

Survey of WDCs

The local delivery plans and other materials were obtained from the WDCs.

Concordant with the last highlight in the previous sub-section, the local delivery plans and related material obtained from WDCs suggests that there is much activity taking place across the different strategic health authorities (SHAs) in terms of skill mix changes and the development of new roles at the trust level. Role redesign and development are seen by many trusts as useful strategies to address shortfalls in staff numbers. Much of the reported activity is reported to be taking place outside of a formal relationship to a Changing Workforce Programme scheme or project. In some cases the change processes are further complicated by moves towards major service redesign that may be already underway in a particular trust (see for example Surrey and Sussex SHA local delivery plan 2003-2006, section 5: workforce).

Although many trusts and health communities appear to be engaging in the change processes with enthusiasm (or at least with resignation), other organisations have expressed their concern at the validity of the productivity and skill mix assumptions that are being used at the national level and have called for further validation work to be carried out. There is a noted lack of confidence in respect of convincing clinicians and achieving the necessary change management agenda, particularly in the short term (see for example Greater Manchester local delivery plan for 2003, workforce section).

Implicit in the NHS Plan and the whole NHS Modernisation Agency's Agenda for Change policy is an emphasis on 'new ways of working' involving the skill mix changes and role redesign or development schemes that the health care sector is now actively in the process of taking on. However, with a few exceptions, including those schemes which are being formally piloted through the Modernisation Agency's own Changing Workforce Programme (outcomes from the first phase of which are already well-summarised in their report – see NHS Modernisation Agency, 2003), there remains relatively little evidence of the formal monitoring or evaluation of many of these skill mix changes and role redesigns or substitutions which would allow any serious conclusions to be drawn about their real value or long-term effectiveness.

Implications for research

While this has not been a comprehensive systematic literature review, it is clear that much of the evidence base for current and projected reforms is anecdotal. Both the literature review and the survey have highlighted a

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large number of gaps in our knowledge especially in respect of the detailed implementation of skill mix changes, the development, acceptability and effectiveness of new roles and in cross-boundary working and team working. Some of these topics could be the subject of systematic large-scale research in the form of a randomised control trial. But many of them call for small-scale, often qualitative enquiry, because they are specific to certain settings and contexts.

What is striking, however, is the under-developed nature of the research tools in this area, both for professional researchers and for reflexive practitioners. Many of the relatively few empirical researchers are still searching for appropriate ways of measuring quality and methods of evaluation. Indeed, from a service point of view, the most urgent need is to understand how to collect routine data about activity in secondary care, and what are the most appropriate approaches to monitoring the impact of any changes. Without these essential building blocks, it will often be impossible for local champions of an initiative or innovation to take advantage of research findings, however sophisticated their methods. On this level, the most important research and development (R&D) tasks are methodological: to find out how to collect reliable routine data on the wards; and to develop appropriate evaluation tools.

However, in the workshop, it was clear that the service participants placed most emphasis on the use and training of HCAs and other support staff (including both housekeepers and ward clerks) and lower priority on the other three topics. While we do not suggest slavishly following demand, given the evident difficulties of carrying out research with the support of overworked staff, it would seem politic to organise research topics that, if not focused on HCAs (for example), are relevant to the most frequent activities.

While it was not possible from the survey to judge the quality of current initiatives - though we did get respondents' reports of what they felt to be the most notable and successful changes recently - overall, three types of activity stood out. Firstly, there were many schemes to expand the role of HCAs, usually through an NVQ programme. Secondly, there was a great diversity of activities around expanding the role of senior nurses. Finally, there were projects to make more use of non-clinical staff such as technicians, people who managed technicians, ward housekeepers, ward clerks and a variety of posts that dealt with non-clinical aspects of patient welfare and discharge. But the systematic evidence base for the enthusiasm is lacking. Perhaps research should first of all focus on these three issues, combined with one of the other issues of more general interest (for example new roles or some of the methodological issues discussed in the next section).

Section 1 Background and context

Chapter 1 Background and methodology of scoping review

1.1 Background

The aim of this scoping review is to advise the SDO Programme what research should be commissioned in this area. The review sets out to:

- 1 Map the available published and grey research literatures (theoretical and empirical) from the health care sector including both private and public (non-health sectors) where appropriate. The literature review is not intended to be a systematic literature review according to the criteria established but it is comprehensive and rigorous. It has also enabled us to identify the research which has been carried out, gaps in the field and relevant methodological issues that may be important to consider in future commissioning.
- 2 Analyse the current NHS context and how the findings from the scoping exercise can inform the development of workforce management within the NHS.
- 3 Examine the policy implications of the findings of the scoping exercise for the Department of Health and the various NHS organisations.
- 4 Identify areas for further research and how these might be addressed.

The specific objectives are to search for evidence on:

- the models of staff deployment are in use and how they work
- new ways of working practice – and any evaluations thereof
- the impact of training and continuing professional development on deployment
- current patterns of delegation from one staff group to another and any evidence of the outcomes of that
- the impact of substitution on quality of care including patient satisfaction and clinical effectiveness (although that is less an emphasis here than in the first scoping exercise).

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While the focus is mainly on searching for relevant published and grey literature, there will be important information to be collected on current patterns of deployment and delegation and on patterns of training that will not necessarily be obtainable through databases. We have, therefore, supplemented the literature search in a number of ways including postal surveys, site visits and stakeholder interviews (see Section 1.3.2 for methodology).

1.2 Previous published research and commentary

In terms of *deployment*, although the vogue for using nursing workload management systems at the beginning of the 1990s has declined, both GRASP (Rapson and Halliday, 2002) and NISCM (McIntosh, 1996) and perhaps some others are still in use. The workforce literature also includes several large-scale studies of ward staffing: one example is the Audit Commission's (2001) review of staffing of 3600 wards. They found wide variation in the amounts spent on staffing even after allowing for specialty mix, ward size, London weighting and time spent on other duties.

There is quite a large literature about the *potential* for *delegation and substitution* both between professional groups and across professional boundaries, but only relatively little published material relating to empirical work. Much of the literature that does exist is very small scale. For example, there is a literature on the role of nursing assistants and support workers and especially on the difficulties of their apparently intermediate role (Norman and Cowley, 1999) - both from their point of view (Thornley, 2000) and in terms of their acceptability to the established nursing staff (Hind *et al.*, 2000) – but it is usually based on the experiences of only a small number of workers. Also, much of the literature is very tangential. For example, a search carried out in June 2002 for the role of housekeepers revealed that only eight of 134 records generated mentioned domestics at all - the remainder were all about the nursing assistant/support worker. Nevertheless, as the tender specification noted, this is a rapidly evolving field.

In terms of assessing the possibility of efficiency gains from re-deployment and substitution, Carr-Hill and Jenkins-Clarke (2002) analysed a very large data set of activity analysis and workload data focusing mainly on nurses and support staff collected during the 1990s. They summarised the lessons from their analysis about skill-mix in seven themes that have been used as the context for this scoping review:

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1 Variation between hospitals

Differences in staffing levels between hospitals suggest there is potential for efficiency gains in some hospitals. It is not surprising that there is a large variation for bank staff in that one would expect to see differences in employment of this group of staff due to location of hospitals (for example whether urban/rural locations) – but it is notable that there are even greater variations for nursing support staff and qualified nurses. While the potential 'slack' in deployment could not be quantified, it is potentially substantial.

2 Ward culture/division of labour

While there are some wards where there is a clearly demarcated division of labour between different grades of staff, the average pattern is that there is little difference in the types of tasks undertaken by different staff grades; suggesting that the skills of different staff are not being used very efficiently. There do not appear to be rigid divisions of labour at the ward level. Instead the assignment of staff to different types of activities appears to reflect particular ward management styles.

3 Skill mix issues

There appears to be little increased specialisation between staff groups as overall staffing increases. For example, qualified nurses do not seem to spend more time on direct care when there are more staff from other groups present or when other staff groups undertake more overhead work. An additional person of any grade does more of everything.

4 Capacity

Although not substantial, both qualified and support staff report an increase in the time that they are 'available' over night shifts.

5 Flexibility

While staff are deployed differentially to different specialties, there is no apparent flexibility in the deployment of nursing staff in response to variations in patient demand (level of severity). While this is to be expected among ICUs and special care baby units because levels of demand are always high, the same appear to be true among specialties which can be described as more 'general' such as surgery, medicine and orthopaedics.

6 Economies of scale

There does not appear to be a strong relationship between numbers of patients and nurse staffing levels, suggesting the possibility of economies

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of scale. There is, therefore, very little 'mechanical' relation between numbers of patients and actual working hours. This suggests that, potentially, there is ample room for economies of scale (in the sense of combining wards to 'economise' on staff time) or reconfiguring the establishment staff.

7 Distributing the overheads

Housekeepers make a substantial contribution to overall staff input. Nursing time could be saved on administration and other non-patient related care in wards where there is high demand (level of severity).

There has also been a limited literature concerning the impact on outcomes of different staff groups carrying out the care required. For example, Carr-Hill *et al.* (1995) showed that more highly qualified nurses produced better quality care measured in terms of QUALPACs – a scale for measuring the quality of nursing care (Wandelt and Ager, 1974) - and bespoke sets of outcomes. Savage (1989) showed how hospital domestics were valued by patients. There have also been a number of studies using the quality pointers questionnaire (York Health Economics Consortium, 1993).

1.3 The literature review

1.3.1 Theoretical bases of the literature review

The topic is broad and the theoretical bases for the review must, therefore, be broad. We have drawn on the following as guidelines for the literature search and trawl among hospitals:

- 1 the original questions in the tender summarised in our aims and objectives as deployment, training and development, delegation and patient outcomes
- 2 the key types of change being considered by the Changing Workforce Programme of substitution, widening and deepening roles and new roles, together with the specialisms on which their pilot sites are focusing
- 3 the themes identified by Carr-Hill and Jenkins-Clarke (2002) - as above - of variations between providers, ward culture, division of labour, skill mix issues, capacity, flexibility, economies of scale and distributing the overheads.

1.3.2 Methods for identifying relevant published and unpublished grey literature

A range of databases to identify published and unpublished information have been searched. These include MEDLINE, CINAHL, EMBASE, BNI, HMIC, the National Research Register, REFER, Inside Conferences, SIGLE, Sociological Abstracts and the Cochrane Library. Websites of selected relevant organisations and databases of any relevant NHS organisations have also been searched.

The desk based literature search has been supplemented by:

- 1 a postal survey of hospitals asking for any experience with deployment modalities
- 2 scoping the WDCs to find out about new training modalities being introduced
- 3 a small number of visits to the relevant pilot sites to understand how these are working
- 4 attending the European HealthCare Management Association Conference at Caltanissetta Sicily where the 2003 theme was 'The workforce in crisis'.

The first three produced a small amount of new grey material and unpublished studies. The conference was very fruitful in generating relevant and up-to-date papers

- theme A: labour markets and health professionals
- theme B: education and continuing professional development of the health workforce
- theme C: personal, organisational and interorganisational development
- theme D: leading and managing networks and multidisciplinary teams
- theme F: management forum
- PhD papers.

1.3.3 Methods for judging the quality of the literature available and for summarising the results

As this is a scoping exercise, the review does not pretend to be systematic in the sense of carrying out a meta-analysis of the papers identified. Indeed, as anticipated in the original proposal, the comprehensive and exhaustive search has in fact turned up only a small number of empirical studies.

The searches have, of themselves, identified the size and shape of the literature. Without the more detailed comprehensive review, the

judgement of scientific quality will have to be based on their description of methods and the coherence of the findings with the other literature.

1.4 Other approaches to identifying initiatives

1.4.1 The survey

The overall aim of this survey is to summarise the types of activities that have been introduced to implement the approaches set out in the Changing Workforce Programme and the skills escalator strategy and, more generally, in the report on the human resources implications of the NHS Plan. A short questionnaire was developed around the main themes of the project, specifically related to recent English NHS workforce initiatives.

The sample

The sampling frame was derived from Binleys NHS database and consisted of all people in England who were concerned with human resources: directorate nurse manager, head of nursing, personnel, medical staffing officer. The selection produced 1393 names at 416 institutions belonging to 247 trusts. Everyone was mailed, recognising that this involved several questionnaires going to most institutions and the likelihood that individual response rates would be low if several people collaborated on a single reply. By mid-July, after follow-up phone calls, 131 completed questionnaires had been returned. While the individual response rate was low (approximately ten per cent); the institutional coverage was encouraging and we received replies from 99 (40 per cent) of the 247 trusts.

Replies to the survey

The 82 trusts replying were well-distributed across the English regions. Directorate nurse managers and directors of nursing were most likely to reply although respondents were not limited to those with prime responsibility for nursing. Although we encouraged people to return questionnaires even if there were no or few relevant initiatives, the replies received had a good deal to report. The questionnaire and covering letter (see Appendix 2) also encouraged people to supply job descriptions and other material relating to initiatives they feel have been particularly successful.

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Main findings

Although the survey did not generate much additional material for the central review, there are several very interesting findings in the survey that are discussed in Chapter 5.

1.5 Conclusion

In the original proposal, we suggested that, in addition to a thorough review of the NHS policy and guidance documents, we would:

- 1 hold a scoping seminar soon after the initiation of the contract
- 2 interview members of the Changing Workforce Programme team and the Modernisation Agency.

We subsequently decided that the most useful function of the seminar/workshop and of any discussions with members of the Changing Workforce Programme and the Modernisation Agency would be to discuss the implications for policy and research of the material that we found rather than to identify additional material. For this reason, it was decided to hold the seminar in the first half of October 2003. Proposed participants, and the Modernisation Agency, were sent the draft report.

Chapter 2 Policy context

2.1 Introduction

As we are all too keenly aware, the vast number of changes in health care provision in the UK in terms of strategy, policy initiatives, planning and practice are taking place in both acute and primary care sectors simultaneously and both sectors are faced with implementing change against a backdrop of reductions in workforce numbers (both nursing and medical).

Much of the commentary and policy discussion is, accordingly, concerned with nurse recruitment and retention (for example Finalyson *et al.*, 2002). However, increasing the numbers of staff will not in itself deliver the changes need to improve health care delivery and in particular to make it more patient-centred. New ways of working are seen as essential in, for example, *Investment and Reform for NHS Staff: Taking forward the NHS plan* (NHS, 2001).

A number of innovative ways of working and delivering services addressing many of the issues of delegation, deployment, substitution and the training required have been introduced over the last few years. Examples are NHS Direct, NHS walk-in centres, nurse practitioners, nurse prescribing and nurse telephone triaging. But, although they may have positive spin-offs for secondary care in terms of reducing demand, these are all focused on primary care. Within secondary care itself, in contrast, there are only a few examples, such as the introduction of housekeepers (NHS Estates, 2001; Mayor, 2002) and 'modern matrons' (Davis, 2002).

2.2 Recruitment and retention

The crucial factor in the drive towards ambitious NHS modernisation is recruitment and, in particular, retention of the existing nursing workforce. While a new pay structure, an increase in the number of training places and exciting new roles for nurses may go some way towards ameliorating the nursing shortages that currently exist, these national initiatives may not resolve the crisis fast enough. According to the King's Fund, difficulties in recruiting and retaining the nursing workforce are obstacles to the progress towards modernisation and, indeed, workforce issues have now achieved a high profile in the recognition that progress will falter unless these issues are debated (Finalyson *et al.*, 2003).

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The problems relating to the shortage of nurses are not unique to the UK – Australia, Canada, USA, as well as the UK are facing ‘a double whammy’ of increasing demand for nurses as demand for health care escalates coupled with alarming demographic characteristics of ageing workforces (Buchan, 2002a). There are reports of nursing shortages and high job dissatisfaction across hospitals in the US, Canada, England, Scotland and Germany (Aiten *et al.*, 2001).

2.3 Relationship between spending and quality of care

Logic might suggest that spending more money on staffing should lead to better quality of care and, indeed, this association is frequently voiced by managers when justifying greater budget requests to employ more nursing and medical staff. However, brave attempts to assess the quality of nursing care are frequently based on professional judgements, with health care outcomes being described in terms of routinely collected data such as length of stay, mortality and adverse events such as incidence of infections. Attributing improved outcomes to changes in the mix and quality of nursing staff is fraught with difficulties and well-nigh impossible. For example in the UK, the Audit Commission reported in 2001 that the relationship between costs of nursing care provision and the quality of care was far from clear. They attempted to assess quality of care using clinical risk data and concluded that trusts cannot demonstrate a link between the amount spent on ward staffing and the quality of care delivered. Moreover, this conclusion can be linked to findings reported over a decade ago when the Audit Commission (1991) reported that ‘there was considerable scope for improvement in the efficiency and effectiveness with which nurses were deployed’. In 2001 the Audit Commission concluded ‘that there is room for improvement in the efficiency with which some trusts deploy their staff to increase utilisation of the staff they have in post’.

2.4 Policy initiatives

On the other hand, there are several general policy initiatives that are currently in process as part of taking forward the NHS Plan, and some of the more significant directions of change that will inform our search for material are briefly described below.

The two most important policy changes, both launched by the Department of Health, are the Changing Workforce Programme (2000b) and Agenda for Change (1999). Both of these directives raise the issue of skill mixing; the Changing Workforce Programme by helping NHS organisations develop new roles through skill mix changes, expanding the

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depth and breadth of jobs and shaping tasks and skills around particular client/patient needs. The latter directive introduces a radical modernisation of the NHS pay system but also seeks to introduce new working practices and skill mixing with an emphasis on flexibility: 'more staff, working differently'.

2.4.1 Agenda for Change

Although the main thrust of this policy is the radical modernisation of the NHS pay system, it also seems to introduce new working practices and skill mixing with an emphasis on flexibility. The aims of these working practice reforms are to encourage staff to take on new responsibilities in order to improve patient care, access to services out of hours and to free up doctors and senior clinicians' time. These suggested reforms will be linked to the proposed new pay system.

2.4.2 Changing Workforce Programme

The Changing Workforce Programme provides the initiatives and supporting roles to help NHS organisations develop new roles through skill mix changes, expanding the depth and breadth of jobs and shaping tasks and skills around particular client needs. It covers four types of change:

- moving tasks up and down a uni-disciplinary ladder – for example a consultant physician giving care previously covered by doctors in training
- widening a role – for example a rehabilitation practitioner working across traditional professional divides
- deepening a role – for example nurse and therapy consultants
- new roles, combining tasks in a different way.

There are 13 initial pilot sites. Most of them are concerned with testing new ways of working in secondary care (senior house officer and equivalent roles in Leicester, new roles in diagnostic care in North Tees, emergency care in Warwick, technical and other support staff in Portsmouth, an anaesthetics team in Burton upon Trent, scientists/cancer specialists in Bristol, allied health professionals (AHPs) in Salford, stroke care in Bradford, generalist/specialist in Central Middlesex and Kingston). The 'toolkit for local change' is being evaluated under a separate contract with the Policy Research Programme. All of these constitute starting points for a search.

2.4.3 European working time directive

This is of immediate concern in terms of the workload of junior hospital doctors. Clearly new ways of working will have to be introduced – for

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example in terms of shift systems for doctors rotas or nurse substitution for part of their workload – and will need to be evaluated. Indeed this was the topic where an initial crude and very preliminary MEDLINE search on substitution among highly skilled staff elicited the largest number of possibly relevant articles.

Section 2 Literature review

Chapter 3 Quality and mapping of literature

3.1 Introduction

At the start of this exercise, searches were made of the following databases: MEDLINE, CINAHL, EMBASE, HMIC, SIGLE, CCTR, Sociological Abstracts, The British Nursing Index, Inside Conferences, the Cochrane Database of Systematic Review and the National Register Records. An initial research database of nearly 18,000 references was compiled from these, and then manually searched by consulting both title and abstract for material relevant to the purview of this review. Records relating to the CDSR and NRR were searched separately for details of research projects currently in progress or recently concluded which may not yet have been formally published.

References which were deemed to be potentially relevant were assigned an initial series of keywords to commence the first stage of 'mapping' or classification and Table 1 lists these keywords assigned at the first selection level. All accepted references had a combination of several keywords and the list below represents this.

Table 1 List of keywords

Total references	17914		
Accepted-1	496	Accepted-2	202
Keywords assigned			
collaboration	32		10
delegation	29		2
HcAs/unlicensed practitioner	110		27
HRM	12		9
innovations	34		18
interprof/disc	59		17
managed care	11		2
management	11		3
matrons	8		2
models	72		27
multidisciplinary	65		23
nursing	202		66
organisation	11		3
outcomes	28		9
policy	18		9
restructuring	135		57
review	37		24
roles	147		51
skillmix	167		108
skills	33		6
survey/study	120		45
service development	37		20
teamwork	98		30
training and education	30		9
UK	250		104
US	56		18
workforce	184		77

From the 17 914 references in total, 496 were initially selected at the title stage (Accepted-1), and then a further process of selection was made by scrutinising the abstracts of these. Searches of the Cochrane Database and National Register Records produced further potentially relevant

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projects and, in addition to these, other relevant documents ('grey area' literature, for example WDC reports, policy papers, Department of Health publications) located were added as obtained to the database. A final total of 202 papers were requested for reading, but 17 of these were later rejected (rejected-full-paper) as not being fully relevant to the purview of this study. At the time of writing this report, six further papers or reports requested could not be obtained (Adams and Goubarev, 1995; Clifford, 1997; Kinley *et al.*, 2001; McKenna and Hasson, 2002; Ritter-Teitel, 2001; Scholes and Vaughan, 2002). In total, therefore, this review is based upon 179 papers which were read and which are summarised in Table 22 (see Appendix 1).

3.2 Preliminary overview of the literature

During the earliest stages of this 'scoping' review, an overview of the broad themes contained within the literature was formed to facilitate the 'mapping' exercise:

Health care reform and hospital restructuring

One whole section of the literature identified broadly addressed issues of health care service reform and restructuring, including significant commentary and debates over the NHS Plan and patient-centred care. A large amount of this literature took the form of editorials, commentaries and general debate over health care and hospital reform and restructuring, new staff roles and training needs; and the implications of these.

Workforce: general staffing, management and service provision issues

Another broad theme to emerge concerned hospital staffing and organisation of services. This literature, as anticipated, was dominated by topics relevant to nursing which included nursing models and workforce planning and trends (for example Project 2000; in-house staffing agencies), collaborative nursing, nurse practitioners and leadership models, nursing roles (for example nursing diagnoses; nurse-managed centres; nurse-led multidisciplinary care teams), nursing workload measurement systems and workload problems related to retention, nursing shortages and 'burnout', empowerment, job satisfaction and professional governance. There was a certain amount on other clinical staffing issues, such as ward staffing and ward rotas. Management issues also emerged in terms of staff planning or training for clinicians and nurses for delegation and leadership skills. There was a moderate corpus of surveys of hospital personnel such as nurses, junior doctors, paediatric specialists or others.

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Skill mix

A considerable literature on skill mix emerged. Much of it, however, was in the nature of general debate over what was actually meant by skill mix, what constituted an acceptable staff mix, how this was influenced by cost-containment issues. A lot of the literature was concerned with the discussion of what ratio of, for example, qualified nurses to HCAs should be employed.

Staffing roles

Staffing roles in terms of role substitution, development or change emerged as another important category. Although much of this literature related to debates surrounding the increasing delegation of duties to unlicensed clinical personnel or non-professional personnel (such as HCAs), a range of different nursing (for example modern matrons, clinical nurse consultant; clinical nurse specialists) and physicians' roles were also well represented. Some debate surrounding problems with perceived structural and medical dominance was also observed including, for example, of barriers to nurses' workplace satisfaction, or of traditional work culture, rituals, norms, and boundaries perceived to stand in the way of the development of new working methods and roles.

Multi-/interdisciplinary teamworking or collaborative activities

Other important categories to emerge, particularly in the context of integrated care or critical pathways were inter- or multi-disciplinary care teams and teamwork, team building and collaboration - a great majority of which were patient group or condition-specific (for example ICU; AIDS, cancer, diabetes, stroke management and pain management; elderly/geriatric/dementia; peri-operative and surgical care; trauma and wound care; ward rounds and record keeping). Included within this context were papers addressing multi-skilling and cross-training initiatives.

2.3 The scoping exercise and categories identified

As a fully comprehensive and systematic exercise was outside the scope of this work, a large amount of the material identified above had necessarily been excluded from further review. As the review represented principally a scoping exercise, to 'map' the nature of the literature, rather than looking for quality of evidence *per se*, no serious attempt was made to grade the literature; although papers that represented empirical research in the form of surveys or studies, literature reviews or policy statements were given priority for selection. In addition to these, a range

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of other papers offering descriptive commentaries or critiques affording an overview of the nature of the literature and associated themes and issues were also selected.

The following, therefore, represents a critical review of key papers dealing with skill mix issues in secondary care, structured according to the overall categories identified above together with a selection of other papers such as critiques, commentaries and editorials. Further details of all papers included in the review, including brief descriptive summaries of the contents of each, together with key findings and recommendations, can be found in Appendix 1, Table 22.

For the initial scoping exercise, all papers were assigned keywords relating to the main themes or issues that the paper addressed such as: 'skillmix', 'roles', 'multidisciplinary', 'teamworking', 'models', 'workforce' (a full list of these initial key words appears in Table 1) and then further classified into one of the following overall group of five subjects identified above:

- health care/hospital restructuring/service development issues
- workforce/human resource management issues
- issues related to skill mix
- role issues, including role development or enhancement and substitution or delegation (nurses for doctors, HCAs for nurses)
- inter/multi-disciplinary teamwork and collaboration.

It should be noted that, although the literature broadly divided into these overall thematic groups, there was inevitably a degree of mixing and overlap between them. For example, papers addressing the general theme of health care reform and hospital reorganisation/restructuring frequently referred to issues of skill mix changes and role development or discussed the increasing use of HCAs or unlicensed clinical personnel. Skill mix papers addressing the driving forces behind skill mix changes by discussing health care reform and workforce issues also frequently included discussion of the use of assistive personnel for what constitutes an appropriate skill mix, or for cost-saving exercises. Papers more generally addressing workforce/human resource management issues as a whole sometimes also included sections discussing skill mix, role substitutions and so on. As this review exercise was upon skill mix in secondary care all the topics identified here related, often explicitly, to issues of skill mix. That said, it was felt to be helpful to attempt a broad classification of this sort (guided by the overall focus of the paper) in order to identify the key issues and messages that the literature conveyed.

The literature reviewed included the following types of papers:

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- Formal literature reviews of, for example, the health care reform process underway in one or more countries, skill mix exercises or role substitution experiences. Few of these were truly 'systematic' or comprehensive in any way.
- Empirical research (surveys/studies) of health systems (for example NHS Trusts) or particular working groups (doctors, nurses, assistive personnel). Few of these employed particularly sound methodologies such as randomised trials.
- Case studies or reports from particular hospitals or units presenting their own implementation of a particular workforce model, new mode of service delivery, or workforce role developments (for example clinical nurse practitioners) with a discussion of the experience, outcomes and the lessons to be learned. Many of these were very 'anecdotal' and lacking in robust methodology.
- 'Descriptive critiques' of health service changes in general or of particular issues (for example, personnel substitution; role expansion).
- Informed commentaries, debates or editorials in professional journals (for example *Nursing Standard*) commenting on skill mix, workforce or health service reform issues.

Chapter 4 Brief reviews of the literature by category

4.1 Health care reform and hospital restructuring

Major reform and restructuring of health services is a process that has been initiated in many countries in recent years and the driving force behind reform and hospital restructuring often implicitly includes issues of cost-containment while explicitly espousing concerns for improved patient care.

There were a total of 19 papers classified as primarily addressing health care reform and hospital restructuring, two of which were literature reviews (Bradley, 1999; Buerhaus and Needleman, 2000) and six of which were surveys or studies (Balfour and Clarke, 2001; Bryan *et al.* 1998; Heard, 2001; Lopopolo, 1997; Sochalski *et al.*, 1997; Sochalski *et al.*, 1999). The remaining papers represent critiques and commentaries of health care reforms both in the UK (for example Buchan, 2000a; Doyal and Cameron, 2000; Page, 2002), other individual countries such as, for example, the US (Brannon, 1996; Peruzzi *et al.*, 1995) and Australia (Bradley, 1999); or, more widely, through comparisons of the process of reform in different countries (Sochalski *et al.*, 1997; Sochalski *et al.*, 1999).

From reform of the health service systems of whole countries, there are many papers offering descriptive critiques on a more local level, of different innovative service developments or particular models of health care provision. This may be from the perspective or experience of an individual trust or from several health care units - reporting process, problems and results of particular experiments with reform of health care service delivery from the UK, US or Australia (Astley, 2000; Balfour and Clarke, 2001; Bryan *et al.*, 1998; Caple, 1996; Drenkard, 2001; Heard, 2001; Lopopolo, 1997; Peruzzi *et al.*, 1995; Rushin *et al.* 1998; Thomas, 1998).

The paper by Heard (2001) is a good example of a study which examined hospital restructuring by evaluating the introduction of a nursing-led in-patient unit in a medium sized district general hospital. Heard concluded that there is some evidence of the effectiveness of the unit for patient outcomes although not necessarily efficiency in cost terms and that the nursing-led in-patient unit model is considered to be worth pursuing for improvements in patient care. It is noted, however, that there are

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significant issues which need to be addressed with the implementation of the model.

Other papers take a more general perspective of the restructuring process, for example, by discussing decentralisation in hospitals (Aas, 1997) or the role of key players such as managers in the implementation of the change process (Drenkard, 2001). Still other papers address the subject of health care services reform in a more general way through its influence either on patient outcomes (Sochalski *et al.*, 1999), or on the changing roles of health service personnel (Lopopolo, 1997).

Overall there are a range of views which emerge from the literature on the implementation of health care reform and hospital restructuring, the majority of which remain optimistic despite the different obstacles and problems described. The summary descriptions of included papers (Appendix 1, Table 22) provide more details of different views, models and experiences of health care reform both in the NHS and internationally.

4.2 Workforce issues

Papers assigned to this category deal in a more general way with workforce issues in health care systems, although (as noted earlier) many of these may contain references to, for example, role development or substitution; or the employment of variations in skill mix which may be used to address workforce issues more generally.

A total of 23 papers were assigned to this category, four of which were literature reviews (Bradley, 1999; Buchan, 2000b; Buchan, 2002b; Buerhaus and Needleman, 2000) and eight of which were surveys or studies (*Same Day Surgery*, 1995; Aiken *et al.*, 2002; Audit Commission, 2001; Buchan, 2002b; Hansed, 2002; Needleman *et al.*, 2002; Rapson and Halliday, 2002; Yates, 2000). Included here are also key reports from the Department of Health addressing workforce issues and the policy context for workforce reform and restructuring of service delivery in the NHS (for example NHS, 2002a; NHS, 2003b).

In response to policy initiatives such as these, the NHS Modernisation Agency produced a report on phase one outcomes from the 13 pilot sites of the Changing Workforce Programme (NHS, 2003a) which will be of key importance in evaluating different innovative models of staffing, development of new working roles and service provision.

Apart from reports and policy directives from the Department of Health or from different departments in the NHS, there is a considerable literature looking more widely at workforce issues in health care systems. Of these, for the UK, two separate reports by the Audit Commission merit mention. The first of these examined the organisation and working practices of

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doctors in acute hospitals through a survey carried out at various sites across England and Wales, offering a range of exemplars on deployment, working practices and role substitution (Audit Commission, 1995). The second - on ward staffing - represents one of the most significant works in this area and is one of the few serious surveys on what is happening in terms of workforce and staffing in UK hospitals at the present time with a focus more widely on staffing (as opposed to nursing), including the contribution of non-registered staff such as HCAs and clinical support workers to patient care (Audit Commission, 2001). *Ward Staffing* reviews the effectiveness of permanent staff and outcomes of ward care as a whole. One of the many strengths of this report is that it reflects recent changes in service provision which includes the reduction in junior doctors' hours and changes in the patterns of health care delivery, shorter lengths of stay for inpatients and the increasing use of nurses in provision of specialist care. In addition to this, there is another up-to-date study by Hansed (2002) which examines workforce issues, service planning and delivery based upon a survey of UK trusts - finding widespread evidence of inflexibility in traditional ward rota systems and considerable scope for improvement in many areas.

Four papers deal explicitly with human resource management, strategic planning and training within the health care systems of different countries – the US (Cammarata, 2001; Hickman and Creighton-Zollar, 1998), Australia (Hogan, 2001) and the UK (NHS, 2002a) – which are useful in terms of the information and innovative human resource management strategies presented and discussed as well as the opportunity for comparative insights they provide. In addition to these, there are more straightforward workforce studies addressing service provision to meet clinical and non-clinical workload, for example, of NHS hospital medical and surgical consultants (Yates, 2000) or from individual trusts offering different staff mix or service development planning models (Cammarata, 2001; Hall, 1997; Thomas, 1998) or, for example, examining the use of computerised models for assessing aspects of care in relation to staff deployment (Rapson and Halliday, 2002). Key concerns are expressed at the lack of serious evaluations of different service planning or staff deployment models being employed with much of literature being in the nature of anecdotal reports and case studies (Hall, 1997), a view with which we would concur.

In addition to these, there are also papers which review current staffing structures, rota systems and inflexible employment, offering recommendations (Burcham, 1998; Hansed, 2002) and critiques or commentaries of workforce issues within the context of government health care plans, reforms and restructuring (Buchan, 2000a; Buchan, 2002c; Chant, 1998).

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As observed in the section on skill mix which follows, Buchan has produced a number of reviews and sound critiques of workforce and health care policy more widely, and of skill mix issues in particular. For the UK, he notes (for example) that the introduction of new roles and skill mix will be the biggest test of the human resources agenda and that success is more likely to come from developing roles of current health professionals than from introducing new types of workers (Buchan 2002c). Chant (1998) draws attention to problems caused by the confusion of roles in the NHS, cautioning that the NHS urgently needs to address its manpower planning (particularly in respect of doctors and nurses) and comments on inappropriate and inadequate training with everyone expected to specialise and no one willing to do menial general work with simpler tasks being delegated to clinical assistants. He cites the problems of very uneven case mix between hospitals for the training of clinical personnel and discusses the confusion in skill mix urging the need for an appropriately trained workforce of stable core who are responsive to change, capable of developing skills and (if necessary) of specialising.

There are a number of descriptions and critiques of staffing, training and workforce development in specific areas, for example in operating theatres (Moore 2002), wherein regional WDCs examine the future requirements for staffing, education and training - finding that, although certain progress has been made, there is still room for improvement to provide a flexible, fully skilled workforce.

There are useful reviews of health care reform and hospital restructuring and related work force issues from other countries such as Australia, where changes in working practices are critiqued as management responses to cost-cutting imperatives (Bradley 1999). Bradley discusses appropriate staffing and skill mix commenting that, although staffing numbers and skill mix are often used as management indicators of efficiencies, there is nevertheless a danger that such indices will be used to support claims of desired outcomes when they cannot, in fact, measure the qualitative aspects of many desired outcomes. Bradley further notes the 'huge differences' across various Australian states which, together with US and UK research indicates that quality of care is influenced not only by the staff to dependency ratio, but also the mix of registered nurses and emergency nurses and factors such as staff training, flexibility of care, policies and facilities in the location. She concludes that education, motivational levels, leadership and the staff deployment skills of directors of nursing are as important as staffing numbers, staffing mix or other such management indicators.

Buerhaus and Needleman (2000) have produced a comprehensive review of nursing workforce studies in the context of health care reform and restructuring, noting that the question of nurse staffing and hospital quality is an increasingly important but understudied public policy issue.

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Although the impact of hospital restructuring on nurses is generally well known, public policy has not resulted in significant changes. The authors caution that although new studies are providing a rapidly expanding body of knowledge, caution is needed using figures to support mandated hospital nurse staffing levels, as the level of sophistication that would allow precise estimates of minimal staffing levels will not be achieved. Future research is recommended in a clearer definition of the level of expected quality, the relationship between outcomes and different staffing levels and measuring patient acuity or need for nursing interventions to further knowledge and policy development.

4.3 Skill mix

Papers classified here as relating primarily to skill mix address issues related to the ratios or proportions of different personnel to meet care requirements in the secondary context, more specifically. Inevitably, much of the debate also includes questions related to specific staff mixes - for example, to the proportion of HCAs, technicians or other assistive personnel to registered nurses - as well as addressing issues of nurse substitution for doctors. However, papers in this section deal with these aspects more generally within a context addressing questions of what is deemed an appropriate skill mix in a particular health care context.

Papers focusing on skill mix in secondary care represent the largest group included in this review and also represent a large proportion of the literature in health care as a whole (see Table 2). A total of 80 of the papers selected for this review were classified as addressing primarily skill mix, of which 19 were reviews and 28 were surveys or studies. In addition to these, there are a number of discussions and critiques of what constitutes skill mix and how it should be applied to different health care contexts. Finally, there are numerous editorials, notes and commentaries in professional journals offering views on skill mix issues and developments to date. The majority of these deal with skill mix issues in the UK health care context but a total of 26 papers specifically addressed skill mix from the US experience and perspective (see Table 22 for more details).

Table 2 Papers addressing skill mix in secondary care

Reviews:

Banham and Connelly, 2002; Bordoloi and Weatherby, 1999; Buchan, 1999; Buchan, 2000b; Buchan, 2002b; Buchan *et al.*, 1996; Buchan *et al.*, 2001; Buchan and Dal Poz, 2002; Friesen, 1996; Hall, 1997; Hunter, 1996; Kernick and Scott, 2002; McKenna, 1995; Needham, 1996; Richardson *et al.*, 1998; Shamian, 1998; Spilsbury and Meyer, 2001; Warr, 1995; Wynne, 1995.

Surveys or studies:

HMSO, 1995; Adams *et al.*, 2000; Aiken *et al.*, 2002; Blegen *et al.*, 1998; Blegen and Vaughn, 1998; Bloom *et al.*, 1997; Buchan, 2002b; Calpin-Davies and Akehurst, 1999; Carr-Hill *et al.*, 1992; Carr-Hill *et al.*, 1995; Carr-Hill and Jenkins-Clarke, 2003; Dial *et al.*, 1995; Furlong and Ward, 1997; Griffiths, 2002; Grimshaw, 1999; Huston, 2001; Jenkins-Clarke and Carr-Hill, 1991; Kletzenbauer, 1996; Melberg, 1997; Needleman *et al.*, 2002; Rapson and Halliday, 2002; Redshaw *et al.*, 1993; Richardson, 1999; Robertson and Hassan, 1999; Spurgeon and Barwell, 1995; Taket *et al.*, 1996; Waters, 1999b.

Discussions and critiques:

Same Day Surgery, 1993; *OR Manager*, 1999 and 2001; *Pharmaceutical Journal*, 2002; Allen, 1995; Aron, 1997; Bordoloi and Weatherby, 2000; Bull, 2003; Evans, 1999; Gallinagh and Campbell, 1999; Glen and Clark, 1999; Goding, 1994; Hassell *et al.*, 2002; Hussey, 1996; Johnson, 1998; Kernick and Scott, 2002; Koch, 1996; Moss, 1996; Needham, 1996; Pearce, 1996; Penny, 1997; Peruzzi *et al.*, 1995; Pringle, 1996; Redshaw and Harris, 1994; Ringerman and Ventura, 2000; Roberts and Cleary, 2000; Ross, 1998; Shamian, 1998; Smith and Long, 2002; Warr, 1995; Waters, 2003; Williams, 1996.

Editorials and commentaries:

Pharmaceutical Journal, 2002; Buchan, 1993; Moses, 1995; Murray, 2002; Notter, 1993; Purtilo, 1996; Sheehan, 1993; Waters, 1999a; Waters, 1999b; Waters, 2003.

4.3.1 Larger skill mix studies and reviews

Skill mix in health care is a subject which has been widely studied and reviewed, particularly in recent years in the context of wide scale reform and restructuring of health care systems in many countries. Several excellent reviews have been produced by Buchan, which variously examine key aspects of change at a wider European level of nursing workforce issues (Buchan, 2000b) or otherwise offer sound critiques of current health care restructuring efforts, policy directives and issues of skill mix (Buchan, 1999; Buchan, 2002b; Buchan *et al.*, 1996; Buchan *et al.*, 2001; Buchan and Dal Poz, 2002). Among this group of papers which present more general reviews or critiques of skill mix within the context of hospital restructuring in the changing health care environment, the article by (Hunter, 1996) is an example of one which provides a useful and comprehensive review of health care reforms and assesses how these processes are reshaping the roles and tasks of health care personnel. The

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article includes a review of skill mix issues, seen as central to moves away from professional demarcations; the perceived lack of evidence of the impact of skill mix initiatives on standards, outcomes and efficiency is noted. Other papers such as that by Bordoloi and Weatherby (1999) represent combinations of more general literature reviews of skill mix, together with the presentation of new staff mix models. Surveys, studies and reviews of skill mix issues from the perspective of other countries are also common, including the US (Blegen and Vaughn, 1998; Bordoloi and Weatherby, 1999; Koch, 1996; Melberg, 1997) or Canada (Friesen, 1996; Hall, 1997; Shamian, 1998).

Studies by Jenkins-Clarke and Carr-Hill (1991), Carr-Hill *et al.* (1992), Carr-Hill *et al.* (1995), Carr-Hill and Jenkins-Clarke (2003) represent four of the very few serious empirical studies employing large nursing workforce data sets to analyse issues of skill mix and nursing effectiveness. Jenkins-Clarke and Carr-Hill (1991) review nursing workload measurement systems and how these relate to deployment and skill mix. Carr-Hill *et al.* (1992) and Carr-Hill and Jenkins-Clarke (2003) both address issues of skill mix and effectiveness of nursing care, while Carr-Hill *et al.*, (1995) look at the impact of nursing grade upon quality and outcome of nursing care. In terms of patient outcomes, the earlier of these studies have been frequently cited in other reviews as providing evidence that a 'rich' nursing skill mix is associated with improved patient outcomes. The findings of the latest study by Carr-Hill and Jenkins-Clarke (2003) should be of key importance when considering issues of staff deployment and skill mix and this is supported by the findings of four other studies included here (Blegen *et al.*, 1998; Blegen and Vaughn, 1998; Huston, 2001; Melberg, 1997), confirming the relationship between a rich skill mix of nurse staffing and improved patient outcomes and, in addition to these, by other reviews of the skill mix literature such as Bloom *et al.* (1997); Buchan (2002b); Buchan and Dal Poz (2002); McKenna (1995) and Wynne (1995).

Other studies, such as that by Adams *et al.* (2000) examine the influence of changes brought about by NHS restructuring upon human resource management, skill mix and roles in some detail - in this case through a study of eight English NHS trusts (see Table 22 for details).

The reviews by Buchan and Dal Poz (2002), Kernick and Scott (2002), Hall (1997), Needham (1996) and McKenna (1995) are good examples of those which offer cautionary notes upon skill or staff mix changes effected primarily as cost-reduction strategies, with the evidence suggesting that the increased use of less qualified staff will not be effective in all situations - although possibly in some, such in the case of doctor-nurse substitutions (Kernick and Scott, 2002). Concern is expressed at the lack of serious evaluation of the effectiveness of different skill mixes across groups of health workers and professions, and

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that the associated issue of developing new roles remains relatively unexplored (Buchan and Dal Poz, 2002); few new staff mix models have been examined over time with empirical methods or with control for confounding factors (Hall, 1997). Cautionary notes on the wholesale substitution of doctors by nurses are also offered by both Calpin-Davies and Akehurst (1999) and Banham and Connelly (2002) - two important papers contributing informed views and empirical data to the debate of role substitution in skill mix questions. The study by Griffiths (2002) presents and discusses some important findings and observations on the issue of skill mix across clinical disciplines, noting that although some skill mix changes may be desirable (such as with junior doctors where the input is presumed to be redundant) others (such as for nurses, occupational therapy or social work) are neither supported by theories advanced to support the intervention nor by the available evidence. Further cautionary notes emerge from the findings by studies such as Huston (2001), or by Grimshaw (1999) on changes in skills mix in relation to pay determination among the nursing workforce. Other reviews, however, are generally more positive (Buchan, 2002b; Buchan and Dal Poz, 2002) with the suggestion that there is both 'considerable scope for alterations in skill mix' and 'unrealised scope' for extending the use of nursing staff (Buchan and Dal Poz, 2002; Richardson *et al.*, 1998).

4.3.2 Case reports and studies from individual units or specialties

Aside from the kinds of methodologically stronger evidence-based studies cited above, there is a large complementary literature dealing more generally with staffing ratios, in particular, of percentage of qualified nursing staff (registered nurses) to multi-skilled generic workers (for example, HCAs or clinical technicians) - sometimes from the context of a particular specialty such as paediatrics (for example Needham, 1996) or based upon anecdotal reports and case studies from individual health care units, often from the US (for example *OR Manager* 1999 and 2001; Koch, 1996). There are smaller case studies of skill mix and outcomes which have contradictory findings or recommendations in respect of delegation to assistive personnel, finding either that suitable delegation to licensed vocational nurses, particularly when supervised by registered nurses, had favourable outcomes in terms of lowered costs, improved patient satisfaction and maintained quality of care (for example, 1993; Ringerman and Ventura, 2000) or that a high ratio skill mix of registered nurses to assistive personnel (in other words a 'rich' skill mix) is associated with better outcomes (Needleman *et al.*, 2002). Anecdotal case reports of the experience of introducing generic workers in a particular health care location often tend to present a more favourable view of skill mix changes which increase the use of unlicensed clinical assistive personnel or technicians. Those aspects of skill mix which focus

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more explicitly upon role and substitution issues, including the employment of or delegation to generic workers/HCAs, are considered in more detail under 'role issues' below.

Given the emphasis on change and restructuring of health care services underway in many countries, there is a sizeable literature which addresses staff skill mix reviews, exercises or even formal evaluation studies from the perspective of a particular health authority or unit (for example Blee, 1993; Peruzzi *et al.*, 1995; Taket *et al.*, 1996), or which discuss skill mix changes from the perspective of a particular specialty, such as radiography (Bull, 2003; Evans, 1999; Ross, 1998; Williams, 1996), peri/postoperative nursing (Huston, 2001; Moss, 1996), critical care (Pearce, 1996; Ringerman and Ventura, 2000), neonatal care (Redshaw and Harris, 1994; Redshaw *et al.*, 1993), rehabilitation (Aron, 1997), or children's nursing (Smith and Long, 2002). Other review exercises offer a presentation and discussion of different 'assessment tools' or models to measure different nursing workload, patient dependency, acuity, and consequent staff skill mix for secondary care contexts (Bordoloi and Weatherby, 1999; Furlong and Ward, 1997; McKenna, 1995; Rapson and Halliday, 2002; Ross, 1998; Smith and Long, 2002; Spurgeon and Barwell, 1995) or deal more explicitly with models of clinical supervision and related issues (Gallinagh and Campbell, 1999). There are also more general critiques on changes in skill mix ratios (for example Moss, 1996; Richardson, 1999), papers which review attitudes among health care staff to skill mix issues (Adams *et al.*, 2000; Kletzenbauer, 1996), or which look at more specific issues such as pay determination in relation to the skill mix of wards or ratio of nurses to HCAs (Grimshaw, 1999).

4.3.3 Critiques of skill mix theories, models and methodologies

Another section of the literature deals with theories on skill mix and how these work in a practical way via case studies (Buchan *et al.*, 2001) or reviews (Kernick and Scott, 2002). There are also occasional papers which present particular models of skills development programmes in action (for example Stern *et al.*, 1997) or which address the educational and training implications of future skill mix requirements, offering critical analyses of, for example, nurse teachers and how these should be developed by presenting new models for both nurse teachers and practitioners (Glen and Clark, 1999).

4.3.4 Patient need and the context for care

There is a clear need for assessing the context of care, including the care needs of specific patient populations, and using these to determine the required skills of the staff needed (Needham 1996); deploying the most

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cost-effective mix to deliver care to a defined standard, with the ideal staff mix not a matter just of cost and the cheapest option nor some elusive 'ideal' equation. Skill mix should be considered an ongoing exercise of matching staff and skills to the ever-changing environment of patient need and health care contexts (Buchan, 2002b; Buchan and Dal Poz, 2002). Following a review of eight ways of determining 'personnel mix', Buchan (1999) cautions that there is no single correct way to determine the right skill or staff mix in health care - with a number of options available, each with strengths and weaknesses:

Most published studies evaluating the effects of different staff mixes are narrow in focus, small in sample size and short in timescale, therefore it is not possible to derive any generalisable indicators or lessons from the available research, partly because the research base is fragmented and partly because the organisational context of each study is different with many contributory (and potentially confounding) variables...

(Buchan 1999).

4.3.5 Workplace and workforce studies with a skill mix focus

There are a number of surveys and studies of what is actually happening now, or in recent years, in the secondary care sector. The Audit Commission, for example, published a report examining the organisation and working practices of doctors in acute hospitals (1995) presenting a 'snap shot' of the then *status quo*, with recommendations to improve service and working conditions; calling for a more systematic approach to skill mix and deployment. The report further offers a range of exemplars on deployment, working practices and role substitution and comments upon the variation between hospitals in terms of division of tasks between junior doctors, nurses and other professional groups.

There are studies which compare and contrast employment skill mix strategies between sites (Grimshaw, 1999; Huston, 2001) and caution against adopting a 'low-free-skilled-nurse basis' (Grimshaw, 1999). An important study by Griffiths (2002) examined the effectiveness of post-acute care in nursing-led intermediate care in-patient units through a survey together with a parallel randomised trial. Findings were that positive results from the units may only be generalisable to settings with a similar skill mix across the multi-disciplinary teams as that found in the acute hospital and that reduced skill mix may be a causal factor leading to extended stays and increased total care costs - a caution which it is recommended should be extended to other models of intermediate care, whether or not they are nursing-led.

A number of the skill mix literature reviews also address the question of delegation to HCAs or unlicensed clinical personnel and most of these offer a cautionary note - for example:

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The evidence... indicates that higher levels of nurse staffing and a greater proportion of registered nurses on staff are correlated with lower rates of mortality, complications, following surgery and other potential adverse nurse-sensitive events.

(Buerhaus and Needleman, 2000)

Other literature reviews (Bradley, 1999) which deal in a more general way with workforce issues comment critically on these issues noting the confusion in the literature over roles and relationships of nursing staff and the need for medical or nursing care, and that there is no firm evidence one way or another to support the widely held view that the use of nurse extenders is cost-effective (Bradley, 1999). Other reviews draw on study findings suggesting that increasing use of unskilled, semi-skilled staff and care assistants can lead to increased staff absenteeism, increased sick time, increased costs: on-call, overtime; reduced morale, reduced staff satisfaction and reduced quality of care; higher workload for registered nurses and higher turnover (Buchan, 2002b; McKenna, 1995).

4.4 Role issues

Developing the roles of health care practitioners and challenging the traditional boundaries represented by them (sometimes referred to as cross-boundary working) represents a pivotal aspect of the health care reforms and hospital restructuring currently taking place in many countries. Although experimentation with role substitution and/or development and enhancement frequently takes place within a context of workforce issues more generally and skill mix exercises in particular, there is a section of the literature which addresses role issues in such a specific way that merits its review as a distinct topic. A total of 45 papers were therefore classified as addressing primarily 'role issues'. Of these, 19 were surveys or studies (Adams *et al.*, 2000; Allen *et al.* 2002; Atwal, 2002; Buchanan, 1996; Caine, 2003; Calpin-Davies and Akehurst, 1999; George, 2001; Glen and Waddington, 1998; Griffiths, 2002; Harris and Redshaw, 1994; Hogg *et al.*, 1997; Lopopolo, 1997; *National Nursing*, 1995; NHS, 1997; Redshaw and Harvey, 2002; Scholes *et al.*, 1999; Smith, 2002; Snelgrove and Hughes, 2000; Wiles *et al.*, 2001). A further seven were reviews (Burchell and Jenner, 1996; Hall, 1997; Hunter, 1996; Masterson, 2002; Richardson and Maynard, 1995; Spilsbury and Meyer, 2001; Watts *et al.*, 2001).

Two basic kinds of role issue are encountered in this literature:

- 1 role development or enhancement (for example modern matrons; continence nurse practitioner; neonatal nurse practitioner)
- 2 role substitution, for example:
 - nurses for doctors
 - HCAs, health technicians for nurses.

4.4.1 Literature reviews

Of the seven reviews classified for the topic of role issues, three are systematic literature reviews (Richardson and Maynard, 1995; Spilsbury and Meyer, 2001; Watts *et al.* 2001).

Watts *et al.* (2001) offer a systematic review which addresses the issue of the sharing of roles and responsibilities between professional groups explicitly in an evaluation of the current level of knowledge of methodologies used in comparative analyses of the individual practices of doctors, nurses and midwives. They argue that the assessment of health care roles and responsibilities would be well served by a more balanced approach that recognises the strengths of both quantitative and qualitative work. Spilsbury and Meyer (2001) review the literature to examine the issue of changing roles through nursing-sensitive outcomes, finding that the evidence suggests that qualified nursing care does make a difference with patient care, although there is as yet no indication of the appropriate ratio of registered nurses to HCAs. Richardson and Maynard (1995) also examine the issue of substitution, concluding from a review of the literature that between 30 per cent and 70 per cent of the tasks performed by doctors could be carried out by nurses - although cautioning that the scope for US-style managed care firm skill mix alterations may be more limited in the NHS and that proper evaluations should be carried out through appropriate research comparing the relative cost-effectiveness of alternative skill mix combinations.

Of the four remaining reviews, Hunter (1996) provides an overview of health care reforms and assesses how it is shaping or reshaping the roles and tasks of health care personnel. Less costly ways of delivering care are discussed. Hunter cautions that many of the problems in health care services are as a result of failure in working effectively across organisational and professional boundaries with the present structure of doctor training being treated separately from other health professions.

The paper by Masterson (2002) addresses these same issues offering a similar cautionary view by examining professional roles and boundaries against policy developments more generally, offering a thorough critique of the assumptions associated with cross-boundary working and urging that a significant investment in evaluation is necessary to ensure that workforce and service developments reflect patient needs rather than professional aspirations or short term expedience. The paper by Hall (1997) is a review of staff mix models as complimentary or substitution roles for nurses which also cautions that little is known of the true impact on costs or quality of care of a range of staff mix models. In a comparative review of patient-focused care between the UK and the US, Burchell and Jenner (1996) explore the implications for the education and training of nurses by examining various models of competence, cautioning against the unmodified transposition of an approach to training

based upon the US model of care, given the different nursing roles in the UK setting.

3.4.2 Empirical research into role development and substitution issues

Empirical research into role issues tends either to take the form of surveys into the nature and extent of new roles taking place in local or national health care systems or to examine a particular care context in order to evaluate the effectiveness of a particular substitution taking place.

The NHS Modernisation Agency has produced a report on phase one outcomes from the 13 pilot sites of the Changing Workforce Programme (NHS, 2003a) which explicitly addresses issues of role development, substitution and innovative working practices in this area.

Papers by Scholes *et al.* (1999) and another survey of developing clinical roles within NHS Trusts in Scotland (*National Nursing*, 1995) are two good examples of wider studies carried out to assess the nature and the extent of the implementation of new nursing roles as well as to evaluate their relative success. The first describes the 'exploring new roles in practice project' (ENRiP) commissioned by the Department of Health's human resource initiative which identified three typologies of role development taking place: developments with a nursing focus; developments with a medical substitution bias and 'niche' developments. The second also identified a large number of new roles being undertaken by nurses concluding that where evaluations have been carried out results suggest that these roles are being taken on overall successfully. Other studies have examined the impact of NHS restructuring on nursing roles (for example Adams *et al.*, 2000) finding widespread evidence of work intensification in health care contexts.

Although overall positive and encouraging in their findings, cautionary points emerge over some of the issues identified - for example, in terms of inhibition of career progression with explicit substitution roles (a potential disadvantage which also emerged in the study by Hogg, Williams, and Norton, 1997, looking at the extended roles of radiographers working in nuclear medicine) or in the need for clear and logical lines of accountability within new posts with cross-disciplinary accountability requiring careful consideration (Scholes, Furlong, and Vaughan 1999). Legal and liability issues were also a cause for concern with some Scottish NHS Trusts. However, in general the perceived benefits of the new roles were felt to far outweigh the drawbacks.

Overall the findings of empirical research tend to favour nurse-for-doctor substitutions. For example, one of the few studies of sound methodology to examine role substitutions employed a randomised controlled cross-

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over trial of nurse practitioner versus doctor-led outpatient care in a bronchiectasis clinic. This concluded that nurse-practitioner-led care for stable patients was as safe and efficient as doctor-led care with significant additional patient satisfaction and better patient compliance with therapy (Caine, 2003). Another multi-centre randomised controlled trial examined the extended role of appropriately-trained nurses and pre-registration house officers in pre-operative assessment in general surgery and concluded that there was no reason to inhibit the development of fully nurse-led pre-operative assessment provided that nurses were appropriately trained and maintained a sufficient workload to retain their skills (George, 2001).

Many papers in this group are small case studies, reports or critiques examining particular roles and role enhancement or development, sometimes as part of the broader process of health care reform and hospital restructuring (for example Peruzzi *et al.*, 1995). Nursing roles in particular are widely discussed - for example, describing the introduction of modern matrons (Davis, 2002; Healy, 2002), the role of nurse consultant (Adam, 2002) or nurse practitioner (Buchanan, 1996; Collins *et al.*, 1995), neonatal nurse (Harris and Redshaw, 1994; Redshaw and Harvey, 2002); acute nurse practitioner (Buchanan, 1996), accident and emergency nurse (Bland, 1997), peri-operative nurse (Moss 1996) or combined specialist nursing roles (Ditzenberger *et al.*, 1995) in a particular care context and the implications of the development of these. Other papers offer descriptive critiques of a particular model, often also based upon a case study or report from a particular hospital or health care system (*Health Service Report*, 1997; Hall, 1997; Langstaff and Gray, 1997) or otherwise based on surveys (Buchanan, 1996; Hogg *et al.*, 1997; NHS, 1997; Smith, 2002; Snelgrove and Hughes, 2000; Wiles *et al.*, 2001).

Despite a generally positive literature, several papers or studies do find problems with issues of role ambiguity and division of tasks as, for example (Atwal 2002) in a survey of a sample of occupational therapists, care managers and nurses working on acute wards in orthopaedics and acute medicine who had little understanding of each others' roles and working constraints. Other papers urge the need for role clarity, support and supervision (Glen and Waddington, 1998) or for a better framework of management support, confirming problems of often short-term crisis management and cautioning that 'upskilling' is not synonymous with job enrichment (Dowling, 1997).

Similar cautionary findings emerge from the large study by Adams *et al.* (2000) who present a detailed and up-to-date examination of the impact of NHS restructuring on nurses roles through a study of eight English NHS trusts. Their findings question the desirability of the government's aim to expand nursing roles further. Problems may be encountered, especially

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when new posts or roles are developed as 'rapid ad hoc responses of senior doctors and nurses to urgent medical workforce problems' (Dowling, 1997). Small local studies such as that of the North Thames NHS Executive (NHS, 1997) focused on identifying core nursing skills and competencies of some of the new expanded roles (for example clinical specialists) to better define the educational and infrastructural needs demanded by these.

Some key study findings offer further cautionary notes, such as that by Calpin-Davies and Akehurst (1999), that 'the policy assumption that suggests a sufficiency of nurses is available for doctor-nurse substitution while still allowing the nursing element to function may be false'. There is a need for professional bodies from nursing and medicine to monitor changes and ensure appropriate education and learning.

4.4.3 Health care assistants, technicians and 'assistive personnel'

A large proportion of the literature dealing with skill mix and role substitution consists of papers which deal more explicitly with the use of HCAs, technicians and 'assistive personnel'. There is actually a very substantial literature addressing this subject although many of these papers are merely anecdotal accounts of the experience of the introduction of care assistants in particular hospitals, problems with delegation or supervision by trained nursing personnel, or editorials or commentaries discussing issues raised by the use of such personnel. A total of 13 papers are included here which dealt exclusively with the issue of this category of health service personnel, and these include one review (Roberts, 1994) and six surveys or studies (Anderson, 1997; Hind *et al.*, 2000; Huston, 2001; Ramprogus and O'Brien, 2002; Ringerman and Ventura, 2000; Thornley, 2000).

There are either more general health service-wide studies, or surveys of the role of HCAs including issues of roles, training, or professional development (for example Ramprogus and O'Brien, 2002; Thornley, 2000). The study by Thornley (2000) is one of the relatively few robust evaluations of this class of generic worker which, based upon survey evidence and detailed case studies of nursing auxiliary/assistant and the new grade of HCA/support worker in the NHS, argues for a re-evaluation of the competencies of these non-registered care givers. There are other case studies of existing HCA roles or the introduction and/or development of new roles within a particular specialty, unit or location (Clayworth, 1997; McLeod, 2001; Ringerman and Ventura, 2000; Roberts and Cleary, 2000) with process, outcomes and attitudes of staff to their introduction (Anderson, 1997; Hind *et al.*, 2000).

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An important and up-to-date study of the changing role of HCAs within the UK health service is that by Ramprogus and O'Brien (2002), which finds that HCAs perform a large proportion of nursing care, often carrying out complex tasks. They have a significant input to nursing students' clinical education. This endorses findings of other research that support workers make a significant contribution to patient care but that there is not sufficient attention given to their role and development or to professional developmental needs.

Much of the literature discussing the use or introduction of HCAs is positive, particularly those which are surveys of the attitudes of other staff to the introduction of such workers. However, most papers emphasise a need for better role clarity (for example, Richardson *et al.* 1998); and clearer boundaries between the roles/duties of the assistant and those of the clinical personnel with whom they work— a requirement, it should be pointed out, which seems to be antithetical to the 'role blurring' called for in new collaborative interdisciplinary teamworking or role development initiatives.

4.5 Interdisciplinary and multi-disciplinary teamwork and collaboration

The related topic areas of interdisciplinary or multi-disciplinary teamwork and collaboration attracted a large literature and, therefore, a rigorous selectivity was adopted to reduce the size of this to a manageable level. A total of 20 papers were classified under this subject area, five of which were reviews (Hall and Weaver, 2001; Mickan and Rodger, 2000b; Mickan and Rodger, 2000a; Rice, 2000) and three were surveys or studies (Atwal and Caldwell, 2002; Brooks, 1996; Molyneux, 2001).

A total of 12 of these papers were included as having innovative approaches or otherwise offering local models of teamworking or collaborative practice in action (Anderson *et al.*, 2000; Atwal and Caldwell, 2002; Boaden and Leaviss, 2000; Brita-Rossi *et al.*, 1996; Johnson and Yanko, 2001; Miller and King, 1998; Molyneux, 2001; Montebello, 1994; Morrish *et al.*, 1995; Rushin *et al.*, 1998; Scott and Cowen, 1997; Verdejo, 2001). Others offered a more general analyses of health care team dynamics and characteristics of effective teams (Atwal and Caldwell, 2002; Barr, 1997; Hall and Weaver, 2001; Mickan and Rodger, 2000b; Mickan and Rodger, 2000a; Montebello, 1994; Rice, 2000) or the role of specific health service personnel within teams (Corrigan, 2002; Kenny, 2002; Miller and King, 1998).

Service-specific papers, such those pertaining directly to issues of teamworking within health care contexts such as the NHS include papers by, for example, Arthur *et al.* (2003), Boaden and Leaviss (2000) and Brooks (1996). Other location, organisation or unit-specific papers

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addressing aspects of teamworking include those by Griffiths (2002), Johnson and Yanko (2001), Molyneux (2001); Rushin *et al.* (1998) and Verdejo (2001).

In general, teamworking and interdisciplinary collaboration are seen positively and as an answer to many of the problems of contemporary health care given a broad correlation with more successful patient outcomes, continuity of care, decreased costs and a range of other benefits (Rice, 2000). The main obstacles to the implementation of effective interdisciplinary teams is seen in the barriers from restrictive practices, rituals and 'dysfunctional (working) cultural norms' (Brooks, 1996). The need for effective educational/training programmes on how to function within a team is considered essential - this includes issues of 'role blurring', group skills, communications skills, conflict resolution and leadership skills (Boaden and Leaviss, 2000; Hall and Weaver, 2001). Cautionary notes are also sounded pointing out that concentration on team dynamics alone will not deliver the teamwork required in the new NHS (Boaden and Leaviss, 2000).

4.6 Discussion

Although certain broad themes and lessons do emerge from this review of the literature there, nevertheless, remain contradictions and ambiguities manifest in the different findings and recommendations that must be addressed. For example, some empirical research openly favours the range of clinical substitutions that are currently taking place, particularly those involving nurse-for-doctor; suggesting 'considerable scope for alterations in skill mix' and 'unrealised scope for extending the use of nursing staff' (Buchan and Dal Poz, 2002; Richardson *et al.*, 1998). Others, however, find problems with issues of role ambiguity and division of tasks or even question that policy assumptions assuming a sufficiency of nurses available for doctor-nurse substitution while still allowing the nursing element to function may actually be false (Calpin-Davies and Akehurst, 1999). Equally, although there are calls for better role definition or clarity in many instances these appear to be at odds with the greater flexibility and need for 'role blurring' also demanded to allow more effective cross boundary working, for example.

There are many voices expressing concern at the lack of evaluation of the effectiveness of different skill mixes across groups of health workers and professions or of the new roles which are being developed (for example Buchan and Dal Poz, 2002; Griffiths, 2002; Hall, 1997). However, despite these problems, in general the literature appears to favour the development of many of the new roles, particularly the group of nurse practitioner or clinical nurse specialist roles whose benefits are generally perceived to outweigh the drawbacks and (where evaluations have been

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carried out) results suggest that these roles are being taken on overall successfully (for example *National Nursing*, 1995).

The widespread introduction of multi-skilled generic workers, clinical assistants, unlicensed clinical practitioners or technicians is an issue subject to particular disagreement. It has already been seen that there is a broad division in the literature, with much anecdotal, case report style 'evidence' favouring their introduction and lauding the beneficial outcomes at the individual unit level in terms of costs saved and patient satisfaction experienced. However, larger more serious empirical studies find to the contrary that a rich skill mix of qualified nursing personnel is that which is associated with better outcomes and that a health care system whose primary objective is to meet patient needs effectively must also be prepared to pay for this in terms of skilled and well-qualified personnel (for example Aiken *et al.*, 2002; Caine, 2003; Jenkins-Clarke and Carr-Hill, 1991; Carr-Hill *et al.*, 1992; Carr-Hill *et al.*, 1995; Carr-Hill and Jenkins-Clarke, 2003; Blegen *et al.*, 1998; Blegen and Vaughn, 1998; Huston, 2001; Melberg, 1997; Bloom *et al.*, 1997; Buchan, 2002b; Buchan and Dal Poz, 2002; McKenna, 1995; Wynne, 1995).

It is also observed that there are many aspects of qualified nursing care that can never be adequately 'quantified' as these form part of an overall holistic care delivered by the nurse which cannot so readily be segmented and delegated to less qualified staff. Problems with 'inappropriate and inadequate training' have been highlighted, 'with everyone expected to specialise, no one willing to do menial general work and simpler tasks being delegated to clinical assistants' (Chant, 1998). There are also problems which emerge in terms of the time spent by qualified clinical staff supervising the assistants as well as issues of the need for clear and logical lines of accountability within new posts (Scholes *et al.*, 1999) or of legal liability over which considerable cause for concern is also expressed.

The drive in recent years towards health care which is patient-focussed, increasingly delivered through integrated care pathways, for example, has been the principal agent driving moves towards teamworking and interdisciplinary collaboration. These are generally seen positively and as an answer to many of the problems of contemporary health care, given a broad correlation with more successful patient outcomes, continuity of care, decreased costs and a range of other benefits (Rice, 2002).

However, it is also clear that innovatory health care developments of this nature require an equally innovatory educational and training infrastructure able to deliver the suitably qualified and flexibly skilled workforce (Hunter, 1996) who have, in addition, the managerial skills increasingly called for to prosper in this new care delivery environment.

4.7 Summary of review findings

Despite a certain level of contradiction in the findings there are, nevertheless, a number of key points to have emerged from this review. These are summarised below:

- There is a demonstrable need for an appropriately trained and flexible, fully skilled workforce of stable core; responsive to change, capable of developing skills and, if necessary, of specialising (Chant, 1998; Moore, 2002).
- Many of the current difficulties being experienced with health care reform and workforce changes are consequent on the tension between opposing priorities: cost-containment versus patient need.
- It is necessary to ensure that workforce and service developments reflect patient needs rather than professional aspirations or short term expedience (Masterson, 2002).
- There is widespread evidence of inflexibility in traditional ward rota systems and considerable scope for improvement in many areas (Hansed, 2002).
- There is a perceived lack of evidence of the impact of skill mix initiatives on standards, outcomes and efficiency (Hunter, 1996).
- There is a clear need for more or better evaluation as changes which are being introduced, particularly in terms of staff deployment models, different staff mix ratios or role changes are not always initiated from a firm evidence-base (Hall, 1997).
- Proper evaluations should be carried out through appropriate research comparing the relative cost-effectiveness of alternative skill mix combinations as little is known of the true impact on costs or quality of care of a range of staff mix models and few new staff mix models have been examined over time with empirical methods or with control for confounding factors (Richardson and Maynard, 1995; Hall, 1997).
- Future research is recommended in a clearer definition of the level of expected quality, the relationship between outcomes and different staffing levels and measuring patient acuity or need for nursing interventions to further knowledge and policy development (Buerhaus and Needleman, 2000).
- Research indicates that quality of care is influenced not only by the staff to dependency ratio but also the mix of registered nursing staff to HCAs and unlicensed practitioners, and factors such as staff training, flexibility of care, policies and facilities in the location (Bradley, 1999).

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- Education, motivational levels, leadership and the staff deployment skills of directors of nursing are as important as staffing numbers or staffing mix or other such management indicators (Bradley, 1999).
- Although there is a certain body of (largely anecdotal) evidence supporting many of the role changes and substitutions currently taking place in health care systems, particularly those of nurse-for-doctor, findings from large empirical studies and systematic literature reviews still support the view that a 'rich' skill mix of qualified personnel, particularly of registered nurses to HCAs, is associated with better clinical outcomes.
- Despite generally positive findings from empirical research, not all studies find in favour of developing nursing roles. Although some skill mix changes may be desirable, others, such as for nurses, occupational therapy or social work are neither supported by theories advanced to support the intervention nor the available evidence (Adams *et al.*, 2000; Griffiths, 2002).
- Despite some positive findings on role development or substitution, particularly in the development of different nursing roles, there are unquestionably also problems caused by the confusion of roles.
- Most papers emphasise a need for better role clarity and clearer boundaries, for example, between the roles and duties of clinical assistants and those of the people they work alongside.
- New posts or roles developed primarily as 'rapid ad hoc responses of senior doctors and nurses to urgent medical workforce problems' (Dowling, 1997), rather than as part of a planned programme of workforce change informed through appropriate processes of monitoring and evaluation, will be those likely to cause the most difficulties.
- An appropriate balance should therefore be sought in the tension between role 'blurring' to allow effective cross-boundary working and better role definition, to address the issues of confusion.
- Concentration on team dynamics alone will not deliver the teamwork required in the new NHS (Boaden and Leaviss, 2000).
- Many of the problems in health care services are as a result of failure in working effectively across organisational and professional boundaries, with the present structure of doctor training being treated separately from other health professions (Hunter, 1996).
- The main obstacles to the implementation of effective interdisciplinary teams are seen in the barriers from restrictive practices, rituals and 'dysfunctional (working) cultural norms' (Brooks, 1996).
- The need for effective educational/training programmes on how to function within a team is considered essential, which includes issues

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of 'role blurring', group skills, communications skills, conflict resolution, and leadership skills (Boaden and Leaviss, 2000; Hall and Weaver, 2001).

- There is a need for professional bodies from nursing and medicine to monitor changes and ensure appropriate education and learning (Calpin-Davies and Akehurst, 1999).
- The policy assumption which suggests that a sufficiency of nurses is available for doctor-nurse substitution, while still allowing the nursing element to function, may be false (Calpin-Davies and Akehurst, 1999).

4.8 Conclusions

The processes of change underway in many health care systems across the world, moving from traditional and often restrictive, hide-bound professional structures, rituals and cultural preserves to more open flexible working practices and roles, within a context of patient-centred care, is unlikely to be reversed. Nor should it be given the many positive benefits such change can and, in some cases, already has effected. However, the ambiguity of objectives manifest in a process which explicitly espouses the primacy of meeting patients' needs on the one hand while being implicitly driven by economic considerations on the other, has undoubtedly been responsible for much of the confusion evident as these changes have been introduced. As a consequence and in the name of reform, major workforce restructuring initiatives, changes in skill mix, and wide scale introductions of new clinical roles have taken place, often too quickly and with little formal monitoring or evaluation of the effects of these changes.

To echo Chant (1998), the NHS urgently needs to address its manpower planning, particularly in respect of doctors and nurses. As Buchan (2002c) asserts, the introduction of new roles and skill mix will be the biggest test of the human resources agenda.

Section 3 Current local and national initiatives

Chapter 5 The survey of secondary care trusts

5.1 A survey of workforce deployment and development initiatives

There are several arguments for including a survey in what is predominately a literature review. Principal among these are an interest in getting information on activities that may be too recent to have reached the literature, in getting practitioners' views on the sources they are finding most helpful in their workforce planning and development; and to generally map the range and scale of current initiatives, including those that may never be reported.

Given the complexity of the subject, such a task would ideally be undertaken with a large interview-based survey, but the timetable and resources for the present exercise would only permit a postal survey with no more than one round of reminders.

In order not to excessively discourage participation, we kept the length of the questionnaire to four pages (see Appendix 2) and were keen to stress the non-evaluative nature of the exercise.

The following extract from the covering letter both summarises the aims and notes that our expectations were modest as to the amount of information respondents would be able or prepared to supply.

The overall aim of our project is to summarise the types of activities that have been introduced to implement the approaches set-out in the Changing Workforce and Skills Escalator Programmes and, more generally, in the report on the human resources implications of the NHS Plan. So we want to hear about relevant aspects of workforce planning, local innovations and any related evaluation mechanisms. We are also very interested in details of any reports that have been produced or any literature/examples found helpful.

We realise that it is unrealistic to ask for ward by ward detail and are only interested in the general approaches that have been tried but would appreciate details of particular wards, units or specialties engaged in innovative workforce planning. We are not just focusing on schemes relating to nurses and nursing support staff, but would like to hear about initiatives

relating to medical staff and other employees. However, we recognise that nursing and nursing support are the main areas of activity.

5.2 Methodology

5.2.1 Questionnaire design

The core themes of the survey (see Appendix 2) can be summed-up in three words: flexibility, responsiveness and change in relation to workforce planning. The survey sets out to investigate how far these three have been achieved in relation to workforce (specifically nursing) planning and what mechanisms have been effective in achieving these aims.

The themes are addressed via a number of issues that will be recognisable from the questionnaire. Firstly, the degree to which planning is *devolved* in an institution defines much of the context for workforce planning. The mechanisms by which staffing is planned are also a key concern. The survey explores the use of proprietary workforce planning systems, methods for estimating and predicting need, and the use of other material including national resources (such as the toolkit for local change) and both grey and published literature. It also investigates whether the effects of changes in staffing and procedures are being adequately monitored and evaluated.

The most substantial section of the questionnaire considers the mechanisms that make for flexibility in the workforce, especially initiatives to expand existing staff roles; to arrange cover for more senior staff and to create new types of post. Several aspects of these are explored, not least the types of roles that have been created and the range of training and other types of support that are being used to help staff take-on wider responsibilities.

5.2.2 The sample

The aim was to cover all acute secondary care establishments, or all the relevant trusts. The sampling frame was derived from Binleys NHS database and comprised all people in England in the following job groups on the database, working in acute NHS secondary care:

- directorate nurse manager
- head of nursing
- personnel
- medical staffing officer.

Many different job titles are included in these four groups, though most refer to posts that have some senior or middle management responsibility

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in nursing or human resources. The selection produced 1393 names at 416 institutions belonging to 247 trusts.

The initial mailing was sent to all 1393, though we recognised that this involved several questionnaires going to most institutions. Nevertheless, we preferred this approach to the more conventional strategy of sending a single questionnaire to a senior figure and hoping that it would be forwarded to an appropriate respondent. We expected a low individual response rate (as is typical of such surveys) but hoped that sending several questionnaires to each trust might result in a reasonable coverage of trusts in the returns.

Questionnaires were posted during week beginning 21 April 2003. By 24 May 2003, prior to starting the follow-up phone calls, 103 completed replies had been returned.

To increase responses, phone calls to a sample of non-respondents were conducted by professional interviewers (hired from NOP World at £20 per hour) starting in week beginning 26 May 2003. The sample was based on people in trusts from which no replies had been received. The sample concentrated on those non-respondents who had the same job titles as those that were most widely represented in the first round of 103 replies, namely: directorate nurse managers and directors of nursing. Again, the aim was to achieve at least one response per trust. It is worth noting that the resources of the project did not extend to telephone interviewing on this survey and the calls were intended as reminders, not interviews. Potential respondents proved very difficult to contact by phone, justifying the earlier decision to conduct a postal rather than telephone survey.

5.2.3 Response rate and representativeness

By mid-July 2003, 131 completed questionnaires had been returned and, without conducting further reminders, it seemed unlikely that we would get further replies.

Although, as anticipated, the individual response rate is low, (approximately ten per cent), the institutional coverage was encouraging and we received replies from 99 (40 per cent) of the 247 trusts (the trusts are listed in Appendix 3).

The geographical base of responses is good. They were well-distributed across the English NHS regions (see Table 3).

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Table 3 NHS regional distribution of replies

NHS region	Number of replies	%
Eastern	17	13.1
London	15	11.5
North West	21	16.2
Northern and Yorkshire	12	9.2
South East	17	13.1
South West	13	10.0
Trent	22	16.9
West Midlands	13	10.0
All	130	100.0

Note: The reference number has been removed from one of the replies so this questionnaire cannot be included in all the analyses.

Table 4 shows that, as noted above, directorate nurse managers and directors of nursing were most likely to reply. It also lists a selection of the other job titles in both the targeted and achieved samples. As can be seen, most were some variant of nurse manager or director. However, some had more general personnel posts and a few had responsibility for medical staffing.

Table 4 Job titles of groups with three or more respondents in targeted sample and achieved response

	Number in target sample	% in target sample	% in achieved response
Directorate nurse manager	123	8.8	14.6
Director of human resources	101	7.3	2.3
Nurse manager	72	5.2	4.6
Director of nursing	56	4.0	5.4
Medical staffing officer	47	3.4	0.8
Medical staffing manager	38	2.7	0.8
Senior nurse	22	1.6	1.5
Head of personnel	20	1.4	0.8
Director of nursing and quality	19	1.4	3.1
Human resources manager	19	1.4	0.8
Director of personnel	18	1.3	0.8
Clinical nurse manager	17	1.2	0.8
Senior clinical nurse	17	1.2	0
Clinical manager	16	1.1	0.8
Head of nursing	14	1.0	0
Personnel manager	14	1.0	0.8
Senior nurse manager	13	0.9	2.3
Medical personnel manager	12	0.9	0
Other	755	54.2	59.8
All (%)		100.0	100
All (number)	1393		130

Although we encouraged people to return questionnaires even if they knew of no or few relevant initiatives, most of the replies had a good deal to report. The questionnaire and covering letter also encouraged people to supply job descriptions of new nursing posts and other material relating to initiatives they feel have been particularly successful. Only four respondents have provided these additional details.

Other than looking at the geographical distribution of the responses and the job titles of the respondents, we have no way of judging the representativeness of the achieved sample. It is not unreasonable to suspect that trusts with above average levels of workforce development

might be more likely to respond, but there is no way of testing for such unrepresentativeness without contacting non-responders. However, it may be worth noting that the replies received last did not seem to contain any less detail than those returned soon after the initial mailing.

5.3 Replies to the survey

5.3.1 How is responsibility for planning devolved?

The questionnaire opens by asking: 'To what extent is the *strategic management* of nurses and support staff devolved to units, specialities or wards?'

The replies indicate four basic levels of devolution:

- 1 none or very partial (that is strategic planning done centrally)
- 2 planning devolved to directorates
- 3 planning devolved to units or specialties
- 4 planning devolved to wards.

The two most often reported were devolution to directorate level (by 34 per cent) and devolution to specialties and units (by 30 per cent) [Table 5].

Table 5 Percentage of replies reporting different levels of devolved responsibility for strategic planning

Level of devolution	% of replies
Blank/central (no devolution)	14%
Very partial/limited	3%
Directorate/divisional level	34%
Specialty or unit level	30%
Ward level	19%

Some respondents noted that where strategic workforce planning was devolved to directorates, there was still an element of overall planning and coordination. For example:

The majority of strategic management is devolved to directorate level, with a trust-wide lead for workforce planning (nursing)'.

Others noted that the directorate model still allows for considerable autonomy with respect to operational planning at unit or ward level.

Where planning was devolved to units or specialties, there may still be an element of central control as in the following comment:

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Strategic management is devolved to specialties (care centres) under the umbrella of the trust's strategy for nursing.

Devolution to wards was reported from nearly one in five of the responding trusts. Comments suggested that in such cases the devolution was quite radical and extensive:

[Planning is] completely devolved to ward level with matrons overseeing.

[Devolution is] fully developed, [grade] Gs and Hs are involved fully in changing and determining skill mix/spending.

It is worth noting that the original question referred to *strategic* rather than *operational* management. A number of respondents had noticed this distinction and commented that while strategic management was based in directorates, operational management was normally at unit or ward level. However, some of the reports of planning being devolved to ward level may have confused operational and strategic issues and the percentages in Table 5 may over-represent the extent of strategic devolution.

The issue is complicated by the level at which budgets are set. The opportunities for strategic management at ward level will be limited if wards have to work within budgets set at directorate or higher levels. Several of the examples of ward level devolution noted that ward sisters and managers could set their own skill mix, but only within budgets that were fixed at directorate level by annual review. Several respondents commented that annual reviews were the only mechanism for seeking substantial changes to the size or skill-mix of their units.

While devolution was clearly appreciated by many respondents for the greater responsiveness and flexibility it gives to the devolved unit, it may create new types of rigidity. A unit manager notes: 'I have a set budget for a unit of seven wards for the care of the older person. We move staff between these wards but not up onto the acute site; and no nurses from the acute site are available to help with our staffing.'

Two themes underpin many of the replies. First, can the devolution of nursing workforce planning be independent of the broad organisational structures of the trust? For example, where trusts have strong directorates, are these the natural focus for workforce planning and is this likely to inhibit devolution to lower levels? In such cases, how do the arrangements for workforce planning relate to the more formal and (possibly) static organisational structures. Is the size of the organisation relevant? A few replies suggested that central planning was either more appropriate for, or more easily sustained, in small trusts.

Second, how does a culture of devolution relate to the organisational structures - does it create them, or work more or less independently of them?

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This is an area that would benefit from some intensive case studies to address questions such as: does devolution to wards occur when units, specialties and/or directorates are relatively weak; and can centralised workforce planning persist in institutions with well-defined units and specialties?

5.3.2 Mechanisms to support workforce planning

There are a number of proprietary systems that can support workforce planning, either on a daily basis, or in the preparation of periodic reports on staffing patterns and levels. As Table 6 shows, these are not widely used among our respondents and only 20 (15.3 per cent) of them named one or more proprietary systems in current use.

Table 6 Systems used for workforce planning

System/model	Number of mentions of each system (in 131 replies)		
	Currently used	Previously used	Considering use
GRASP	7	1	3
NICSM	5	3	
Own system	6	2	
Criteria for Care	2	2	1
Birth-Rate Plus	3		
Algorithm/guidelines for workforce planning documentation by Hurst (2003)	3		1
DM Nurse	2		
Monitor	1		
CSSD	1		
Paediatric Dependency (Notts)		1	
Amended Telford	1		
Teamwork		1	

GRASP and NICSM were the most frequently mentioned of the commercial systems, but a similar number of institutions had developed their own systems. Three were investigating the options for developing a system following the guidelines in the materials that Hurst (2003) produced for the Department of Health.

Thirty-one respondents gave some information on the present uses of these systems. Details are fairly sketchy, but it seems that just under half (11/31) are using their systems on a regular basis to monitor workloads

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and skill-mix in relation to patient dependency. The remainder were mainly using them to produce periodic reports to support skill mix and staffing reviews and annual bids for staff.

Very few specifically stated that these systems were used in benchmarking or to assess the impact of innovative staffing such as to explore the consequences of introducing ward housekeepers.

One of the more notable features of these replies is the number of institutions that had discontinued using the proprietary systems. Comments suggested that they were inaccurate or did not provide suitable information for workforce planning. The overall impression was that such systems were not widely meeting the needs of this group. This leads to a further set of questions that are beyond the scope of this project, such as: what benefits and drawbacks are experienced by people who are using the systems; what had caused people to discontinue their use; and what caused people to develop their own systems in preference to commercial systems?

5.3.3 Adjusting staffing to meet need

The issue of relating staff to patient need is taken up explicitly in survey question 1d: 'What mechanisms (if any) are in place to vary ward staffing levels or grade-mix in response to changes in patient numbers or dependency?'

In replying to later questions, respondents state that flexible shifts and flexible hours/contractual arrangements are crucial and successful parts of current workforce planning, but the replies to the present question suggest that the use and planning of these mechanisms is largely informal and based on individual (that is, professional) judgement rather than formal systems (Table 5). One respondent commented that arrangements tended to be reactive, not pro-active, and this seemed to apply to much of the day-to-day planning. Admittedly, the question only asked for details of the types of staffing arrangements, rather than the underlying planning processes. It referred to the mechanisms for varying the staffing, and did not specifically ask for details on the methods for planning these variations.

In approximately one sixth of institutions there was an ability to move staff between units and a similar number reported the use of either external agency staff or internal staff banks/pools (Table 7). However, for a larger group of respondents it appears to be the case that variation in staffing was limited to rearranging the work patterns of existing unit staff, for example, by changing shift arrangements.

There were 20 (out of 131) mentions of a measure of dependency or some other workload predictor being used to adjust or assess staffing

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levels, either on a daily or weekly basis, or as part of periodic reviews of staffing levels and skill mix.

Table 7 Mechanisms used to vary staffing levels and skill mix in response to need (Q1d)

Mechanism	N	% of 131
Annual/other periodic review of skill mix	28	21.4
Planning tools (e.g. GRASP)	7	5.3
Measures of dependency/demand predictor	20	15.3
No formal planning mechanism - managed locally: professional judgement	44	33.6
Bank or agency arrangements used	20	15.3
Shifts/hours varied to meet need	11	8.4
Staff numbers varied (includes moving staff between wards and units)	23	17.6
Skill mix varied in response to immediate demand	3	2.3

Several themes recurred in those replies that went into more detail on the local planning process. A common model was for decisions on budgets and establishment to be based around annual or infrequent central/directorate level reviews of skill mix, at which unit and ward management could make relatively formal bids for staffing and other resources. Meanwhile local day-to-day staff management would be relatively informal and (in only a small minority of cases) linked to systematic procedures to measure workload and dependency.

The need to vary staffing levels was questioned by some respondents, suggesting that the issue is less critical in some settings. For example, several people noted that in non-elective areas such as accident and emergency and paediatrics the workload was so unpredictable that the best approach was to maintain fixed staffing levels with a relatively high proportion of senior grades, on the assumption that these grades would have the ability to change their work patterns consistent with need.

A few respondents expressed an interest in trying to move away from ward level planning by fixing establishments at directorate or unit level and then developing mechanisms to move staff between wards as required.

5.3.4 Covering tasks usually conducted by qualified nurses

The difficulty of recruiting qualified nurses for the NHS is one of several reasons for an increasing interest in equipping other staff to carry out traditional nursing tasks.

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When asked: 'What arrangements (if any) do you have to use nursing support staff to cover or substitute for qualified nurses (such as using clinical support workers)?', 44 per cent of respondents mentioned training to NVQ Levels 2 and 3 (especially Level 3) and other mechanisms to expand the role of HCAs (Table 8). Several other types of non-clinical support roles were also cited, including: team support workers, ward housekeepers and patient liaison transfer assistants.

The use of bank, pool and agency staff was also mentioned here (by eight per cent of respondents). Different arrangements were described, but several respondents supported the creation of internal pools of staff, a theme that recurs at several points in the replies.

Table 8 Arrangements for using nursing support staff to cover or substitute for qualified nurses (Q1e)

Staff group/mechanism used for cover or substitution	N	% of 131
Ward clerks	1	0.8
Non-clinical support staff	4	3.1
Ward housekeepers	2	1.5
Health care assistants with enhanced roles and training (NVO)	58	44.3
Other clinical support workers	12	9.2
Nurse practitioner and other enhanced high grade roles	5	3.8
Bank and agency arrangements	11	8.4
Other	11	8.4
Rare or not applicable	6	4.6

Despite the relatively widespread use of HCAs to cover for aspects of qualified nursing, some respondents clearly thought there were roles and tasks for which HCAs were not appropriate. Comments included:

We do not use HCAs on the acute paediatric ward. The ward housekeepers oversee hygiene, health and safety, cleaning, tradesmen (for example painters, electricians) and serve meals. These posts are an enormous benefit to the ward.

[HCAs are] not appropriate [cover] for midwives.

A related survey question (1f) pursued the issue of expanding roles and providing suitable support for workers taking on new responsibilities. It asked for 'details of any initiatives to standardise or develop the range of activities of nurses and nurse support staff, including examples of shifting job boundaries'. It was effectively two questions, one on the standardisation of roles and the other on their development.

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In relation to the standardisation of roles, eight to nine per cent of replies mentioned efforts to identify and standardise core competencies and review job descriptions (Table 9). However, the majority of respondents concentrated on the themes of role creation and expansion. The two main areas of reported activity were supporting an extended role for HCAs, including training to enable them to acquire nursing qualifications; and training and structural changes that enabled nurses to play both more specialised and more senior roles in both care and management. Three other types of schemes received several mentions: the creation of ward housekeepers, developing the skills of grade D and E nurses and extending the role of support technicians.

Table 9 Schemes to develop the activities of nurses and nursing support staff (Q1f)

Scheme	N	% of 131
Recent/ongoing major review of roles and job descriptions	11	8.4
Development of generic/formalised/competency-based job descriptions	12	9.2
Nurse-led activities	8	6.1
Ward housekeeper programmes	9	6.9
Cadet nurse programmes	1	0.8
Support for extended role of HCAs	47	35.9
Developing grade D and E competencies	6	4.6
Extended roles for senior nurses	48	36.6
Extended roles for support technicians	4	3.1
Support for new non-clinical roles	1	0.8
Taking account of competency frameworks	7	5.3
Training materials	1	0.8
Changing ratio of qualified to unqualified groups	1	0.8
Support for community initiatives	1	0.8
Clinical benchmarking	1	0.8

A wide range of examples of expanding roles and responsibilities was cited. They include the following examples given by individual respondents:

- Public health initiatives such as drug misuse liaison midwife, Sure Start midwives, consultant midwife with a public health remit, midwives trained for examination of the neonate, smoking cessation midwives.

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- Radiographers giving intravenous injections. Sonographers undertaking non-obstetric reporting. Radiographers undertaking Ba Enemas. Radiographers undertaking plain film and computerised tomography (CT) head reporting.
- Stroke unit - developing nursing skills for clinical assessments and clinical decision-making while developing support staff to deliver direct care. Ophthalmics - nurse clinicians, nurse prescribing. Medicine - nurse prescribing, developing special nurse role.
- Reviewing rehabilitation assistant's role for stroke unit. Auditing chief nursing officer's 'top ten roles'. Some clinical nurse specialists are carrying out endoscopic procedures and nurse-led clinics.
- Critical care outreach team - each of which has a designated practice educator. Nurse clinicians. Nurse consultants. Matron.
- Nurse practitioners in emergency assessment unit and accident and emergency department and nurse consultants in critical care - X-ray requests. Discharge liaison support workers.
- Nurse-led services on various areas including preoperative assessment, ophthalmology, accident and emergency practitioners. Looking to include number of nurse practitioners in areas such as paediatrics and special care baby unit, medical support and surgical manager.
- New medical assistant role in accident and emergency department; clinical nurse specialists with special interests; new nurse consultant roles; staff nurse development programmes.
- Skill enhancement for example venepuncture, cannulation, first dose intravenous (IV) devices. A, B and C grades writing care plans. Now working towards competency-based job descriptions.
- Many individual role expansions in nurse specialist roles for example cannulation, blood taking, prescribing, nurse discharge.
- Introduction of NVQ Level 3 for HCA: HCAs at NVQ Level 2 undertake cannulation and phlebotomy, perform electrocardiograms (ECGs).
- Housekeepers recruited to free up HCAs to support nurses in hands-on care. Nursery nurses are being piloted to provide basic baby/child care - hygiene and nutrition to free up nurses for clinical care.
- HCAs now do baseline observation. Breastfeeding support and daily routine baby checks. They assist in theatre and we are planning to train to NVQ Level 3 with phlebotomy and scrubbing skills. Also plan to use in community to support midwives.
- HCAs being used in preoperative clinics, acute medical admissions, accident and emergency, undertaking clinical skills such as venepuncture, ECGs, cannulation in some instances. HCAs undertaking the role of manual handling key training.

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- Emergency nurse practitioners; nurse-led thrombolysis; nurse practitioners (night duty). Nurse consultant. Extended roles (IV cannulation; suturing; prescribing using those on postgraduate diploma; ECG taking and reading; ordering of investigations).

Issues of training and support for new and extended roles were also addressed in Section 4 of the questionnaire that asked for 'brief details of any programmes and/or training to support the upward development of the roles of nurses and nursing support staff; and any other initiatives inspired by the skills escalator principles.' Nearly three-quarters of respondents (73 per cent) had something to report here and others had given relevant details in replies to earlier questions.

Replies followed a similar pattern to those of the questions on role substitution and development. Two types of scheme stand-out: for developing the skills and qualifications of HCAs via training for specific tasks or NVQs; and for enabling senior nurses to undertake specialist nursing and nurse consultant roles (see Table 10).

Other schemes mentioned included: IT and basic skills training; rotational programmes for new starters; Royal College of Nursing leadership training; nurse cadet programmes; schemes to encourage domestic staff into HCA roles; and competency led development programmes, especially for D grade nurses.

Table 10 Numbers of reports of 'skills escalator' initiatives (Q4)

Type of training/scheme	N	% of 131
Basic skills	2	1.5
Housekeeper training	6	4.6
NVQ for non-medical staff such as cooks	1	0.8
Other courses for non-nursing courses	1	0.8
IT courses	1	0.8
HCA training and development	13	10.0
NVQ Levels 2 and 3 – nursing	34	26.2
Nursing cadetships	7	5.4
Competency based training	9	6.9
Grade D training (including courses to Grade E)	18	13.8
Nurse leadership training, e.g. LEO ('leading an empowered organisation')	7	5.4
NHS 'essential IT skills' (ECDL) training	1	0.8
Nurse practitioner, nurse prescribing and other Grade G and above training	34	26.2

5.3.5 The Changing Workforce Programme

Section 6 of the questionnaire asked if any of the developments had arisen specifically from events or materials associated with the Changing Workforce Programme.

The first sub-section (6a) asks: 'Please provide brief details of any initiatives inspired by the Changing Workforce Programme or similar programmes – we are interested in projects for all types of staff, not simply nurses.' Replies gave frequent, if very brief, details of initiatives.

The full set of replies is shown in Table 11. The range of projects mentioned probably reflects the types of units and specialties where the respondents worked, specifically the numbers of natal care and radiographic posts mentioned. There are three main groups of initiatives: those relating to HCAs, those giving nurses specialist roles in existing patterns of care, and those where nurses (and other staff) roles are being extended to develop new types of care, such as outreach teams or primary care provision in acute units. Some of these are posts to meet very specific local needs, perhaps difficulties in replacing lost staff or expanding some aspect of a service to meet increased need. Others have general implications for certain specialties - for example, the pilot site for multi-disciplinary nursing and support roles for stroke care in professions allied to medicine. Yet others have more general implications, such as the development of a 24-hour clinical matron service to replace some aspects of junior doctor cover and reduce junior doctor hours.

Table 11 Full list of initiatives reported in the survey as inspired by the Changing Workforce Programme and similar programmes (Q6a)

HCAs and NVQs

A grade training in line with NVQ 2. B grade training in line with NVQ 3
HCA - medical emergency technician. Thrombolysis facilitator. HCA - renal technician
Health care/support worker forum for mental health services

Radiography

Accelerated development programme for radiography
AHPs - radiographer helper roles
Part of the Changing Workforce Programme accelerated development programme relating to radiology
Radiographer assistants (AHPs). Surgical assistants' pilot.

Natal care

Advanced neonatal nurse practitioner roles developed
Advanced neonatal practitioner

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Developed a neonatal resuscitation nurse role

Development of advanced nurse and midwife practitioners who when fully trained participate in the senior house officer rota

Neonatal nurse practitioner

Neonatal practitioner in intermediate care unit. Clinical assistant posts are being changed into nurse specialist post, e.g. allergy

Doctors' assistants

Appointing doctors assistants this year

Development of clinical assistant posts

Intending to employ nurse to develop clinical skills of junior doctors

Other enhanced senior nursing roles

Assistant practitioners. Night nurse practitioners. Clinical specialist physio.

Business case for medical assistant extended scope practitioners; orthopaedics clinical nurse specialist acute pan

Clinical matrons are nurse practitioners who cover 24-hour site on call to achieve reduction in junior doctors' hours

Exploring an enhanced role for senior nurses in acute assessment. Nursery nurse phlebotomy

Nurse-led clinics. Pre-assessment clinics. Outreach nurses

Nurse practitioners

Paediatric oncology day care nurse - G grade (in post). Paediatric emergency nurse practitioner (not implemented)

Orthopaedics and trauma

Clinical nurse specialists in orthopaedics and urology

Trauma co-ordinator and surgeon's assistant

Trauma nurse practitioner

Stroke care

Review of staff skills associated with stroke care - possibly of generic type worker

Stroke support worker

We are a pilot site for stroke, several different roles trialled across the district. Stroke co-ordinator, bilingual support worker, enablement workers, therapy assistants

Work being undertaken with patients who have had strokes

Emergency and critical care services

Emergency services collaborative.

Involved in emergency care pilot. New roles for accident and emergency nurses. Paramedics - leading to emergency care practitioner's role

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Looking at appropriateness of Changing Workforce Programme to do some work in critical care

Looking at roles in emergency services - not solely related to Changing Workforce Programme projects - initiated by directorate

Using toolkit to explore new ways of working in emergency care

Tests and investigations

Endoscopy nurses. Heart failure nurse

Epidural obstetric assistant (continence nurse practitioner). Nurse practitioner (ear, nose and throat project pilot)

Admissions and discharges

First project meeting has just taken place. Projects around admissions, discharges and patient movement

Working on nurse-led admissions (training existing nurses at present)

Outreach

Introduction of assertive outreach team in line with national service framework targets which linked nurses, AHPs and social workers under common management.

Dispensing

One stop dispensing as part of IDEA initiative.

Primary care

Opening of primary care provision within hours of 9am to 6pm Monday to Friday and 10am to 6pm Sunday

Multiple initiatives

Housekeeper role in elderly care; radical changes in care delivery in accident and emergency and gynaecology; pre-op assessment in theatres; radiography technicians; nine nurse consultants

Housekeeper. Administrative posts. Generic worker support/clerical

Nine staff trained in Changing Workforce Programme toolkit. A strategic group being implemented. Projects in progress include: surgical assistants, 1st assistant, expansion of HCA role

Introduction of a phlebotomy team for inpatients. Pre-admission for cardiac patients. Booking office for cardiac patients. Call centre for neurosciences. Pilot of new role of clinicians' assistants in four areas

Medical support workers; theatre assistant personnel

Mental health pilot for Changing Workforce Programme. Associate psychologist - mental health clinical pharmacist support. Housekeeper roles being developed and piloted

Order entry protocols for ordering investigation.

Physiotherapy practitioners. Nurse practitioners - 1st surgical assistants

National pilot site for the accelerated development programme for medical

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secretaries

Senior nursing personnel are undertaking advanced practice module to facilitate the management of nurse-led beds

Theatre assistant personnel

The development of a multi-skilled assistant practitioner role – combination of nursing duties and AHP duties. Ward hostess role. Theatre 1st assistant role (nursing)

Trust initiative in recruiting junior and senior medical staff (from Egypt). Proposal is being negotiated with Royal College of Psychologists to recruit doctor in an international specialist registrar training scheme.

Respondents were asked if they had personally attended events relating to the Changing Workforce Programme (Q6b). Twenty-nine (22.1 per cent) had been to such events; four had not attended personally, but knew of others in their hospital that had.

Views were divided on the quality and effectiveness of these events. A small majority found them helpful, but there were a few comments on the events being poorly organised and too basic.

Table 12 Views on events related to the Changing Workforce Programme (Q6b)

Views	Replies (N)
Not helpful - too basic	1
Badly organised over-subscribed	1
Not helpful	3
Not particularly - required funding	2
Very helpful/extremely useful	3
Helpful	3

5.3.6 The toolkit for local change

The toolkit for local change is a major part of the Changing Workforce Programme and should enable the general principles of the programme to be developed and adapted for local use. Two questions explored local knowledge of the toolkit and its use. Exposure to the toolkit was patchy across this group of respondents and trusts. Fourteen said that between one and five people in their organisation had attended relevant courses. A further six said that more than five people had attended, but none of the staff in trusts of the remaining 85 per cent respondents had apparently had any training in the toolkit. One queried the need to send staff on

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courses: 'We felt we already had the skills and were developing new roles appropriately.'

Three had experienced obstacles when trying to get training or access to the toolkit and commented: 'I have attempted to get hold of the tool with no success'; 'Not available in their trust. Unable to send staff on external courses'; 'None - despite my repeated requests through the divisional management structure'.

The lack of exposure to the toolkit and courses may be explained (as one respondent noted) by trusts regarding toolkit training as more relevant to central human resource personnel, rather than the type of operational nurse managers who tended to reply to our survey. Nonetheless, there do seem to be problems of information and access and there is an argument for exploring why this is happening.

Use of the toolkit was even more limited. In five cases, work was in its early stages and there was nothing specific to report. Only four respondents could name actual schemes: two generic worker posts (one in a fast response team); work with radiologists, radiographers and assistant radiographers; a national diabetes care pilot; and a programme to develop a cadet scheme.

5.3.7 New types of nursing and related roles created by the initiatives

Identifying the types and titles of new posts that are being created in workforce deployment and development schemes were important aims of the survey. The draft questionnaire used an open-ended question for this purpose, but our pilot respondents suggested a list would be more effective. This is the one pre-coded question in the questionnaire and it lists 11 job titles. The numbers of mentions of each are shown in Table 13. Only pathway and clinical skills nurses were reported by less than 25 per cent of respondents. Answers to this question suggest many more new posts and roles than might be inferred from the replies to the earlier questions on training and staff support. This apparent discrepancy may be real given the suspicion that pre-coded 'tick-boxes' can inflate responses, but there could be other explanations. For example, we know that most respondents were not based in trust central administrations so the majority of their replies will relate to their local unit or directorate. However, for this question it is likely that many of them will be replying for the whole trust (an interpretation that is confirmed by the comments accompanying their replies).

We suspected that the list of 11 job titles might divide the trusts between those that had introduced most of these new roles and those with very few. A count of the different job titles mentioned in the replies was used as the indicator and revealed, contrary to our expectations, that there is a

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roughly 'normal' distribution (Table 14) with a small peak consisting of the 12 institutions with none of the two roles.

The question that collected the numbers of new titles for Tables 13 and 14 also asked for details of the grades at which these new posts were created. Tables 16a and 16b show the full range of grades reported for these roles. The most frequently mentioned grade for each role is summarised in Table 15.

Table 13 Numbers of institutions reporting the introduction of these (new) types of nursing and related roles (Q3)

Job title/role	N	% of 131
Clinical skills nurses	30	22.9
Clinical support workers (NVQ)	86	65.6
Critical care outreach workers	68	51.9
Pathway nurses	22	16.8
Discharge nurses	64	48.9
Lecturer/practitioners	61	46.6
Nurse consultants	75	57.3
Practice placement facilitators	80	61.1
Clinical skills facilitators	46	35.1
Modern matrons	108	82.4
Ward housekeepers	74	56.5

Table 14 Numbers of institutions introducing different numbers of new types of roles

Number of new roles	Introduced at this number of institutions	% of 131
0	12	9.2
1	5	3.8
2	4	3.1
3	11	8.4
4	13	9.9
5	14	10.7
6	22	16.8
7	14	10.7
8	16	12.2
9	13	9.9
10	6	4.6
11	1	0.8
Total	131	100.0

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Respondents were invited to supply details of new and inventive posts not covered by the standard list. Approximately 50 job titles and corresponding grades were supplied. They are listed (unedited) in Appendix 4. There are a number of very specialised posts, including mentions of teenage pregnancy and Sure Start midwives and a consultant physiotherapist in cystic fibrosis. A significant minority of responses mentioned jobs concerned with education and training (such as clinical teachers, clinical education advisors and educational facilitators).

Table 15 Most frequently mentioned grades for new types of nursing and related roles (Summary of Tables 16a and 16b)

Role	Most frequent grade/s
Clinical skills nurses	F
Clinical support workers (NVQ)	B
Critical care outreach workers	G
Pathway nurses	G
Discharge nurses	H
Lecturer/practitioners	H
Nurse consultants	NC
Practice placement facilitators	G
Clinical skills facilitators	G
Modern matrons	E/F
Ward housekeepers	B

Table 16 Grades associated with new types of nursing and related roles (Q3)

Table 16a Numbers of grades		Grade														All
Role	HCA	NVQ3	A	B	C	D	E	F	G	H	I	SNP	NC	£35-40K	Other	
Clinical skills nurses			1	2	1		1	10	7	6	1		1			30
Clinical support workers (NVQ)	6	2	17	45	11			2	1						2	86
Critical care outreach workers				1	1			20	41	9	2				1	75
Pathway nurses								2	8	5					1	16
Discharge nurses			3	3			5	14	15	16	3					59
Lecturer/practitioners								6	18	34	4		1		2	65
Nurse consultants					1				1	4	6	4	16	8	3	43
Practice placement facilitators							1	7	37	22	2				2	71
Clinical skills facilitators							2	12	23	9						46
Modern matrons						4	61	61				5				131
Ward housekeepers	2	1	12	14	5			2	1				1		3	41

Table 16b Percentage of grades linked to each role																
Role	HCA	NVQ3	A	B	C	D	E	F	G	H	I	SNP	NC	£35-40K	Other	All
Clinical skills nurses	0.0	0.0	3.3	6.7	3.3	0.0	3.3	33.3	23.3	20.0	3.3	0.0	3.3	0.0	0.0	30
Clinical support workers (NVQ)	7.0	2.3	19.8	52.3	12.8	0.0	0.0	2.3	1.2	0.0	0.0	0.0	0.0	0.0	2.3	86
Critical care outreach workers	0.0	0.0	0.0	1.3	1.3	0.0	0.0	26.7	54.7	12.0	2.7	0.0	0.0	0.0	1.3	75

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Pathway nurses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	50.0	31.3	0.0	0.0	0.0	0.0	6.3	16
Discharge nurses	0.0	0.0	5.1	5.1	0.0	0.0	8.5	23.7	25.4	27.1	5.1	0.0	0.0	0.0	0.0	59
Lecturer/practitioners	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	27.7	52.3	6.2	0.0	1.5	0.0	3.1	65
Nurse consultants	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	2.3	9.3	14.0	9.3	37.2	18.6	8.6	35
Practice placement facilitators	0.0	0.0	0.0	0.0	0.0	0.0	1.4	9.9	52.1	31.0	2.8	0.0	0.0	0.0	2.8	71
Clinical skills facilitators	0.0	0.0	0.0	0.0	0.0	0.0	4.3	26.1	50.0	19.6	0.0	0.0	0.0	0.0	0.0	46
Modern matrons	0.0	0.0	0.0	0.0	0.0	3.1	46.6	46.6	0.0	0.0	0.0	3.8	0.0	0.0	0.0	131
Ward housekeepers	4.9	2.4	29.3	34.1	12.2	0.0	0.0	4.9	2.4	0.0	0.0	0.0	2.4	0.0	7.3	41

5.3.8 Workforce planning for professions allied to medicine

We expected that workforce initiatives relating to professions allied to medicine would be a minor issue for most of the acute trusts surveyed, but respondents were invited to supply details of any work with these practitioners that paralleled the nursing initiatives. Many said the question was inapplicable given the lack of those in allied professions in their unit/trust, but just over 40 supplied some information.

As one respondent commented, flexible employment schemes for professions allied to medicine are well-established, in order to cope with problems of recruitment and retention. The mechanisms described were similar to those for nurses: job share, part-time working, flexible shifts, family friendly hours and term-time contracts.

Similarly, the training and role development schemes were mostly of the two types reported for nurses: assistants taking on (and being trained for) aspects of the work of qualified staff and senior staff from professions allied to medicine taking on clinical and management responsibilities.

In the former context, the three most frequently mentioned groups of junior staff were occupational therapists, physiotherapists and radiographic assistants. These were being trained to cover aspects of the corresponding work of those in professions allied to medicine, and they were being offered NVQ routes to professional qualifications.

The roles of more senior personnel in professions allied to medicine were being extended in two directions: by taking on practitioner roles (for example in orthopaedic and plastics outpatients) and by taking on greater management responsibilities.

5.3.9 Monitoring the effectiveness of staff redeployment

We were interested to explore whether the level of activity being put into the development of new posts and ways of working would be matched by efforts to evaluate their effectiveness.

We asked the question: 'What mechanisms do/have you used to monitor the effects on patient care of any changes to staff deployment?' Replies to this were not as patchy as our pilot respondents and our own suspicions had led us to expect. Eighty of the 131 replies contained some relevant details. However, the two most frequently-mentioned methods for monitoring were patient satisfaction surveys and audits (see Table 17), both of which are rather general tools for evaluating the impact of staffing changes. Moreover, it is likely that most of these are simply on-going monitoring schemes not specifically intended for evaluating workforce

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initiatives. Other types of routine monitoring were also mentioned in this context, including: adverse incident and complaints reporting and risk management assessments. Equally routine methods were used to assess the impact of deployment on staff, such as staff surveys and sickness and absence recording.

Given the types of methods reported, we think there is considerable scope for further work to develop more focused methods that can be used for assessing the impact of some of the more common forms of flexible working on both patients and staff as well as the effectiveness of new types of posts.

Table 17 Methods used to monitor the effectiveness of staff redeployment (Q5)

Method	N	% of 131
Audit	33	25.2
Benchmarking	4	3.1
Performance management	3	2.3
Via annual report	3	2.3
Patient satisfaction survey	22	16.8
Other form of patient feedback	8	6.1
Staff feedback survey	10	7.6
Staff sickness	2	1.5
Retention and redundancy	1	0.8
Complaints reporting	12	9.2
Risk management	5	3.8
Adverse incident reporting	13	9.9

5.3.10 Notable changes

We hoped that asking the question: 'What have been the greatest changes in ways of deploying nurses and nursing support staff working in your institution over the past five years?' would shed some light on the impact of national programmes on nursing workforce planning. Three topics stood out in the replies:

- the development of the roles of HCAs and their use in covering activities of qualified nurses
- the development of senior nursing posts, both in clinical specialisation and in administration
- the use of flexible shift patterns (see Table 18).

Other topics that received multiple mentions included the use of agency/bank staff (especially the establishment of internal nursing banks), changes in the methods of delivering care, and staff rotation.

The overall impression is of a service that, for whatever reasons, was adopting flexible employment practices and beginning to erode traditional staffing structures, such as fixed ward establishments, and moving towards larger pool-based and rotational staffing schemes.

That said, it is noticeable (again, see Table 18) that only one quarter of respondents were reporting such changes. Many said there were no major changes to report, or left this section blank. Moreover, a few expressed concerns that changes had been implemented for the wrong reasons, or had not been successful, or that potentially useful schemes were inhibited by lack of funding or other constraints.

5.3.11 Most successful initiatives

Similar themes were explored from a slightly different perspective by the question: 'What would you say are the most successful forms of flexible working for nurses and nursing support staff that you are currently operating?' (question 1g). At least one example of a successful mechanism was mentioned by 98 of the 131 respondents, but four stood out: flexible/variable shifts, self-rostering, term-time hours/contracts and annualised hours (see Table 18). All four were mentioned by 19 per cent or more of respondents. Related forms of flexible working such as long-shifts, part-time posts and family friendly hours each featured in approximately a tenth of the replies.

Where respondents added comments on the benefits of flexible working three themes emerged (see Table 19):

- flexibility and the capacity to develop job descriptions enhanced the skills and job satisfaction of the individuals concerned
- flexibility could make for better care by way of improved procedures, benchmarking and adherence to protocols
- flexibility was a necessity given problems of staff recruitment and retention.

Describing the last of these, a few respondents regarded increasing flexibility as not an entirely desirable necessity. Comments included: 'Flexible for who? - good for nurses bad for wards!' These references to the possible difficulties and disadvantages of increased flexibility suggest an interesting range of research questions on methods to minimise the potential 'disbenefits' of staff pooling, job rotation, flexible shifts and other mechanisms that might disrupt stability in the staffing of wards and impact on staff and patient morale; and a related set of questions on the effectiveness of mechanisms to ensure continuity of treatment in such circumstances.

Table 18 Greatest changes in ways of deploying nurses and nursing support staff over past five years (Q1h)

Change	N	% of 131
Flexible job definitions	1	0.8
Annualised hours	1	0.8
Use of agency nurses and internal banks	5	3.8
Term-time contracts	1	0.8
More part-time working	2	1.5
Ward housekeepers	3	2.3
Flexible/expanding roles for HCAs	30	22.9
D and E grade job rotation	1	0.8
Expanding roles for senior nurses	28	21.4
Introduction of support technicians	2	1.5
Non-clinical support posts (patient liaison/discharge)	4	3.1
Increased ratio of qualified to unqualified staff	1	0.8
Flexible shifts	14	10.7
Self rostering	3	2.3
Family friendly hours/contracts	4	3.1
Changes in arrangements for delivering care	7	5.3
Community care teams	3	2.3
Structural changes (for example trust mergers)	4	3.1
Decentralisation of management/decision making	4	3.1
Increasing demands for care	1	0.8
Less structural rigidity	1	0.8
Successful workforce reviews with GRASP or NICSM	2	1.5
Difficulties in recruiting	3	2.3
Staff rotation	7	5.3
24-hour site and bed management posts	4	3.1
Multi-skill training	1	0.8
Overseas recruitment	1	0.8
Planning at directorate rather than ward level	1	0.8

Table 19 Most successful forms of flexible working (Q1g)

Method of working	N	% of 131
12-hour and other long shifts	15	11.5
Short day shifts	6	4.6
Twilight shifts	6	4.6
Term time working/contracts	26	19.8
Annualised hours	25	19.1
Flexible/variable shifts	40	30.5
Family friendly hours	15	11.5
Self-rostering	30	22.9
Team managed rostering	5	3.8
Individual rotas	7	5.3
Nurse/locum bank (including bank contracts)	6	4.6
Job shares	9	6.9
Part-time working	12	9.2
Leave for carers	2	1.5
Targeted development for B grades	1	0.8
HCA development	1	0.8
Targeted NVQs	1	0.8
Nursing pool	2	1.5
Rotational posts	1	0.8
Home working	1	0.8
Self management team	1	0.8
Phased retirement	1	0.8
Special roles for senior grades	5	3.8
Regular ward meetings	1	0.8
Use of external agency/bank staff	1	0.8

5.3.12 Reports, literature and documentation

One part of the survey directly complements the literature review by asking for details of any reports or publications that trusts had produced (in the past four years) on workforce development and staff deployment. It also asked for titles of any recent documentation, both reports and publications, that respondents had found particularly helpful when considering or planning workforce issues.

Only three respondents knew of external documents or presentations based on local work (see Table 20). It was most common; though only

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then in six per cent of cases, for workforce assessments to be presented as internal reports or as part of skill mix reviews. The overall impression was of an area that was not extensively or separately reported.

Table 20 Numbers of reports and publications on implementing or evaluating staff deployment produced by respondent's trust in past four years

Type of report or publication	N	% of 131
Annual reports	3	2.3
Modern matron report to chief nursing officer	2	1.5
Staff satisfaction surveys	2	1.5
Produced article or conference presentation (external)	3	2.3
Skill mix review	8	6.1
Other internal report	8	6.1
Information for 'improving working lives' initiatives	2	1.5
Report from outside consultants	3	2.3

Twenty-two respondents supplied some details when asked to list 'recent documentation, both reports and publications, (they) had found particularly helpful when considering or planning workforce deployment'. Three of these referred to papers on workforce planning produced by Hurst (2003). The remainder mentioned a variety of reports and guides. There are two mentions of the Audit Commission report and two references to work done locally by consultants. A full list of these replies is given in Table 21.

No standard body of guides or other publications is evident in this list. While it may be the case that most of these respondents neither have the time or resources to pursue relevant literature, the variety and, in some cases, tangential nature of these sources may be a pointer to the absence of a well-defined core literature.

Table 21 Sources cited as ‘particularly helpful’ in workforce planning

Local region has undertaken a Nuffield review of nurse staffing
Acute hospital portfolio database
British Renal Society workforce planning document launched May 2003. Covers all health professionals related to care of renal patients
Dr Foster report
European working time directive, improving the effectiveness of the nursing workforce
‘Improving working lives’ initiative has clearly helped some staff but results in increased pressure for those remaining full time
Information from Changing Workforce Programme projects. National service framework documents give prescriptive detail of roles to develop in response to targets
Local delivery/workforce demand 2003 narrative. Workforce strategy to accompany vanguard outline business case (in draft)
Modernisation Agency guides
National plan. Gateway workers. Changing workforce - older people
National Association of Theatre Nurses guidelines for theatre staffing
National service frameworks for mental health and older people
Nursing contribution to cancer care
Outcome of KPMG audit
Policy implementation guide. Junior doctor hours
Royal College of Nursing guidelines for staffing in critical care. Department of Health comprehensive critical care guidance
Audit Commission document on planning workforce/skill mix
Selecting and developing methods for estimating the size and mix of nursing teams. Chief nursing officer’s bulletin
Workforce initiative from Department of Health; ten key roles for nurses; nurse specialists; practitioner; consultant paper
<i>Ward Staffing</i> Audit Commission report (national)

On the basis of the replies to this question, published material and other literature did not seem to play a major part in these respondents’ thinking about workforce planning and evaluation.

5.4 Summary

The main aim of the survey component of the project was to identify the types of initiatives that have been introduced to implement the approaches set out in the Changing Workforce Programme and skills

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escalator strategy and, more generally, in the human resources component of the NHS Plan.

A postal questionnaire was sent to all acute NHS secondary care establishments in England, or to the relevant trusts. Replies were received from 99 of the 247 trusts and 416 target institutions. Replies are geographically well-distributed across England but we cannot tell if they over-represent trusts that are most active in nursing workforce development.

The extent of devolution of strategic workforce planning is likely to be a major influence on the processes and capacity to vary local staffing to meet immediate needs. Four basic levels of devolution were reported:

- 1 none or very partial (that is, strategic planning done centrally) (17 per cent)
- 2 planning devolved to directorates (34 per cent)
- 3 planning devolved to units or specialties (30 per cent)
- 4 planning devolved to wards (19 per cent).

There are a number of proprietary systems that can support workforce planning, either on a daily basis, or in the preparation of periodic reports on staffing patterns and levels. However, these are not widely used among respondents and only 15 per cent of respondents currently used one or more such systems. It is noteworthy that a number of institutions had discontinued using these systems because they were 'inaccurate' or did not provide suitable information for workforce planning.

The ability to vary staffing levels to match immediate need can be a crucial feature of workforce management, though it may not be appropriate for some types of acute settings. Respondents from approximately one sixth of institutions reported the ability to move staff between units and a similar number reported the use of either external agency staff or internal staff banks. However, for a larger group of respondents it appears to be the case that variation in staffing was limited to rearranging the work patterns of existing unit staff, for example, by changing shift arrangements. One in six respondents also mentioned some measure of dependency or some other workload predictor being used to adjust or assess staffing levels, though we suspect this is more often part of periodic reviews than daily ward management.

When asked: 'What arrangements (if any) do you have to use nursing support staff to cover or substitute for qualified nurses (such as using clinical support workers)', 44 per cent of respondents mentioned training to NVQ Levels 2 and 3, especially Level 3, and other mechanisms to expand the role of HCAs. Several other types of non-clinical support roles were also cited, including: team support workers, ward housekeepers and patient liaison transfer assistants.

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Similar responses were obtained when asking for details of the types of training and support provided for role creation and expansion. The two main areas of reported activity were supporting an extended role for HCAs, including training to enable them to acquire nursing qualifications, and training and structural changes to enable nurses to play both more specialised and more senior roles in both care and operational management. Three other types of schemes received several mentions: the creation of ward housekeepers, developing the skills of grade D and E nurses, and extending the role of support technicians.

When asked to describe initiatives inspired by the Changing Workforce Programme and similar programmes, three main groups of initiatives were mentioned: those relating to HCAs, those giving nurses specialist roles in existing patterns of care and those where nurses (and other staff) roles are being extended to develop new types of care, such as outreach teams or primary care provision in acute units. Some of these are posts to meet very specific local needs, perhaps difficulties in replacing lost staff or expanding some aspect of a service to meet increased need. Others have general implications for certain specialities, for example the pilot site for multi-disciplinary nursing and support roles for professions allied to medicine in stroke care. Others have more general implications, such as the development of a 24-hour clinical matron service to replace some aspects of junior doctor cover and reduce junior doctor hours.

Respondents were asked if they had personally attended events relating to the Changing Workforce Programme. Twenty-nine had been to such events and four had not attended personally, but knew of others in their hospital that had. Views were divided on the quality and effectiveness of these events and feedback from this, admittedly small, sample suggest that the courses may need refining.

Under the general umbrella of getting feedback on the Changing Workforce Programme, we sought views on training in the toolkit for change. Fourteen respondents reported that between one and five people in their organisation had attended relevant courses and a further six said that more than five had received such training, but staff in the trusts of the remaining 85 per cent of respondents had not apparently had any training in the toolkit. One queried the need to send staff on courses: 'We felt we already had the skills and were developing new roles appropriately.' Three had experienced obstacles when trying to get training or access to the toolkit and commented: 'I have attempted to get hold of the tool with no success'; 'Not available in their trust. Unable to send staff on external courses'; 'None - despite my repeated requests through the divisional management structure'.

This lack of access to the toolkit needs to be investigated.

New types of nursing posts were widely reported. The following were mentioned by 50 per cent or more respondents: clinical support

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workers (65.6 per cent), critical care outreach workers (51.9 per cent), nurse consultants (57.3 per cent), practice placement facilitators (61.1 per cent), modern matrons (82.4 per cent) and ward housekeepers (56.5 per cent).

When it comes to evaluating workforce deployment initiatives, 80 of the 131 replies contained some relevant details. However, the two most frequently mentioned methods for monitoring were patient satisfaction surveys and audits, both of which are rather general tools for evaluating the impact of staffing changes. Other types of routine monitoring were also mentioned in this context, including: adverse incident and complaints reporting and risk management assessments. On the basis of these replies, we think there is considerable scope for further work to develop methods that can be used to specifically assess the impact of some of the more common forms of flexible working on both patients and staff.

We asked the question: 'What have been the greatest changes in ways of deploying nurses and nursing support staff working in your institution over the past five years?'. We hoped this would shed some light on the impact of national programmes on nursing workforce planning. Three topics stood out in the replies:

- the development of the roles of HCAs especially to cover parts of the roles of qualified nurses
- the development of senior nursing posts, both in clinical specialisation and in administration
- the use of flexible shift patterns.

Similar themes were explored from a slightly different perspective by asking: 'What would you say are the most successful forms of flexible working for nurses and nursing support staff that you are currently operating?' At least one example of a successful mechanism was mentioned by 98 of the 131 respondents, but four stood out: flexible/variable shifts, self-rostering, term-time hours/contracts and annualised hours. All four were mentioned by 19 per cent or more respondents and related forms of flexible working such as long-shifts, part-time posts and family friendly hours each featured in approximately a tenth of the replies.

The survey asked for details of literature and other documentary sources that either reported on local work or had been found to provide helpful advice on workforce planning. Only three respondents knew of external documents or presentations based on local work and the most common model, though only in six per cent of cases, was for workforce assessments to be presented as internal reports or as part of skill mix reviews. The overall impression was of an area that was not extensively or separately reported.

Similarly, very few examples were given of literature or other materials that had been helpful in local workforce planning. Three of these referred to the Keith Hurst papers on workforce planning on the

Department of Health website. There were two mentions of the Audit Commission report *Ward Staffing* (2001) and two references to work done locally by consultants, but the few other sources were very disparate. No standard body of guides or other publications is evident in the works cited. While it may be the case that most of these respondents neither have the time or resources to pursue relevant literature, the variety and, in some cases, tangential nature of these sources may be a pointer to the absence of a well-defined set of core sources.

5.5 Conclusions

From the survey it is quite difficult to judge the level of activity in this area. Although we have information from 40 per cent of trusts, many of the replies come from people in specific units or directorates who are reporting on activities in their own units, rather than in the trust as a whole. We had recognised that this might be a problem from the outset as there was a basic design dilemma. If we had only approached central trust management and asked about their trust as a whole, very little other than general statements of policy could be collected in a short postal questionnaire. As we were interested in more detailed information on individual initiatives, there was merit in getting the views of more junior people on local activities, but at the expense of losing the trust-wide perspective.

In the event, we seemed to have got something of both. In the descriptions and names of specific initiatives we seem to be getting the local view, and the level of activity was moderate: on most topics only 30 per cent or less had something to report. However, when we asked a question that could more easily be answered from a trust or institution-wide perspective (for example question 3 on new types of nursing posts) a much higher level of activity was reported. The implication that workforce development is limited to certain units within trusts raises further questions, such as are some settings more amenable to these initiatives, or is the need greater in some areas?

In relation to the devolution of workforce planning to local units, the survey found a very mixed picture. The variety of organisational structures in trusts seemed to be compounded by varying attitudes to devolution and mixed experiences of local or higher level workforce planning. In all, there were a great variety of models and circumstances and, we suspect, few clear guidelines on what is likely to work in specific settings.

When we asked about the methods and support systems for workforce planning, we found that relatively little use was being made of proprietary systems. Only two systems (GRASP and NICSM) were mentioned by more than three of the 131 respondents, and several people reported they had tried and abandoned these systems. Moreover, it was unclear whether those that did have these systems

were using them on a daily basis or only in preparing periodic reviews. Although there have been several recent commentaries on these systems, it looks as though there is still room for work to establish precisely why they are not meeting planning needs or are not felt to be cost-effective.

The notion that workforce planning was an area best left to professional judgement (or, at least, that this was how it was presently carried out, and it seemed to work) was widespread in the replies. The less than enthusiastic response of a large minority to Changing Workforce Programme events and the relatively low knowledge of the toolkit for local change suggest that there may not yet be a universal acceptance of incorporating planning aids and systems in nursing workforce development. A similar impression was gained from the very sparse reports of literature that people were using to aid their planning; and the lack of reports and literature that people had produced on their own experiences. Whether this all results from lack of time, lack of access to relevant materials, lack of relevant materials, or a culture that may not naturally look for such sources are just several of the questions outstanding.

Similar questions arise in relation to the evaluation of initiatives. Here we feel there may be an argument for greater advice on how to test the effectiveness of what are undoubtedly a considerable volume of often quite radical changes. Conventional monitoring exercises (including patient and staff surveys), if used well, may be able to provide some feedback on the impact of changing staffing levels and skill mix. However, they are less suitable for testing the effectiveness of new types of post and some of the other role development initiatives reported from many trusts.

From the survey it was not possible to judge the quality of initiatives, though we did get respondents' reports of what they felt to be the most notable and successful changes. Overall, three types of activity stood out.

- 1 There were many schemes to expand the role of HCAs - usually through an NVQ programme.
- 2 There was a great diversity of activities around expanding the role of senior nurses. Some of these involved taking on specialised clinical roles, others involved more general clinical activity (such as providing 24 hour cover for some of the roles of junior doctors); some were moves into management (as in the modern matron developments); and a considerable number used nurses as trainers.
- 3 There were projects to make more use of non-clinical staff such as technicians, people who managed technicians, ward housekeepers, ward clerks and a variety of posts that dealt with non-clinical aspects of patient welfare and discharge.

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In addition to these schemes to develop and change staff roles, many expressed enthusiasm for various forms of flexible shift working, term-time contracts and other mechanisms that allowed staff some control over their hours of work.

The need to minimise the length of the questionnaire meant that one interesting set of issues had to be omitted. These were questions on the motives for introducing the various changes. Although respondents made some telling comments in passing, it generally was not clear whether the main reason for the changes was staff development, improving patient care, trying to find ways of coping with serious staff recruitment and retention problems, or some fortunate alliance of all three.

Chapter 6 Workforce development confederation initiatives in new ways of working and training

6.1 Introduction

WDCs are locality-based organisations, with their executive formed of representatives from NHS trusts, primary care trusts (PCTs), social services, independent and voluntary sector employers, learning and skills councils and higher education (see for example Shropshire and Staffordshire NHS SHA local delivery plan 2003-2006). WDCs were set up to replace the education and training consortia, and are now responsible for the national education and training budgets for all staff groups within the NHS. The WDC operates through working groups whose members are drawn from nominations provided by constituent organisations. The WDCs have 14 functions that can be grouped as follows:

- 1 capturing workforce information, analysing that data and planning for future
- 2 managing education and training contracts
- 3 human resource functions
- 4 performance management functions.

WDCs were and, to some extent, still are membership organisations but have now been integrated with the 28 new SHAs:

- | | |
|---------------------------------------|---|
| • Dorset and Somerset | • Birmingham and Black Country |
| • Devon and Cornwall | • Cheshire and Merseyside |
| • Avon, Gloucestershire and Wiltshire | • County Durham and Tees Valley |
| • Kent, Surrey and Sussex | • Cumbria and Lancashire |
| • Hampshire and the Isle of Wight | • Greater Manchester |
| • Thames Valley | • North and East Yorkshire and North Lincolnshire |
| • Bedfordshire and Hertfordshire | • Northern England |
| • Essex | • South Yorkshire |
| • Norfolk, Suffolk and Cambridge | • West Yorkshire |
| • Shropshire and Staffordshire | • North Central London |
| • Trent | • North East London |
| • West Midlands (South) | • North West London |
| | • South East London |
| | • South West London. |

In addition to the formal review of the published literature, all WDCs in the UK were contacted for information about any relevant workforce and training initiatives in secondary care contexts their area. In many instances (although not all) the WDCs actually employ a link person to liaise between them and the Changing Workforce Programme, usually if they are involved with one of the formal national pilot projects or schemes; such as the accelerated development programmes. Where particular information about such projects or schemes was not directly available from the WDC, local delivery plans were examined. In most cases, this appeared in the form of information about skill mix initiatives and role enhancement or substitution exercises that had or were expected to have an impact upon workforce planning in the future.

6.2 Local delivery plans: some examples

All SHAs have developed local delivery plans based on what the trusts (both primary and secondary) in their area are doing and are proposing to do. These are used as the basis for writing the local delivery plan in their area. While some of them will not have involved the WDC, in certain cases the WDC has clearly taken a major role in the production of the Workforce section of the local delivery plan.

Summaries of the local delivery plans for the SHAs, including the chapter on workforce in particular, were obtained from as many WDCs or SHAs as possible to determine what sorts of relevant initiatives may be underway within their secondary care sectors.

Although information was obtained for many of these, only a selection have been included here; particularly those providing information most explicitly relevant to this study since, in the majority of cases, information relating to skill mix changes and role development or substitution initiatives are given only in the context of workforce productivity plans and exercises being carried out to meet NHS strategic targets. Other strategies included in the local delivery plans involve the direct recruitment of new graduates, overseas recruitment and 'retention initiatives' such as 'improving working lives', childcare provision and 'return to practice'.

Trusts have supplied information on their projected workforce productivity over the next three years based upon a set of 'national assumptions' of increasing workforce productivity (for consultants, nursing, GP and scientific, therapeutic and technical staff) and by optimising flexible ways of working and 'skill mix' (of particular concern to this study). These are:

- 1.5 per cent of consultants' work done by G grade nurses and senior scientific, therapeutic and technical staff by 2005/06
- two per cent of consultants' time freed by improved administrative and IT support by 2005/06

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- ten to 15 per cent of senior house officer/specialist registrar work to nurses
- seven per cent of GP work to nurse practitioners and scientific, therapeutic and technical staff by 2005/06
- four per cent of nurses' work to HCAs by 2005/06.

Individual trusts were invited to address the potential impact of these 'productivity' and 'skill mix' changes in the local delivery plans, although usually cautioned that local assumptions related to such productivity and skill mix should be both robust and evidence-based if actually informing the local area model. The majority of plans contained some level of future workforce productivity and flexible working scenarios based upon such skill mix changes (for example, in terms of delegation or substitution of HCAs for nurses, or nurses for doctors or consultants). Those included offer the most information on workforce issues including skill mix initiatives, new role development or training schemes. Considerable detail is provided in the local delivery plans; they are only summarised here.

Devon and Cornwall / South West Peninsula

Planned initiatives included in their overall 2003 strategy include an emphasis on new roles, skill mix reviews and 'enhanced productivity', representing a significant proportion of the additional full-time equivalent posts planned for in terms of consultants, nurses, scientific, therapeutic and technical staff, GPs and clinical support workers.

Plymouth Hospitals NHS Trust

The plan cites Plymouth Hospitals NHS Trust as a good example that is currently instituting major workforce changes and developments.²

The Changing Workforce Programme

Plymouth Hospitals NHS Trust's 2003 workforce strategy notes that they have been recently approved as a pilot site for phase 2 of the Changing Workforce Programme's accelerated development programme for medical secretaries. They see role redesign and development as the best strategies to address problems with shortfalls in staff numbers.

Workforce and skill mix development initiatives

Some HCAs are being developed into more 'technically focused' roles which includes (for example) cannulation, the taking of blood and recording of ECGs. A skill mix ratio of 70 per cent trained staff (registered nurses) to 30 per cent untrained (support workers) has now changed to 60 per cent trained to 40 per cent untrained.

Technical instructors have been introduced in the physiotherapy department. Dietetic assistants have been recruited and a pilot

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programme is due to start with an assistant working between dietetics and speech and language therapy. Physiotherapy assistants are being more widely used and posts have been developed within cardiothoracics and are being considered within intensive care settings. AHP roles are being developed with extended scope practitioners, particularly within physiotherapy and orthopaedics. There have been an increasing number of posts of this kind during the last year, with further requests to extend in orthopaedics and to start in accident and emergency. There are opportunities being examined for either occupational therapy or physiotherapy to manage consultant follow-ups and within ear, nose and throat departments for speech and language therapists. There is also an increasing demand for clinical specialists able to undertake a wider remit in respiratory medicine and for dietetics in renal services.

Within the accident and emergency context, emergency nurse practitioners are now well established and have an input in reforming emergency care targets in terms of quality and waiting times through the development of protocols and patient care directives.

A pilot project is planned using operating department practitioners in cardiac intermediate treatment units through the work of the Changing Workforce Programme's facilitation group. Within the rehabilitation unit an addition of two modern matrons is planned, with a ratio of approximately 55 per cent qualified to 45 per cent unqualified staff, and grade G posts moving to nurse consultant posts over time. There is a 50:50 split within unqualified staff between A and B grades to allow for the 'enabler' role.

Workforce development, training and education

The trust is collaborating with the University of Plymouth to develop a more integrated approach to training and development, developing (for example) a staff flow chart demonstrating a pathway for clinical and academic training.

The Manchester Centre for Healthcare Management (MCHM) model is employed for workforce planning. The future workforce mix is planned to include 60 per cent support workers (including different levels of assistant roles) in contrast to the 65 per cent of registered professionals at present.

The provision of a clinical skills centre, the development of clinical skills stations, and a professional nurse development unit are highlighted as facilities required within the vanguard project to meet future education and training requirements.

Greater Manchester

The workforce section of the 2003 local delivery plan for Greater Manchester reports an increase in demand across all categories of staff, particularly for HCAs and support workers, and developing new

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roles is stated as one of the principal means to achieve this, with an emphasis placed on 'doing things differently'. Although there is a projected shortfall in expected targets for consultants and GPs, Greater Manchester expects to over-achieve its targets for nurses and scientific, therapeutic and technical staff.

There are a range of different developments reported which includes skill mix transfers mostly in the primary care sector, with GP work transferring to practice nurses, developing new roles (such as emergency care practitioners) and productivity improvements. However, the lack of overall capacity in the workforce has reportedly impeded progress in the development of enhanced and advanced roles.

Increasing workforce productivity

Workforce productivity assumptions are based partially on the national assumptions relating to the percentage of work to be transferred from one staff category to another (consultants, specialist registrars and senior house officers, GPs and scientific, therapeutic and technical staff) and, for nurses and HCAs, upon a recent workforce modelling exercise undertaken locally by the WDC. The proposed assumption for the nursing to HCA skill mix is six per cent by the year 2006, higher than the national assumptions, owing to the implementation of the local 'delivering the workforce' initiative and increases in suitably qualified support staff.

Development of assistant practitioner role

A major project to develop a new role of assistant practitioner, capable of working across traditional professional boundaries, has been recently approved, based on a two-year foundation degree programmes. The project has commenced with 383 assistant practitioners currently in post (in PCTs, acute hospitals, mental health trusts and in partnership with social services) and a further 500 expected in each of the next three years. Identification of the skills and competencies required to enable registered staff to take on new and enhanced roles to support skill mix changes will take place in the second stage of the project, with the assistant practitioners giving organisations the capacity to enable the development of other staff.

Programmes implementing the skills escalator strategy

Greater Manchester WDC have a range of initiatives related to the skills escalator strategy within: nursing and midwifery; scientific, therapeutic and technical staff; medical; common learning and continuing professional development; supplementary and independent prescribing; student support and retention; and clinical placements. All support staff in Greater Manchester will have access to either NHS learning accounts or NVQs for Levels 1, 2, 3 and 4 by 2005.

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Nursing and midwifery education

There is a considerable unmet demand for the secondment of HCAs to pre-registration nurse training. Although the cost is higher than that of other pre-registration programmes, attrition so far is virtually nil and those qualifying remain with their employing trust.

Developments in education for scientific, therapeutic and technical staff

New initiatives to support the development of scientists, technicians and therapists include:

- the commissioning of education programmes for assistant practitioners, collaborating with one of the pilot sites in Cumbria and Lancashire
- a new BSc degree in audiology available for audiologists, hearing therapists and audiological scientists
- collaboration with Cheshire and Mersey WDC in the development of operating department practitioners
- implementation of the healthcare scientists' national occupational standards framework locally through the Greater Manchester health care scientists/clinical professions network, and the WDC's 'HCS project'.

New roles and new ways of working are also being explored within:

- podiatry and other rehabilitation services at Salford Royal Hospitals NHS Trust, in support of the Changing Workforce Programme pilot
- the Modernisation Agency's accelerated development programme for interventional radiology at Pennine Acute, Salford Royal, and Tameside Acute.

Supporting developments in medical education

Senior house officer posts have been moved into programmes of learning, with a system to ensure that all senior house officers undergo a formal performance review at least once in a six-month period. The WDC has supported and encouraged a scheme for the comprehensive implementation of appraisal for doctors. All current medical trainees have a personal development plan.

Multi-disciplinary pre-registration pilot project

Plans to facilitate common learning and interprofessional education through a multi-disciplinary pre-registration pilot project are being carried out together with Cumbria and Lancashire WDC (as the lead commissioning confederation) and the University of Salford.

Supplementary and independent prescribing

Within a framework of national targets of approximately 1200 nurses and 120 pharmacists across the North West, plans are presented for the training of nurses to become independent prescribers and for both nurses and pharmacists to act as supplementary prescribers. This training will eventually be extended to cover prescribing by staff from the allied health professions (for example, optometrists) and possibly to healthcare scientists (for example, hearing therapists or audiological scientists).

Clinical placement project

A clinical placement project has recently been established by the Greater Manchester WDC to ensure the provision of sufficient high quality clinical placements, to meet the education and training requirements for all health and social care students in their area.

Hampshire and the Isle Of Wight

New projects in this area which are expected to affect demand include diagnostic and treatment centres, cardiac revascularisation expansion, a catheter laboratory, 'new build' and expanding cancer services. Changing roles, reductions in the hours of junior doctors and service developments have been responsible for an increase in the number of nurses and scientists, therapists and technicians.

Role development initiatives and new working practices

The area's local delivery plan for 2003 presents plans for the development of new and more flexible ways of working to improve workforce productivity and to address European working time directives. This includes enabling staff to undertake roles and responsibilities previously undertaken by higher grade staff through skill-mix initiatives. Examples given include consultant work undertaken by nurses and other health professionals and nursing work carried out by HCAs and by the use of more generic workers. It is felt that the area's approach to skill mix and role redesign will reflect the national assumptions on productivity, skill-mix and work transfer.

European working time directive

There are currently two local pilot schemes which are underway to address the directive: at Winchester and Eastleigh Healthcare NHS Trust, where general and elderly medicine have been completely integrated since 1995, a pilot project is underway to examine the impact of consultants and nurses with extended roles working differently to support specialist registrars working in medicine and elderly care. At West Hampshire NHS Trust, the pilot involves the introduction of new mental health practitioners with extended roles who will provide senior house officer level cover in several mental

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health units. The trust will also be working in collaboration with Southampton University to formalise a training programme for extended mental health practitioners.

Tools and models for staffing and workforce planning

The WDC has developed a ward staffing tool to assist in the different staffing reviews being carried out by local trusts. The tool uses the most recent Audit Commission data for benchmarking, enabling professional judgement to be used as part of the methodology.

The WDC is supporting an operational research PhD student at the faculty of mathematical studies, University of Southampton, to develop a mathematical workforce modelling tool that is hoped will improve workforce planning capability. The tool will be used to evaluate the impact of different local activity and workforce decisions as well as to determine the workforce consequences of service configuration by analysing situations posed by NHS trusts, the SHA and the Directorate of Health and Social Care.

Education and training for future workforce planning and service provision

The WDC has allocated more than 2800 new NVQ places, NHS learning accounts and basic skills places in 2002/03. Investment in these programmes will continue to be supported through a network of lifelong learning advisors. The WDC also supports more than 160 HCAs training to become registered nurses. There is also provision for the secondment of HCAs and other support staff to the foundation degree programmes.

The 'new generation' project

The new generation project is an integrated model of interprofessional learning offered at the Universities of Portsmouth and Southampton. It functions across 11 professional programmes (including medicine, nursing, therapies and social work) enabling students to develop the knowledge, skills, competencies and attitudes required to be able to deal with the complexity of modern health and social care delivery.

'NHS professionals' project

The NHS professionals project financed through an allocation from the Department of Health, is currently underway and is stated to be progressing well. During 2002/03, work carried out as part of the project found that there were significant resources implications through the employment of high cost agency staff to maintain staffing levels in critical care, intermediate treatment unit and other specialised areas. The current projected savings on nursing budgets alone is stated to be in excess of £4 million.

Portsmouth and South East Hampshire

Portsmouth and South East Hampshire is a location for one of the Changing Workforce Programme pilot site initiatives which is assessing the following technical and other support staff: rehabilitation assistants, medical technicians, radiology assistants and team workers including domestics, housekeepers, ward clerks, healthcare support workers.

Results from this programme are currently being evaluated and early outcomes will be included in the NHS Modernisation Agency report on phase 1 of pilot site activity. A local team is being established in Portsmouth to manage the implementation of these roles.

Portsmouth Hospitals Trust

The WDC is providing further support to Portsmouth Hospitals Trust to pilot the expanded role of the health care support worker in the medical assessment unit, based on the upgrading of five health care support workers for one year and releasing grades E and F nursing time to providing coaching support.

Mental health

There are also a number of other local initiatives where roles have been changed to meet service needs. An example of this is where a local shortage of mental health nurses has resulted in the targeting of social science students to undertake mental health practitioner roles. Trainees will be appointed initially to competency/modular based apprenticeship schemes with an opportunity to move on to postgraduate level programmes. This will provide fast track training in one year, with an annual target of 40 people working in mental health who would not have done so otherwise.

Radiography

The WDC has sponsored a working group of senior radiography and radiotherapy managers to recommend the design of a vocationally-prepared support worker who would substitute appropriately for professionally qualified staff.

Trent

According to the 2003-06 local delivery plan, throughout Trent there have been developments for nurses and AHPs, consultant posts, specialist practitioners and significant advances in identifying continuing professional development and learning beyond registration needs. There are many examples of the skills escalator approach and work on changing roles (for example, with services for older people).

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Examples of innovation in modernising service delivery and work design expected to impact upon the future workforce; including the following schemes:

- the Changing Workforce Programme pilot in older people in North Derbyshire
- the introduction of ward practitioners at Chesterfield and North Derbyshire Royal Hospital NHS Trust
- the first contact programme in Lincolnshire - designed to enable patients with undifferentiated, undiagnosed problems to be seen and cared for by non-medical staff such as nurses or AHPs - is one of eight 'blue print' pilot sites.

Health communities in the area have already achieved their target for the introduction of modern matrons, with 142 appointed by 2004. Targets for the introduction of ward housekeepers by 2004 are also expected to be met.

West Yorkshire

Local development plans for West Yorkshire highlight the training of emergency nurse practitioners, triage skills development, and diagnostic and treatment skills development for nurses as key workforce initiatives.

Within cancer services there is a growing demand for specialist cancer nurses, advanced radiographer practitioner and assistant practitioner, which have been nationally piloted roles. New roles are also being developed within mental health and include 'support time and recovery' gateway workers and graduate mental health workers, with West Yorkshire being part of a national pilot.

For older people's services, an increase in nursing roles in specialist areas is anticipated (although many of these will be within a primary care context) as is an increase in therapists such as physiotherapists, occupational therapists, podiatrists and dieticians. There is a planned extension of therapy assistants and the planned development of other new roles (such as generic workers and co-ordinators in the single assessment process (SAP), rehabilitation and joint care management and a nurse consultant role for children at risk.

Leeds Teaching Hospitals Trust

The trust anticipates savings through the development of new roles and 'substantial' skill mix alterations, and highlights training requirements; particularly to achieve advanced clinical support workers. Innovations here include the development and preparation of existing basic and higher grades for more senior roles in physiotherapy and the planned introduction of consultant posts within physiotherapy, occupational therapy, dietetics and diagnostic radiography. New roles within dietetics are planned including a

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dietician's assistant (linked into the trust's overall support worker project) and 'succession planning' in therapy radiography.

For qualified nursing staff, modern matrons are mentioned, and accredited clinical support workers operating at a more skilled and senior level. There are skill mix changes for clinical nurse specialists, the development of the nurse practitioner role, work on 'succession planning' and the continuation of leadership training programmes. Initial pilots to accredit clinical support workers have proved successful, although the importance of measuring this initiative and its implementation is also stressed.

Mid Yorks Hospitals NHS Trust

The Mid Yorks Hospitals NHS Trust presents a future workforce model in its local delivery plan that includes plans for consultant-led services for a number of specialisms involving skill-mix changes to provide services effectively.

Of particular note is the development of a new specialist rehabilitation assistant, qualified to a minimum of NVQ Level 3 or equivalent, to undertake a number of duties currently provided by junior qualified staff. Additional specialist modules will be provided depending on the specialism in which the member of staff will work leading to some growth in the number of qualified therapy staff.

The new workforce model will require the development of approximately 100 full-time equivalents of the new type of practitioners in support of fully qualified staff to meet service levels without the need for significant investment in additional qualified staff.

North and East Yorkshire and Northern Lincolnshire

Information from this area was obtained from a visit made to the WDC in York, through the 2003-06 local delivery plan and from additional material relating to two different local initiatives (Campion and Durrant, 2001; Moore, 2001).

For example, a range of innovative ideas to expand the medical workforce and achieve a number of interdependent benefits are being planned with the Deanery and the Hull Medical School which include:

- mentorship for new consultants
- pump-priming new part-time posts to accommodate the growing number of 'flexible trainees'
- attracting recently retired consultants, or consultants approaching retirement, to undertake teaching and mentoring, and assessing specialist registrar posts
- maximising opportunities for conversion of staff grade doctors, those who have completed fixed term training appointments to gain access to the specialist register

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- new consultant (and GP appointments) to the Hull/York Medical School.

Other initiatives which will directly impact workforce provision in the secondary care sector include primary care sector initiatives, such as the development of GPs with a special interest - aimed to control demand within that sector to avoid creating increased pressure on acute sites and thereby reduce demand for expensive consultant posts.

A range of new roles within the CHARD area (Craven, Harrogate and rural district) are planned, which include nurse practitioners in paediatrics, orthopaedics and surgery and competency-based career pathways for radiography which are envisaged will change radiology and radiography roles. Support workers on surgical wards are planned, and other schemes underway include a proposed pilot cadet scheme for occupational therapists, extending NVQs to convert assistant technical officers to medical technical officers, altered skill mix in accident and emergency, and nurse-led discharge.

Some brief examples

The Selby and York Trust is introducing physicians' assistants in medical assessment units, renal and ophthalmology; extended nurse practitioners in emergency care; a number of new nurse practitioners; an extended scope physiotherapist, and discharge liaison nurses in mental health.

The Hambleton and Richmond Trust is introducing foot care assistants, a biomechanics specialist, dietetics helpers and a nurse consultant in palliative care, and there are many other support roles reported for nursing and the allied health professions.

In the South West region, new roles include a cadet scheme, AHPs and plans for a podiatry surgeon. A critical care assistant is being developed with the Changing Workforce Programme and there are many other support roles in evidence, with a scheme planned to develop competencies and clinical skills.

In North Lincolnshire, there is a project to investigate new roles in connection with the European working time directive and nurse practitioners in many areas. An advanced critical care practitioner is being developed under the Changing Workforce Programme. Many support roles are in evidence and these are noted as being particularly successful in theatres.

Other developments in the region include the introduction of career staff grades to replace clinical assistants, nurse prescribing within specialist children's services, physiotherapy assistants developed to NVQ Level 3 to support qualified staff, specialist children's services to extend skills of qualified nurses to facilitate shift of work from medical staff, rehabilitation assistants to work with AHPs within intermediate

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care, grade B HCAs developed to free up time for qualified nurses and AHPs within the forensic (mental health) service.

West Midlands South

Information for West Midlands South comes from the 2003-04 business plan for the WDC and the workforce section of the summary local delivery plan for 2003-06. The West Midlands (South) WDC is in control of the Changing Workforce Programme.

General workforce

In light of the increased demand for AHPs, scientists and technicians, work is underway to identify new ways of working and the development of new roles that will support the qualified professionals.

The number of commissions to nurse training will be increased. It is noted that the development of nursing roles will also have an effect on other staff groups such as HCAs, which may generate increased demand within these groups.

Role development initiatives

Mainstreaming the emergency care practitioner and the physician's assistant, and developing radiography assistants are specified as areas that will be attracting investment this financial year.

Nurse prescribing

Details are provided of plans to extend nurse prescribing in the area, with nurse prescribing courses being available since 2001 and some 55 have been trained across the WDC area to date. It is expected that an additional 165 nurses and 15 pharmacists will meet these criteria by April 2005.

6.3 Discussion

6.3.1 Education and training

The major focus of WDC education and training activities is on pre-registration, guided by policy documents such as *Making a Difference in Primary Care* (Department of Health, 2000c) - especially Chapters 3 and 4). However, with the current agenda of major health service workforce change underway, post-qualification training is becoming increasingly important (Wilson, 2002).

WDCs have done reviews of education and training needs in respect of specific areas of expertise which they share with each other, and they employ in their planning processes to inform education commissioning, focusing on delivering growth in areas that demonstrate the highest future need. These exercises involve a mixture of interviews and focus

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groups with stakeholders to identify gaps in skills and capabilities and their related training needs. Several WDCs have produced reports that address strategies or initiatives in specific areas, such as physiotherapy (Campion and Durrant, 2001), radiography (South West London WDC, 2002), psychotherapy, or operating departments (Moore, 2001).

WDCs have modernised education provision, widening access and introducing initiatives such as flexible and work-based learning. Strategies for commissioning of education may be wider than the actual area for which a WDC is immediately responsible and it is commonplace for WDCs to collaborate in training initiatives or pilot schemes, as with (for example) the Greater Manchester WDC collaborating with one of the pilot sites in Cumbria and Lancashire in the commissioning of education programmes for assistant practitioners, or with Cheshire and Mersey WDC in the development of operating department practitioners. Another example would be the South West London WDC, responsible for commissioning diagnostic and therapeutic radiography education on behalf of the whole of London (including some of the surrounding areas) in collaboration with the other London confederations. This WDC also seeks to initiate and support developments that will modernise radiography staffing and education in respect of the goals of the NHS Plan and the Cancer Plan (Department of Health, 2000d).

The European working time directives, together with the oft-cited document *Unfinished Business* (NHS, 2002b) have also had an important impact, particularly with respect to recent developments in medical education. Trusts report the reformation of medical staff posts (senior house officer and non-consultant career grades) and shorter, more broadly-based higher specialist training programmes are to be developed, offering opportunities to review the existing medical skill mix and develop the medical workforce further.

The WDCs usually maintain strong collaborative links with local higher education institutions, and are providing an increasingly wide array of different courses, or training modules related to NVQs and professional education and training, as well as continuing professional development (see below). Examples of these include return to practice programmes, the training and development of different grades of nursing posts (for example, grades E and F posts at the Leeds Teaching Hospital Trust), or the secondment of HCAs to pre-registration nurse training. Recruitment from foundation degree courses and enhanced NVQs is often viewed as another means of achieving the national productivity assumptions more rapidly. Appropriate education and training provision for the new planned posts are sometimes offered within a local delivery plan, such as with the new role of assistant practitioner (Greater Manchester) being registered on two year foundation degree programmes. Several other examples have already been presented.

Influence of training on staff deployment

The proliferation of types of training schemes and initiatives across the UK is a consequence of the expectations and directives (as with the national assumptions) that health communities will not only experiment with new types of clinical roles but also be active in introducing them. The training programmes offered should provide the necessary means for developing the key skills and competencies that this process demands. In that sense current moves to change traditional patterns of staff deployment have affected training more than the other way around. That said, the range of different training initiatives seem set to provide a more flexible and multi-skilled workforce capable either of specialising on the one hand or of working across a range of traditional health care settings on the other.

WDCs commonly report how they plan to achieve the NHS lifelong learning framework targets locally and many have active lifelong learning strategies that support interprofessional learning (see above). An example would include Greater Manchester WDC who noted a two-year investment plan being developed for continuing professional development, through collaboration with higher education institutions, the Deanery and other education providers intended to widen access to current continuing professional development portfolios to all professions where appropriate.

Continuing professional development is intended to have a dual impact upon staff deployment. It should improve staff flexibility within a health care arena moving increasingly towards interprofessional collaborative teamwork, requiring adaptable multi-skilled workers capable of moving seamlessly across care boundaries. It should also provide already qualified health personnel the opportunity to specialise and, therefore, be in a position to assume enhanced roles within a particular speciality (for example the investment in training GPs with special interests is seen as a way of containing demand within the primary care sector and reducing the need for expensive consultant posts in the acute sector).

6.3.2 Patterns and process: new roles and delegation

New roles

The development of new roles has been one of the key driving forces behind the expansion of training and education, necessitating the design of new courses and modules to deliver these. Examples of new roles would include nurse consultants and practitioners and assistant practitioners described in several of the local delivery plans, envisaged as being able to work across traditional professional boundaries; as well as modern matrons and ward housekeepers or practitioners, among many others.

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Many SHAs/WDCs are heavily committed to role redesign initiatives and skills escalator developments as a consequence of supporting the Changing Workforce Programme. This is carried out mainly through lifelong learning and career progression opportunities, and through the modernisation of human resource practices.

The development of new sorts of educational facilities has also emerged as a key means for the provision of the new roles and requisite skills being demanded, such as the clinical skills centres or stations, and professional nurse development units (for example, Plymouth Hospitals NHS Trust vanguard project). Shared interprofessional initiatives within trusts are reported - including clinical skills facilities, education centres and information services, staff customer care programmes, competency framework programmes from induction to advanced practitioner, staff cultural awareness sessions and communication workshop events. Also noted are 'whole health economy' common learning initiatives undertaken in collaboration with social services departments.³

Current patterns of delegation and the processes involved.

Delegation is a process which happens not only directly, as in the taking up of duties by one class of worker which were formerly the responsibility of another but also through direct changes to service provision, as in the shift to nurse-led clinics or inpatient units or other nurse-led services. An increasing number of these are being introduced in different health care sectors across the UK, some of which have been noted in the range of local delivery plan examples offered earlier.

Although there are a whole range of different role redesigns, developments and substitutions, aside from direct changes to service provision, changes to the current patterns of delegation are principally those which:

- move nurse or advanced practitioners, specialists or consultants into areas formerly staffed by doctors or consultants
- move consultants into aspects of care delivery formerly provided by doctors in training (less common)
- train HCAs, technicians or support workers into, for example assistant practitioners to take over from nurses
- extended role health practitioners providing, for example, senior house officer level cover in appropriate settings
- ward sisters, modern matrons and ward housekeepers and clerks, also to take over duties formerly provided mainly from the registered nurse staff grades.

The impression received throughout is one of greater flexibility and fluidity and, as has been seen from a number of the examples included here, the development of different or enhanced roles is usually expected to have a 'knock-on' effect in another part of the

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system or workforce: for example, the development of extended nursing roles may affect the roles of HCAs, thereby generating increased demand for these groups.

The processes that underpin these patterns of delegation are primarily those driven by the different policy directives from the Department of Health, reflected in part in the national assumptions for workforce productivity set out earlier. Trusts are clearly anxious to meet the set targets and one of the principal aims of every local delivery plan is to set out how these will be achieved over the next three years. Another major driving process is recruitment and retention difficulties, with role 'redesign' and development often undertaken to address problems with shortfalls in staff numbers, or to improve work satisfaction and reduce stress, thereby (hopefully) improving retention. However, the development of enhanced and advanced roles is usually dependent upon overall sufficient workforce capacity; a lack of capacity makes it difficult to innovate.

The extent of the use of unqualified assistants

An evaluation of local delivery plan and workforce planning material from the different SHAs and WDCs has demonstrated a far greater emphasis on the role of the HCA throughout secondary care sectors in the UK. There are clear signs that some of these are set to change into more generic workers trained in both nursing and therapy skills, more suitable for working within a multidisciplinary care context. The examples show how some HCAs are also being developed into more 'technically focused roles' – for example trained to undertake cannulation, blood samples and recording of ECGs, for example (Plymouth NHS Hospitals Trust).

However, it should also be cautioned that the term 'unqualified assistants' is probably increasingly unjustified as, through the provision of the sorts of educational and training programmes described above; in many cases these staff are, in fact, quite well-qualified, although without the professional status or levels of qualifications of so-called 'qualified' staff – a point made quite forcibly in a formal survey of HCAs reviewed earlier in the report (Thornley, 2000).

In the majority of cases, it can also be observed that skill mix changes involving decreases in the proportions of qualified relative to support staff parallel those already highlighted in the literature review (for example the shifts in the Plymouth Hospitals Trust).

Changes such as these appear to be happening widely. It appears that 'unqualified assistants' are being relied upon to a very great extent and, as seen in the earlier review of the literature, this has been noted with concern by several authors.

6.4 Conclusion

An overview of details from the different local delivery plans and related material obtained from WDCs presented above suggests that there is much activity taking place across the different SHAs in terms of skill mix changes and the development of new roles, supporting the findings of Adams *et al.* (2000), that there is 'widespread evidence of work intensification'. As observed earlier, role redesign and development are seen by many health communities and trusts as useful strategies to address problems with shortfalls in staff numbers; particularly in 'hard to fill' vacancies.

It is also clear that much of this activity is reported to be taking place outside of a formal relationship to a Changing Workforce Programme scheme or project in that many trusts appear to be experimenting with new roles and 'ways of working' or, indeed, to be actively engaged in their introduction. This appears to be as a direct consequence of having to meet increased workforce productivity targets and flexible ways of working and skill mix initiatives listed earlier in the national assumptions for growth in the health care sector. In some cases the change processes are further complicated by moves towards major service redesign that may be already underway (see for example Surrey and Sussex SHA local delivery plan).

Although many trusts and health communities appear to be engaging in the change processes with enthusiasm (or at least with resignation), other organisations have expressed their concern at the validity of the productivity and skill mix assumptions that are being used at the national level and have called for further validation work to be carried out. There is, moreover, a distinct lack of confidence in respect of convincing clinicians and achieving the necessary change management agenda, particularly in the short term (see for example Greater Manchester local delivery plan). Finally, with a few exceptions, including those schemes which are being formally piloted through the NHS Modernisation Agency's own Changing Workforce Programme (outcomes from the first phase of which are already well summarised in their 2003 report), there remains relatively little evidence of the formal monitoring or evaluation of many of the skill mix changes and role redesigns or substitutions which would allow any serious conclusions to be drawn about their real value or long-term effectiveness.

Section IV Research implications

Chapter 7 Implications for policy relevant research

The review has highlighted a large number of areas where there is a great deal of enthusiasm for change and about innovations that have already taken place, but where we simply do not know whether they are cost-effective (regardless of any debate over the choice of outcome measures) simply because the research has not been done. These are presented in the first part. Suggested topics for research are italicised. These lead to more general questions about the routine data that is being collected and the evaluation methods available - considered in the second part.

Some might argue that events and changes have occurred so fast in the NHS that several of the findings highlighted in the literature review are based on evidence that is too out-of-date to be relevant to the current situation. Firstly, it would seem that the onus should be on those making that argument to *demonstrate* that there have been such radical changes in the last five or ten years. Second, there is no systematic attempt to collect these data *currently* that would demonstrate that the problems highlighted in this review have disappeared.

7.1 Summary of main findings and knowledge gaps

7.1.1 Workforce planning

Variations and standardisation?

It is clear from all the sources that there are large variations in the deployment of staff working in the same specialities in different hospitals; with widespread evidence of inflexibility in traditional ward rota systems and considerable scope for improvement in many areas (Hansed, 2002). Why is this? Clearly there will be some (local) explanations of these variations – such as the location of hospital sites and the situation in the local labour market, for example – but such explanations are unlikely to account for the majority of this (substantial) variability. The suspicion is that part of the explanation is the local culture of specific hospitals – or even of units within hospitals

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– but without evidence, this is also only speculation. It needs proper research.

Overlaps

Given the frequently reported shortages of nurses on all wards, it is not surprising that there is considerable overlap in the types of tasks undertaken by all grades of staff. For example, the ‘when the going gets tough, the tough get going’ mentality abounds and all members of the ward team are called upon to undertake all types of activities at busy times on a shift. Nonetheless, it seems clear that, in addition to issues around the proper deployment of HCAs (see below), more effective and efficient deployment of ward clerks and housekeepers would liberate some qualified nurses’ time. Many of the anecdotal reports address the impact of the deployment of ward housekeepers on the availability of qualified nursing staff (Carr-Hill and Jenkins-Clarke, 2003). The NHS Plan recommends that at least half of all hospitals should have ward housekeepers by 2004. By July 2003 around a third of all acute hospitals and nearly half of hospitals of over 100 beds (which account for 86 per cent of all beds) – had housekeepers or were piloting them (NHS Estates, 2003). But once again, however ‘obvious’, there is little serious evaluation of their effectiveness in releasing qualified nursing time. However there are plans for East Sussex Hospitals NHS Trust together with the Facilities Management Graduate Centre at Sheffield Hallam University and the School of Healthcare Studies at Leeds University to examine how ward housekeeping initiatives in the trust impact on existing care teams, the patient experience and standards of clinical and non-clinical care (NHS Estates, 2003).

Deployment and demand

Against the background of recognised nursing shortages the NHS Plan makes a number of recommendations that should enable nursing staff to spend more time on patient care. It is of concern therefore that there is no systematic evidence that trained staff are in fact being deployed in response to variations in patient demand (level of severity). In the survey, respondents from only approximately one sixth of institutions reported the ability to move staff between units and a similar number reported the use of either external agency staff or internal staff banks to meet shortfalls in staffing. For a larger group of respondents it appears to be the case that variation in staffing was limited to rearranging the work patterns of existing unit staff, for example by changing shift arrangements. It seems unlikely that this latter would be sufficient to cope with what can be quite large variations in demand.

Underlying this apparent failure to deploy staff systematically according to demand is the issue of professional judgement (and which profession is making the judgement) about how many staff are needed given the characteristics of the patient ‘population’ under

consideration. While attempts to standardise skill mix are being made in the USA, there is no consensus in the UK from which it would be possible to determine minimum staffing levels. It is time to start the debate on this issue; or at least to institute the research that would form the basis for that debate. Such research would need to explore the reasons for wide variations in staffing and the difficulties that managers encounter when trying to do something about deployment.

Problems of devolution and decentralisation

The extent of devolution of strategic workforce planning is likely to be a major influence on the processes and capacity to vary local staffing to meet immediate needs. Four basic levels of devolution were reported:

- 1 none or very partial (that is, strategic planning done centrally)
- 2 planning devolved to directorates
- 3 planning devolved to units or specialties
- 4 planning devolved to wards.

The variety of organisational structures in trusts seemed to be compounded by varying attitudes to devolution and mixed experiences of local or higher level workforce planning. In all, there were a great variety of models and circumstances and (we suspect) few clear guidelines on what is likely to work in specific settings. This also needs research to establish best practice in devolution and decentralisation according to context.

Flexible shift working

One of the main initiatives, encouraged by the Changing Workforce Programme, was flexible working patterns. At least one example of a successful mechanism was mentioned by 98 of the 131 respondents, but four stood out: flexible/variable shifts, self-rostering, term-time hours/contracts and annualised hours. Many respondents in the survey expressed enthusiasm for various forms of flexible shift working, term-time contracts and other mechanisms that allowed staff to some control over their hours of work. There is considerable scope for further work to assess the impact of some of the more common forms of flexible working on both patients and staff, and this probably requires the development of appropriate methods (see below).

There is no doubt that solutions to workforce and workload problems are challenging but since budgets required for ward staffing are the largest single component for all trusts, it is time to move forward and attempt to derive transparent mechanisms for the deployment of nursing and support staff in acute hospitals. In so doing, it is important that some basic foundations are incorporated into any future strategy – thus it is crucial that we provide evidence about where nurses and support workers are working, what they are doing

on the wards, division of labour and patterns of deployment (see below).

7.1.2 Training and using of health care assistants and specialised nurse

HCA's

Nursing support staff are now employed in relatively large numbers, and further increases are likely in the context of the impact of the working time directive on, for example, weekend staffing. There is no systematic evidence either on what they do or on the impact of their deployment on other staff or on the impact on the quality of care delivered to the patient.

There was considerable support for an extended role for HCAs, including training to enable them to acquire nursing qualifications to perform what used to be seen as general nursing functions; 44 per cent of respondents mentioned training to NVQ Level 2 and 3 (especially Level 3) and other mechanisms to expand the role of HCAs. Some commentators have asked whether the enrolled nurse is being recreated through the 'back door' and others whether the new roles being envisaged for already trained nurses (see next sub-section) are compatible with the retention of a general nursing function. There is an obvious need for research to understand what is happening. Examples of possible topics are:

HCA working patterns

- How is the work of HCAs organised: for example patient-centred, task allocation? Which models are most effective from the point of view of the HCAs themselves, the hospital, the nurses on the ward and the patients?
- Specifically, does the patient get adequate information on the procedures if HCAs in fact carry out the majority of care?

Impact

- What is the impact on other team members on the ward in terms of their own work patterns? How does the impact vary according to the type of ward; and, specifically, is the impact of HCAs potentially larger in acute general wards?
- Specifically what is the impact of housekeepers on the quality of care?

Training

- Are the core competencies acquired by HCAs during training actually being used?
- Is the training cost effective? – are trained HCA staff retained? What are the opportunity costs, sickness rates and substitution?

Specialist nursing roles and extended roles

The third main initiative encouraged by the Changing Workforce Programme and similar programmes, apart from those relating to flexible shift working or HCAs, are those giving nurses specialist roles in existing patterns of care and those where nurses (and other staff) roles are being extended to develop new types of care, such as outreach teams or primary care provision in acute units. Similarly, new types of nursing posts or at least new names for specialist or extended nursing roles were widely reported.

Some of these are posts or roles to meet very specific local needs, perhaps difficulties in replacing lost staff or expanding some aspect of a service to meet increased need. Others have implications for certain specialities, for example the pilot site for multi-disciplinary nursing and support roles for professions allied to medicine in stroke care. Others have more general implications, such as the development of a 24-hour clinical matron service to replace some aspects of junior doctor cover and reduce junior doctor hours in the light of the working time directive. In particular, we need to know what is the impact on quality of care of nurse replacement of junior doctors.

Indeed, despite generally positive findings from empirical research, not all studies find in favour of developing nursing roles and the settings that are most favourable to such changes need to be identified. For example, it has been argued that new posts or roles developed primarily as 'rapid ad hoc responses of senior doctors and nurses to urgent medical workforce problems' (rather than as part of a planned programme of workforce change informed through appropriate processes of monitoring and evaluation) will be those likely to cause the most difficulties (Dowling, 1997). There are clearly also problems caused by the confusion of roles. How these confusions arise and how the tension between role 'blurring' to allow effective cross-boundary working and flexibility on the one hand, and better role definition on the other, needs to be explored both theoretically and empirically.

7.1.3 Implementing change

Many of the current difficulties being experienced with health care reform and workforce changes are consequent on the tension between opposing priorities: cost-containment versus patient need. Workforce and service developments should reflect patient needs rather than professional aspirations or short term expedience (Masterson, 2002).

Usefulness of Changing Workforce Programme and other documentation

In the survey, views were divided on the quality and effectiveness of the events related to the Changing Workforce Programme and

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feedback from this, admittedly small, sample suggests that the courses may need refining.

The notion that workforce planning was an area best left to professional judgement – or at least that this was how it was presently carried out, and it seemed to work – was widespread in the replies. The less than enthusiastic response to Changing Workforce Programme events and the low knowledge of the toolkit for local change (staff in the trusts of 85% of respondents had not apparently had any training in the toolkit and participants at the workshop said that this had been a short-term problem) suggest that there may not yet be a universal acceptance of incorporating planning aids and systems in nursing workforce development.

The overall impression from the survey was of an area that was not extensively or separately reported. No standard body of guides or other publications is evident in the works cited. Whether this all results from lack of time, lack of access to relevant materials, lack of relevant materials, or a culture that may not naturally look for such sources are just several of the questions outstanding. These issues need research evidence in order for the Changing Workforce Programme to be fully effective.

Level of activity

From the survey it is quite difficult to judge the level of activity in this area. Although we have information from 40 per cent of trusts, many of the replies come from people in specific units or directorates who are reporting on activities in their own units, rather than in the trust as a whole. In the event, we seemed to have got something of both. In the descriptions and names of specific initiatives we seem to be getting the local view, and the level of activity was moderate - on most topics only 30 per cent or less had something to report. However, when we asked a question that could more easily be answered from a trust or institution-wide perspective a much higher level of activity was reported. The implication is that workforce development is limited to certain units within trusts. In turn, this raises the further question as to whether some settings are more amenable to these initiatives (or is the need greater in some areas?).

The role of training

Research indicates that quality of care is influenced not only by the staff to dependency ratio, but also the mix of registered nursing staff to HCAs and unlicensed practitioners, and factors such as staff training, flexibility of care, policies and facilities in the location (Bradley, 1999). Some argue that education, motivational levels, leadership and the staff deployment skills of directors of nursing are as important as staffing numbers or mix or other such management indicators (Bradley, 1999). The relative weight of these factors needs

to be established in order for effective implementation of a change programme.

Evaluations

Similar questions arise in relation to the evaluation of initiatives. There is a case for greater advice on how to test the effectiveness of what is undoubtedly a considerable volume of often quite radical changes. The two most frequently-mentioned methods for monitoring were patient satisfaction surveys and audits, both of which are rather general tools for evaluating the impact of changes in staffing and skill mix. Other types of routine monitoring were also mentioned in this context, including adverse incident and complaints reporting and risk management assessments. But none of these are very suitable for testing the effectiveness of new types of post and some of the other role development initiatives reported from many trusts. More specific evaluation tools need to be developed (see below).

The need to minimise the length of the survey questionnaire meant that we were not able to fully explore the motives for introducing the various changes. Although respondents made some telling comments in passing, it generally was not clear whether the main reason for the changes was staff development, improving patient care, trying to find ways of coping with serious staff recruitment and retention problems, or some fortunate alliance of all three. *The motivations and constraints on implementing change need further research.*

7.1.4 Cross boundary working, new roles and team working

Cross-boundary working and new roles

Many of the problems in health care services are seen to be a result of failure in working effectively across organisational and professional boundaries: some argue that this results from the training divide, with the present structure of doctor training being treated separately from other health professions (Hunter, 1996); others that the culture of a professional group within a hospital inhibits inter-disciplinary working.

There are again several issues that need to be researched. Examples are:

- How acceptable are 'new roles' to colleagues in terms of collaborative working, the implications of legal responsibility?
- What are the main constraints to inter-agency working? In which situations is inter-agency working likely to be most relevant and effective?
- Are the number of hand-offs (transfers of responsibility for patients between staff) increasing? What are patients' views of hand-offs?

- What are the opportunity costs of teamworking? How cost effective are specific new roles given the known overhead costs of collaboration?

Team working

The main obstacles to the implementation of effective interdisciplinary teams is seen in the barriers from restrictive practices, rituals and 'dysfunctional' (working) cultural norms (Brooks, 1996). The need for effective educational/training programmes on how to function within a team is considered essential, which includes issues of 'role blurring', group skills, communications skills, conflict resolution, and leadership skills (Boaden and Leaviss, 2000; Hall and Weaver, 2001). Exactly what constitutes effective educational training programmes in this regard is unclear; and this also needs research.

7.1.5 What are the priorities?

As pure academics, the most interesting are the problems of cross-boundary working and new roles but, wearing a pragmatic hat, these researchers would see the issues around workforce planning as the most important. However, in the workshop, it was clear that the service participants placed most emphasis on the use and training of HCAs and other support staff (including both housekeepers and ward clerks), and lower priority on the other three topics.

While we do not suggest slavishly following demand, given the evident difficulties of carrying out research with the support of overworked staff, it would seem politic to organise research topics that, if not focused on HCAs for example, are relevant to the most frequent activities.

While it was not possible from the survey to judge the quality of current initiatives - though we did get respondents' reports of what they felt to be the most notable and successful changes recently - overall, three types of activity stood out.

- 1 There were many schemes to expand the role of HCAs, usually through an NVQ programme.
- 2 There was a great diversity of activities around expanding the role of senior nurses.
- 3 There were projects to make more use of non-clinical staff such as technicians, people who managed technicians, ward housekeepers, ward clerks and a variety of posts that dealt with non-clinical aspects of patient welfare and discharge.

But the systematic evidence base for the enthusiasm is lacking. Perhaps research should first of all focus on these three issues, combined with one of the other issues of more general interest (for example new roles or some of the methodological issues discussed in the next section).

7.2 Implications for routine data systems and research methodology

The objective of the multiple recent changes is to improve patient care. This includes both better clinical care and a better experience with the care itself. This implies not just that there are more staff working differently – the current slogan for the Changing Workforce Programme – but that the *staff in post* are working effectively to improve outcomes for the patient in both clinical and non-clinical terms.

7.2.1 Routine data and monitoring

How to monitor

There is a body of (largely anecdotal) evidence supporting many of the role changes and cost-containment substitutions currently taking place in health care systems, particularly those of nurse-for-doctor, but the policy assumption that suggests a sufficiency of nurses is available for doctor-nurse substitution while still allowing the nursing element to function may be false (Calpin-Davies and Akehurst, 1999) and this needs to be explored (as above). At the same time, the findings from large empirical studies and systematic literature reviews still support the view that a 'rich' skill mix of qualified personnel, particularly of registered nurses to HCAs, is associated with better clinical outcomes. In order to plan workforce deployment, we have to know how these apparently contradictory findings come about; and that means data on what people are doing and how that impacts on each individual patient. Although it may appear to be very basic, there is still very little routine data on the staff inputs, what happens on the ward, and what are the outcomes on the ward level. Without that, it is very difficult to see how any of the changes currently being promoted can be monitored.

That, of course, is a medium to long-term prescription for the kinds of routine data systems that are required. But the evidence from the survey is that there is only limited use of proprietary routine data systems– such as GRASP or NISCM – and sometimes only for preparing periodic reviews. Moreover, many hospitals had tried and then stopped using these systems after a relatively short period. While those particular systems may not be appropriate in many contexts (and there have been several critical commentaries on those systems) it is important to undertake research to find out why they are not meeting planning needs or are not felt to be cost-effective, in order to be able to design systems that are viable.

On another level, it may be that *no* data collection system that reports upwards is viable (*vide* all the critiques of league tables and performance indicators), but then the research and development problem is to find ways of recording activity that are acceptable to

frontline staff and that can be used both by them and management staff. With very few exceptions, the current literature does not appear to be addressing this essential need. Qualitative research is needed to understand this situation.

Where are the evaluations?

Moreover, in the short term, what is needed are evaluations of the staff changes that are being proposed or that have been put in place. The overwhelming evidence from this review is that, while the changes are often greeted with enthusiasm - especially by their local champions - there is little evidence of their effectiveness or even efficiency. There is a pervasive danger of the Hawthorn effect – that is there is an improvement in performance after an innovation that is not sustainable - that does not appear to have been recognised throughout the service. There is a clear need for more or better evaluation as changes that are being introduced, particularly in terms of staff deployment models, different staff mix ratios or role changes, are not always initiated from a firm evidence base (Hall, 1997). Proper evaluations should be carried out through appropriate research comparing the relative cost-effectiveness of alternative skill mix combinations as little is known of the true impact on costs or quality of care of a range of staff mix models and few new staff mix models have been examined over time with empirical methods or with control for confounding factors (Richardson and Maynard, 1995; Hall, 1997).

Many of these have been specified above but clearly there are innovations all the time; and 'meta-research' is also needed to understand the apparent reluctance to evaluate – or even routinely monitor the impact of an innovation – in the service.

7.2.2 Measurement issues

Measuring quality of care

The Audit Commission's report (2001) sets the scene (and possibly a way forward) by attempting to measure the quality of care delivered by ward staff using data from five main areas – the number of formal complaints, incidence of pressure ulcers, patient accidents, staff accidents and ward audits. It was observed that: 'Even when such outcomes measures are agreed, comparisons require the use of consistent and uniform methods for measuring and recording.' But, despite their recommendations, methodological development in terms of clearly defining the level of expected quality; the relationship between outcomes and different staffing levels and measuring need for nursing interventions are still required (Buerhaus and Needleman, 2000).

The impact of training

At the same time, many of the new ways of working that have been proposed have almost automatically led to the introduction of a wide variety of training programmes as described in Chapter 7. While only to be applauded – in terms of improving the quality of the human resource stock – one would have thought that this effort would, at the very least, have been monitored (even if it is too much to ask that they should be evaluated in terms of their effects). But, when asking one WDC how many new training modules had been introduced, they looked vague and said ‘several thousand’. This has two implications that need exploring, both of which are rather obvious but do not appear to have been addressed in any of the literature:

- how much staff time is left after all the training packages and the consequential costs of collaboration?
- how effective is the training in its own terms and in terms of patient care?

Clearly these two questions are interlinked in the sense that a more effective training might lead to such an improvement in patient outcomes that they more than compensate for the reduced amount of time spent with patients.

7.2.3 What are the priorities?

Those four issues: monitoring what have been the actual changes in working patterns (as distinct from the rhetoric) after the recent policy directives; proper evaluations of the impact of these changes on patient care; agreeing on what counts as quality; and assessing the impact of training - are pervasive throughout discussions and disagreements over skill mix in secondary care.

Thus, it is clear that, whether or not current methods for investigating working patterns on either a routine or evaluative basis are appropriate in principle, they are not seen to be appropriate by the frontline staff who are the essential form-fillers (and sometimes the research assistants). A number of institutions had discontinued using the proprietary systems because they were ‘inaccurate’ or did not provide suitable information for workforce planning. Given the investment in terms of both start up costs and staff time in these systems, it is urgent to understand why current routine data collection systems are inappropriate and how they could be improved. This is essentially a methodological problem prior to the development of appropriate routine data collection systems; and essential for developing staffing standards.

The lack of routine monitoring and evaluation in the service is also very striking; and needs exploration both in terms of attitudes and culture and in terms of developing appropriate methods and tools.

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Similarly, there is still no widely accepted method of measuring the quality of care. While this is perhaps appropriate in a research context focusing on different specialisms in different contexts, there is a need for a core module upon which everyone can agree. It may also be the case that current methods for assessing the impact of training have not been sufficiently broad to take into account both the time spent on the training itself and the possible leakage from the system.

When these problems are added to – perhaps unfounded - suspicions that many of the reforms have a cost-containment objective rather than being focused on better patient care, it is not surprising that the area generates more heat than light.

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Appendices

Appendix 1 Papers included in the literature review

Table 21 Descriptive summaries of included papers

Study	Keyword coding 1	Keyword coding 2	Summary description and/or main findings
#10335 Peruzzi <i>et al.</i> , 1995. A community hospital redesigns care.	HC REFORM/ RESTRUCTURING, SKILL MIX and ROLE ISSUES	skill mix; workforce; innovations; restructuring; outcomes; US	Article based upon the Albany Memorial Hospital's redesigned patient care services as NY State Workforce Demonstration Project. Components such as decentralisation of services, case management and relocation of work to new or expanded roles examined. Subsequent changes in skill mix associated with improved or unchanged quality indicators and satisfaction levels. Cost savings demonstrated. Outcomes justified time and energy of process. Article addresses three major aspects of the service redesign: planning; implementation and evaluation of an innovative patient care delivery system; changing role of nurse manager; evolution of nurse case manager. <i>Comment:</i> report of one hospital's experience of redesigning patient care, skill mix reforms etc. Need to consult paper for details of the redesign process. KEY PAPER.

Abbreviations commonly used in table: A&E = accident and emergency; ATN = appropriately trained nurse; CCA = critical care assistant; CCU = critical care unit; CM = certified midwife; CNM = certified nurse midwife; CNP = continence nurse practitioner; CNS = clinical nurse specialist; DGH = district general hospital; ENP = emergency nurse practitioner; FTE = full-time equivalent; HA = health authority; HR = human resources; LOS = length of stay; LPN = licensed practice nurse; LVN = licensed vocational nurse; MAE = medical administration errors; NA = nurse assistant; NLIU = nursing-led in-patient unit; NNP = neonatal nurse practitioner; ODP = operating department practitioner; OR = operating room; OT = occupational therapist; QoL = quality of life; PRHO = pre-registration house officer; RCT = randomised control trial; RN = registered nurse; UP = unlicensed practitioner

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#10383 Rothwell, 1994. The changing roles of hospital practitioners: how to determine the skill mix.	HC REFORM/ RESTRUCTURING and ROLE ISSUES	roles; workforce; restructuring; skill mix; US; NA	Short commentary from <i>Canadian Journal of Respiratory Therapy</i>
#8151 Lopopolo, 1997. The effect of hospital restructuring on the role of physical therapists in acute care.	HC REFORM/ RESTRUCTURING and ROLE ISSUES	delegation; interprof/disc; restructuring; roles; workforce; survey/study; US	<p>Purpose of study was to begin to identify how the organisational change in hospitals is altering the role of physical therapists in hospitals. Qualitative case study to identify the changing role of physical therapists. At least for the facility studies, the decentralisation of physical therapy services had a profound effect on patient care delivery and professional interaction of not only the therapists but also those with whom they work. Therapists have assumed greater and more demanding roles in the delivery of patient care while knowledge and information sharing have increased, and these changes have potential to benefit caregivers and patients. management skills have been needed to meet the needs of administrators for cost-effective delivery of care, the needs of nurses for effective and timely integration of services, the needs of patients for quality and continuity of care and the needs of physical therapists.</p> <p><i>Comment:</i> need to refer directly to article for details of role changes.</p>
#2914 Caple, 1996. Empowerment in the modern health service.	HC REFORM/ RESTRUCTURING	innovations; models; restructuring; workforce; UK	<p>Article uses the experience of the Northumbria Ambulance Service as a case study to argue for the empowerment of the workforce as key in health service management and 'entrepreneurialism'. Discusses innovative employee reward strategies, flexible working practices, personal development, empowerment and ownership and value for money. Describes evolution from an autocratic paramilitary management style to a light touch management approach where the individual and his/her achievement is recognised within a family culture.</p> <p><i>Comment:</i> another anecdotal report of one health service unit's change experience.</p>

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#2494 Brannon, 1996. Restructuring hospital nursing: reversing the trend toward a professional workforce.	HC REFORM/ RESTRUCTURING	restructuring; HCAs/unlicensed practitioners (UPs); nursing; workforce; teamwork; US	<p>Article reviews the shift from 'team nursing' with a stratified work force that included LPNs and nurses' aides to 'primary nursing' and the trend towards all RN staffing, and explains how this trend contributed to current efforts to reverse the process. Article then discusses current work redesign methods adapted from traditional industrial applications to destroy work jurisdictions and further rationalise hospital production through the downsizing of the professional work force and the creation of cross-trained workers in a new team-based management approach. Article concludes by discussing nursing's response to corporate-imposed work restructuring and the significance of these changes. Cost-containment has been principal interest of management in reorganising health care delivery on hospital wards despite espoused ideology of either professionalisation or quality improvement. earlier team nursing produced difficulties between RNs and non-professional workers, so if RNs now displaced and LPNs and NAs reintroduced with new UPs with less credentialing and experience, work problems and dissatisfaction may well undermine any intended cost savings and additionally have adverse effects on quality of patient care. An adequate staffing of RNs has become more important in care of hospitalised patients whose illness has become proportionately more severe across time.</p> <p><i>Comment:</i> article in the nature of an historical review of health service organisation in the US and the rationale/dynamics behind the different structural changes and significance of these. In 'debate' terms, favours caution before introducing too large a reliance on UPs etc, particularly if just to reduce costs. Argues need for a rich mix of skilled RNs. Good for context setting and clarification of the key issues.</p>
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#12914 Heard, 2001. Substitution of inpatient nursing- led units for acute services: evaluation of clinical outcomes of transfer to a nursing-led ward prior to full discharge to the community.	HC REFORM/ RESTRUCTURING	hand search; nursing; outcomes; costs; UK; survey/study	<p>Study examines intermediate care in an NLIU, a 19 bedded ward in a medium-sized DGH. Patients are referred from acute wards in same hospital. Patients' need for medical care must be stable and of low intensity; study aimed to: describe the patient population for the NLIU; the care processes; the impact of the NLIU on the use of medical/other therapy resources and evaluate cost-effectiveness of transfer to the NLIU. Study uses a mixture of methods including a RCT of clinical outcomes and observation of nursing care processes. Refer to study for details of methodology and outcome measures.</p> <p>For processes of care, study finds that on the NLIU the responsibility for discharging patients was shared between the primary nurse and the social worker. On a large majority of medical wards only the medical staff had authority to discharge patients. Care plans of patients in the treatment group had a rehab. focus and evidence of patient's involvement in the decision-making process. The quality of nursing care was found to be higher on the NLIU than on control wards. For multi-professional resources, the study finds that the nursing team on the NLIU has a higher proportion of senior qualified nursing staff than control wards. Numbers of junior qualified nurses were considerably lower. There was high use of agency staff on the NLIU, majority of whom were unqualified. There was comparable access to other disciplines on the NLIU. No significant difference was found in the overall therapy input between treatment and control patients although amounts of OT and social work per patient day is significantly lower on the NLIU. For effectiveness study finds no adverse effects associated with the NLIU. No significant differences in place of discharge, mortality during study and up to 180 days post discharge, incidence of complications or rates of readmission within 7, 28, 90 and 180 days post-discharge. No significant differences in functional independence and psychological well being but treatment group showed a trend of greater improvement in all psychometric outcome measures. treatment group showed a greater improvement in health-related distress ($p < 0.05$) than controls. Analyses to correct for time spent in hospital eliminates the single significant difference in outcome for the NHPD. Treatment group patients had a longer LOS ($p < 0.01$) leading to higher inpatient costs; some evidence of cost saving post discharge. Concludes that there is some evidence of the effectiveness of the NLIU for patient outcomes, but not necessarily efficiency in cost terms. NLIU care model worth pursuing for improvements in patient care although there are significant issues which need to be addressed implementing the model; factors impacting on hospital stay must be explored to determine whether the benefits to patients could be maintained with lower LOS. Costs, cost-savings and reduced opportunity costs assoc. with intermediate care should be considered in future research.</p> <p><i>Comment:</i> useful empirical research finding some evidence of the effectiveness of NLIU for patient outcomes.</p>
#12266 Sochalski <i>et al.</i> , 1997. Hospital	HC REFORM/ RESTRUCTURING	restructuring; skill mix; workforce;	Article describes the extent and nature of hospital restructuring across the US, Canada and Western Europe and assesses feasibility of international research on outcomes of restructuring. Finds that hospital systems internationally are undertaking very similar restructuring interventions, particularly ones aimed at reducing

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restructuring in the US, Canada and W. Europe. An outcomes research agenda.		UK; survey/study	labour expenses through work redesign. Nursing a prime target, resulting in changes in numbers and skill mix as well as fundamental reorganisation of clinical care at the inpatient level. Yet little evaluation of outcomes of such change. Concludes that restructuring of workforce and redesign of work in inpatient settings widespread and markedly similar across North America and Europe, warranting a systematic study of impact of processes on inpatient care on patient outcomes. <i>Comment:</i> useful paper examining hospital restructuring in US, Canada, and Western Europe, but is really setting a research (outcomes) agenda, rather than being an empirical study on outcomes.
#12267 Sochalski <i>et al.</i> , 1999. Nurse staffing and patient outcomes: evolution of an international study.	HC REFORM/ RESTRUCTURING	nursing; outcomes; restructuring; workforce; UK; survey/study	International study: US, Canada; England; Germany; Scotland. Study asks whether changes in the numbers of nurses and the practice environment in hospitals resulting from workforce restructuring have affected patient outcomes. Each site treated as an 'independent replication' of a common study design, with the goal of determining the strength and consistency with which the organisation of nursing care explains differences in patient outcomes across sites. No findings apparently yet available. <i>Comment:</i> important international study of nurse staffing and patient outcomes.
#3 Aas, 1997. Organisational change: decentralisation in hospitals.	HC REFORM/ RESTRUCTURING	restructuring	Defines and discusses process of decentralisation in hospitals and proposes a framework of four main points for analysis of decentralisation status: need for change; its starting point; decentralisation solutions; need for review before change is undertaken. Concludes that positive effects may be obtained but that to date, empirical investigations on impact of decentralisation in hospitals are few. <i>Comment:</i> short overview of process of change offering framework for analysis.
#4080 Drenkard, 2001. Team-based work re-design: the role of manager when you are not on the team.	HC REFORM/ RESTRUCTURING	management; restructuring; roles; teamwork; US	Examines the role of managers responsible for leading the implementation of changes. Article reviews the experiences of a multi-hospital non-profit health care organisation (Inova Health System, Virginia) after a 3 year system-wide redesign effort that was team-based. The organisation used methodology of large group interventions to include thousands of people in the redesign. Managers from every discipline involved. Need to engage health care staff to participate in shaping future work. <i>Comment:</i> Article includes details of the change management process and the role of the manager in this, but not explicitly relevant to UK and too detailed to summarise adequately.

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#4066 Doyal, 2000. Reshaping the NHS workforce.	HC REFORM/ RESTRUCTURING	multidisciplinary; restructuring; roles; service development; workforce; UK; NA	<p>Paper argues that necessary changes are constrained by professional structures from the past. Constraints described as: differences in styles of learning, in career patterns, in models of working, and in regulatory mechanisms; little or no movement of individuals between professions and no easier for a highly skilled nurse to become a doctor, for example, than it was 30 years ago. These structural problems need to be addressed. New mechanisms of workforce planning needed to develop integrated strategies for different occupational groups; need to rethink education and training, and a more integrated approach to planning and managing human resources in quality of care to be maintained.</p> <p><i>Comment:</i> short informative critique of problems and process with health care reform and hospital restructuring from UK perspective, looking at historical constraints, etc.</p>
#9333 Page, 2002. The role of practice development in modernising the NHS.	HC REFORM/ RESTRUCTURING	multidisciplinary; nursing; restructuring; roles; service development; teamwork; workforce; UK.	<p>Article addresses practice development, distinct from other change management activities, includes: the introduction of changes in practice; the support and development of practitioners, setting standards and quality improvement. Practice development focuses on the improvement of patient care; incorporates a range of approaches; takes place in real practice settings; underpinned by development and active engagement of practitioners; collaborative and interprofessional; evolutionary; transferable rather than generalisable. Draws on: quality improvement; evidence-based practice and innovation in practice. Practice development helps to address a range of priorities identified in the NHS modernisation agenda; by involving practitioners at all levels, practice development tackles inconsistencies, as at e.g. Newcastle upon Tyne NHS Trust in ref to subcutaneous drug administration > practitioner-led audit > development of comprehensive guidance in partnership with palliative care and acute pain nurses, medical and pharmacy colleagues.</p> <p><i>Comment:</i> Article uses research and theory sensitive to practice issues and gives further examples of projects in Newcastle. Emphasis on sharing good practice and benchmarking; tackles old-fashioned demarcations between staff and barriers between services.</p>

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#4198 Eccles, 1996. Using multi-skilling to develop flexible working practices in central support services.	HC REFORM/ RESTRUCTURING	models; multidisciplinary; workforce; UK	<p>St. Helier NHS Trust. Describes implementation of PFC with new 'customer-focused facilities designed to be a combination of multi-skilled, multi-disciplinary and work-based teams. Achieved at Sutton and Nelson Hospitals over a two-year period and progressed at St. Helier. Key feature was a customer services function which provided a 'one stop shop' for internal and external 'customers' and simplified access to a range of services. Redesign of services supported by a team of facilitators, training staff and a quality team (a business development team). Cultural transition involved moving away from demarcation lines and traditional hierarchies. Personal competencies were identified and all staff undertook a two-day personal development review programme, prior to establishment of new teams. Emphasis on training and development. Personal development plan highlights key training requirements (for individual and team). Training includes: job skills to national standards; interviewing skills; personnel policies; performance and peer appraisal; quality systems training; budgeting; team co-ordinator development train the trainer.</p> <p><i>Quantitative and Qualitative Evaluation:</i> management costs reduced by 23%; operating costs at Sutton Hospital reduced in excess of 12.5%; training costs increased – 1% of budget top-sliced to support this; overtime and sickness levels reduced by 2nd year, though fluctuated during transition; increased consumer satisfaction (particularly at Sutton); ISO 9000 European Quality accreditation achieved in nine service teams; customer service level agreements in place in eight service areas; customer focused care training (attitude and behaviour) widely recognised for its effectiveness. Accreditation to offer assessment for NVQ Level 3 in Customer Service; new uniforms to support new identities; working staff charter in place; unprecedented openness and spirit of co-operation now exists; annual quality achievement awards successful; achieved during a period when local pay still in the process of being established.</p> <p><i>Comment:</i> Useful small project/case study relating to experiences of hospital restructuring and the introduction of new model of service delivery, with cost savings demonstrated.</p>
#2648 Bryan <i>et al.</i> , 1998. Measuring and evaluating hospital restructuring efforts.	HC REFORM/ RESTRUCTURING	ICU; restructuring; roles; outcomes; US; survey/study.	<p>US study of critical care: 18m follow-up and extension to critical care process and role changes pivotal to ensuring continued quality, cost-effective and efficient care. Authors describe restructuring, including measurement and evaluation strategies within four CCUs in an acute care tertiary institution. Post structuring, quality of patient care was maintained and, in several categories, actually improved. 1) framework and measurement for medical-surgical units is valid and useful in guiding how they restructure services to increase efficiency and still protect patient and staff satisfaction as well as clinical quality. 2) framework and measurement accelerated implementation and evaluation of redesigning critical care.</p> <p><i>Comment:</i> There is a fair amount of detail in this article which cannot be readily summarised here; given its purview to the US, refer directly to article as deemed relevant.</p>

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#1742 Astley, 2000. Transforming allied health.	HC REFORM/ RESTRUCTURING	models; multidisciplinary; organisation; restructuring; service development.; teamwork. Australia	<p>1995 review of service delivery models and organisational structure at Women's and Children's Hospital, Adelaide. paper describes the change management process. Barriers to and facilitators of change are highlighted. Outcomes of the change process are described, including the new multidisciplinary team and programme-based organisational structure and culture.</p> <p>Headings are: Historical context: consumer input; strategy before structure; program and team identification; management structure; WCH endorsement; HR changes; environment; organisational culture; Experiences of barriers to change and recommendations for future change processes: professional territorialism; identity, environment; workload; inconsistent communication; Experiences of facilitators of change and recommendations for future change processes: catalysts; vision; staff participation; sustaining the momentum; champions; conflict can be an opportunity; open management style; profession-based development; communication; ongoing evaluation; non-negotiables; external facilitators; acknowledgement of allied health profession differences. Outcomes achieved and conclusions.</p> <p><i>Comment:</i> There is a fair amount of detail in this article which cannot be readily summarised here; given its purview to Australia, refer directly to article as deemed relevant.</p>
#11691 Thomas, 1998. The service development process: integrated planning for NHS trusts.	HC REFORM/ RESTRUCTURING and WORKFORCE ISSUES	service development; models; UK	<p>Article describes the service development process planning model which has evolved within the St. Helier NHS Trust to enhance service development, by making all of the central NHS Executive (NHSE) planning requirements into meaningful service delivery documents. It also integrates the trust's corporate statement of purpose, and its aims and objectives, with hitherto isolated planning events. Article also highlights importance of corporate intelligence and role of marketing as an aid to service development.</p> <p><i>Comment:</i> Paper examines service development/delivery, described from the perspective of one Trust. Contains much detail, particularly in terms of the different planning and implementation stages of the model described, which merits closer perusal, as it cannot be readily summarised.</p>

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#2181 Buchan, 2000. Health sector reform and human resources: lesson from the UK	HC REFORM/ RESTRUCTURING and WORKFORCE ISSUES	restructuring; skill mix; HRM; workforce; UK	<p>Objective of paper to assess the HR dimension of the NHS reforms in the UK and highlight lessons for health care systems. Impact of HR function of NHS reforms assessed by examining the central requirements of the HR function: to maintain effective staffing levels and skill mix; to establish appropriate employee relations policy and procedures; to be involved with pay determination. Paper concludes that the most significant changes which have occurred as a result of the NHS reforms have been in staffing changes and organisational culture, and the individual attitudes of NHS management. Changes can be characterised as a partially successful attempt to adopt private sector HR management techniques to meet the challenges of public sector reform.</p> <p>Paper is a good context setting summary of the NHS reforms in practice as they relate to HR and in particular to skill or grade mix which were undertaken to identify the most cost-effective level of staffing and mix of different grades or occupational groups. Increasing debate about the impact on the quality of care provided by some of skill mix changes initiated. Problems post-construction decentralisation excessive need for managerial and admin staff. Introduction of the HCA as generic support workers not linked to any one profession. Charts overall impact of these changes in terms of % change of different staff groups. Marked reduction in ancillary staff as result of contracting out. Nurses in training reclassified as supernumerary. Little attempt to conduct a proper evaluation of the cost-effectiveness of the cost-effectiveness of skill mix changes or evaluating broader impact on costs on costs and quality in terms of employee productivity and effectiveness of care. refers to Carr-Hill <i>et al.</i> 1992 and evidence of a direct relationship between grade mix and quality of care. i.e. lower the average mix the lower the quality of care. Erosion of data availability and quality a problem of health systems undergoing decentralisation. Describes research findings that managers looking to more effective staff deployment, skill mix alterations/substitutions as main source of cost savings. Discusses more ambitious trust strategies of reprofiling the workforce through e.g. patient-focused-care (PFC) delivered through multi-skilled care teams. Claimed that PFC will enable significant labour and admin. cost savings through changes in skill mix, working patterns and staffing levels. Changes not always initiated from a firm evidence-base.</p> <p><i>Comment:</i> Another good paper from Buchan critiquing health care reform and restructuring in the UK NHS. Lists key lessons to be learned, need to refer directly to paper under Conclusions for these.</p>
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#2707 Buerhaus and Needleman, 2000. Policy implications of research on nurse staffing and quality of patient care.	WORKFORCE ISSUES and HC REFORM/ RESTRUCTURING	nursing; outcomes; policy; restructuring; review; US.	<p>A comprehensive overview of nursing workforce studies and examines current efforts to investigate the relationship between hospital staff nursing and patient outcomes that are sensitive to nursing and discusses the implications for public and private policy making. <i>In sum:</i> evidence from several studies (though not all) indicates that higher levels of nurse staffing and greater proportions of RNs on staff are correlated with lower rates of mortality, complications following surgery and other potential adverse nurse-sensitive events. Nevertheless, the present state of knowledge, combined with increasing public attention to the causes and prevention of errors and adverse patient outcomes, makes the question of nurse staffing and hospital quality an increasingly important but understudied public policy issue. Although impact of hospital restructuring on nurses is generally well known, public policy making has not resulted in significant changes. The lack of substantial policy is attributed to insufficient empirical evidence linking changes in hospital nurse staffing to adverse patient outcomes. Even though new studies are providing a rapidly expanding body of knowledge, caution is needed using findings to support mandated hospital nurse staffing levels. The level of sophistication that would allow precise estimates of minimal staffing levels and ratios will not be achieved. Authors suggest areas for future research that would further knowledge and policy development in this area: clearer definition of the level of expected quality; relationship between outcomes to different staffing levels (i.e. unit-type level, ICU, med-surg, step-down), and measures of patient acuity or need for nursing interventions.</p> <p><i>Comment:</i> Paper offers a comprehensive overview of nursing workforce studies and examines current efforts to investigate the relationship between hospital staff nursing and patient outcomes that are sensitive to nursing and discusses the implications for public and private policy making. KEY PAPER, although with a US focus.</p>
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#2468 Bradley, 1999. Doing more with less in nursing work: a review of the literature.	WORKFORCE ISSUES and HC REFORM/ RESTRUCTURING	nursing; workforce; skill mix; roles; restructuring; HCAs/UP; outcomes; Australia; review	<p>Paper explores the literature on changes in nursing work. It examines the suggestion that changes in working practices are management responses to cost cutting imperatives. Nursing labour force issues such as staffing roles and staffing mix, the push for flexibility in the workforce and casualisation are discussed. Concludes that given the rise of casual work in the general Australian workforce, research needs to be conducted on the extent of casualisation of nursing, and the implications this may have for nursing practice, professional development and on the nursing market.</p> <p><i>Appropriate staffing and skill mix:</i> staffing numbers and skills mix used as management indicators of efficiencies, but a danger that such indices used to support claims of desired outcomes, when they cannot measure the qualitative aspects of many outcomes. An early 1990s review (Pearson 1992) comments that although literature argues both for and against the need for high proportions of RNs, not a great deal of evidence for against the argument. Central point of this review was that neither staffing numbers, nor mix of staff were in themselves sufficient to determine either the cost-effectiveness of care or the quality of care (re nursing home residents). Huge differences across States reported in empirical work in Australia, which, in addition to UK and US studies indicate that quality of care is influenced not only by the staff: dependency ratio, but also the RN/EN mix, and factors such as staff training, flexibility of care, policies and facilities in the location. Can conclude that education, motivational levels, leadership and staff deployment skills of directors of nursing are as important as staffing numbers or staffing mix or other such management indicators. Contentious issue in the skill mix literature re nature of nursing care, characterised by skilled intervention and personal care provided by a carer. Replacement of nurses by UPs a major concern. Management viewpoint is the need to identify: those nursing tasks which require a professional qualification, and to allow less or unqualified people to undertake more basic tasks if capable of doing so. Discusses review of different models of nursing care from the US, which concludes that questions of the effectiveness of UPs are so mixed and contradictory, there is no firm evidence one way or the other to support widely-held view in US that use of nurse-extendors is cost-effective.</p> <p>Also contentious – question of appropriate RN/EN ratio, and appropriate role of each category of nurse (in Australia, as role being phased out in UK). Confusion in literature over roles and relationships of nursing staff and also need for medical care and need for nursing care. Continues with discussion of nursing roles. and rise of nurse practitioners. Problems of casualisation of jobs in general and nursing in particular in Australia.</p> <p><i>Comment:</i> in places more relevant to Australia, but also contains useful comments on what literature finds from UK and US. Good short section on skills mix issues, summarised above.</p>
# 12903	WORKFORCE	hand search;	Full working report by the Audit Commission on ward staffing, reflecting recent changes in service

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Audit Commission, 2001. Ward Staffing	ISSUES	workforce; UK; review	<p>provision, including reduction in junior doctors' hours and changes in patterns of health care delivery, shortened lengths of stay for inpatients and increasing use of nurses in providing specialist care which have had an impact upon the way that wards are staffed. Data from almost all Trusts in England and Wales in 2000 to establish how much trusts spend on ward staffing and how differences can be explained; what evidence there is that resources can be used more efficiently and effectively in the delivery of patient care and whether the level of resources relate to clinical risk or quality of delivered care. Report structured around these three headings.</p> <p>Focus is on 'staffing' (as opposed to 'nursing') as it reflects the larger contribution to patient care of non-registered staff, including HCAs and clinical support workers who have replaced student nurses who are now largely supernumerary. Reviews effectiveness of permanent staff and outcomes of ward care as a whole. Comments on costs of bank and agency staff, but use, quality of work, costs and management arrangements is fully reviewed in the Audit Commission, 2001, <i>Brief Encounters</i>.</p> <p><i>Summary findings are:</i> some trusts spend substantially more on ward staffing than others even after allowing for specialty mix, ward size, London weighting and time spent on other duties; a few Trusts review the way their wards are staffed in a way that is both systematic and sensitive to patients' needs but the majority could learn from their example; many Trusts are making good use of the staff they have in post though some could improve this with better scheduling and management; outcome measures need to be adopted nationally to demonstrate any relationship between the quality of care and ward staffing resources; hospitals employ a significant number of specialist nurses but their impact on ward staffing and care is unclear and needs evaluating.</p> <p><i>Comment:</i> good, relevant and up-to-date review of workforce/ward staffing issues. KEY PAPER.</p>
#12905 Department of Health, 2000. The NHS Plan. A plan for investment, a plan for reform.	WORKFORCE ISSUES	hand search; workforce; policy; UK;	Document which sets out the policy context for workforce reform and restructuring in the NHS.

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#12904 Department of Health, 2002. HR in the NHS Plan: more staff working differently.	WORKFORCE ISSUES	hand search; HRM; workforce; policy; UK;	Report aims to build on the NHS Plan by setting out a comprehensive strategy for growing and developing the NHS workforce, including a number of outline action plans pointing to action needed to realise the strategy. Refers to next report 'Delivering HR in the HR Plan, setting out firm action plans for delivery. Discusses the NHS objective for a major expansion in staff numbers and a major redesign of jobs.; cites the skills escalator approach; modernising workforce planning and work of WDCs.
#6074 Hogan, 2001. Human resource management strategies for the retention of nurses.	WORKFORCE ISSUES	HRM; workforce; nursing; innovations; Australia	Article examines innovative human resource management strategies to promote the retention of nurses; Australian focus.
#2873 Cammarata, 2001. Paradigm gained.	WORKFORCE ISSUES	workforce; HRM; models; restructuring; NA; US	Article offers a model for staff allocation in care delivery called the proportional staffing quotient (PSQ). Need to refer directly to article for details. <i>Comment:</i> nothing to add to above.
#12901 Statistical Bulletin, 2002. NHS hospital and community health services non-medical staff in England: 1991-2001.	WORKFORCE ISSUES	hand search; UK; workforce	Provides useful data on the numbers of non-medical employees employed in NHS hospital and community health services in England from 1991-2001, allowing analyses of changes in numbers per grade employed over ten years etc.

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#12913 Yates, 2000. Patterns of work among hospital consultants.	WORKFORCE ISSUES	hand search; case mix; workforce; workload; UK; survey/study	<p>Study is of clinical and non-clinical workload of NHS hospital medical and surgical consultants and for clinical activity asks: do routine data sources identify real differences in workload? and to what extent are i) variations in surgical workload explained by case mix; ii) variations in medical workload explained by speciality mix; iii) variations in workload explained by resource provision; variations in inpatient workload explained by outpatient activity; is there evidence that, for consultant surgeons, operating time less than in previous years; what advice is currently available about workload and resource provision for consultants? For non-clinical activity: is there variation in activities: across specialties and can workload equity be assessed? is there variation within specialties and is there a degree of personal discretion? Is there variation in workload across different stages of the career path, what skills are needed to support the demands and when might any training be given most appropriately? Refer directly to study for details of methodology. Findings are too detailed to report in full, so only summary findings and conclusions reported here. There are large variations in hospital admissions between consultant firms. For general surgery firms, case mix does help explain differences in numbers of operations per year in the middle range of workloads, but does not explain the differences between the very highest and lowest workloads. For physicians, their specialty mix and consequent case mix must be taken into account when comparing clinical workloads. Not enough is known about the workload implications of different case mixes. There is little difference between physicians and general surgeons in their non clinical activities, the importance they give to them, and the average time they spend on them.</p> <p><i>Comment:</i> Of peripheral relevance to purview of review.</p>
#3442 Davis, 2002. Modern matrons make their mark.	WORKFORCE ISSUES	hand search; matrons; UK	<p>Article discusses the implementation of 'modern matrons', their role and their influence on the ward: already beginning to improve patient care and nurse representation.</p> <p><i>Comment:</i> fairly standard exemplar of the literature dealing with the introduction of modern matrons.</p>
#5789 Healy 2002. Thoroughly modern matrons.	WORKFORCE ISSUES	matrons; innovations; nursing; roles; service dvpt, NA; UK.	<p>Article describes the implementation of 'modern matrons' at Southampton University Hospitals Trust, by giving nurses bigger budgets and more responsibility.</p> <p><i>Comment:</i> another exemplar of the literature dealing with the introduction of modern matrons through a case report of this trust's experiences.</p>

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#5657 Hansed, 2002. Finding your form.	WORKFORCE ISSUES	restructuring; skill mix; workforce; UK; survey/study	<p>Traditional ward rota systems need to be changed if money to be saved and staff morale improved. Many trusts have inflexible arrangements which do not take account of patient dependency and skill mix. Trusts should consider employing more part-time staff and introducing more flexible working for ward clerks. Little or no information available at a national level to assist trusts to evaluate, review and re-balance ward staffing establishments on formula-based methods. Computer staff planning systems often regarded as out of date and time consuming and often over-estimate the level of staff required. Need for real-time rostering of flexible design reflective of patient activity throughout week. Need to share staff with other wards when unpredictable demand outstrips planned capacity. Majority of wards still operate a traditional three-shift pattern which are often unable to meet needs of day-to-day ward activity and not flexible enough to cope with unexpected increases in demand. Timing of shifts also inflexible for staff needs (g, carers, parents etc). Little routine monitoring of patient dependencies; reduced LOS and day surgery increases mean throughput rising rapidly. New service developments being introduced at ward level not being supported by increases in ward establishments. Lack of correlation between shift patterns and patient dependencies which is restricting the ability to deploy staff effectively and efficiently.. Many ward rotas don't take account of elective admission patterns, operating days or emergency-on-take arrangements.</p> <p>Trusts need to recruit more part-time staff to maximise flexibility and reduce dependency on expensive agency staff. Need for IT systems to be developed to help nurse managers roster staff more efficiently. Allocation of weekend work not fairly distributed across all ward staff. Employment of bank/agency staff to cover weekend gap can cause resentment and can result in trust staff leaving to work for agencies for better pay and conditions. Problems with increasing recruitment of international staff, who may require additional monitoring. Ward clerks contracted to work 9-5 Mon – Fri does not meet needs of wards. Trusts need to extend and redesign the roles of ward clerks to provide cover during weekends and evenings to employ nurses more effectively, as at present, vast amounts of nurses' time is adsorbed in admin. work. Management techniques need to be brought up to date.</p> <p><i>Comment:</i> : Good, up-to-date study of workforce issues, service planning and delivery, staff rotas, etc. based upon a survey of UK trusts. KEY PAPER</p>
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#5945 Robinson Hickman and Creighton-Zollar, 1998. Diverse self-directed work teams: developing strategic initiatives for 21st century organisations.	WORKFORCE ISSUES	collaboration; HRM; models; teamwork; multidisciplinary; training; workforce. US	Article proposes strategic planning and training initiatives that human resource managers and others may use to facilitate the development of diverse self-directed work teams. The proposed approaches are based on an evaluation of collaborative processes among college level group members from diverse backgrounds. Insights gained from the performance of these groups have practical implications for effective functioning of diverse self-directed teams in the workforce.
#2184 Buchan, 2002. Rallying the troops.	WORKFORCE ISSUES	restructuring; roles; skill mix; workforce; UK	<p>Skilled staff need motivation and a superior career structure.</p> <p><i>Key points:</i> The government's plans for the NHS will not be achieved simply through meeting its targets for staffing; more attention should be given to retention and a fairer pay system; the introduction of new roles and skill mix will be the biggest test of the human resources agenda; success is more likely to come from developing the roles of current health professionals than from introducing new types of workers.</p> <p><i>Comment:</i> This is an informed commentary rather than a survey, study or review, although representing one of the group of related papers published by this author on these issues.</p>
#8648 Moore, 2002. The staffing of the operating theatre – how far have we come since Bevan?	WORKFORCE ISSUES	HCA's/UP; nursing; workforce; skill mix; ORs NA; UK.	<p>Article based on work undertaken as part of a project commissioned by the N and E, and W Yorkshire WDC to examine the future requirements for staffing, education and training for all levels of operating department practice (both NHS and independent organisations) in N, E and W Yorks. Current figures for the region compared with data in Bevan report of 1989. Findings show that although progress has been made, still more required to provide the flexible, fully skilled workforce that today's modern operating departments require. Article examines progress service has made in training and developing the operating department workforce in last 12 years.</p> <p><i>Comment:</i> Essentially duplicates #8645 also by Moore: Changing the workforce. Contains detailed workforce statistics for the region.</p>

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#3109 Chant, 1998. A confusion of roles: manpower in the NHS.	WORKFORCE ISSUES	restructuring, roles, skill mix, workforce, UK	<p>The NHS urgently needs to address its manpower planning, particularly in respect of doctors and nurses. Discusses problems experienced with present changing roles of nurses – particularly since advent of HCAs and doctors is respect of inappropriate or inadequate training, and the proposed Calman Reformation, with everyone expected to specialise, no one willing to do menial general surgical work, and simpler work delegated to clinical assistants, by DGH surgeons in smaller community hospitals. Has a devastating effect on medical students and junior hospital doctors who may not see an appendectomy or herniorrhaphy from one week to the next. Case-mix that nurses and doctors trained in is so uneven between hospitals that complete coverage of the totality of medicine, surgery or general practice is only achievable by ever more frenetic junior doctor rotations. Discusses confusion in the skill mix. and recommends asking: i) what categories of staffing do we have? ii) how many of each? iii) what skills available among them? iv) how good are they at doing it? v) how flexible are they? vi) how easy is it to transfer individual skills? vii) what would their trade union say? Need for a workforce that is appropriately skilled, able to respond to change, has a stable core (non-rotating), and is capable of developing skills and, if necessary, specialising. Discusses own designer doctor – the stem doctor – who was an amalgam of staff nurse and houseman, and to staff at all levels with basic doctors capable of delivering managed care after a considerably shorter training than the present general practitioner, with a broad training in medicine and surgery, but limited prescribing rights. From this initial stem doctor, all doctors, nurses and physiotherapists would pass, trainees branching out into specialities accordingly. In rush to train specialists, staffing structure overlooked.</p> <p><i>Comment:</i> useful critique of the current workforce restructuring situation in the NHS, offering considered alternatives.</p>
#2241 Burcham, 1998. Staffing solutions.	WORKFORCE ISSUES and ROLE ISSUES	innovations; models; restructuring; workforce; US; NA.	<p>Argues that new staffing models are essential In today's changing health care environment. Outlines innovative roles for (rehab) therapist, office staff and therapist extenders. Discusses staffing models and acute care and outpatient staffing formularies as in: 'analyse the top 20 diagnosis-related groups treated by therapy, and establish the patient average LOS and the number of cases for each DRG', together with some basic 'assumptions' e.g., 40 new cases per therapist or two evaluations a day and ten average patient visits etc: . plus predicting visit volume from a health plan contract, and work flow considerations.</p> <p><i>Comment:</i> Refer to paper directly for details. Hard to tell whether these are actual 'working' i.e. tried and tested models, or simply recommendations. US paper.</p>

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#14377 NHS Modernisation Agency, 2003.	WORKFORCE ISSUES and ROLE ISSUES	hand search; workforce; roles; UK	Report on Phase 1 of the Modernisation Agency, the Changing Workforce Programme and Pilot Sites.
#92 Audit Commission, 1995. The doctors' tale.	WORKFORCE ISSUES and SKILL MIX	skill mix; workforce; UK; survey/study	<p>Full working report by the Audit Commission on hospital medical staffing, the organisation and working practices of doctors in acute hospitals based on a survey carried out at various sites across England and Wales. Chapter 2 is on Skill Mix and Deployment and comment upon the then status-quo, with recommendations to improve service and working conditions, e.g.: 'a more systematic approach to skill mix and deployment is needed with proper written job descriptions and clearer responsibilities and guidelines on who should do what. More flexibility in the allocation of doctors' hours needed, the number of tiers in on-call rotas, the potential for shift working, the scope of emergency cover across the specialties and the nature of employment opportunities..... ' vital that the availability, grades and skills of doctors are properly and explicitly matched to patients' needs and to medical training requirements, while maintaining safe levels of staffing..... a number of problems need to be overcome, many of which have their roots in long-standing working practices, ' and ' the boundaries between the roles of doctors and those of other professions involved in patient care are often not clear, and systems for allocating tasks between different grades of doctors are lacking. This is particularly true for doctors in the most junior grade. Offers a range of exemplars upon deployment, working practice and role substitution, and comments upon the variation between hospitals in terms of how tasks divided between junior doctors and nurses and other professional groups.</p> <p><i>Comment:</i> a useful and key report in some ways, although also superseded by more recent studies and NHS developments .</p>
#12922. Needleman <i>et al.</i> 2002. Nurse- staffing levels and the quality of care in hospitals.	WORKFORCE ISSUES and SKILL MIX	hand search; nursing; outcomes; workforce; US; survey/study	<p>Study aims to determine if lower levels of staffing by nurses at hospitals are associated with adverse outcomes (increased risk of complications or death). Admin data for 799 hospitals for 1997 in 11 states. Mean no. of hours per patient day was 11.4, of which 7.8 provided by RNs, 1.2 by LPNs and 2.4 by nurses' aides. Statistical findings reported, see study for details. Concludes that a higher proportion of hours of nursing care provided by RNs and a greater no. of hours of care by RNs per day associated with better care for hospitalised patients.</p> <p><i>Comment:</i> KEY PAPER, for outcomes, although study is from US acute care setting.</p>

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#10804 Rapson and Halliday, 2002. Safety in numbers.	WORKFORCE ISSUES and SKILL MIX	workforce issues; workload; models; UK; survey/study	<p>Short report from Bedford Hospital Trust on use of a computerised model (quality pointers tool) to assess a variety of aspects of care for each shift, leading to appointment of additional nursing staff. Review found a correlation between low staffing and a high number of clinical incidents. Results have led to changes in practice and action to tackle sickness absence.</p> <p>A ward profile was devised to examine each area in terms of overall level of care: ward routine; staff deployment; success in completing paperwork; stock ordering; supervision and teaching; care planning and assessment; and communication with patients. Profile also includes health and safety issues; clinical incidents and risks; number of hospital acquired pressure sores; staffing changes complaints and use of bank agency nurses. Each ward entered on a rolling eight-week programme, where workload and quality are measured. A total of 10.5 WTE nurses appointed as a result of the review. HR tackling sickness absence and senior nurses' study leave being reduced in wards with high absence levels.</p> <p>The development of measurable criteria applied in a systematic way, to address ward and departmental staffing has benefited the management of these issues as well as patient care.</p> <p><i>Comment:</i> useful small report on one hospital's model to improve quality of care through evaluation and staffing changes.</p>
#12923 Aiken, <i>et al.</i> 2002. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction.	WORKFORCE ISSUES and SKILL MIX	hand search; nursing; outcomes; workforce; US; survey/study	<p>Study aims to determine the association between patient-to-nurse ratio and patient mortality, failure-to-rescue among surgical patients and factors related to nurse retention, with cross-sectional analyses of linked data from 10184 staff nurses surveyed and admin data from 168 non-federal adult general hospitals IN PA, between 1998-1999 (general, orthopaedic, vascular surgery patients).</p> <p>Risk-adjusted patient mortality and failure-to-rescue within 30 days of admission, and nurse reported job dissatisfaction and job-related burnout. After adjusting for patient and hospital characteristics, each additional patient was associated with a 7% increase in the likelihood of dying within 30 days of admission and a 7% increase in the odds of failure-to-rescue. After adjusting for nurse and hospital characteristics, each additional patient per nurse assoc. with a 23% increase in the odds of burnout and a 15% increase in the odds of job dissatisfaction. Authors conclude that in hospitals with high patient-to-nurse ratios, surgical patients experience higher risk-adjusted 30 day mortality and failure-to-rescue rates, and nurses more likely to experience burnout and job dissatisfaction.</p> <p><i>Comment:</i> As with 12985 above, KEY PAPER, for outcomes, although study is from US acute care setting.</p>

Skill mix in secondary care

#2180 Buchan, 2000. Planning for change: developing a policy framework for nursing labour markets.	WORKFORCE ISSUES and SKILL MIX	nursing; workforce; skill mix; restructuring; policy; UK; review	<p>Article examines key aspects of change in European nursing labour markets and highlights an integrated policy framework intended to improve nurse recruitment, retention and utilisation in European health care. Report argues that it is appropriate to regard staffing in general and nurses in particular, as part of the solution to improving quality, access and cost of care. Major elements in nurse workforce planning are discussed, with need for planning to be integrated with service delivery. A policy-based framework for sustained improvement is presented based on five areas of action: to improve 'conventional' recruitment; improve recruitment from 'non-conventional' sources; identify and apply incentives to improve staff retention and motivation; improve staff deployment; and improve utilisation/skill mix. Suggests that one possible solution to improve staff deployment would be to give nurses in a work environment responsibility to work with managers to identify best working pattern that fits local needs, self-scheduling that could raise job satisfaction and improve productivity; Also more effective use of part-time staff in 'career' posts.</p> <p>For improved utilisation/skill mix, says that there are few studies examining cost/quality implications of replacing qualified nurses with less qualified HCAs/UPs, many studies being single-site before/after studies. Some studies report cost and quality improvements after introduction of HCAs, while others suggest that scope for real cost savings may be more apparent than real. Differences in staffing patterns, roles and mixes, a lower level of trade union activity in USA, and differences in organisational culture limit scope for transferability of US study results to the European context; many of studies are also methodologically weak, highlighting need for further research in the European context for informed decision making on skill mix.</p> <p>Then discusses studies of sounder methodology (including RCTs) examining skill substitution and development of alternative models of care delivery based on nursing/midwifery staff rather than doctors. Evidence from several of these (mainly US) highlighting scope for increasing role and deployment of clinical nurse specialists, nurse practitioners, clinical nurse midwives and nurse anaesthetists, while maintaining or reducing costs and improving care outcomes. Cites Richardson <i>et al.</i> 1998: 25-70% of doctors' tasks which could be undertaken by nurses or other professionals). Clear that determining ideal staff mix not just about cost and cheapest option. but about assessing context of care and deploying most cost-effective mix to deliver care to a defined standard.. Need to ensure that nurses' skills are continuously updated and enhanced to meet changing requirements of health care, with support for access to continuous professional development.</p> <p><i>Comment:</i> useful review and policy-setting article with focus on European health care sector.</p>
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Skill mix in secondary care

#2686 Buchan, 2002. Nursing shortages and evidence-based interventions: a case study from Scotland.	SKILL MIX and WORKFORCE ISSUES	nursing; service development; skill mix; workforce; UK; survey/study; NA	<p>Key aspects of change in the labour market for nurses in Scotland are examined, and an integrated policy framework to improve nurse recruitment, retention and utilisation is outlined. To provide an overview of the dynamics of the nursing labour market and draw some more general messages from the evidence base on the effectiveness of interventions to improve recruitment and retention of nursing staff. 1) Key trends in the Scottish nursing labour market; 2) summarises issues related to planning and nursing shortages; 3) reviews the main potential interventions to address recruitment and retention difficulties. Evidence of a 'tightening' in the Scottish nursing labour market (refer to article for details as required). Five areas of policy-based framework interventions for sustained improvement examined: i) <i>integrating the planning of the healthcare workforce</i>; recommends building on existing examples e.g. involving employers in national-level nurse-workforce planning, an annual system using a bottom-up planning involving all health service employers and attempts a whole system perspective, by factoring in estimates of future demand for private sector nursing. ii) <i>improving recruitment</i>; iii) <i>incentives to improve retention</i>; iv) improving staff deployment; interventions to match peaks and troughs, using effective rota systems and evaluating benefits of different working patterns. One solution: give nurses the responsibility to work with their managers to identify the working pattern that best fits local needs, to raise job satisfaction and improve productivity; role of part-time staff by not marginalising experienced staff to non-career posts; employment of nurses on annualised hours contracts meaning that the actual number of hours worked per week will vary depending on workload; information system to review patterns of activity and variations in workload a prerequisite for effective deployment of staff, supports use of judgement to make decisions on daily staffing levels; v) <i>improving utilisation/skill mix</i>. Evidence base here is limited, and majority from US. Some studies report cost and quality improvements after introducing HCAs, but others have not reported improvements, arguing decreased quality of care and increases in other costs such as on-call, sick leave and overtime, higher workload for RNs and a higher turnover or absence rate. Review of research on skill substitution and development of alternative delivery models using new roles for nurses/midwives rather than doctors generally more positive and suggests scope for maintaining/improving quality of care while maintaining/reducing costs by increasing role and deployment of CNSs, NPs and clinical nurse midwives. Evidence of whole organisation restructuring along patient-focused lines limited and not wholly positive. Need to assess context of care and deploy most cost-effective mix to deliver care to defined standard. Education sector/training providers may be a constraint: capacity to respond to demands for changing roles etc, and constraints of pay and employment career/structure conditions of health workers. Priority to improve current approach to identifying, evaluating and networking 'best practice'. Action must be evidence-based, developed through partnership working and co-ordinated.</p> <p><i>Comment:</i> although this study/review is principally upon workforce, recruitment and retention issues, it contains important and useful information on issues of skill mix and improved utilisation etc.</p>
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Skill mix in secondary care

#2182 Buchan <i>et al.</i> 2001. If changing skill mix is the answer, what is the question?	SKILL MIX	restructuring; review; skill mix; workforce; UK	<p>Aim is to examine the context in which skill mix is identified as a potential solution to health service staffing and resourcing problems. Paper discusses what is meant by skill mix, provides a typology of the different approaches to assessing skill mix and examines, through case studies, the contextual, political, social and economic factors that play a part in determining skill mix. These factors are examined in relation to three factors: drivers for examining skill mix; impact of contextual constraints and effects of varying managerial control. Case studies from Costa Rica, Finland, Mexico, UK and USA used to explore the reality of assessing skills in different contexts and health care settings. Context can have a significant effect on the ability of health service managers to assess and change skill mix. The key determinant is the extent to which these factors are in the locus of control of management nationally, regionally, or locally within different countries.</p> <p>Need to link any skill mix review with other initiatives and organisational developments. Organisations have to adopt a pragmatic approach that takes account of the day to day realities of their priorities and resources. Although not a panacea, changing skill mix can have a role in improving organisational effectiveness and quality of care, but will always be a process for achieving change. Therefore any organisation looking to implement skill mix changes should consider: assessing the need for change; identifying the opportunities for, and barrier to, change; planning for change; and making change happen. The local managerial span of control and degree of organisational flexibility will be major factors in determining the likely impact of any attempts to change skill mix.</p> <p><i>Comment:</i> useful paper examining some of the operational dynamics of skill mix changes in health care settings.</p>
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Skill mix in secondary care

#8255	SKILL MIX	skill mix; outcomes; UK; review; NA	<p>A comprehensive literature review undertaken to explore relationship between skill substitution and quality of care. Three assumptions identified, which are examined critically: 1) Rich skill mix of mostly qualified nurses is often an ineffective and inefficient way of providing health care. During early 1990s when nos. of unqualified staff in the UK increased, the no. of qualified staff decreased, and a decrease in nos. of nurses being trained, but a contemporaneous increase in health care productivity, with the numbers of patients treated between 1981 and 1993 increasing from 15.2/1000 to 31.1/1000 and 3m more treatments. Article urges caution however. <i>In sum</i>: a no. of studies suggesting that rich skill mix of mostly qualified staff can lead to an increase in costs, an increase in non-nursing duties, a decrease in direct patient care and no change in quality of patient welfare. If managers accept these findings they could legitimately use the available research to reduce the numbers of qualified staff.</p> <p>2) Research which appears to indicate that a skill mix of mostly unqualified staff is an inefficient and ineffective approach to health care provision. May lead to nurses spending less time in direct patient care and more on supervision, teaching and directing unqualified staff. Therefore increasing nos. of unqualified staff could ultimately lead to low productivity of all staff and higher costs as a result. Problems of staff substitution and morale and effect on quality of patient care. In British health care there is a trend where skilled staff are being replaced by increasing numbers of unskilled and more semi-skilled staff. <i>In sum</i>: several research studies suggest the use of more unqualified staff leads to increased staff absenteeism, increased sick time, increased costs, reduced morale, reduced staff satisfaction and reduced quality of care.</p> <p>3) A plethora of research findings suggesting that the most effective and efficient way to provide health care lies in a rich skill mix - the employment of a high numbers of qualified staff, but many different evaluative criteria used. Patient surveys point to nurses being the most helpful professional group and that rich skill mixes of qualified staff led to high levels of patient satisfaction. Productivity findings whereby cost of employing more qualified staff offset by increase in productivity, by up to 210% in one study finding. Other findings, that a higher proportion of registered nurses were more productive than a poorer skill mix of qualified and unqualified nurses. Qualified staff considered more effective; that RNs in direct contact with patients more likely to deal with a patient's total needs; that a rich skill mix of qualified staff allows each nurse to function in a full professional role, with more time in direct patient care and less in supervision. Other studies have identified direct cost savings of employing a rich skill mix of qualified staff (see review for details).</p>
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Skill mix in secondary care

#8255			<p>Research findings of links between high quality of care and high qualified staff ratios (cites Carr-Hill '92). US Magnet hospitals have rich skill mixes and favourable nurse staffing levels. On average, RNs were 67-97% of total nursing personnel. Evidence (9 recent studies) that high numbers of qualified staff on a unit positively correlated with shorter LOS, e.g. by average of 1.1 days earlier or, for low-birth weight babies, 11.2 days. Other studies show that the higher the % of RNs, the lower the patient mortality rates. <i>In sum</i>: many patient-centred factors which appear positively correlated with a rich skill mix of qualified staff, incl.: reduced LOS, reduced mortality, reduced costs, reduced complications, increased patient satisfaction, increased recovery rates, increased QoL and increased patient knowledge/compliance. Also: increased productivity, reduced staff absenteeism, reduced staff sickness, reduced staff turnover, reduced overtime and reduced costs. Limitations of the different studies are addressed, e.g., the applicability of US studies to the UK; disparity of methodologies employed; small samples, or non-representativeness sampling techniques; sensitivity, appropriateness, reliability and validity of instruments used. <i>Summary/Conclusion</i>: there seem sufficient studies to support the retention of high numbers of qualified nurses, although few are of sufficient rigour for lobbying purposes. Need for high quality replicative research and practitioners must get involved in skill mix reviews and prove their effectiveness and efficiency in the myriad new health service roles.</p> <p><i>Comment</i>: This is an important review exploring the relationship between skill substitution and the quality of care; it includes many earlier studies up to 1995. KEY PAPER</p>
#8255 McKenna, 1995. Cont...			
#6854	SKILL MIX	restructuring; skill mix; workforce; outcomes; UK; review	<p>Paper aims to outline the economic issues in the area of doctor/nurse skill mix and the problems of obtaining correct solutions from the perspective of efficiency. Paper written from perspective of primary care, but equally relevant to skill mix in secondary care sector. Offers a pragmatic framework which can facilitate decisions in this area.</p> <p>Concludes that there is a developing literature to suggest that, in some areas, substituting nurses for doctors gives equal or better health outcomes. However, there remains little evidence of cost-effectiveness at a time when skill mix changes are being introduced in an effort to increase health service efficiency. Argues that, in many cases, the evidence base will not be accessible to enable an exact optimisation of skills. Pragmatic approach needed.</p> <p><i>Comment</i>: Although this paper is written largely from the perspective of primary care, it offers important insights which are equally relevant to skill mix secondary care.</p>

Skill mix in secondary care

#11008 Richardson, 1999. Identifying, evaluating and implementing cost- effective skill mix.	SKILL MIX	skill mix; workforce; UK; survey/study	<p>Study finds that the (opportunity) cost implications of changes in NHS skill mix are rarely evaluated adequately. The impact of releasing professionals' time has not been estimated and therefore determining whether changes are cost effective is difficult. Concludes that economic evaluation has been under-utilised in studies of skill mix. If economic evaluation demonstrates that skill mix changes reduce cost and improve or maintain outcomes, this is strong evidence that these changes should be implemented. Incentives may be required to attract the necessary personnel. This in itself may influence the cost of changing the skill mix and therefore the situation should be monitored as both costs and effectiveness can alter over time.</p> <p><i>Comment:</i> useful small study offering a cautionary note upon instituting skill mix changes without adequate (economic) evaluation.</p>
#5390 Grimshaw, 1999. Changes in skills- mix and pay determination among the nursing workforce in the UK.	SKILL MIX	HCA's/UP; nursing; skill mix; UK; survey/study	<p>Article gives background historic/context for study and discusses pay scales etc. Recruitment of HCAs may increase wage inequality among nurses and greater managerial autonomy assoc. with hiring HCAs on local pay scales and also, may increase opportunities for managers to reassess traditional demarcations between qualified and unqualified nursing staff and seek cost reductions through reducing the proportion of qualified staff employed.</p> <p>Comparison of the change in composition between two trusts in study between 1990 and 1995 reveals a major difference in employment strategy around skills-mix between them, with widely differing ratios of qualified to unqualified nursing staff (A: from 2.7 to 2.0; B from 3.3 to 3.5).</p> <p>Case study evidence points to the potential for a substantial lowering of entry rates in unqualified nursing positions and a dilution of skills-mix of qualified and unqualified nursing staff. Trust A one of a handful of trusts where local pay determination for HCAs extended to the majority of qualified nursing staff; managers at Trust B keen to use the design of HCA pay scales as a pilot experiment for future extension of local pay to all nursing staff. remains a continuing debate around benefits of local flexibility agreements as supplements to, or substitutes for, national terms and conditions, and, as such, there remain a number of lessons to be learned from the wider implications of recruitment of HCAs on local pay scales. If Trust A serves as a model for future NHS employment strategies it seems that national cost-cutting strategy of managing trusts on a 'low-free-bed-basis' soon promises to be complemented by a personnel strategy of providing health services according to a 'low-free-skilled-nurse-basis'.</p> <p><i>Comment:</i> A comparison of the change in skill mix composition between two trusts, offering a cautionary note on skill mix changes, HCA for nurse substitution, and wage issues.</p>

Skill mix in secondary care

#11007 Richardson <i>et al.</i> , 1998. Skill mix changes: substitution or service development?	SKILL MIX	policy; skill mix; workforce; UK; review	<p>An extensive review of published studies where doctors were replaced by other health professions demonstrates considerable scope for alterations in skill mix. In health service world-wide there is a policy focus which emphasises the substitution of nurses in particular for doctors. This substitution may not, however, be 'real' and increased roles for non-physician personnel may result in service development/enhancement rather than labour substitution. Further study of skill mix changes and whether non-physician personnel are being used as substitutes or complements for doctors is required urgently.</p> <p>13 studies measured effectiveness of substitution, but mainly of primary care. Review summarises these. One RCT evaluating doctor-nurse substitution in Ontario (1971-72) estimated that 67% of cases could be managed by nurses with no detrimental effect on patients' health outcomes. US cohort study found similar results to these. Majority of studies concluded that the potential level of substitution of task between doctors and other health professionals was in range of 25-70%, which corresponds with more recent estimates from the US of the potential for delegation in the anaesthesia department. From a sample of 358 anaesthetic, around 70% could have been managed without medical supervision. One study reports that 30-65% of anaesthetics given to patients in the US administered by a nurse anaesthetist. Audit Commission in UK has recommended the use of pilot schemes evaluating such skill mix changes.</p> <p><i>Comment:</i> An extensive and important review of published studies where doctors were replaced by other health professions which finds considerable scope for alterations in skill mix. Discusses cost-effectiveness of doctor-nurse substitution and offers recommendations for further research.</p>
#5725 Hassell <i>et al.</i> , 2002. The complexities of skill mix in community pharmacy.	SKILL MIX	skill mix; community; pharm; UK	<p>This seems to be an extremely good article on the question of skill mix and pharmacy, but is about community, so may be irrelevant. However, a brief glance through recommended in case there are any issues of relevance or transferability.</p>

Skill mix in secondary care

#1185 Banham and Connelly, 2002. Skill mix, doctors and nurses: substitution or diversification?	SKILL MIX	skill mix; restructuring; workforce; policy; UK; review	<p>Article surveys the current arguments for and against modifying the work of doctors and nurses by placing the main viewpoints – substitution and diversification – within the policy background, particularly of the UK. Forces for modification discussed: cost-effectiveness, professional development, quality improvement and pragmatic management and how each provides a standpoint for the evaluation of the issues. The evidence base for doctor-nurse substitution is fragmented, and therefore policy makers and managers should consider skill mix changes only when they are clear about: purpose, evidence base, acceptable risks, accountability and quality assurance. Doctor-nurse substitution is not necessarily cost-effective, nor is it unfailingly a gain in nurse professionalism or in quality of care. Of the management perspectives available – advocacy, scepticism or pragmatism – the current evidence and policy base favours pragmatism over evaluations of the appropriateness of a general policy.</p> <p>Cites the Wanless 2002 report that nurse practitioners take on 20% of work currently done by doctors: the Wanless workload model assumes a transformation rate of 1.5 nurse practitioners substituting for one doctor. The resultant shortage of nurses could then be filled by HCAs.</p> <p>Present economic arguments for substitution ‘not robust’ (cites Richardson and Maynard, 2002).</p> <p>Concludes that ‘the way forward’ is through defined roles held by professionals flexible enough to learn from each other and adapt their attitudes to optimise patient care, with patient experience as the best outcome measure for effectiveness. The present evidence does not make an overwhelming case for change, with change driven by the ‘New Deal’ for junior doctors and expected shortfall of doctors in the UK.</p> <p><i>Comment:</i> this is a good review of the main issues surrounding the substitution debate; the section on ‘Effectiveness’ summarises the results of some studies and is worth reading. Some of this review is about primary care.</p>
#6556 Johnson, 1998. Improving nurse satisfaction with Skill-Mix Changes.	SKILL MIX	skill mix; HCAs/UP; restructuring; nursing	<p>Paper details five strategies to increase satisfaction of nurses with current skill-mix changes; these are: i) helping nurses decrease their concern about risk; ii) focus on future vision; iii) reach an effective balance of professional and non-professional staff, iv) identify the role of the professional nurse apart from the HCA and v) focus on patient outcomes and the goal of maintaining quality of care.</p> <p><i>Comment:</i> useful short paper on approaches to introducing skill mix changes.</p>

Skill mix in secondary care

#2685 Buchan, 2002. Skill mix in the health care workforce: reviewing the evidence	SKILL MIX	HCA/UP; nursing; restructuring; roles; skill mix; workforce; review	<p>Paper discusses reasons for skill mix being import. for health systems. Examines evidence base, summarises main findings from literature review and highlights evidence on skill mix that is available to inform health system managers, health professionals, health policy makers and other stake holders. Many published studies are merely descriptive accounts or have methodological weaknesses. With few exceptions, the published analytical studies undertaken in the US, and findings may not be relevant to other health systems. Results from even the most rigorous of studies cannot necessarily be applied to different setting. This reflects basis on which skill mix should be examined - identifying the care needs of a specific patient population and using these to determine the required skills of staff. Therefore not possible to prescribe in detail a 'universal' ideal mix of health personnel. With these limitations in mind, the paper examines two main areas in which investigating current evidence can make a significant contribution to a better understanding of skill mix. For the mix of nursing staff, evidence suggests that the increased use of less qualified staff will not be effective in all situations, although in some cases increased use of care assistants has led to greater organisational effectiveness. Evidence on the doctor-nurse overlap indicates that there is an unrealised scope in many systems for extending the use of nursing staff. The effectiveness of different skill mixes across groups of health workers and professions, and the assoc. issue of developing new roles remain relatively unexplored.</p> <p><i>Comment:</i> this is an excellent review, being both relevant and very up-to-date. Needs to be referred to in full as very detailed. KEY PAPER</p>
#4751 Furlong and Ward, 1997. Assessing patient dependency and staff skill mix.	SKILL MIX	skill mix; models; UK; survey/study	<p>An assessment tool was developed to measure patient dependency and staff skill mix in a child psychiatry inpatient unit. The authors discuss the results of a three-month pilot implementation. The implications for practice include adjustments in staff duty rotas, allocation of skill mix and the systematic assessment of patient dependency before inpatient admission.</p> <p><i>Comment:</i> A KEY PAPER presenting and discussing a formulae for measuring patient dependency and staff skill mix. Refer to article for details.</p>

Skill mix in secondary care

#11165 Smith and Long, 2002. Confusing rhetoric with reality: achieving a balanced skill mix of nurses working with children.	SKILL MIX	skill mix; nursing; models; NA;UK; survey/study	<p>Reviews option for a separate registration in children's nursing; suggestion that generic nursing registration with later specialisation would be a more appropriate structure. Study aims to provide a factual historical overview of significant reports of child health care over the past 50 years, identifying the key principles of each, and to develop from this analysis reasoned conclusions re priorities in skill mix for nursing children. Secondly to propose an alternative framework for nursing skill mix that will ensure that children receive care appropriate to their needs, and that nurses are appropriately prepared for the level of service to be offered. Authors conclude that the problems associated with expectations of universal provision of registered children's nurses for all children requiring nursing intervention have resulted from misunderstandings of the recommendations of key historical reports. in the light of evidence presented for the drive for abolition of specialist registration, and the main arguments of the polar stances of genericism or specialisation, its is vital that alternative strategies are developed and debated. The proposed framework, based on pragmatism and key principles established from major reports, is discussed in an attempt to address the real issues, that children are cared for by adequately-prepared nurses, and that there is a strong career trajectory for all nurses working in the field of child health.</p> <p>No structured educational path for those working wholly within a paediatric environment. Proposes an alternative framework developed from a mapping exercise using service levels described in Children's Surgery – A First Class Service (RCSE, 2000) superimposed onto the career framework for nurses identified in Making a Difference (Department of Health, 1999). Need to refer directly to Table 2 in paper for details of the alternative framework.</p> <p>Paper designed to strengthen role of children's nurses across all fields of practice, to seek/explore new ways of working, and offer all nurses working with children a clear career pathway.</p> <p><i>Comment:</i> useful new service delivery framework proposed.</p>
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Skill mix in secondary care

#1709 Bloom <i>et al.</i> , 1997. Nurse staffing patterns and hospital efficiency in the United States.	SKILL MIX	nursing; models; skill mix; workforce; US; survey/study	<p>The objective of this exploratory study was to assess the effects of four nurse staffing patterns on the efficiency of patient care delivery in the hospital: RNs from temporary agencies; part-time career RNs; RN rich skill mix; and organisationally experienced RNs. Using transaction cost analysis, four regression models were specified to consider the effect of these staffing plans on personnel and benefit costs and on non-personnel operating costs. A number of additional variables were also included in the models to control for the effect of other organisation and environmental determinants of hospital costs. Use of career part-time RNs and experienced staff reduced both personnel and benefit costs, as well as total non-personnel operating costs, while the use of temporary agencies for RNs increased non-personnel operating costs. An RN rich skill mix was not related to either measure of hospital costs. These findings provide partial support of the theory. Implications of findings for future research on hospital management are discussed.</p> <p>Findings provide evidence of a significant relationship between staffing patterns for both hospital personnel and operating costs. Study considers only hospital efficiency, not issues of effectiveness or whether staffing strategies, have different implications for quality of care. Study extends the evaluation of the impact of staffing strategies from personnel costs to the overall operating costs of providing a unit of hospital-based health care. Strategies are important HR utilisation decisions such as building in flexible part-time scheduling and promotion from within the organisation to retain nurses rather than using external supply-based solutions. (e.g. recruiting new full time personnel).</p> <p><i>Comment:</i> Useful empirical research in terms of service delivery, assessing four nurse staffing patterns on the efficiency of patient care delivery in the hospital. Study considers only hospital efficiency, however, not issues of effectiveness or whether staffing strategies, have different implications for quality of care.</p>
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Skill mix in secondary care

#12902 Carr-Hill and Jenkins-Clarke, 2003. Improving the effectiveness of the nursing workforce.	SKILL MIX	hand search; nursing; skill mix; UK; survey/study	<p>Research from the Centre for Health Economics, York. Report sets out the key findings and implications from an analysis of the activity and workload of nurses of different grades, with a view to identifying nursing skill mix and working practices that may reduce workforce demand for a more highly skilled nursing staff. Data set from 30 hospitals and 5208 staff recording their activity in 535 shift blocks in 19 hospitals and workload from 38,585 shifts in 90 wards in 17 hospitals. Study identifies seven themes of: <i>variation</i>: differences in staffing levels between hospitals suggest that there is potential for efficiency gains in some hospitals; <i>ward culture/division of labour</i>: average pattern of little difference in the types of tasks undertaken by different staff grades, suggesting that skills of different staff not being very efficiently used; <i>skill mix issues</i>: appears to be little increased specialisation between staff groups as overall staffing increases. An additional person of any grade does more of everything; <i>capacity</i>: both qualified and support staff report an increase in available time over night shifts; <i>flexibility</i>: there is no apparent flexibility in the deployment of nursing staff in response to variations in patient demand; <i>economies of scale</i>: no strong relationship between the numbers of patients and nurse staffing levels, suggesting possibility of economies of scale; <i>distributing overhead/housekeepers</i>: housekeepers make a substantial contribution to overall staff input. Nursing time could be saved on administration and other non-patient related health in wards where demand is high.</p> <p><i>Comment</i>: very relevant and up-to-date study with important findings. KEY PAPER</p>
#14380 Carr-Hill <i>et al.</i> , 1992. Skill mix and the effectiveness of nursing care.	SKILL MIX	skill mix; nursing; UK; survey/study	<p>Research from the Centre for Health Economics, York which aimed to: develop and field test measures for monitoring the quality and outcome of nursing care; identify the major input and process variables which need to be taken into account in monitoring the impact of nursing skill mix; investigate the links between different skill mixes and the quality and outcomes of care provided; relate the full costs of different skill mixes to both the quality of care and the outcomes for patients of that care. Research design focused on aspects of care which were almost totally within the control of nurses. Study found that grade mix had an effect on the quality of care in so far as the quality of care was better the higher the grade (and skill) of the nurses who provided it, but that the variation in the quality of care between different grades of staff were reduced when higher grade staff worked in combination with lower grade staff. These results occurred in different approaches to measuring skill mix from analysing the data at different levels of aggregation. At the ward level better outcomes were also associated with greater proportions of staff in Grade D and above independently of the effect of quality. The variations in both quality and outcome with higher grade staff suggest that investment in employing qualified staff, providing post-qualification training and developing effective methods of organising nursing care appeared to pay dividends in the delivery of good quality patient care.</p> <p><i>Comment</i>: one of the few, and, by now 'classic' serious research projects on the influence of skill mix upon the effectiveness of nursing care.</p>

Skill mix in secondary care

#14381 Jenkins-Clarke and Carr-Hill, 1991. Nursing Workload Measures and Case-mix: an investigation of the reliability and validity of nursing workload measures.	SKILL MIX	skill mix; nursing; workload; UK; survey/study	<p>Research from the Centre for Health Economics, York, which aimed to: investigate the relationship between case-mix and nursing workload measures. Report specifically focuses on the underlying issue of examining the methodologies and instruments used for measuring workload and the assessment of the sensitivity of chosen measures. the relationship between diagnosis and process and outcome of patient care is also described at the individual patient level and the overall relationship of case-mix and nursing workload is explored at ward level. Overall conclusion reached is that the Nurse Workload Management systems (NWMs) reviewed (FIP, EXCELCARE and SENS) produced inconsistent and unreliable estimates of nursing workload, which also make insufficient allowance for the skill mix manipulation required to deliver good quality care. Recommendations are made based on these findings.</p> <p><i>Comment:</i> another piece of primary research, although focus of this is on nursing workload measurement systems, and therefore how these relate to deployment and skill mix, particularly in view of the inadequacies found.</p>
#5087 Glen and Clark, 1999. Nurse education: a skill mix for the future.	SKILL MIX	skill mix; nursing; training; roles; models; UK	<p>Article explores the changing nature of the role of nurse teachers in placement areas and outlines a variety of potential new models which include the link teacher role, the clinical teacher role, the lecturer/practitioner role and Clinical Research Fellowship. Article proposes a radical scenario and outlines a skill mix for the future for nurse education. Urgent need for the clarification of the new roles that can be shaped and likely they will be diverse. Offers a new model for teacher/practitioners (see Box 1 of article) which offers a variety of career opportunities for nurses interested in developing careers in and around nurse education, and possibilities for nurses to manoeuvre between educational and practice arenas providing there are clear contractual responsibilities identified by service and educational managers. Emphasises need for the majority of future nurse teachers and lecturers to have a firm practice base while simultaneously recognising need for nurse educationalists who manage nurse educational programmes, and need to bring in lecturers with expertise from related disciplines. Paper concludes that the introduction of education-led diploma programmes has been successful in increasing the academic status of nursing, but high cognitive skills combined with more varied and less predictable clinical experience has led to a perceived lack of skills and confidence. Generalist role of the nurse teacher being eroded by highly qualified specialists in higher education and more knowledgeable, articulate practitioners. Nurse educators also increasingly required to fit into the business plan of their institution. The teacher of the future should first and foremost be a practitioner in the terms originally proposed by the UKCC (1986).</p> <p><i>Comment.</i> Refer to paper for details of the proposed model for training. KEY PAPER in terms of the educational model presented.</p>

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#3663 Dial <i>et al.</i> , 1995. Clinical staffing in staff- and group HMOs.	SKILL MIX	skill mix; workforce; US; survey/study	<p>Based on a nationwide survey of 54 staff- and group-model health maintenance organisations (HMOs), study examines physician-to-member ratios, the use of non-physician providers, and HMOs' methods of estimating clinical staffing needs. Overall physician staffing ratios and primary care physician staffing ratios closely resemble those reported in previous studies, but they exhibit wide variability and are strongly correlated with HMO size. Although caution should be exercised using HMO staffing ratios in projections of physician workforce requirements, the ratios described here support projections of a specialty physician surplus.</p> <p>Findings congruent with previous analyses of project medical workforce requirements based on HMO ratios of c. 120:140 total FTE physicians per 100,000 members, with a specialist-to-generalist ratio of between 60:40 and 50:50. Employment of non-physician providers largely for cost-containment purposes.</p> <p><i>Comment:</i> although useful, the emphasis seems to be on primary care provision.</p>
#11293. Spurgeon and Barwell, 1995. Skill mix review in the NHS: use of a structured analytic technique.	SKILL MIX	skill mix; workload; roles; nursing; HRM; UK; survey/study	<p>Study aims to: examine roles of outpatient nurses at two sites of a large London hospital both as individuals and aggregated into clinical grade categories; to determine estimates of the quantity and quality of outpatient nursing activities; to assess the implications of the results for a future full skill-mix review. Paper describes Hierarchical inventory of nursing tasks (HINT) which offers an important balance between consideration of cost and quality of care. Paper outlines the application of HINT to a group of outpatient nurses describing their work tasks at various levels of detail. Various hypothetical alternative staffing options are examined to establish the impact of such staffing provision in terms of the resultant patient services.</p> <p>Paper discusses different nurse workload measurement systems and quote Jenkins-Clarke and Carr-Hill 1991 that current nurse manpower planning systems are neither reliable nor valid, although Proctor (1991) points out that patient dependency is not an objective concept, yet its estimation is at heart of much research into nurse manpower planning. Skill mix measures based upon subjective/fallible concept of patient dependency should be viewed with caution. Cites Bagust 1992 demonstrating link between quality of care and number of trained nurses and therefore need to investigate likely consequences on quality of care of revised grading structures imposed simply for cost-containment. HINT is not based upon estimates of patient dependency and addresses need to maintain quality of nursing care, but HINT measures both quantity (time) and quality (importance) of nursing activities and combines measures into an estimate of workload.</p> <p><i>Comment:</i> useful brief survey/study of a workload assessment model, with some review of relevant literature.</p>

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#2502 Carr-Hill <i>et al.</i> , 1995. The impact of nursing grade on quality and outcome of nursing care	SKILL MIX	nursing; skill mix; outcomes; UK; survey/study	<p>Paper analyses relation between skill mix and of a group of nurses and the quality of care provided. Data from 15 wards at seven sites on both quality and outcome of care delivered by nurses of different grades, affording an analysis at different levels from a specific nurse-patient interaction to the shift session. Findings show a strong grade effect at the lowest level which is diluted at each succeeding level of aggregation; also a strong ward effect at each of the lower levels of aggregation. Study concludes that quality of nursing care improved as the ratio of qualified and further trained staff increased, and also that costs increased with the quality of nursing care. Thus, employing qualified staff, providing post-qualification training and developing effective methods of organising nursing care need to be regarded as investments which pay dividends in the delivery of good nursing care.</p> <p><i>Comment:</i> KEY PAPER for questions of skill mix, how to measure it, how it works and its influence on care outcomes.</p>
#1819 Bordoloi and Weatherby, 1999. Managerial implications of calculating optimum nurse staffing in medical units.	SKILL MIX	models; workforce; skill mix US; review	<p>Article offers a generic model using linear programming to derive optimum mix of different staff categories that minimises total cost subject to constraints imposed by patient acuity system and minimum staffing policies in a medical unit of Fairbanks memorial hospital, Alaska. Model illustrates that room for additional LPNs and NAs exists with subsequent reduction of RNs for the medical unit. Can serve as quantitative evidence in supporting such a decision. Laying off RNs to hire less educated staff is not recommended. Managers may want to investigate costs of training and retaining NAs and RNs who remain in the same position for longer periods. Managers should be alert to new research that supports the efficacy of more NAs and fewer RNs when evaluating patient outcomes.</p> <p><i>Comment:</i> useful, probably important article and literature review that makes recommendations based upon a model of optimum nurse staffing, although US based.</p>
#4691 Friesen, 1996. Skill mix literature Review.	SKILL MIX	skill mix; Canada; review	<p>Article reviews the literature and research data on skill mix briefly, discussing the relevant issues such as cost savings, staff roles and patient outcomes, identifying positive and negative implications, concluding with suggestions for further research.</p> <p><i>Comment:</i> good short review offering some important findings related to staff mix models, although limited to Canadian studies only.</p>

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#1688 Blegen and Vaughan. A multisite study of nurse staffing and patient occurrences.	SKILL MIX	HCA/UP; nursing; outcomes; restructuring; skill mix; US; survey/study	<p>Study to determine the relationship between different levels of nurse staffing and patient outcomes (i.e. adverse occurrences) Data from 39 units in 11 hospitals. Findings of a 'non-linear' relationship between the proportion of RNs in the staff mix and MAEs. As the proportion of RNs on a unit increased from 50% to 85% the rate of MAEs declined, but as the RN proportion increased from 85% to 100%, the rate of MAEs increased.</p> <p><i>Comment:</i> a useful study of nurse staffing in relation to patient occurrences/outcomes, with some key findings; US-based.</p>
#11868 Shamian, 1998. Skill mix and clinical outcomes.	SKILL MIX	skill mix; outcomes; NA; Canada; review	<p>Article offers a general discussion of issues related to skill mix and clinical outcomes, looking at the 'real cost' of skill mix, advising that the true costs of the de-skilling process need to be examined. Cites findings of the Canadian study by O'Brien-Pallas (1994) indicating that the RN, as the most diversified worker is the most productive worker among the three groups who included practical nurses and multi-skilled workers, with multi-skilled workers being the least productive. RN can do all of the functions that the other two categories in an holistic patient-family centred approach. Advises that quality effectiveness needs to be factored into cost effectiveness, citing research findings of lower levels of adverse effects like pneumonia, decubitus ulcers and other complications with higher ratios of RNs. offers a series of working solutions which have helped to reduce costs while maintaining the professional nursing compliment.</p> <p><i>Comment:</i> useful discussion of the whole skill mix issue in reference to clinical outcomes. Canadian-based.</p>
#4933 Gallinagh and Campbell, 1999. Clinical supervision in nursing – an overview.	SKILL MIX	skill mix; interprof/disc.; models; nursing; UK	<p>Article provides an objective overview of current thinking in clinical supervision, including different models which are presented and discussed, e.g.: Proctor's (1986) Three Functional Model.</p> <p><i>Comment:</i> explicitly addresses issues of clinical supervision, rather than effectiveness, substitution, service delivery etc.</p>

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#7327 Koch, 1996. Staffing outcomes: skill mix changes	SKILL MIX	skill mix; workforce; HCAs/UP; outcomes; US	<p>Article discusses the use of unlicensed assistive personal in the OR at the Presbyterian hospital, Dallas, US from a safety/cost-effective perspective, looking at: all RN staffing, other staffing ratios, the impact on patient care, financial outcomes and managing skill mix changes. Discusses the use of an advanced role UP to assist in the OR with an all RN staff mix.</p> <p><i>Comment:</i> short anecdotal argument of one US hospital's development and experience of an UP post in the OR.</p>
#1222 <i>Same Day Surgery</i> , 1999. Restoring an 80:20 skill mix	SKILL MIX	skill mix; workforce; nursing; HCAs/UP; NA; US	<p>Short anecdotal article describing return to an 80: 20 skill mix ratio of RNs to surgical technologists in the OR at Evanston Hospital, Chicago.</p>
#6979 Kletzenbauer, 1996. Radiographers attitude to skill mix changes.	SKILL MIX	skill mix; restructuring; attitudes; UK; survey/study.	<p>Study reports the views of a large, random sample of diagnostic radiographers to the issue of potential changes in skill mix., finding that overall, radiographers have negative attitudes to issue of skill mix changes, with an observed tendency for managers to have a more positive attitude towards skill mix changes than clinical staff. Staff employed in trust hospitals appeared more defensive of job territory than staff employed in Directly Managed Units,.</p> <p><i>Comment:</i> survey of staff attitudes to skill mix, role boundaries etc.</p>
#10849 Redshaw <i>et al.</i> , 1993. Nursing and medical staffing in neonatal units.	SKILL MIX	skill mix; workforce; ICU; UK; survey/study	<p>56 neonatal units in England were contacted for information on staffing arrangements, policies and facilities, from four representative units in each health region: a regional centre, a sub-regional centre and two district units. Large inter-unit differences found and in many units the levels of staffing found to be at lower than recommended levels. Relationship between nursing establishment and numbers of designated cots examined, and more recent the recommendation, the greater the discrepancy between establishment in operation and that recommended. Large inter-unit variation also found in the proportion of staff qualified in the specialty, ranging from 0% to 92% of qualified nurses in individual units. Overall, 83% trained nurses were working in study units, of whom 53% were qualified in the specialty. Significant differences found between types of unit: regional and sub-regional units had a higher 'qualified in specialty' rate (50% and 49%) than district units (32%). These figures lower than the 70% level recommended.</p> <p><i>Comment:</i> early survey of staffing in neonatal units; may well not be very up-to-date for current situation.</p>

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#10850 Redshaw and Harris, 1994. Nursing skill mix in neonatal care.	SKILL MIX	skill mix; workforce; ICU; UK	<p>Article builds on data from study described above (10849). Key skill mix findings were: the largest segment of neonatal nursing workforce made up of staff nurses and staff midwives, and of these there are greater numbers of staff nurses; E grade at 31% most frequently found, followed by G (19%) and F grades (16%); vacancies were disproportionately high at staff nurse/staff midwife level; nursery nurses were employed for direct nursing care in 80% of units, nursing auxiliaries were employed in 70% of units, although only half were involved in direct infant care. Staffing policies diverse and not clearly related to the type of unit or the numbers of designated intensive and special care cots. Tendency to employ more junior staff at night; the use of support staff varied widely and in many units was at very low levels or absent. In addition to differing service demands that may affect the skill mix required, there is a clear need for the profession to address the questions that arise from changing roles and areas of responsibility in the spheres of management, teaching and clinical practice.</p> <p><i>Comment:</i> useful survey of staffing of neonatal units, although now probably rather out-of-date.</p>
#2288 Blee, 1993. The right staff in the right place: a review of manpower, leading to skill-mix, activity matured to outcome,	SKILL MIX	skill mix; restructuring; workforce; UK; review	<p>Article describes the comprehensive review of district staff and skill mix by the Isle of Wight health authority wherein changes in future manpower requirements (numbers and skill mix) were planned in conjunction with existing staff, to meet assessed workload and required quality standards. Potential savings of up to 10% were identified.</p> <p>Review resulted in an ongoing monitoring system for outcome standards matching workload, skill mix and cost. Health authority developing a bottom-up approach to quality assurance within a single framework across both units.</p> <p><i>Comment:</i> article describes staff and skill mix review of one health authority and cost savings identified</p>

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#8982 Melberg, 1997. Effects of changing skill mix.	SKILL MIX	skill mix; workforce; HCAs/UP; US; survey/study; outcomes	<p>Article argues that the greater the rate of patient acuity, the greater the need for an all-RN staff. Skill mix, LOS and salary costs among five teaching hospitals measure the cost effects.</p> <p>1994-5 budget data show that high RN mix does not correlate with higher nursing costs per patient day in acute or critical care and therefore that diluting the RN mix does always reduce staff costs. Although hospital A has 96% RN skill mix, the highest in the system, total nursing salary per patient day falls exactly in the middle. Highest costs occurred at hospital C, with a 64% RN mix, the lowest in the system. Finding is consistent in acute care, in CC and on orthopaedic units, specialty nursing areas found in all five hospitals; difference not explained by regional variations in RN salary. Although no. of FTEs per 100 beds occupied does not correlate directly with RN mix decreases, facility with highest % of non-RN staff also has highest number of FTEs per 100 occupied beds. Facility with highest % of RN staff still has fewer FTEs per 100 occupied beds than the average hospital surveyed. Concludes that introducing various skill levels into a nursing unit results in more people to manage, more people to educate and evaluate, but not necessarily in better patient care. Finds that average LOS seems to decrease with increased RN mix.</p> <p><i>Comment:</i> a good short study on the cost-benefit effects of skill mix changes at five US hospitals. Probably a KEY PAPER</p>
#14201 Wynne, 1995. Skill mix in nursing: efficiency and quality?	SKILL MIX	skill mix; nursing; outcomes; HCAs/UP; UK; review	<p>Short review (of earlier, 1980s and early 1990s literature) discussing skill mix in nursing and the introduction of HCAs. Distinguishes skill mix from grade mix, former being balance of skill and experience within grades. Observes that many studies focus on a reductionist, procedural/task orientated aspect of nursing emphasising the perceptual and motor skills by linking skill to activities with little recognition of cognitive aspects of care. Much hinging on whether nursing a profession or trade for purpose of skill mix, yet much of what nurses do is qualitative, not amenable to quantification.</p> <p>Urges that definitions of nursing take a more holistic view to encompass its qualitative nature, a necessary prerequisite in decision making process re. appropriate mix of skills to provide the most cost-effective and quality nursing care. Health care delivery also multidisciplinary. Concludes that measures to introduce a higher percentage of untrained staff will be counter-productive to high quality care and that the trade off in cost reductions likely to result in reduced quality of service.</p> <p><i>Comment:</i> short review of earlier literature, falling into the cautionary group of arguments offering views against widespread introduction of HCAs and in favour of retention of high percentage skilled nurses in mix. Brief but useful.</p>

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#11584 Taket, 1996. Evaluation of the implementation and management of skill mix in eight diagnostic imaging centres.	SKILL MIX	skill mix; UK; survey/study	Research undertaken by South Bank University for Department of Health to evaluate the level of success of the implementation of skill mix programmes in eight different diagnostic imaging departments and will identify the range of skill and abilities of staff extending their practice in this field and the organisational/managerial issues associated with these changes in working practice. Also aim to evaluate cost-effectiveness. Detailed objectives include the assessment of the extent of skill mix, staff attitudes; education and training offered for role extension; identification of the organisational and individual staffing issues related to skill mix implementation; evaluation of the quality of diagnostic examination and/or report resulting from the implementation of skill mix; assessment of degree of patient satisfaction with quality of care; measurement of financial costs and assessment of cost-effectiveness. Each of chosen sites will have been involved in a range of skill mix activities for several months.
#11363 Stern <i>et al.</i> , 1997. Skill swap: a solution in search of a problem	SKILL MIX	service development; skills; workforce; models; training; UK	Article describes the Skill Swap programme which was set up in response to the increased call for a streamlined and multi-skilled NHS workforce, encouraging cross fertilisation of working practices and ideas. Skill Swap programme harnesses needs of trusts and carries out short-term projects to broaden skills and experience of personnel by working in other organisations. Initial findings from first programme promising, with a total of 18 people seconded into HAs and family health service authorities for > 6m in a programme sponsored by South Thames RHA. Participants felt that Skill Swap was a highly effective tool for personal development. and for achieving successful outcomes to development projects. <i>Comment:</i> example of a small but apparently successful project to develop marketable skills for health service use.
#12303 Waters, 2003. It's all in the mix.	SKILL MIX	skill mix; NA; UK	New government-funded research suggests there is room for diluting the skill mix on wards still further. Review from Nursing Standard on views of research and experts. Cites Carr-Hill and Jenkins-Clarke 'Improving the effectiveness of the nursing workforce extensively. See 12902 separately below for details/recommendations etc
#12296 Waters, 1999. NHS workforce review to spell out future skill mix.	SKILL MIX	skill mix; workforce; NA; UK	Commentary/debate from Nursing Standard.

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#8713 Moses, 1995. Right to nurse: foot shooting.	SKILL MIX	skill mix; nursing; NA; UK	Commentary/debate from Nursing Standard.
#2167 Buchan, 1993. Posting notice about skill mix exercises.	SKILL MIX	skill mix; workforce; NA; UK	Commentary/debate from Nursing Standard.
#12291 Waters, 1999. Survey shows NHS trusts are diluting staff skill mix	SKILL MIX	skill mix; UK; NA; survey/study	Commentary/debate from Nursing Standard. Also results from a study showing dilution of skill mix in some trusts to a 60:40 RN to unregistered nurse ratio.
#10867 Sheehan, 1993. Skill mix does not work.	SKILL MIX	skill mix; UK; NA	Commentary/debate from British J. Nursing.
#9094 Notter, 1993. Skill mix is not grade mix.	SKILL MIX	skill mix; UK; NA	Editorial from British J. Nursing.
#8836 Murray, 2002. Mix and match.	SKILL MIX	skill mix; workforce; UK; NA	Planning the right workforce is not just about numbers. Commentary/debate from Nursing Standard.
#470 Allen, 1995	SKILL MIX	skill mix; nursing; teamwork; UK	Author uses Jung's theory of personality types to examine effective team building and appropriate skills mix, arguing that personality skill mix is as important as nursing skill mix to facilitate a happy and effective environment for patient care and job satisfaction. <i>Comment:</i> interesting and rarely offered angle on the issue of appropriate skill mix and team dynamics.

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#9875 Purtilo, 1996. Judgement call: Increasing the skill mix in an acute care facility.	SKILL MIX	skill mix; UK; NA	Commentary/debate from the Magazine of Physical Therapy raising concerns over lowering skill mix in favour of cost containment and asking where the locus of authority for decisions that affect provision of health care services should be.
#13987 Williams, 1996. Commentary: skill mix for radiologists and radiographers.	SKILL MIX	skill mix; UK; NA	Report on a meeting organised by the BIR Diagnostic Methods Committee, held at London, April, 1996 and presents digest of views of assembled parties. Puts view of Royal College of Radiographers that proper delegation should be planned, agreed and monitored, be methodologically sound and according to GMC guidelines. For service skill mix offers a way to meet expectations while maintaining cost control; for patient offers a more accessible and available service which, if professionals can work together as a team should retain high clinical quality. <i>Comment:</i> another informed skill mix commentary.
#9495 Pearce, 1996. Skill mix and workforce planning: is it time to open up the debate?	SKILL MIX	skill mix; HCAs/UP; nursing; workforce; ICU; UK; NA	Short commentary from Nursing in Critical Care addressing problems of the wide variations in NHS staff deployment . Discusses disparate objectives of managers, purchasers etc. For manager, control over resources, including skill and grade mix represents a means of achieving policy goals, while purchasers challenge staff costs in provider units with result that workforce plans are part of business plans and trust's corporate objectives. Jobs designed around occupational standards with the 'right to practice' subject to assessment of competence ensures employers have control over training and assessment programmes. <i>Comment:</i> useful short debate/commentary on NHS workforce planning and skill mix issues, highlighting key concerns.
#1700 Aron, 1997. The best staffing mix.	SKILL MIX	skill mix; HCAs/UP; rehab.; outcomes; US; NA	US article on skill mix issues in rehab. setting, concluding that the ideal staffing ratio remains elusive. Affirms need for therapists to delegate effectively and manage comprehensively to enable 'therapy extenders' to be used to the maximum efficacy. Points out the variation between different US states' regulations governing acceptable staffing ratios and supervision of licensed assistants. <i>Comment:</i> Debate on use of UPs and what constitutes best staffing mix.

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#619 Anon, 1993. Changing skill mix reduces cost, enhances productivity.	SKILL MIX	skill mix; ORs; US; NA	Cost-focused article looking at savings generated by skill mix changes, e.g., Miami Valley Hospital, Dayton, Ohio, saving \$45,000 in an 18m period by altering skill mix in inpatient and outpatient surgery suites by changing from a 70:30 to a 65:35 ratio of RN to ORT. Addresses problems of substituting lower paid less educated workers for higher paying positions. <i>Comment:</i> another anecdotal skill mix paper, from the earlier 1990s and US.
#1467 Anon, 2001. Skill mix remains stable.	SKILL MIX	skill mix; nursing; HCAs/UP; ORs; US	Short comment/report in OR Manager reporting ratio of RN to surgical techs skill mix in ORs and ambulatory surgery centres: 1995: 69:31; 2000: 61:34 and 2001: 62:36. <i>Comment:</i> US paper reporting situation in US hospitals.
#4395 Evans, 1999. Skills-mix and the future for radiographers.	SKILL MIX	skill mix; skills; workforce; NA; UK	Article outlines current thinking from the Society of Radiographers on skills mix and the future. Concludes that new team relationships must be formed and there must be preparation for new roles and new disciplines; has to be new approach in the delivery of radiation medicine, with radiographers developing new roles alongside others in the new radiology teams in order to preserve and develop the science and practice of radiography. <i>Comment:</i> position statement and current thinking from the Society of Radiographers on skills mix and the future.
#1649 Anon, 2002. Are workforce shortages affecting all professions driving skill mix changes?	SKILL MIX	skill mix; pharm; workforce; NA; UK	Article discusses workforce shortages in many health care sectors, pharmacy, nursing and GMP. This, coupled with expansion of existing roles is seen to be driving some of issues behind skill mix debate. <i>Comment:</i> up-to-date commentary/discussion on skill mix and pharmacy.

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#8916 Needham, 1996. Balancing skill mix – future paediatric health care provision.	SKILL MIX	NA; skill mix; workforce; nursing; roles; HCAs/UP; skills; UK; review	<p>Paper outlines the need to define the role of the nurse and the function of skill mix review. Arguments are discussed surrounding the issues of an all qualified nursing staff in a traditional hospital or the use of a generic 'multi-skilled' workforce within a patient-focused environment. Reasons for developing the role of NVQ Support Worker examined and how they, and Project 2000 trained staff nurse compare one with the other. Paper looks at the paediatric field of health care in light of the 1991 Clothier Report to increase no. of trained staff within that environment and what future role of the children's nurse may be. Emphasises the importance of a clear understanding as to the role of nurses and how their skills and experience can be effectively and appropriately used. Points to the increasing body of research showing that a workforce of qualified nurses is efficient, cost-effective, having a positive effect on the quality of care delivered, and can increase the throughput of patients.</p> <p><i>Comment:</i> useful review and critique of what constitutes skill mix, and offering a cautionary note on the issues surrounding use and extension of the role of HCAs/UP vs RNs in the context of paediatric care.</p>
#14383 Bull, 2003. Skill mix in radiography.	SKILL MIX	skill mix; restructuring; UK	<p>Article discusses issues surrounding the introduction and development of skill mix in radiography, including a discussion of the forces driving changes in ways of working.</p> <p><i>Comment:</i> descriptive critique of skill mix issues, offering historical perspective and critique of present changes from the perspective of radiology.</p>
#13657. Warr, 1995. Skill mix fixed.	SKILL MIX	skillmix; NA; UK; review	<p>Short review article critiquing different skill mix methodologies, arguing that skill mix 'tools' should be recognised as a catalyst to change, not a solution to the problems and that to make sense of skill mix change it is important to avoid the expansionist and protectionist aspirations of some professional quarters. The choice of the approach may be less important than normally thought.</p> <p><i>Comment:</i> commentary/debate with brief review from Nursing Management.</p>
#10367 Ross, 1998. Efficiency in the spotlight.	SKILL MIX	skillmix; workforce; UK	<p>Report outlines methods of increasing efficiency and making financial savings in the imaging department of the Luton and Dunstable Hospital NHS Trust, considering the effects of these changes over the next 5 years. Focuses on two main areas: the making staff more efficient through skill mix and restricting the number of imaging examinations carried out through the enforcement of radiological guidelines. Paper uses SWOT (strengths, weaknesses, opportunities, threats) analyses to consider the present situation in the department and some of changes that could be made over a five year period.</p> <p><i>Comment:</i> example of a paper examining skill mix issues from the perspective of one specialty/unit</p>

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#14379 Buchan, 1999. Determining skill mix: lessons from an international review.	SKILL MIX	skillmix; review; hand search	<p>Paper based upon a research review commissioned by the WHO of English language publications published between 1986-1996, of which a total of 473 publications were identified and 79 subject to detailed review. Paper examines why achieving the right mix is so important and critiques some of the main approaches to determining skill mix in health care, looking at eight methods of determining personnel mix: task analysis, activity analysis, self recording of activities, case mix/dependency, zero-based reprofiling, professional judgement, job analysis interviews and group brainstorming. Methods of evaluating cost effectiveness also considered. In reviewing relevant research in this area, authors provide a conceptual model of the elements involved in determining skill mix. Authors point out that in an ideal study, the effectiveness of a particular skill mix of health workers would be defined by the effect it has on patient outcomes and the care outcomes produced by one mix could then be compared with those produced by another and a judgement made about which is the more effective. Studies of personnel mix often undertaken as a precursor to or stimulus for organisational change, and focus on the level of the employing unit and fail to fully explore alternatives to changing personnel mix. Discusses part played by labour market dynamics in skill mix, and also issues of training, where any attempt to evaluate the cost/quality dimensions of changing personnel mix should attempt to assess training costs. The issue of specialist vs generalist heart of personnel mix debate, exploring balance between professions/staff groups as well as divisions between them. Notes trend towards using generalist 'multi-skilled' workers and urges consideration of the training and retraining costs associated with these, and requirement to maintain skills and competencies across a broader range of practice. Paper concludes: there is no single 'correct' way to determine the 'right' skill/staff mix in health care; a number of options are available, each with strengths and weaknesses; most published studies evaluating effects of different mixes of staff are narrow in focus, small in sample size and short in timescale; not possible to derive any generalisable indicators or lessons from available research, partly because the research base is fragmented and partly because the organisational context of each study is different, with many contributory (and potentially confounding variables); in order to achieve a more robust series of guidelines and 'lessons' on determining skill mix, there is a need to standardise methodologies in research and evaluation studies, to replicate these studies and to improve the networking of study results. Apparent that there is a continuing tension between the organisational priority of implementing change and containing costs in the short term, and the need for 'objective' evaluation of the broader effects of such change in the longer term. Determining the appropriate skill mix of staff should not be regarded as a 'one-off' exercise, it should be about reviewing this mix, and managing the tension between cost and quality issues over the longer term.'</p> <p><i>Comment</i> Based upon the findings of an earlier semi-systematic/comprehensive review, and an important paper looking at some of the key issues/questions in skill mix research offering important insights and making sound recommendations. KEY PAPER.</p>
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#1689 Blegen, 1998. Nurse staffing and patient outcomes.	SKILL MIX	skills mix; nursing; outcomes; US; survey/study	<p>Study aims to describe the relationship among total hours of nursing care, RN skill mix and adverse patient outcomes (unit rates of medication errors, patient falls, skin breakdown, patient and family complaints, infections and deaths in 42 inpatient units of an 880-bed hospital. Results found that units with higher average patient acuity had lower rates of medication errors and patient falls but higher rates of other adverse outcomes. With average patient acuity controlled, the proportion of hours of care delivered by RNs was inversely related to the unit rates of medication errors, decubiti and patient complaints. Total hours of care from all nursing personnel were associated directly with the rates of decubiti, complaints and mortality. An unexpected finding was that the relationship between RN proportion of care was curvilinear; as the RN proportion increased, rates of adverse outcomes decreased up to 87.5%. Above that level, as RN proportion increased, the adverse outcome rates also increased. Study concludes that the higher the RN skill mix, the lower the incidence of adverse occurrences on inpatient care units.</p> <p><i>Comment:</i> an important study on influence of grade of nurse staffing on patient outcomes. See also 1688 study by Blegen, of slightly different outcomes.</p>
#11128 Robertson and Hassan, 1999. Staffing intensity, skill mix and mortality outcomes: the case of chronic obstructive lung disease.	SKILL MIX	skill mix; workforce; outcomes; US; survey/study	<p>Study extends beyond prior research by expanding the scope of staffing intensity and skill mix measures beyond that of physicians and nursing personnel and by focusing on a specific diagnostic group – patients with chronic obstructive pulmonary disease (COPD). Refer to study for details of methodology. Results indicate that the only respiratory care practitioners, respiratory therapists and respiratory therapy technicians showed staffing intensities positively associated with better outcomes. The results relative to skill mix were inconclusive. It was concluded that during the 1989-1991 period, hospitals with higher staffing intensities for both respiratory therapists and respiratory therapy technicians had better outcomes for COPD.</p> <p><i>Comment:</i> US paper relating staff/skill mix to patient outcomes.</p>
#6458 Hussey, 1996. Changing skill mix, starting at the staff level.	SKILL MIX	skill mix; NA	<p>Commentary/debate from Nursing Management. Advocates that four main areas should be addressed before introducing changes, that taskforce members should: instruct current staff about delegation, nursing process and scope of practice; evaluate where and how supplies and resources are obtained and how paperwork duplication can be avoided; select new staff; promote trust and communicate through delegation/assignment sheets, flow sheets, dry-erase boards in patient rooms, feedback forms and practice sessions to build interpersonal communication skills.</p> <p><i>Comment:</i> Standard sort of short commentary/debate with recommendations etc.</p>

Skill mix in secondary care

#10195 Ringerman and Ventura, 2000. An outcomes approach to skill mix change in critical care.	SKILL MIX and HCASS/UP	HCA's/UP; ICU; nursing; outcomes; skill mix; US; survey/study	<p>Paper looks at the solution used by a community hospital in S. California to cope with nursing shortage, where RNs partnered with LVN and lowered costs, raised patient satisfaction levels and maintained quality of care. To determine the appropriateness of skill mix change, interventions of critical care (CC) nursing were classified as complex or basic. Analysis of interventions indicated that 55% of tasks could be delegated to properly trained LVN when working in partnership with experienced RN; translated into 9FTE without any reduction in time for regularly scheduled staff members. Describes Phase I Initial planning; Phase II selection of outcomes variables: patient falls, medication errors, nosocomial infection rates, decubiti incidences and mortality rates.. Labour costs per case to measure cost savings; Phase III education needs: delegation; appropriate assignment of patient care distinct RN and LVN; role gathering data for reporting purposes; essential elements of utilisation review and case management; essence and rewards of nursing professionalism; nurse practice acts for RNs and LVNs; applicability and worthiness of clinical paths for CC patients. Outcomes found increased patient and physician satisfaction, decreased nurse satisfaction, labour costs lowered by 18% All other outcomes remained unchanged. Concluded that outcomes associated with the entering of CC nursing by an RN-LVN team can be maintained or enhanced when staff education, communication and participation are successfully implemented.</p> <p><i>Comment:</i> useful small case study, favourable to introduction of HCA's/UP, albeit pertaining to the US system.</p>
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Skill mix in secondary care

#6460 Huston, 2001. Contemporary staffing mix changes: the impact on post- operative pain management.	SKILL MIX and HCASS/UP	HCAs/UP; workforce; nursing; skill mix; models; outcomes; US; survey/study	<p>Retrospective, descriptive study of two surgical units in two hospitals, which examines correlations between staffing mix and pain management as a process indicator of quality after the implementation of a staffing model designed to increase unlicensed assistive person (UAP) and decrease RNs and LVNs in the skill mix. Statistically significant increases in numeric pain scores found for patients (n = 203) in diagnosis related group who were dependent upon nurse-administered analgesia (NAA) and for those patients given epidural or spinal analgesia. Pain scores for patients with patient-controlled analgesia tended to decrease, as did scores of patients using a combination of patient-controlled analgesia and epidural/spinal anaesthesia. Fair degree of relationship found between increased RN staffing as a percentage of staffing mix and lower numeric pain scores for the NAA subgroup. Similarly, increased unlicensed assistive personnel staffing as a percentage of the staffing mix found to be related to increased pain scale scores in the NAA subgroup. Quality nursing care plays a role in patient outcomes but has yet to be identified or defined, as have specific nursing interventions that affect patient outcomes. Observes a 'trend' (i.e. not statistically significant) toward less effective pain management in patients dependent upon NAA with suggestions that changes in staffing mixes may have contributed to the decrease, although other potentially confounding factors unknown. Interventions to address this decrease might include changes in staffing mix, staff education re pain management principles, a structural unit redesign promoting rapid and efficient pain medication admin. etc. Quest for determination and measurement of nursing sensitive patient outcomes likely to be difficult.</p> <p>Concludes that, given the increasing complexity of health care and acuity of patient illnesses, there are a maximum representation of UAP and a minimum representation of licensed nursing staff in the staffing mix that should not be breached, although those levels are not yet known.</p> <p><i>Comment:</i> this seems quite a useful skill mix study employing patient-sensitive outcomes, although only one statistically significant relationship and other 'trends' . Contains detailed tabulated data of outcomes with P values etc.</p>
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Skill mix in secondary care

#5395 Griffiths, 2002. Nursing-led in-patient units for intermediate care: a survey of multidisciplinary discharge planning practice.	SKILL MIX and ROLE ISSUES	multidisciplinary; teamwork; models; skill mix; UK; survey/study	<p>Effectiveness of post-acute intermediate care in nursing-led intermediate care in-patient units (NLIU) has been studied over the last 20 years. A survey with a parallel RCT undertaken to compare multidisciplinary care and discharge planning practice on the NLIU with 16 wards that referred patients to it. Findings identify that a wide range of professions participate in care on the NLIU with physiotherapists and occupational therapists most widely involved (see article for fuller details). In general, the team composition and care processes differed little between the NLIU and control wards. There was some evidence that there was lower participation in care on the NLIU from occupational therapy and social work. Concluded that NLIU is a complex multidisciplinary intervention. Positive results from some NLIUs may only be generalisable to settings with similar skill mix across the multidisciplinary team as that found in the acute hospital. Reduced skill mix may be a causal factor leading to extended stays and increased total care costs. This caution should be extended to other models of intermediate care, whether or not they are nursing-led.</p> <p>Findings suggest that the 'grade mix' issue is wider than simply nursing. Rather, the issue is more broadly one of skill mix across the disciplines. If the NLIU simply reduces the skill mix available then no benefit accrues to patients. Overall hospital costs are, in fact, increased by extended LOS with no discernible benefits to patients. Some skill mix changes may be desirable, because the input is presumed to be redundant (e.g. junior doctors). Others, reduction in nurses, occupational therapy and social work are neither supported by theories advanced to support the intervention nor the available evidence. Skilled clinical leadership of the multi-disciplinary team a key factor overlooked in the NLIU. Substitution of leadership (consultant to nurse or any other profession) may be possible and even desirable, but has ramifications far beyond the particular professional groups involved. Vital that designated clinical leader not only has the clinical knowledge and skills required but is also able to lead whole team (authority and management skills).</p> <p><i>Comment:</i> Findings on skill mix and implications of these seem important. Therefore probably a KEY PAPER</p>
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Skill mix in secondary care

#5555 Hall, 1997. Staff Mix Models: complementary or substitution roles for nurses.	SKILL MIX and ROLE ISSUES	HCAs/UP; models; nursing; restructuring; roles; skill mix; workforce; Canada; review.	<p>In response to the need to improve health care efficiency and effectiveness, hospital organisations are exploring and implementing restructured patient care delivery models. the shift away from traditional patterns causes an opportunity for redesign of health care resource utilisation and creation of new staff mixes. Many emerging models appear to provide substitute workers for the RN rather than complement the nursing role. One concern evident in the literature is the lack of evaluation of these staff mix models as they become more prevalent. The outcomes for patient, hospital system and nurse remain unclear. Explain staff mix models and gives examples. Most prevalent influence on staff mix has been financial. Two broad groups of staff mix models in literature, based on relationship to nursing role: 'complementary' models use unlicensed workers as ancillary or support staff for nurses, usually to perform non nursing tasks; 'substitution' models use UPs as ancillary support with responsibilities that include some nursing care or care functions traditionally provided by other health care practitioners. In addition, blends or mixes of these two exist. Staff mix models linked to re-engineered work, product of redesign process, now common in modern health care; many focus on patient-centred care and several linked to the concept of 'multi-skilling', in nursing with development of knowledge beyond original speciality, and cross-training between specialities can also be seen e.g.: labour/delivery and postpartum care, or with emergency and critical care nursing. Describes complimentary, blended and substitution staff mix models separately (see review directly for details). Some attempt to evaluate these in terms of outcomes, two most prevalent being overall quality of care and patient satisfaction. Findings suggest some evidence that patient satisfaction and quality of care are not at risk with the implementation of these staff mix models, they need to be interpreted with caution, as few models have been examined over time using empirical methods, and little evidence of control for confounding factors. Little known of the true impact on the costs quality of care of a range of staff mix models. Concerns are: 1) break up of nursing work and delegation to UP takes patient care back to task-based focus concentrating on skills than cognitive and conceptual nursing practice; 2) costs constraints driving implementation of these models, with result being a decrease in no. of nurses in staff mix. Many reports in literature are anecdotal discussions of models with comments from staff and patients, not proper evaluations. Important for nurse leaders and administrators to realise that the fact that such models exist in practice and in the literature does not mean they produce what they are designed to do. Without solid evaluation cannot be known if they are cost-effective, what kind of impact they have on quality of patient care, and how satisfied consumers and care providers are with them.</p> <p><i>Comment:</i> this is a good and reasonably up-to-date review and discussion of skill mix and role development/substitution issues with a Canadian study focus, offering cautionary views. KEY PAPER.</p>
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Skill mix in secondary care

#8723 Moss, 1996. Skill Mix changes broaden the spectrum for perioperative nurses.	SKILL MIX and ROLE ISSUES	managed care; nursing; HCAs/UP; ORs; skill mix; roles; US	<p>Changes brought by capitation to perioperative nursing skill mix, which was 80-100% RN in the past, and now mix averages 50-60% RN. In ambulatory surgery centres, skill mix moving to 50/50 breakdown, changes stemming from managed care economics. Now, if two or 2.5 caregivers are needed for a procedure, only one need be an RN, the others can be a technician or an LVN. Threat to nursing seen through increasing numbers of technicians as well as cross-training that enables technicians to broaden their roles in OR. In reality skill mix change frees nurses to expand beyond the single phase patient care involvement of the traditional OR to a broad-based spectrum of patient care. Includes a discussion of traditional vs re-engineered OR nursing roles, a broad spectrum for perioperative nurses, and educational requirements which include changes in attitudes and new relationships with other professional staff such as surgeons and anaesthesiologists.</p> <p><i>Comment:</i> useful critique with a US focus examining skill mix changes driven largely by economic considerations. Includes a discussion of role development.</p>
#360 Adams <i>et al.</i> , 2000. Skill-mix changes and work intensification in nursing.	SKILL MIX and ROLE ISSUES	HRM; nursing; restructuring; skill mix; roles; attitudes; UK; study/survey	<p>Paper a detailed examination of the impact of NHS restructuring on nurses' roles. Data collected by semi-structured interview in eight NHS Trusts in England : a qualitative study examining how managers make decisions about and implement changes in HR requirements. Interview explored: triggers to decisions to change skill mix, managers' objectives, participants in decision-making, information on which decisions are based, skill mix change implementation, methods of evaluation and outcomes change. Typology of skill-mix changes; negative effects of skill-mix change; influence of a positive organisational and HRM culture are discussed.</p> <p>Findings show evidence of up-skilling among all grades and types of nurses, reflecting wider social trends. Data illustrate that specific nursing tasks increasingly delegated to HCAs, could be regarded as de-skilling, but content of nursing work simultaneously shifting, with both a horizontal and hierarchical transference of tasks. Nurses released from some aspects of clinical work by junior/support staff only to assume others' work, so nursing increasingly comprises enlarged managerial, medical and therapeutic elements. Primarily is a result of multi-skilling, but also owing to nurses' own professionalisation projects. Earlier studies found little evidence of systematic attempts to reorganise management of nursing labour to create flexibility, but short-term crisis management. These findings demonstrated range of systematic approaches among trusts recognised as innovators in staffing and skill mix. Some still lacked a strategic change plan and others still demonstrated short-term HRM approach, which may be cause for nurses' negative reactions to skill mix changes found. Widespread evidence of work intensification found, where all types and grades of nurses subject to potent mix of resource constraints, heavy workloads, significant. role changes and pressures to develop larger, more sophisticated range of work skills.</p>

Skill mix in secondary care

#360

Adams *et al.*

Cont...

Findings question desirability of govt's aim to further expand nurses' work roles. Increased managerial and supervisory roles perceived as onerous and causing role strain. Skill-mix changes seen to occur in absence of reciprocal workload support from other occupations, undermining multi-disc. working relationships. With one CCU exception, nurses did not assoc. increased responsibility with increased autonomy and findings suggest that scope of NHS nurses' autonomy is severely limited. Details of care environment increasing managerially controlled. Findings support importance of trusts' HRM cultures as facilitators of work role changes, but up-skilling not synonymous with job enrichment, although highly acute, specialist work settings can provide particular development. opportunities for nurses. CCU nurses in one trust absorbed diagnostic and monitoring tasks off loaded by doctors, and despite tight management control, enhanced their influence as pro. practitioners, significantly improved service delivery and demanded that the medical profession do likewise. HRM strategies designed to achieve staff flexibility undermine the distinctive domains of professional work, with nursing work becoming indistinguishable from other health care professions, although can simultaneously enhance nurses' status as they undertake more medical work. Findings also highlight explicit lack of professionalisation strategy within nursing itself. Lack of clarity re advanced practice means that while incumbents may fulfil a useful, flexible and cost-effective role in eyes of managers, their roles are professionally limited; they are localised trust-specific and exist in the absence of a wider professional framework. Such developments serve managerial, economic and patient interests, limited evidence of benefits for nurses themselves.

Comment: this is an important and up-to-date study reporting early findings of NHS restructuring and role changes upon skill mix etc. KEY PAPER.

Skill mix in secondary care

#6432 Hunter, 1996. The changing roles of health care personnel in health and health care management.	ROLE ISSUES and SKILL MIX	Restructuring; roles; skill mix; UK; review	<p>Management seen as critical in securing supply-side reforms in many countries. Many centre on establishing a new relationship between professionals. Paper offers an overview of health care reforms and assesses how it is shaping/reshaping the roles and tasks of health care personnel. One conclusion is mismatch between management style favoured by policy makers and reformers and the necessary flexibility required in skill mix and organisation of work. High trust relations lie at the heart of professional forms of organisation whereas the new managerialism appears based on expectation of low-trust relations. Paper concludes with a brief look at the implications of all these developments for training and education and finds there is still a long way to go before any real prospect of providing and equipping health care personnel with the requisite skills to enable them to meet the complex challenges characteristic of health care systems.</p> <p>Paper discusses the changing health care environment in terms of social and economic trends, of which future recruitment and skill mix important issues, as well as gender issues and changes in disease and illness patterns with long-term care and chronic conditions becoming more pronounced, which will have a major impact on organisation, configuration and location of care; also changing fashions of provision from large DGHs to network of smaller community hospitals etc. Key issue is ignorance in ability to predict future patterns of illness; changing nature of health care, growth of complementary therapies and developments in health technology, drug therapies, day care surgery etc. Health promotion. Discusses health service restructuring and changing roles for doctors, nurses etc and describes changed role/concept of nursing process and care with development of nurse practitioners. Discusses less costly ways of delivering care with careful matching of staff skills and the delegation of non-patient care specific nursing tasks to HCAs. Discusses implications for training and education. Concept of skill mix - central to moves from current professional demarcations – is discussed, including lack of evidence of impact of skill mix initiatives on standards, outcomes and efficiency. Effect on training issues, and training itself a consequence and cause of professional ‘tribalism’. Emphasises that many of the problems/breakdowns in health care services a result of failure in working effectively across organisational and professional boundaries, with present structure of doctor training treated separately from other health professions. Modular forms of training therefore offer scope for building up competencies, as required, by different professions. Professional boundaries need to change, with more flexible structures and emphasis on teamwork and collaboration.</p> <p><i>Comment:</i> this is a good review of the changing health care environment, the processes inherent in it and the issues of skill mix and training.</p>
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Skill mix in secondary care

#2383 Calpin-Davies and Akehurst, 1999. Doctor-nurse substitution: the workforce equation.	ROLE ISSUES and SKILL MIX	Nursing; policy; restructuring; roles; skill mix; UK; survey/study	<p>Discusses sufficiency assumptions inherent in the new nursing roles, as means of substituting part of the doctors skills. NHS hospital workforce data analysed and changes in the overall numbers of doctors and nurses available for work were calculated as doctors' hours were progressively reduced. Changes in skill mix were compared, 1: as a result of the estimated potential reductions in nurses available to undertake nursing functions as movements up the nursing skills spectrum occurs, and 2: as a result of the alteration in the balances of available skilled staff. The policy assumption that suggests that a sufficiency of nurses is available for doctor substitution, while still allowing the nursing element to function may be false.</p> <p>Article discusses changes to the actual workforce, and remaining problems with recruitment and high attrition rates from both professions. Discusses changes in skills mix in detail and impact of substitution process (refer to article for full details, including bar charts etc). Loss of E,F and G nursing grades required for subset. to take effect. Will require replacement by movements of available nurses up nursing skill spectrum by attracting experienced nurses back and increasing student intakes. In addition to movement up nursing skills spectrum, effective doctor : nurse ratio is changing causing a reduction in the balance of nurses to doctors with a direct impact on nursing workload. Impact of reduction in doctors' hours is to increase the effective ratio of nurses to doctors. Doctors will, in effect, become gradually more unavailable for some activities and increasingly more difficult to contact for medical emergencies, instructions, advice or support. Refers to Carr-Hill <i>et al.</i> 1995 in a study of 15 hospital wards, finding a significant relationship between grade of nurse and quality of health outcomes. An overall reduction in the level of nursing skill and time can be expected to impact negatively on the quality of what is regarded as primarily nurses work. Discusses implications in terms of need for new professional bodies from nursing and medicine to monitor changes and to ensure appropriate education and training; need for radical change from current uniprofessional to an interprofessional structure.</p> <p><i>Comment:</i> Good up-to-date study based on an analyses of NHS workforce data, addressing issues of the introduction of new role, substitution, and skill mix and policy context for these. KEY PAPER</p>
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Skill mix in secondary care

<p>#11270 Spilsbury and Meyer, 2001. Defining the nursing contribution to patient outcome: lessons from a review of the literature.</p>	<p>ROLE ISSUES and SKILL MIX</p>	<p>Nursing; outcomes; roles; service development; skill mix review</p>	<p>Review of research in terms of nursing-sensitive outcomes and changing roles.</p> <p><i>Nursing-sensitive outcomes:</i> Nurses have sig. influence over patient outcomes in, e.g.: patient hygiene, nutrition, hydration, pressure sores/skin integrity, intravenous therapy, discharge planning, pain control, education/rehabilitation, and elimination; nurse-influenced outcomes from RCTs: patient education, health promotion, cardiac rehab. ,pre/post-op. care, anxiety prevention/reduction, and pain management. Studies suggest better care and outcome for patients with nurse-led initiatives. Further details of outcomes described.</p> <p><i>Changing roles:</i> Issues of staff substitutions have raised questions over definitions of nursing and midwifery. Research (Read <i>et al.</i> 1999) suggests there are now at least 3000 new nursing roles defined as 'innovative and non-traditional', or taking responsibility for aspects of care previously undertaken by another group of health professionals. Research suggests that such roles have a positive impact upon patient care and multidisciplinary teamwork. Roles include: nurse practitioners; nurse-led initiatives; midwife-led initiatives and mental health and learning disability nursing; nurses taking over junior doctors' duties, but probably only beneficial when tasks incorporated into nursing practice than nurses taking over doctors' duties.</p> <p><i>Skill mix research:</i> skill mix issues not widely researched; no clear recommendations re most effective deployment of skill mix; evidence suggests RNs do make a difference with patient care, although no indication of the appropriate ratio of RNs : HCAs. Few economic evaluations of skill mix and gap in work examining the interface between RNs and support workers and subsequent effect on patient outcome.</p> <p><i>Comment:</i> systematic and up-to-date review of nursing outcomes, skill mix and changing roles, therefore a KEY PAPER. Need to refer to paper for further details.</p>
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Skill mix in secondary care

<p>#12916 George, 2001. extended scope of nursing practice: a multicentre randomised controlled trial of appropriately trained nurses and pre-registration house officers in pre-operative assessment in elective general surgery.</p>	<p>ROLE ISSUES</p>	<p>hand search; nursing; service devpt; ORs; roles; outcomes; UK; survey/study</p>	<p>Study examines the extended role of ATNs and PRHOs in pre-operative assessment in general surgery. Aims were: to determine whether pre-operative assessment carried out by an ATN is equivalent in quality to that carried out by a PRHO; to assess whether pre-assessments carried out by ATNs and PRHOs are equivalent in terms of cost; to determine whether assessments carried out by ATNs are acceptable to patients; to investigate the quality of communication between senior medical staff and ATNs.</p> <p>Refer to paper for full details of methodology, outcome measures etc.</p> <p>Study found that: the pre-operative assessments carried out by ATNs were essentially equivalent to those performed by the PRHOs in terms of under-assessment that might possibly have affected peri-operative management, although there was variation between the ATNs in terms of the quality of history taking, although may be related to low numbers of patients seen at one study site. PRHOs ordered significantly more unnecessary tests than ATNs. the substitution of ATNs for PRHOs was calculated to be cost-neutral. Results of qualitative assessment showed that use of ATNs for pre-op. assessment was acceptable to patients; however, no evidence that communication between senior medical staff and those carrying out pre-operative assessments was improved by their introduction.</p> <p>Study demonstrated no reason to inhibit the development of fully nurse-led pre-operative assessment, provided nurses are appropriately trained and maintain sufficient workload to retain skills.</p> <p>Authors recommend that further research is needed on the extent and type of training needed for nurses undertaking the pre-operative assessment role, and the use, costs and benefits of routine pre-operative testing.</p> <p><i>Comment:</i> Important empirical research broadly endorsing the extended role of appropriately trained nurses and pre-registration house officers in pre-operative assessment in general surgery.</p>
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Skill mix in secondary care

<p>#12920 Caine, 2003. A randomised controlled cross-over trial of nurse practitioner vs doctor-led outpatient care in a bronchiectasis clinic.</p>	<p>ROLE ISSUES</p>	<p>hand search; nursing; workforce; outcomes; restructuring; roles; UK; survey/study</p>	<p>Nurse practitioner vs doctor-led outpatient care in a bronchiectasis clinic. Study aimed to : assess the feasibility and safety of nurse practitioner-led outpatient clinics and their acceptability to patients and their doctors and to compare the cost-effectiveness of nurse practitioner-led care with a doctor-led system of care.</p> <p>Findings (summarised here) were that nurse-practitioner-led care resulted in a relative rate of infective exacerbation of 1.09, which was not stat. sig. 100% of patients receiving antibiotics were compliant vs 81% of patients with doctor-led care, a result which was stat. sig. The health-related QoL revealed no significant mode of care effects. Patients reported less vitality/energy and greater levels of pain following doctor-led care, but fewer role limitations because of emotional [problems. There was a stat. sig. difference between two care modes in patients' satisfaction with clinic consultations in favour of the nurse practitioner, in the area of communication and time spent with patient. However, nurse practitioner led care resulted in sig. increased resource use compared with doctor-led care; the mean difference was £1498 per patient and was greater in the first year (£2625) than in the second (£411). Author concludes that nurse-practitioner-led care for stable patients within a chronic chest disease clinic is safe and as effective as doctor-led care. There was sig. additional patient satisfaction with some aspects of nurse practitioner-led care and better patient compliance with antibiotic therapy. However, there was a significant additional resource use related to admissions and antibiotic prescriptions during nurse practitioner-led care. This may have been a learning curve effect, as difference was substantially greater during the first year.</p> <p><i>Comment:</i> useful study of robust methodology endorsing the employment of nurse practitioners in clinical substitutions.</p>
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#12919 Smith, 2002. The problem of expertise in anaesthesia.	ROLE ISSUES	hand search; anaesthesia; roles; skills; UK; survey/study	<p>Reductions in junior doctors' hours have made trainees less available for meeting service requirements and reduced the amount of time available for training to take place. This study therefore aimed to: define expertise in anaesthesia through observation; to address the gap in understanding between what is taught (explicit) and learned (tacit) with the anaesthetist's education and to explore the boundaries between different groups in anaesthesia. Study conducted in a DGH in the N. of England with a shorter period of observation of at a hospital in the SW. Refer directly to study for details of methods and sample groups.</p> <p>Study found that official definitions of the boundaries between different staff groups within anaesthesia are quite rigid. In practice there is considerable blurring of roles, but this depends upon local and individual negotiation. There was great respect for the importance of tacit knowledge in the expertise of each professional group and a distrust of protocols and guidelines. If non-physicians were to administer anaesthetics, this would probably be in the form of algorithms. Neither the expert anaesthesia nor the other staff who might extend their roles in this way would probably be reassured by a protocol-driven approach. Future directions should include the incorporation of observational methods training for anaesthetic staff within their postgraduate education, a recognition of the importance of consultants working with other experts as part of their continuing professional development and attempts to foster the articulation and transmission of tacit elements of anaesthetic knowledge in an increasingly competence-driven training programme.</p> <p><i>Comment:</i> some useful data provided on roles and training needs.</p>
#10144 Richardson and Maynard, 1995. Fewer doctors? More nurses?	ROLE ISSUES	restructuring; skill mix; workforce; UK; review	<p>Review of the literature suggests that between 30 and 70% of the tasks performed by doctors could be carried out by nurses. Also suggested that 30% of doctors could be replaced by nurses savings hundreds of millions of pounds in these skills mix changes. Authors point out that the evidence base underpinning these assertions is very small, with most of the studies having significant defects in their design, or from North America, with limited validity for the UK. The scope for US-style managed care firm skill mix alterations may be more limited in the NHS, and should be identified through appropriate research comparing cost effectiveness of alternative skill mix combinations. Without such evaluations there is a risk that the quality of patient care will be reduced in search of cost savings.</p> <p><i>Comment:</i> see also later article #11007 by Richardson and Maynard (1998), which is more up-to-date.</p>

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#11179 Snelgrove and Hughes, 2000. Interprofessional relations between doctors and nurses: perspectives from South Wales.	ROLE ISSUES	interprof/disc; restructuring; roles; nursing; workforce; attitudes; UK; survey/study	<p>Paper discusses findings from a study of interprofessional relationships between doctors and nurses in medical wards in three provincial general hospitals in South Wales. The aim of the research was to investigate the changing nature of doctor-nurse relations; paper focuses on a subset of the findings concerned with doctors' and nurses' accounts of the hospital division of labour and the extent of overlap in their work activities. Semi-structured interview with 20 doctors and 39 nurses over four months. Findings indicate that doctors and nurses perceived their roles in largely traditional terms, there was some recognition of blurring of occupational boundaries, especially when considering work pressures, working at night and differences in practice in more specialised clinical areas. Although nurses were generally reluctant to challenge doctor's authority, some used the notion of patient advocacy to frame and justify their questioning of particular decisions. While doctors valued 'experience' in nurses and saw experienced nurses as the group who might most legitimately move into doctors' territory, nurses valued formal education and saw advanced nursing qualifications as the route to role expansion.</p> <p><i>Comment:</i> a useful survey/study of what is actually happening in practice, and of practitioners perceptions and views.</p>
#6075 Hogg <i>et al.</i> , 1997. Extended roles of radiographers working in nuclear medicine.	ROLE ISSUES	HRM; roles; service development; workforce; UK; survey/study	<p>Survey of 50 nuclear medicine departments in England and Wales. Results confirmed that 'extended' roles were routinely practised (See paper for details). 70% of respondents had <5years experience of nuclear medicine. Short term nature of their experience may result in lack of career development; this, with established working practices of other professional groups may inhibit development of new roles and responsibilities.</p> <p><i>Comment:</i> a useful survey/study pointing to possible career disadvantages of role development.</p>
#346 Adam, 2002. The role of a nurse consultant in expanded critical care.	ROLE ISSUES	ICU; nursing; roles; training; service development; UK	<p>Paper gives summary of policy objectives from 'Making a Difference'; gives an explanation of the nurse consultant role and four core functions: expert clinical practice for 50% of time; professional leadership/consultancy; education, training and development; practice and service development. Nurse consultants to bridge gap between wards and ICU, and support ward staff in patient care before and after ICU admission. Details NC's role, pre, during and post ICU. Describes formation of the patient emergency response team, led by nurse consultant who evaluates effectiveness of team and own role. Education centred on recognising/responding to acute situations. Continuum of care through to discharge and home. A supportive network providing a huge reservoir of clinical critical care nursing expertise. NCs often excluded from decision-making on strategy and operation. Time consuming nature of role means unlikely to be able to research and audit effectiveness as well as deliver trust-wide educational requirements.</p> <p><i>Comment:</i> Good descriptive analysis and critique of the nurse consultant role.</p>

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#14376 Masterson, 2002. Cross-boundary working: a macro- political analysis of the impact on professional roles.	ROLE ISSUES	roles; policy; multidisciplinary; restructuring ; workforce; UK; hand search	<p>A review of policy developments impacting on professional roles and boundaries in health and social care; critiques assumptions associated with cross-boundary working; explores issues such as whether or not new nursing roles are being developed to meet need; myths and realities of interprofessional working; the need for rigorous robust evaluation of service and role developments.; likely consequences of political and professional initiatives for both cross-boundary working and profession of nursing are illuminated. Nurses at vanguard of new of new role development., replacing junior doctors and other health/social care professionals and increasing numbers working as specialists/consultants; leading and developing new services in acute and primary care, many of which cross traditional profession and service boundaries. Discusses: new nursing roles e.g. clinical nurse specialist, nursing practitioners; inter-professional working as a willingness to share or give up exclusive claims to specialised knowledge and authority to other professional groups (compared with multi-professional working). The role and composition of the health care team in terms of professional skills undergoing rapid change. Problem of assuring competence re. litigation etc. Discusses professional regulation, professional education: service and role developments require crossing of traditional boundaries not only in practice but in education too, requiring educational reform – work-based systems of learning etc. Discusses National Occupational Standards, shared learning, viz inter-professional education; workforce planning viz recruitment and retention issues. Govt. believes that strict adherence to professional boundaries impedes effective service delivery and that workforce planning will increasingly be based on competencies required to deliver services than numbers of professional staff. Team working across professional/organisational boundaries and flexible working emphasised and workforce development stemming from patients needs. Restrictive professional barriers to be dispensed with. But new role developments have often lacked rigorous evaluation, especially in relation to clinical and service outcomes and patient perspectives. Concludes that ‘in order to ensure robust, sustainable cross-boundary working, a significant investment in evaluation is required to ensure that workforce and service developments reflect patient needs rather than merely professional aspirations and/or short-term expedience.</p> <p><i>Comment:</i> Up-to-date and comprehensive critique/review of policy developments impacting on professional roles and boundaries in health and social care; critiques assumptions associated with cross-boundary working; explores issues such as whether or not new nursing roles are being developed to meet need. KEY PAPER.</p>
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Skill mix in secondary care

#524 Andalo, 2002: Skill Mix. Shifting roles and responsibilities	ROLE ISSUES	pharm; restructuring.; roles; UK	Doncaster Royal Infirmary. Extended role of pharmacy technicians to triage non-emergency patient admissions to see if they need a pharmacists' assessment; prediction that only 25% of all elective cases will need a qualified pharmacist. This shift in roles and responsibilities > time spent by pharmacists on clinical work from 19-68% over eight years. Skill optimisation for both technicians and pharmacists, Greater job satisfaction across the team. Emphasis of individual's competencies, rather than qualifications <i>per se</i> . Old working practices banished. Paper discusses both the pharmacists and the technicians new roles, which is summarised in Panel 1 and the advantages of this change in skill mix in Panel 2. Refer directly to article for these. <i>Comment:</i> useful paper, but fairly typical example of an anecdotal-style case report.
#3999 Ditzenburger <i>et al.</i> 1995. Combining the roles of clinical nurse specialist and neonatal nurse practitioner.	ROLE ISSUES	ICU; nursing; roles; US	Doernbecher Neonatal Care Centre. Many facets of the roles of CNS and NNP may be interfaced, although having originated and evolved separately. CNS responsibilities include variety of functions related to clinical practice, education, administration, consultation and research. NNP includes direct patient care management, neonatal delivery resusc. and in-house coverage during evenings, nights, weekends and holidays in rotation with paediatric resident service. Role combined through 1980s and early 90s. Need for a neonatal CNS role to provide specialised nursing expertise in neonatal field and combined NNP-CNS practice created to meet both these needs. Article describes how the dual role was created viz: 'The CNS role has been individually tailored, yet remains flexible, to meet the interests and strengths of each of the NNP/CNSs and the needs of the unit.' Article proceeds to detail different aspects of the role. Table 2 details benefits and limitations of the NNP-CNS role. Facets of dual role incl. patient care management, faculty practice, clinical instruction, staff liaison, and variety of educational opportunities. Dual role continues to evolve. <i>Comment:</i> useful paper, but fairly typical example of an anecdotal-style case report.

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#10683. Scholes <i>et al.</i> , 1999. New roles in practice: charting three typologies of role innovation.	ROLE ISSUES	HRM; innovations; models; restructuring; roles, UK; survey/study	<p>'Exploring New Roles in Practice' project (ENRiP), commissioned by the Department of Health Human Resource Initiative to identify types of new roles that had emerged in response to the Policy Research Programmes' Human Resources and Effectiveness Initiative, and to examine factors that influenced their evolution. ENRiP a three stage study from 1996-98. Nine post holders in new roles were identified in three distinct sites. Three typologies of role development taking place identified: developments with a nursing focus; developments with a medical substitution bias and 'niche' developments – roles established in response to gaps in the local service or in response to client need. Aspects of roles identified under three headings: consultancy, interaction and co-ordination. The article considers the implication for each one of these. The context in which the new roles have emerged is described, as well as the organisational barriers and levers which facilitate effective implementation of the new role. The importance of strategic planning and organisational support for innovation is highlighted. Concludes that services are rapidly expanding in response to patient need and nurses strongly placed to identify ways in which services could develop that benefit patients. However, the organisational context is all-important in determining the way in which these roles develop and the impact the post holder has on patient services. Evidence-based guidelines have been produced based on findings of ENRiP study.</p> <p><i>Comment:</i> An important study which explicitly examines the development of new clinical and nursing roles in response to Department of Health initiatives, therefore a KEY PAPER: REFER DIRECTLY TO PAPER FOR DETAILS.</p>
#5667 Harris and Redshaw 1994. The changing role of the nurse in neonatal care: a study of current practice in England.	ROLE ISSUES	ICU; nursing; restructuring; roles; workforce; UK; survey/study	<p>Aims: to assess ways in which NNs had already begun to change their role, the effects of grade and qualification in specialty on aspects of practice, and attitudes. Survey data from 24 units from six separate health regions; 718 nurses (599 D-I; 119 A-C grades). Findings show that many are already in role changing process, although inter-unit variation. Nurses with neonatal qualifications more likely to be role changing. A small no. of nursery nurses and nursing auxiliaries were undertaking tasks that could be considered part of an expanded role. Study details different tasks undertaken as common and part of skill base expected of qualified/trained nurses in this specialty (e.g. heel prick blood sampling; removal of IV cannula; giving of IV antibiotics) and less common (e.g. IV admin. of non-antibiotic drugs; removal of endotracheal tubes; setting up of arterial BP monitoring; removal of umbilical arterial catheter etc.) Areas of skill involving more invasive procedures, the use of advanced technical equipment, or in which decision-making is an integral part, yet to be accepted as part of the role on a broad scale. Influence of unit policy in tasks routinely undertaken discussed, together with liability re. use of unqualified/untrained staff to carry out technical tasks. Changing role of NN as much a function of changing perceptions of the nursing and medical interface as of specific activities employed in the role. To many NNs, the changing role should include areas like training, education, research and family-centred care. Nurses attitudes to role development discussed.</p> <p><i>Comment:</i> a survey of role development within the neonatal care setting. Offers useful details of tasks assoc. with skill base and role expansion for NNP. Study now rather old and possibly out-of-date, superseded by events?</p>

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#7660 Langstaff and Gray, 1997. Flexible roles: a new model in nursing practice.	ROLE ISSUES	Models; roles; nursing; service development; workforce; attitudes; UK	<p>Article explores the development of a new clinical role giving experienced E and F grade nurses the opportunity for personal and professional growth; 50% of the nurses time is devoted to ward-based clinical work and 50% to developing an area of clinical practice or research, as with some clinical nurse specialists. Flexibility over the area of specialist interest to reflect the needs of the service and the expertise and interests of the individual, and also flexibility in relation to clinical commitment increasing opportunities for job share. New model for practice also new model for management. Stereotypical roles assoc. with clinical grading system and traditional hierarchical stance in health care barrier to truly collaborative approach, still doctor-led. because of pervading medical model used in training paramedical staff. A number of benefits in development of new role: opportunity for variety and responsiveness to local need; potential costs savings and auditable targets.</p> <p><i>Comment:</i> a useful case report describing the development of a new clinical role and model for practice.</p>
#2187. Buchanan, 1996. The Acute Nurse Practitioner in Collaborative Practice.	ROLE ISSUES	Collaboration; innovations; models; nursing; US; survey/study	<p>Article describes the development and evaluation of an alternative (health care) service based on a collaborative model, utilising master-prepared, certified nurse practitioners on a nonteaching service for medical patients, whose role is described. Scope of practice for nurse practitioners based on what is legally allowable in each state as defined by nurse practice acts. Role is: To provide a service for attending physician and manage daily patient care /management activities; limited practice of medicine; to implement therapeutic nursing interventions, including prescribing. Article evaluates the two alternative service models- traditional and collaborative via patient demographic, LOS and cost data. Nurses demonstrated a positive change in collaborative practice behaviours, while physicians did not. Without organisational recognition of this fact and strong support for change in system process guidelines, collaborative practices will not be attained and sustained.</p> <p><i>Comment:</i> : US study and critique of the role of acute nurse practitioner in a collaborative care context, with positive findings for nurses in terms of behavioural change in role development, although less so for physicians.</p>

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#9593 Neades, 1996. Expanding the role of the nurse in the A&E department.	ROLE ISSUES	Multidisc.; nursing; roles; emerg; UK	<p>Article reviews the development of the expanded role for the nurse within the A&E team and discusses its implications. Detailed descriptions follow of: <i>The nurse specialist in A&E</i>: e.g. nurses have adapted their role to include tasks previously undertaken by medical staff, incl. suturing wounds, plastering fractures and recording ECGs Variety of skills in A&E departments so varied that what constituted 'normal practice' impossible to determine. practice of extended roles controlled by protocols established by individual HAs. <i>Triage in A&E</i>: advancement of nurse triage one of most important developments in last ten years. Describes nurse triage, triage priority system, potential benefits of nurse triage and telephone triage in detail Describes <i>The Emergency Nurse Practitioner</i> as another initiative within A&E nursing with potential to cut waiting times, improve care and reduce pressure on junior doctors in A&E; a variety of roles: diagnosis (including tests like X rays) and treatment of minor injuries (nurse-led minor injuries units), referral to other health professionals and health/accident promotion activities.; also more advanced roles such as the assessment and treatment of hand injuries.</p> <p>Full potential of role to be realised; not a replacement for the junior doctor, but a professional with qualities and skills which complement those of A&E medical staff.</p> <p><i>Resuscitation of acutely ill patients</i>: A&E nurses now undertake a much more active role within Advanced Life Support and advanced trauma support resuscitation teams; although a legal requirement for a doctor to take responsibility for certain procedures, e.g. drugs prescribing. Development of multi-disc. teams with advanced skills essential with experienced, trained A&E nurse integral.</p> <p><i>Comment</i>: useful article which examines the development of the expanded role for the nurse within the A&E team with detailed descriptions of tasks undertaken and skills required, and discusses implication of the role, noting that its full potential of is yet to be realised.</p>
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Skill mix in secondary care

#2743 Burchell and Jenner, 1996. The role of the nurse in Patient-focused Care: models of competence and implications for education and training.	ROLE ISSUES	Nursing; review; roles; service development; skills; training; UK; US	<p>Explores implications of Patient-Focused Care (PFC) for education and training of nurses, by examining various models of competence and their strengths and limitations as bases for developing training programmes. Cautions against attempting to transpose an approach to training based on the USA model of PFC without modification, given the differing nursing roles in the UK PFC setting. Argues for a broad-based definition of competence rather than a narrower focus on training in specific skills alone. Describes: The changing role of the nurse in PFC settings, in UK through abolition of role of Ward Sister. Now there are <i>Clinical Managers</i> who set a framework for standards, care protocols and ensuring multi-disciplinary clinical audit and <i>Care Leaders</i> (1st/2nd level RNs) key in day-to-day management and co-ordination of care. Role seen as competency based and underpinned by clinical knowledge. Discusses multi-skilling: nurses being trained to undertake limited elements of other professionals' jobs, and the issues involved in training for this. Differences in perceptions of roles of Clinical manager, whether like nurse consultant or of pastoral care and training monitor. Need for a senior clinical nurse to provide emotional/situational support to ward nurses (as old style Sister). In USA focus of the changing role very much on multi-skilling whereas in the UK, role of care co-ordinator is as much a change for the nurse as is multi-skilling. In the US it focuses mainly on the acquisition of clinical skills, in the UK other dimensions also required, incl. changing attitudes, advancing knowledge base and developing a whole range of soft skill competencies essential to the changing roles of nurses. Graduate education probably necessary for the role of Clinical Manager, which closely parallels that of the Clinical Nurse Specialist.</p> <p><i>Comment:</i> Good descriptive and comparative critique of the changing role of the nurse in patient-focused care settings between UK and US, with implications for the education and training of nursing staff.</p>
#12531 Wiles <i>et al.</i> , 2001. Nurse-led intermediate care: an opportunity to develop enhanced roles for nurses?	ROLE ISSUES	Models; nursing; attitudes; restructuring; roles; service devpt; UK; survey/study	<p>Evaluation of a 10-bed nurse-led unit (NLU) in England. Explores potential for enhanced nursing roles by focusing on views (gained via interviews) of the NLU nursing staff and other professional groups (managers, acute ward nurses and doctors). Findings indicate that models of nurse-led post acute care do provide opportunities for nurses to develop enhanced nursing roles in which care associated with concepts of therapeutic nursing can be provided. Junior/mid grade nurses and other professional groupings viewed this model of care as low status and did not equate work on NLU with continuing professionalisation of nursing. Senior nurses viewed the route to developing nursing on the NLU as involving nurses as doctor substitutes (extended roles) rather than as working in separate but complimentary therapeutic domains (enhanced roles). NLUs provide opportunities for nurses to develop enhanced roles in which they can work autonomously in providing elements of therapeutic nursing aimed at improving patient outcomes at discharge. However, education, training and leadership needed to ensure that such opportunities are well-understood and optimised to the benefits of nurses and patients.</p> <p><i>Comment:</i> small case study of opportunities and potential for enhanced nursing roles and attitudes of nurses regarding these.</p>

Skill mix in secondary care

#2275 Bland, 1997. Developing the emergency nurse practitioner role in A&E: bottom-up approach.	ROLE ISSUES	Emergency; innovations; nursing; roles; training; service devpt; UK	<p>A&E department and emergency nursing development unit, Dewsbury, develops role of emergency nurse practitioner, and paper describes the whole development process over two years. Describes role of the ENP and the setting up of a pathway/programme of nine training modules at level 2 (advanced) of : research awareness; advanced anatomy/physiology; assessment and <i>Clinical skills modules</i>: Casting; venous access and administration of IV medication; Intubation; cardiac dysrhythmias; nurse prescribing; wound care. Pathway required to be flexible. Describes assessment process of ENPs. Describes analysis of the change in practice: staff supported and encouraged to be own leaders and initiators and to make own decisions regarding practice development. A central theme was the development of each nurse's ability to practice innovatively and autonomously, and develop practice. Emphasis on personal and professional development. NDU as supporter and facilitator for development...each staff member contributing to changes in practice. Team-building and co-operation fostered; operation of 'chuncking' (Jap industry) whereby small groups offered autonomy to solve own problems, involving anyone with a potential contribution regardless of status. Whole process a bottom-up approach to developing practice. ENP planning team ensured a successful partnership between academic units and service area...development of practice theory from practitioners and educationalists being together within the practice setting. First cohort of six A&E nurses providing an autonomous service to A&E patients at Dewsbury in addition to existing nurse practice. Aims are to provide a mainly autonomous practitioner service to patients. ENPs may assess and carry out a treatment themselves or refer to a colleague as part of an existing team and their roles will overlap. Framework from which nurses can shape the future of the service offered to A&E patients, not as 'mini-doctors' but as an improvement in the team approach to care.</p> <p><i>Comment:</i> Another case study of the development of a particular role – emergency nurse practitioner within a particular location – A&E department., Dewsbury.</p>
#5146 Glen and Waddington, 1998. Role transition from staff nurse to clinical nurse specialists: a case study.	ROLE ISSUES	nursing; roles; UK; survey/study	<p>Major expansion in no. of Clinical Nurse Specialists (CNS) considered experts in own specialities. Article discusses role transition from experienced staff nurse to CNS. Using Nicholson's (1984) model of work-role transition and Wabous' (1992) four-stage model of organisational socialisation, study explores the transition of two nurses from experienced staff nurses to novice CNSs. Role is perceived as being high in discretion, but negatively affected by team and organisational factors (culture, politics, resistance to change). Need for role clarity, support and supervision.</p> <p><i>Comment:</i> : small case study of the process of role transition as experienced by two nurses.</p>

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#4061 Dowling, 1997. Life can be tough for the inbetweens	ROLE ISSUES	nursing; restructuring; roles; service development; UK	<p>Professional boundaries are becoming increasingly blurred as nurses have taken over clinical work once the domain of junior hospital doctors, but this can create confusion among patients, and colleagues, as well as stress for the nurse. Better framework of management support is needed. Most of posts studied over last three years lacked any robust and safe management support and were developed as rapid ad hoc responses of senior doctors and nurses to urgent medical workforce problems. Role problems assoc. with job title, actual uniform worn, type of work done and main professional group interacted with. Problems of hostility with other staff and managers over professional boundaries or identities, professional isolation. Increased risk of complaints and illegal actions taken because of the unusual way they worked and uncertainties about professional identities. Problem of wide separation between planning and management of nursing and medical workforce and of training institutions and regulatory bodies such as UKCC and GMC locked into separate nursing and medical frameworks. Some trusts have set up cross-professional groups to support new posts.</p> <p><i>Comment:</i> useful descriptive critique of problems generally associated with role development, offering several cautionary notes.</p>
#162 Anon, 1997. Roles and reward for ward based staff at Ealing hospital NHS Trust.	ROLE ISSUES	models; workforce; roles; restructuring; UK	<p>A case study of ward-based staff at Ealing Hospital NHS Trust. Describes new roles and competency based reward for nurse clinicians, staff nurses, health care workers and housekeepers. Article contains fair amount of dense detail; some of which is summarised here. Pilot unit comprised of two combined wards forming a 58 bed GM unit. Staffing structure on the pilot unit is: one clinical team leader; six nurse clinicians; 16.7 staff nurses; 15.8 health care workers; 10.1 housekeepers and 1.5 ward clerks. Describes competency-based roles, staffing philosophy and strategic values. Describes professional development which is central to the pilot project, and competency framework. No outcomes reported.</p> <p><i>Comment:</i> pilot project is relevant to purview of this review, but there are no outcomes as yet available for it to assess effectiveness.</p>

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#12322 Watts, <i>et al.</i> , 2001. Methodologies analysing individual practice in health care: a systematic review.	ROLE ISSUES	roles; UK; review	<p>A systematic review to identify, explore and evaluate the current level of knowledge of methodologies used in comparative analyses of the individual practice of doctors, nurses and midwives. as the question of how roles and responsibilities might be shared differently between professional groups in order to promote improved, cost-effective health care requires a systematic analysis of existing roles and practice. Finds experimental/quasi-experimental, descriptive/non-experimental and qualitative methodologies in the studies reviewed. Discussion centres on a critique of quantitative methodologies used to analyse individual practice in relation to role substitution and diversification. the potential contribution of qualitative methodologies in the analysis of individual practice is discussed. Authors conclude that the current level of knowledge is based towards quantitative research. It is argued that the assessment of health care roles and responsibilities would be well served by a more balanced approach that recognises the strengths of both quantitative and qualitative work.</p> <p><i>Comment:</i> Although focusing on methodologies of the different studies reviewed, as a systematic review it does contain useful summary data in tabulated form addressing the findings of different studies on the roles of a range of different health care personnel. KEY PAPER</p>
#10852 Redshaw and Harvey, 2002. How clinicians in neonatal care see the introduction of neonatal nurse practitioners.	ROLE ISSUES	ICU; skillmix; workforce; attitudes; UK; survey/study	<p>Study's aim to investigate the views of UK clinicians in neonatal care working with nurses trained as neonatal nurse practitioner (NNPs). Via questionnaire survey of senior clinicians in 66 neonatal units with one or more qualified NNPs. Main outcome measures were type and frequency of response and similar data from NNPs used to make comparisons. 86% response. NNP clinical practice perceived similarly to that recorded by NNPs themselves, though clinicians expected more NNP involvement in some procedures (inserting central venous lines, umbilical arterial catheters, chest drains and peripheral arterial cannulae than was actually found. Perceptions of NNP role were similar, though the clinicians were significantly less likely to see taking a case load, conducting a ward round, accepting outside referrals and taking charge of emergency transfers as integral elements. Reflections on the utilisation of NNPs in neonatal care, and the impact on junior medical staff education referred to NNPs filling gaps, a reduction in the intensity of work, improvements in training and in the quality of care. Concludes that the introduction of NNPs is seen positively from clinicians working alongside them in neonatal care.</p> <p><i>Comment:</i> Useful short study on the role of NNPs and contains detailed tabulated lists of clinicians vs NNPs perceptions of what tasks constitute NNPs roles.</p>

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#1754 Atwal, 2002. A world apart: how occupational therapists, nurses and care managers perceive each other in acute health care.	ROLE ISSUES	interprof/disc; multidisciplinary; teamwork; roles; skills; training; UK; survey/study	<p>Article presents findings and discusses implications of a survey of a sample of occupational therapists, care managers and nurses working on acute wards in orthopaedics and acute medicine, and in elder care in one health care trust. Article discusses issues of role ambiguity, division of tasks, obstacles to communication and personality factors within interprofessional relationships. Findings suggest that occupational therapists, care managers and nurses had little understanding of each others roles and constraints.</p> <p>Article concludes that role ambiguity is a factor that influences interprofessional collaboration, and that communication may suffer when other pressing priorities are present. Need for more effective communication with members of the multidisciplinary team, attributes which may be fostered by advances in the interprofessional education of recent health care educational developments.</p>
#20 Allen <i>et al.</i> , 2002. Delivering health and social care: changing roles, responsibilities and relationships. Research report.	ROLE ISSUES	roles; rehab.; outcomes; UK; survey/study	<p>Brief research report of a pilot study on stroke rehabilitation undertaken between 1998-1999 and employing a cross-site comparative design. Study aimed to examine roles and responsibilities in the provision of services to people with complex health and social care needs, and to identify those factors which help or hinder integrated working. Eight ethnographic case studies of adults undergoing stroke rehab. carried out in two separate HAs refer to study for further details of methodology. Findings included that communication appeared to be more problematic in the community context than in the secondary care sector; that health and social services interface managed best when there was clearly identified lead professional at each stage of client's recovery period. Refer to study for further details and research recommendations.</p> <p><i>Comment:</i> brief research report; not that useful.</p>
#2973 Collins <i>et al.</i> , 1995. Clinical nurse practitioner in a surgical team.	ROLE ISSUES	nursing; workforce; roles; skill mix; UK	<p>The role of a nurse undertaking duties of a PRHO in a surgical team is described. Although a nurse can carry out almost all of the elective activity of the PRHO, she cannot completely substitute for PRHO out of hours. As more consultants are appointed without additional medical members of the team, suggested that two consultant teams might best be served by one PRHO working with one CNP. Article describes duties of the CNP in detail, the CNP relationships with the full clinical team, the activities a CNP cannot legally undertake, the CNP responsibilities, the problems encountered when acting for PRHOs. Concludes that although the CNP can effectively reduce the PRHO workload, cannot contribute to reducing antisocial hours of work significantly; can bring an extra dimension to ward care of patients of a clinical firm and can offer continuity and expertise not provided by peripatetic PRHOs. Post can provide a challenging and satisfying role providing post is introduced formally to all the doctors and nurses concerned and appropriate support is organised with other members of the clinical team. A CNP should not be appointed in lieu of a PRHO without fulfilment of these conditions.</p> <p><i>Comment:</i> useful article on the role of the CNP and the realities of substitution for PRHO.</p>

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#14384 National Nursing, Midwifery and Health Visiting Advisory Committee, 1995. Health service developments and the scope of professional nursing practice.	ROLE ISSUES	hand search; nursing; roles; UK; survey/study	<p>Results of a survey undertaken to explore the range of new nursing roles across a sample of Scottish NHS trusts, to provide an understanding of: the range of role developments within nursing, midwifery and health visiting; the preparation undertaken for introduction of new roles; the implications of new roles; the perceived benefits and drawbacks; the nature of role evaluation and plans for future development. Findings demonstrate a large number of new roles being undertaken by nurses in Scotland, classified as: existing nursing roles with general up-skilling; medical support nurses; clinical nurse specialists; advanced practitioners. The titles and academic requirements for specialist and advanced practitioner posts currently cause confusion; a variety of barriers to and opportunities for the development of new roles expressed – many attitudinal than evaluative in nature; generally nurses are motivated and enthusiastic re development of new roles; recognised need for education and training to support new roles and ensure quality of clinical practice. Consideration of the inclusion of new skills for nurses in pre-registration education, and/or post-registration preceptorship period (e.g. venepuncture, cannulation and ECG recording) would be beneficial; in general, the perceived benefits of new nursing roles far outweigh the drawbacks; legal and liability issues of concern in some NHS trusts; use of formal protocols to guide new nursing roles was varied and these are still in the developmental stages, as are the evaluation techniques; where evaluations have been carried out, the results suggest that nurses are taking on new roles successfully; executive nurse directors throughout Scotland expressed the common view that nursing is at a crucial stage and must take control of its own destiny to ensure optimal patient care and professional development.</p> <p><i>Comment:</i> useful study of new roles taking place within nursing in Scotland.</p>
#14382 NHS 1997. The development of nursing and health visiting roles in clinical practice. A contribution to the debate.	ROLES ISSUES	hand search; roles; models; nursing; workforce; UK; survey/study	<p>Paper describes a 1996 project in the North Thames Region, which sought to analyse range of emerging clinical roles in nursing and health visiting. The aim was to identify the issues raised by the initiatives and also issues of practitioner competence and safety; lack of clarity about the local supportive infrastructures required to ensure safe, cost-effective practice. Paper concentrates on emerging nursing roles at interface between traditional medical and nursing boundaries. Data from interview and focus groups of practising nurses. Identified common core of knowledge and skills across four types of expanded role: i) doctor's assistant/replacement; ii) clinical specialists; iii) minor injury and treatment services; iv) primary care practitioners in GP or community practice (not relevant to this study). Describes the strategic framework within which these role developments take place, which needs to include systems for: appropriate education and training; assessment of competence (to practice) and reinforcement of clinical responsibility (via audit). Concludes that current educational and training preparation for nurses undertaking these roles is very varied and not necessarily competence based. Also some fundamental issues re strategic framework, as increasing range of expanded and extended roles for nurses needs infrastructure to accommodate this.</p> <p><i>Comment:</i> useful paper identifying some of the key issues/core skills associated with some of the more common expanded nursing roles, and the educational and infrastructural needed to accommodate these.</p>

Skill mix in secondary care

#2801 Clark and Thurston, 1994. The RN and LPN skill mix.	HCASS/UP and ROLE ISSUES	roles; restructuring; HCAs/UP; skill mix; Canada	<p>Article describes the staffing mix change which took place in Foothill Hospital, Calgary, Alberta in 1991, with the introduction of another level of caregiver in active treatment areas – LPNs and the resultant problems. Many RNs were unaccustomed to supervising and delegating to other workers and the primary nursing method for delivering patient care no longer worked. Describes project to resolve difficulties of roles etc. The project helped to clarify roles and scope of practice. RNs and LPNs continue to work together to find most efficient care delivery method that will result in quality patient care.</p> <p><i>Comment:</i> anecdotal report on one hospital's experience of introducing LPNs (Canada).</p>
#2835 Clayworth, 1997. The integration of unlicensed assistive personnel using an 'expanding our skills' workshop.	HCASS/UP	HCAs/UP; restructuring; roles; skill mix; workforce, training; US; review	<p>Article describes the education programme used to successfully facilitate the use of obstetric technicians in a large labour and delivery unit. Role clarification and education regarding delegation skills are key factors discussed.</p> <p><i>Comment:</i> another working example (from the US) dealing with the development of the HCA technician role, and the training programme that underpins it.</p>
#540 Anderson, 1997. The introduction of generic workers into the ward team: an exploratory study.	HCASS/UP	HCAs/UP; workforce; restructuring; attitudes; UK; survey/study	<p>Addenbrooks NHS Trust, Cambridgeshire. Drawn from a quantitative study defining the role and resources required for the introduction of generic workers into the ward team. Month's trial to explore staff attitudes and perceptions from a small convenience sample. incl. trained, untrained and domestic staff, via semi-structured interviews, pre, post and non-participant observations during trial. Findings indicated positive support for the introduction of such workers and the transfer of responsibility from a central domestic team to the no to the ward manager. The ward environment improved and nursing staff were freed from non-nursing activity, leaving more time for patient care All wards in the trust are now to introduce such workers.</p> <p>Gives a breakdown of duties found to be consistent with a ward assistant role including non-nursing activities (call bells, stock/tidy linen, ward errands etc) catering activities (serve meals, tidy kitchen etc); domestic activities (change rubbish bags, seal sharps bins etc).</p> <p>Employment of change theory to facilitate/understand phases of change.</p> <p><i>Comment:</i> fairly typical small study evaluating the attitudes, process and outcomes of introducing generic workers onto the ward.</p>

Skill mix in secondary care

#12985 Thornley, 2000. A question of competence? Re-evaluating the roles of the nursing auxiliary and HCA in the NHS.	HCASS/UP	HCAs/UP; nursing; roles; hand search; UK; survey/study	<p>Article draws from the first national sample survey evidence and detailed case studies of both the long-standing grade of Nursing Auxiliary/Assistant and the new grade of HCA/Support Worker in the NHS. Argues for a fundamental re-evaluation of the real competencies of non-registered care givers, and of their potential to progress into RN training. Study demonstrates the real maturity, experience, competencies, roles and responsibilities, along with the extent to which they perceive themselves as 'substituting' for registered nursing staff; many blocked from entering RN training due to domestic and financial constraints; but NVQ accreditation has now provided both potential for formal recognition of experiential learning and also means by which they might progress into RN training, or even along parallel and more practice-orientated lines. Argues that RNs should welcome a more fluid and progressive role for these team members. Key findings relate to employee numbers, manager's reasons for introducing HCAs, the role of HCAs and NAs, their competencies, NVQ training and attainment; the personal profiles and characteristics of HCAs and NAs and perceptions of the future.</p> <p>Summary of findings: <i>numbers</i>: No reliable/accurate official data on numbers of NAs and HCAs employed in the NHS; survey find that the non-registered profile has been changing dramatically, with a proliferation of the HCA grade and a corresponding decline in the numbers employed in the NA grade 70-80% of trusts may now be employing HCAs, with significant numbers of NAs now incorporated into HCA workforce; nearly a fifth of trusts have incorporated all NAs this way, with no Whitley grade. Wide range of titles used for HCA, compounded by whether workers engaged in 'nursing', direct patient care, clinical duties, or solely on ancillary duties. <i>Reasons</i>: Cost effectiveness ranked as most important managers' reason for introducing HCAs, followed by flexible hrs, deployment and multi-skilling, demonstrating that grade dilution is a primary factor. HCAs a necessary and vital response to resource constraints and to declining availability of enrolled, student and RN staff on wards/community. <i>Roles</i>: High agreement between managers, HCAs and NAs on actual roles. Conclusive evidence that boundaries between so-called 'ancillary' work and 'nursing' work continue to be highly blurred and fluid, with both the traditional grade of NA and the 'new' HCA engaged widely in 'nursing' duties, with job titles used almost interchangeably in most trusts. 90% of HCAs perform nursing duties; need to refer directly to article for details of duties. Discusses competencies, NVQ training and attainment, wherein required job competencies and skills may be acquired either through experiential learning or specific on- or off-the job training, and are verified by internal and external assessors. NVQ attainment gradually more of an expectation for both HCAs and NAs, therefore no longer reasonable to generalise as 'untrained' or 'unskilled'. Discusses characteristics of the HCA/NA posts, i.e. four fifths women, and two fifths to one half working part time. High degree of interest in RN training. issues re whether training should be on wards or in community or academic institutions; also concern nature of nursing work itself.</p> <p><i>Comment</i>: KEY PAPER, presenting up-to-date survey data on the employment of HCAs in the NHS.</p>
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Skill mix in secondary care

#11117 Roberts and Cleary, 2000. Sustaining care delivery – team nursing with intensive care assistants.	HCASS/UP	ICU; HCAs/UP; nursing; roles; skill mix; UK	<p>From the Cardiothoracic Centre, Liverpool faced with an acute nursing recruitment problem, accentuated in the specialist area of intensive care. Response of unit was: triple tracking, being management of three extubated and stable post-op cardiac surgical patients by a senior grade F or G practitioner, assisted by an auxiliary, a development which required the redefinition and restriction of the role of the surgical intensive care nurse to key clinical decision making and nursing, delegating routine tasks to appropriate trained nursing auxiliary. Role of auxiliary nurses then further developed by training to a new and further extended role of 'intensive care assistant', with NVQ level II baseline, covering basic to more complex tasks (e.g. analysis of blood samples - see article for further details). Unit had fairly rich skill mix allowing scope for a revision which was instrumental in making successful practice and skill mix changes necessary for the introduction of intensive care assistants while guaranteeing expert supervision. Team nursing also introduced to help facilitate the developing role of the auxiliary nurse, and team-based patient allocation employed. Initial resistance to introduction of team nursing from senior nurses who felt skills as shift leaders were being eroded. Role of intensive care assistant continues to evolve and is constantly reviewed and evaluated.</p> <p><i>Comment:</i> useful short paper describing one unit's response to a staffing shortage and the role development/skill mix changes introduced to deal with it.</p>
#8282 McLeod, 2001. Critical care assistants: from concept to reality.	HCASS/UP	HCAs/UP; ICU; nursing; roles; service development; training; UK	<p>Current lack of adequately trained intensive care nurses requires identification of new roles to assist in care delivery. Article describes the development of a new competency-based role: the Critical Care Assistant at the Anaesthetic Directorate, Havering Hospitals NHS Trust. Postholders undertake an 18m training, incorporating a 3m foundation programme and an NVQ level 3 in Care, which is supplemented by specific ODP NVQ units, addressing the specialised needs of an ICU/HDU. Feedback after 3m positive, but training requires validation for a nationally recognised qualification to be obtained. Gives tabulated summaries of specific CCA skills (additionally to clinical support worker competencies) and examples comparing CCA and preceptored nurse competencies. Details of the training/education programme etc. Need to refer to article for details of these.</p> <p><i>Comment:</i> useful little paper describing another empirical example of the development of a new clinical role.</p>

Skill mix in secondary care

#10775 Ramprogus and O'Brien, 2002. The case for the formal education of HCAs.	HCASS/UP	HCAs/UP; nursing; workforce; roles; policy; UK; survey/study	<p>Study focuses on the professional development of HCAs in relation to patient care. National inconsistencies in training provision and the need to standardise the education of HCAs through registration are discussed, and the implications for nursing are examined. Via a semi-structured questionnaire, (80% response) supplemented by documentary analysis, the <i>Aims</i> were therefore: to analyse the changing scope of HCAs practice; to critically explore their role and development. needs; to discuss the potential implication of these changes for NHS trusts and nurse education. Questionnaires and documentary analysis indicated that the HVAs practice spanned three categories of core (personal care activities carried out by all HCAs), extended (areas of nursing practice delegated to HCAs for which they would normally receive training) and restricted skills (included procedures that the trust had decided were the responsibility of nurses). see Box 1 in article for details. Tasks commonly carried out by HCAs were: communicating with patients and relatives; non-patient contact tasks (washing lockers, tidying wards, running errands, acting as escorts, and clerical tasks. Involvement in advanced care varied, with some carrying out restricted procedures, and although none did drug rounds, they often administered drugs under a nurses supervision. Focus group revealed lack of systematic education and training for the intended role, with patchy course provision (see paper for details) but no organised approach to ensuring standards. Most experiences of preparation for the role were negative.; they learned 'on the job', from each other and fitted in with prevailing ward culture. Strong desire for career development expressed. As HCAs lack formal knowledge about specific interventions, at risk of learning tasks without understanding patients' needs or the knowledge underpinning the task. Study supports other research that support workers make a significant contribution to patient care, but not enough attention to their role and development, or to their professional developmental needs. Study shows that HCAs perform a large proportion of nursing care, often carrying out complex tasks and have a significant input to nursing students' clinical education. When students are supported by HCAs lacking formal education, result likely to be fragmented care not critically informed by theory. Two of strongest findings were: need for HCAs to feel valued and for career structure to be centred on continuing professional development. Trust has set up a system to develop protocols to define roles, prepare HCAs and support them in their career development.</p> <p><i>Comment:</i> KEY PAPER as an up-to-date survey/study of the changing scope of HCA practice and an exploration of their role, with implications for NHS trusts and nurse education.</p>
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Skill mix in secondary care

#6007 Hind, <i>et al.</i> Health care support workers in the critical care setting.	HCASS/UP	HCA's/UP; ICU; roles; skill mix; workforce; attitudes; UK; survey/study	<p>Article reports a study examining the views of critical care unit staff on the introduction of health care support workers into the critical care unit, and concludes that the role is viable within the setting of this study. A framework is outlined that could form the basis for a critical care health support worker training programme.</p> <p>Article discusses the changing nature of high dependency care, the changing role of the CCN and health care support workers in CC settings in the context of new, multidisciplinary working. Training for health care workers available to NVQ Level 3 and suggested by many they be delegated certain inessential nursing duties to lead to more cost-effective and patient-focussed use of nursing time and expertise. Demise of untrained nursing auxiliary now replaced by health care support workers whose roles have expanded into the professional nursing domain, with nurses lamenting release of nursing role to professionally unqualified staff. Worries that nurses' concentration on medico-technical skills and delegation of basic care to support workers may result in loss of basic skills. Examines views of staff in respect of these issues, wherein most respondents agreed with the introduction of HCSW if role was clearly defined and if each worker understood the boundaries within which they would carry out duties.; all nursing/medical staff felt that certain tasks should not be carried out by qualified nurses who need to concentrate on special skills, and role development. Fears that erosion of nursing role would adversely affect patient care. Important that health care support workers were incorporated into a team. Article provides tabulated summaries of clerical and housekeeping duties supported by nursing staff and of key areas of activity for support workers.</p> <p><i>Comment: a useful study of attitudes to the introduction of HCAs, their potential use, viability of roles etc.</i></p>
#6768 Johnson, 1996. Teaching nursing delegation: analysing nurse practice acts.	HCASS/UP	skill mix; HCA's/UP; nursing; delegation; training; US	<p>Paper is concerned with the issue of teaching delegation to nursing staff as good delegation skills needed to effectively implement current skill mix and patient focused care changes. Need for guidelines on what can/cannot be delegated to unlicensed assistive personnel and LPN/LVNs. Analysing practice acts as basis for teaching delegation principles a critical requirement for today's staff development/continuing education.</p> <p><i>Comment: US-focused paper dealing with teaching of delegation skills to nurses.</i></p>

Skill mix in secondary care

#11107 Roberts, 1994. The Health Care Assistant: professional supporter or budget necessity?	HCASS/UP	HCAs/UP; nursing; roles; skill mix; UK; review	<p>Article discusses the pros and cons of the widespread introduction of HCAs in the NHS. Concludes that a limited number of hospitals have made the HCA a valued, progressively trained addition to the nursing team. However, problem remains that far too many hospitals still unclear as to HCA real role in the NHS, as replacement for nursing auxiliary, as another form of EN or actually as a potentially cheaper version of the professionally qualified nurse, following progression through the NVQ system. Argues that although budget necessity will always be a priority, HCA should be an effective professional support to the qualified nurse.</p> <p><i>Comment:</i> quite an early article/review on the introduction of HCAs, before many of the later restructuring/role changes and substitutions were carried out.</p>
#3093. Corrigan, 2002. Nurses as equals in the multidisciplinary team.	INTER/ MULTIDISC/TEAM/ COLLABORATION and ROLE ISSUES	multidisciplinary; nursing; teamwork; roles; UK	<p>Nurses now recognised as professionals in own right, alongside doctors. Nurses must take personal responsibility for developing their own leadership and boardroom skills to enable them to make an equal contribution. Article discusses the role of nurses in the Centre for Reproductive Medicine in Bristol and work/attitude of Prof. M. Hull there, with nurses treated as equals.</p> <p><i>Comment:</i> standard sort of paper on successful team working dynamics via working example, with a special focus on the role and value of nurses in the team.</p>
#6568 Johnson, 2001. Collaborative practice. A successful model.	INTER/MULTI/ DISC/TEAM/ COLLABORATION	collaboration; interprof/disc; models; US	<p>Describes the process used in developing a collaborative practice model for patients with tetraplegia who are ventilator-dependent. It includes recommendations for the creation of a workable process.</p> <p><i>Comment:</i> example of a paper describing the development of a collaborative practice model from the perspective of a particular care situation.</p>
#10121 Rice, 2000. Interdisciplinary collaboration in health care.	INTER/ MULTIDISC/ TEAM/ COLLABORATION	multidisciplinary; interprof/disc; collaboration; teamwork; training; service development.; R&D; review; US	<p>Summary and analysis of a literature review on interdisciplinary collaboration in practice, education and research. Collaborative practice seen as an answer to many concerns facing contemporary health care because of correlation with more successful patient outcomes, continuity of care, decreased care costs, job satisfaction and promotion of personal identity. Describes: interdisciplinary teams and collaborative practice, including the elements of successful collaboration and effective teamwork. Discusses: collaborative practice models; reviews research on effectiveness, international developments, alternative therapies and complementary care; reviews linking practice and education with community partnership models, including interdisciplinary education and educational models, curriculum design, barriers and suggestions for success.</p> <p><i>Comment:</i> Very comprehensive and useful review/digest, therefore KEY PAPER, for this topic only.</p>

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#5533 Hall and Weaver, 2001. Interdisciplinary education and teamwork: a long and winding road.	INTER/ MULTIDISC/ TEAM/ COLLABORATION	interprof/disc; collaboration; teamwork; training; review; Canada	<p>Article review literature on interdisciplinary education and teamwork in health care to reveal main issues and best practices. Mainly N. American articles reviewed. Finds two issues emerging in health care as clinicians face complexities of current patient care: the need for specialised health professionals and the need for professionals to collaborate. Interdisciplinary health care teams with members from many professions answer the call by working together, collaborating and communicating closely to optimise patient care. Education on how to function within a team is essential. two main categories of issues emerged: those related to the medical education system and those to the content of education. Concludes that much of the literature pertained to programme evaluations of academic activities and did not compare interdisciplinary education with traditional methods. Many questions about when to educate, who to educate and how to educate remain for future research to address. Key learning points are: education on how to function within a team is essential; interdisciplinary education must address role blurring, group skills, communication skills, conflict resolution and leadership skills. Under interdisciplinary education of the health care team discusses: system issues, including availability of education. timing of the educational intervention, non-traditional teaching methods, need for faculty development, institutional support, participants characteristics, and content issues (see above).</p> <p><i>Comment:</i> AS with #10121, this is a good review of the topic, but too detailed for précis and not all of it explicitly relevant.</p>
#554 Anderson <i>et al.</i> , 2000. Interdisciplinary shared governance: partnership model for high performance in a managed care environment.	INTER/ MULTIDISC/ TEAM/ COLLABORATION	interprof/disc; multidisciplinary; managed care; models; innovations; management; restructuring; service devpt; US	<p>Article discusses way that managed care environment is forcing hospitals to seek new and innovative ways to deliver a seamless continuum of high-quality care and services at lower costs. Many striving to achieve this through shared governance models that support point of service decision making, interdisciplinary partnerships and the integration of work across clinical settings and along the service delivery continuum. Authors describe key processes and strategies used to facilitate the design and successful implementation of an interdisciplinary shared governance model in Cincinnati, Ohio. Implementation costs and initial benefits obtained over a two-year period are also identified, including substantial cost savings realised from decreased RN turnover and vacancy rates and improved co-ordination and utilisation of health care resources, also greater patient satisfaction.</p> <p><i>Comment:</i> Discusses the context of the changing context of health care service provision in the US and problems associated with managed care, cost-containment etc, within which the move towards inter/multidisciplinary teamwork is discussed; not all of it explicitly relevant.</p>

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#2551 Brita-Rossi <i>et al.</i> , 1996. Improving the process of care: the cost- quality value of interdisciplinary research.	INTER/ MULTIDISC/ TEAM/ COLLABORATION	interprof/disc; multidisciplinary; teamwork; roles; collaboration; innovations; US	<p>Article describes how a multidisciplinary group of clinicians and administrators convened to find innovative ways to contain costs and improve the quality of care on an inpatient orthopaedic unit. Team proved to be a model of effective, successful collaboration and has enabled ambitious goals to be realised. Article outlines changes related to preoperative, intraoperative and post-operative care and discusses the dynamics of effective interdisciplinary professional collaboration.</p> <p>Article doesn't exactly address skill mix issues in the delivery of patient care, simply organisational changes and changes in the planning, location or administration of some clinical procedures. Does comment how OR nurses, anaesthesiologists and orthopaedic surgeons worked together to decrease OR delays; group recommended that there be dedicated orthopaedic nursing teams in the OR, who, by recognising special needs of patients, were further able to refine systems to reduce delays and better able to meet needs of patients during surgery.</p> <p><i>Comment:</i> Another paper on team working initiatives with a US and cost-containment focus. Article doesn't exactly address skill mix issues in the delivery of patient care, simply organisational changes and changes in the planning, location or administration of some clinical procedures.</p>
#9078 Mickan and Rodger, 2000. Characteristics of effective teams: a literature review.	INTER/ MULTIDISC/ TEAM/ COLLABORATION	review; teamwork	<p>Article describes 18 characteristics of effective teams which have been identified from the literature, which are: Organisational structure, including purpose, culture, task specification, distinct roles, suitable leadership, relevant members, adequate resources, individual contribution, self-knowledge, commitment and flexibility; Team process, including co-ordination, communication, cohesion, decision making, conflict management, social relationships and performance feedback. Supportive organisational structures and optimal individual contributions key for effective teamwork; team leader should be appropriately skilled and all team members need clearly delineated and necessary roles; teams more effective with minimum numbers of members to meet their purpose and membership should be regularly clarified in response to patient needs. Consistent education and support for team building and development should be accessible for all health care workers. Team more effective when members are cohesive, make joint decisions and manage conflict. Need to build and maintain effective teams to maximise the specialist skills of health care professionals in meeting complex patient needs team development and performance can be promoted through education. Patient care ultimately enhanced through the co-ordinated efforts of effective health care teams.</p> <p><i>Comment:</i> Useful paper identifying the characteristics of effective teams from a review of the literature.</p>

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#9079 Mickan and Rodger, 2000. The organisational context for teamwork: comparing health care and business literature.	INTER/ MULTIDISC/ TEAM/ COLLABORATION	review; teamwork	<p>Paper notes that there is as yet little documentation of the changing nature of teamwork in health care. Currently appears that the traditional patient-focused production/service teams are moving from a multidisciplinary to an interdisciplinary focus. Health care teams also being expected to perform quality and management tasks in addition to delivering co-ordinated patient care. The business literature may be generalised to health care if the significant differences between both environments are kept in focus. Patient needs must be kept in focus; when individuals collaborate around patient needs they can generate a shared perception of what is required of the team and how best the team can achieve it, through defined clinical pathways. Ultimately a conceptual framework for understanding teamwork in contemporary health care is needed to support and educate health care professionals about teamwork to promote quality health care for patients.</p> <p><i>Comment:</i> another review of effective health care team working dynamics offering a comparison with the business literature.</p>
#1013 Atwal, 2002. Do multidisciplinary integrated care pathways improve interprofessional collaboration?	INTER/ MULTIDISC/ TEAM/ COLLABORATION	interprof/disc; multidisciplinary; collaboration; teamwork innovations; survey/study; UK	<p>Paper reports on the evaluation stage of a research project on interprofessional collaboration in discharge planning via stakeholder interviews; interprofessional audit and analysis of the variances from the integrated care pathway. Finds that although integrated care pathways led to improved outcomes for the health care trust, there was little evidence to suggest that interprofessional relationships and communication were enhanced. Furthermore, key factors in discharge delays appeared to be organisational rather than professional. Care pathways (also multi-disc. action plans etc) widely promoted as a managed care paradigm and facilitate development and implementation of multi-disciplinary guidelines, minimise delays and use of resources while maximising quality of care. Benefits include increased collaboration, increased professionalism, more effective clinical care, improved clinician-patient communication and patient satisfaction, but limited evidence for this potential to improve patient care.</p> <p><i>Comment:</i> As an evaluation of the effectiveness of the integrated care pathway, this article is probably only of limited relevance to workforce issues in service delivery <i>per se</i>. Some potentially useful points here though.</p>

Skill mix in secondary care

#2064. Brooks, 1996. Using ritual to reduce barriers between sub-cultures.	INTER/ MULTIDISC/ TEAM/ COLLABORATION	interprof/disc; teamwork; cultures; workforce; UK; survey/study	<p>Article addresses attempts in the NHS to reduce negative consequences of demarcation and develop team-orientated, multi-skilled and flexible employees, with the aim to achieve an appropriate match between the skill levels of personnel; and the demands of the task, thereby maximising both value for money and effectiveness. Still much potential for role substitution etc. Article looks at the potential for achieving change by interpreting and manipulating rituals which preserve the negative aspects of professional and work group autonomy. paper discusses rituals observed in a case study hospital and demonstrated how they help to maintain potentially dysfunctional cultural norms and behaviours which, consciously or not, serve to resist moves to achieve more flexible, team-orientated patient-centred changes. New rituals explored which may question current practices and attention to rituals in the wider change process may facilitate the desired change. Suggests that changes which confront unnecessary demarcation, but which do not undermine professional integrity can be of real benefit.</p> <p>There is a useful table of working examples of different rituals, their classification and analysis and the required change, e.g.: 'It's not my job': demarcation issues between all groups/professions often assume ritualistic proportions; this is classified as a rite of enhancement: enhances and preserves the power and social identity of sub-cultures; also a rite of resistance: group/profession 'conspiracy' to resist change; required change: work groups/professions seeking ways to remove barriers to effective, patient-centred teamwork. And Nurses serve food: nursing staff often resist moves to delegate task to ward assistants or caterers; this is classified as a rite of enhancement: enhances social identity of nurses as caring profession and denies access to less qualified staff; required change appropriately trained ward assistants complete tasks, thus saving resources.</p> <p>Tabulated examples of rituals encouraging change e.g.; up-skilling nursing staff classified as rite of passage: facilitates their transition into new social role/status; also rite of renewal: refurbishes a social structure and improves their functioning.</p> <p><i>Comment:</i> this is an interesting and useful paper using anthropological paradigms to interpret the dynamics of organisational change processes in the NHS; could be useful for service provision, skill mix changes etc.</p>
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#9247 Molyneux 2001. Interprofessional team working: what makes a team work well?	INTER/ MULTIDISC/ TEAM/ COLLABORATION	innovations; teamwork; UK; survey/study	<p>Study explores how and why co-operative and positive working relationships and practices developed within one interprofessional health care team in NE England. Three emergent themes indicative of positive team working: personal qualities and commitment of staff; communication within the team and the opportunity to develop creative working methods within the team, all of which were seen by team members as significantly different from their previous experiences of interprofessional working.</p> <p><i>Comment:</i> standard sort of paper on successful team working dynamics via working example.</p>
#13396 Verdejo, 2001. Leading into the 21 st Century: changing the visions and leading towards success.	INTER/ MULTIDISC/ TEAM/ COLLABORATION	interprof/disc; multidisciplinary; innovations; models; workforce; US	<p>Article explores the experience of one organisation seeking an alternative transdisciplinary model of care delivery. The required leadership skills and expertise in leading the implementation of trained teams highlighted for each phase of the implementation. Background for success illustrated as well as successful outcomes. Goal to expand and reinforce the team's definition of care integration and to define and operationalise a unique method of care delivery. The process and outcomes are outlined, focusing on successes and failures. Highlights the strengths of the transdisciplinary model for patient as well as staff.</p> <p><i>Comment:</i> standard sort of paper on successful team working dynamics via working example</p>
#9265 Montebello, 1994. Teamwork in health care: opportunities for gains in quality, productivity and competitive advantage.	INTER/ MULTIDISC/ TEAM/ COLLABORATION	innovations; restructuring; teamwork; workforce; US	<p>Article describes how to organise teams at all levels and accelerate their development to achieve important organisational objectives, eg. improving quality, productivity and efficiency, while increasing employee satisfaction. Pioneering workplace innovations are reviewed to demonstrate how high involvement teams integrating strategic planning, research and health-care delivery processes not only possible but desirable. Enhanced quality, improved productivity, greater efficiency, and employee satisfaction all translate to an undeniable competitive advantage.</p> <p>Describes how to design and organise teams emphasising skill variety, task identity, task significance, autonomy and feedback; applications of teamwork in health care organisations; how teams develop by stages; describes a new behavioural model of teamwork, surveying a team's teamwork patterns and the real world of team development.</p> <p><i>Comment:</i> This is rather an early article with a clear US focus, written towards the start of the restructuring process which is now well advanced in both the US as well as the UK. However, has some useful insights into team construction and dynamics which might be relevant to workforce service delivery issues. Too detailed in describing these for an adequate summary.</p>

Skill mix in secondary care

#9135 Miller and King. Collaborative practice: a resource guide for midwives.	INTER/ MULTIDISC/ TEAM/ COLLABORATION	interprof/disc; teamwork; workforce; collaboration; models; US; review	<p>Review finds a paucity of literature specifically addressing the efficacy of collaborative practice composed of midwives and physicians. However, the literature documenting the effectiveness of interdisciplinary teams of various health care providers combined with the literature on the effectiveness of midwifery practice presents a compelling argument for midwife-physician collaborative practice. Presents a 'resource' list of literature relevant to identified themes: Collaborative practice; Models of interdisciplinary (nursing and medicine) health practice: much of literature here focuses on nurse-physician relationships and on demonstration projects involving collaborative teams. Critical care nurses, quality assurance teams and hospital and home-care managers, in particular, have been active in collaborative practice and have documented their work; Models for collaborative practice between certified nurse midwives and physicians: issues specific to midwives and physicians re collaborative practice such as the CNM/CM scope of practice, patient populations and acuity, and the reimbursement needed to meet costs are addressed. Professional relationships: nurses, advanced practice nurses, midwives, and physicians: professional competence and effective communication are key elements for any collaborative relationship. Barriers to establishing collaborative practices that exist within health care systems and within the individual cultures of nursing, midwifery, and medicine addressed. Interdisciplinary education: many educators and practitioners agree that to strengthen collaborative practice, it is necessary to begin training students to work together and respect each others disciplines. American College of Nurse-Midwives and American College of Obstetricians and Gynaecologists documents relating to collaborative practice: presents list only. Organisational dynamics: A key to introducing the concept of collaboration into an ongoing practice or service delivery setting is to understanding group dynamics and team building. Organisational change and organisational management refs list follows. Midwifery: History of in the US – list follows; Demographics and practice activities: refs list follows. Efficacy of Midwifery Care: to date, no definitive meta-analysis of the efficacy of midwifery care. Large-scale meta-analysis of controlled trials of perinatal care (Chalmers <i>et al.</i> 1989) suggest that women with normal pregnancies can be cared for by midwives. Evaluation on outcome data across 20 years support the general efficacy of midwifery (Wills and Fullerton 1991). Outcomes of midwifery care: , comparison to non-midwife providers; outcomes of midwifery care in out-of-hospital settings, refs lists only. Public Health perspectives: Federal and state commissions on safe birthing have repeatedly suggested increasing the use of midwives to improve access to care for vulnerable populations and to improve maternal and neonatal morbidity and mortality. The Inst. of Medicine (1985) concluded that more reliance should be laced on midwives to provide perinatal care to groups at risk of low birth weight; refs list follows.</p>
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#9135			Cost-effectiveness of midwifery care: difficult to demonstrate compared with physician care because of no. of variables affecting midwifery productivity and costs. Studies need to assess type of practice setting, location, provider-population ratio, acuity and severity of patient's problems as well as account for degree of independence of midwives in providing services. Study suggests that technical and psychosocial aspects of care given by CNMs/CM and physicians so different that using a provider substitution model is inadequate to describe the relationship between the outcomes of care and the different inputs physicians and midwives bring to each client interaction. Refs list follows. Access to care for underserved and/or vulnerable populations: studies document the role of nurse-midwives have performed in improving access to care for underserved and vulnerable populations. More than half of all midwives serve women in rural or inner city neighbourhoods. Patient satisfaction/consumer perspectives: literature demonstrates a high degree of patient satisfaction with midwifery care. Barriers/challenges to midwifery practice: include legislative restraints, malpractice surcharges for physicians practising with certifies nurse-midwives, lack of hospital privileges, and lack of public awareness of services. Effect of health care reform on midwifery practice: future of midwifery in a rapidly changing health care delivery system is very much in question.
Miller and King.			Comment: some but not all of this lengthy review article relevant in terms of service delivery, professional substitution, collaborative practice etc.
Cont...			
#7105	INTER/MULTIDISC/	interprof/disc;	Interprofessional working poorly understood in clinical practice. Article explores implications of
Kenny, 2002.	TEAM/COLLABORAT	multidisciplinary;	interprofessional working and argues for 3 separate/related dynamics: philosophy – new ways of working;
Interprofessional	ION	teamwork;	policy initiatives to create structures where interprofessional working can be implemented; patients
working:		innovations;	receiving improved care with delivery based on evidence and efficient use of resources. Article seeks to
opportunities and		policy; UK	show how nursing can actively engage with this process to a positive effect, and that values and focus of
challenges.			holistic care can be integral to modern health care delivery.
			Nurses need resources for skill acquisition to engage in research and a patient-centred care dialogue.
			<i>Comment:</i> Article is nurse-specific, and probably not that useful.

Skill mix in secondary care

#1722 Boaden and Leaviss, 2000. Putting teamwork into context.	INTER/MULTIDISC/ TEAM/COLLABORATIO N	multidisciplinary; teamwork; roles; models; education; policy; UK	<p>Multi-disciplinary teamwork becoming more important in both the delivery of health care and the organisation and management of that delivery. Traditional professional education has done little to address challenge it presents to professionals. Service delivery changes in NHS mean that professionals must work together in increasingly flexible and innovative ways. They are also required to play more formal roles in NHS management and policy. Teamwork in professional education has concentrated on interpersonal dynamics of working teams. Although important, curricula and educational practice will have to be clearer about the variety of teams involved and the importance of the context within which teams work. One view offered as to how that context might be understood in order to map team diversity. Two models offered to help develop multidisciplinary team learning. One deals with key aspects of organisational setting and other with factors that affect team processes. Argues that both should help to facilitate multidisciplinary curriculum development but also suggest learning needs to be met within unidisciplinary professional education. Concentration on team dynamics alone will not deliver the teamwork required in the new NHS. Teamwork more complex than educational approaches commonly adopted allow; the seamless nature of health care delivery, and the necessary links between NHS policy and the ultimate service delivery require that that complexity be understood. Also requires that many participants, at all levels of the NHS, develop teamwork skills both within their core area of expertise but also in handling the many boundaries at which their work is affected by other parts of the service, requiring a more fundamental examination of the dynamics of teams and teamwork, and developments in education. Many useful initiatives currently underway in attempts to meet the challenges of multidisciplinary working in the NHS, which tend to focus on team processes rather than on team context. New emphasis on context will require a new approach in basic, post-graduate and continuing education to allow the development of skills in graduate professionals that are more flexible and more transferable..</p> <p><i>Comment:</i> KEY PAPER in terms of its focus on the context service delivery changes within the NHS and the training/educational needs to enable effective team working in the modern health care environment.</p>
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Skill mix in secondary care

#1946 Barr, 1997. Interdisciplinary teamwork: consideration of the challenges.	INTER/MULTIDISC/ TEAM/COLLABORATIO N	interprof/disc; teamwork; organisation; restructuring; service development; UK	<p>Most NHS services involve a considerable amount of interdisciplinary teamwork. Article outlines a definition of and rationale for successful interdisciplinary teamwork. It considers key organisational, professional and interpersonal challenges that need to be addressed if the present level of teamwork is to be enhanced. Points out that several variables, e.g., increased caseloads, increased discharges from caseload, higher reported staff morale, patient/carer satisfaction, reduced costs and response times could be used as outcome measures when measuring the success and effectiveness of teamwork. Key points are: a need to develop effective interdisciplinary teams within health and social services; not all groups of people working together form teams, with many so-called teams within health and social services being fragmented groups of people; effective teamwork requires investment of time and money in team development; interdisciplinary teams should be evaluated by the extent to which they are more successful than single disciplinary teams in assisting clients to achieve client-centred goals; current professional guidance suggests that nurses must seek to develop and maintain interdisciplinary teamwork.</p> <p><i>Comment:</i> a good short article discussing benefits and dynamics of teamwork and challenges to setting it up in modern NHS service delivery.</p>
#1716 Arthur, <i>et al.</i> , 2003. Team resource management: a programme for troubles team.	INTER/MULTIDISC/ TEAM/COLLABORATIO N	HRM; multidisciplinary; teamwork; UK	<p>Article is a case study illustrating the NHS clinical governance support team's team resource management programme, which supports individuals who work with poorly performing teams.</p> <p><i>Comment:</i> Paper fairly typical of the range of team working dynamics articles.</p>

Skill mix in secondary care

#10431 Rushin, <i>et al.</i> , 1998. Teamwork in the operating theatre.	INTER/ MULTIDISC/ TEAM/ COLLABORATION and HC REFORM/ RESTRUCTURING	multidisciplinary; teamwork; restructuring; service development.; models; ORs; UK	<p>Article a report on the work of the gynaecology theatre team of the Leicester Royal Infirmary (LRI) NHS Trust, concept of teamwork and its benefits to the organisation and delivery of patient care in the OR. Explores the meaning of effective teams, identifies developments and the contributions the team has made to enhanced patient care. Report contains a detailed description of this unit's team development strategies and discusses transferability of outcomes, resource and support. Outcome of teamwork is research based, method is a qualitative approach, using the Giorgi 5 step procedure.</p> <p><i>Details:</i> Article discusses the characteristics of an effective team. LRI Trust re-engineering health care > dramatic improvements in patient care, teaching and research., and is one or two pilot projects for the NHS Exec. Healthcare, clinical and managerial aspects redesigned; organisational structure moving from traditional to patient-focussed. Results are: greatly accelerated outpatient processes and diagnostic tests; reduced LOS by 50% and increased patient satisfaction; significant efficiency gains. New theatre staffing strategy addressing needs of modern OR environment. teamwork introduced owing to changes in training practices and problems with local recruitment. Enables ODA/Ps to apply for jobs. Creation of team-based work, an operational manager, resource manager, training and quality manager and seven speciality teams (general, emergency, ENT, gynae., maxillo; orthop. and plastic surgery teams). Size of teams from four – 50 members, consisting of nurses, ODA/Ps and untrained staff, and with a team leader. Emerg. and orthop. teams have deputies, the remaining teams have a clinical specialist, followed by different levels of staff. Within the concept of teamwork offers the opportunity for staff to become multi-skilled in surgery, anaesthetics and recovery. Untrained staff can also undertake NVQ level II training and then proceed to develop professionally through the NVQ training pathway. All trained staff carry out the task of doing the off-duty and allocating team members to the theatre; experience also gained here in management. Each team members ensures that staff rotate , that the skill mix is correct, that learning is achieved and patient care maintained. Rotation gives each individual the opportunity to work with all the surgeons and anaesthetists. All trained team members record sickness and staff return; each member has access to all the ordering and budget info. Individual members see reps from different companies and deal with any request for equipment, new products or instruments. All members have input into purchase of instruments/equipment.</p> <p><i>Comment:</i> probably a KEY PAPER in that it is a very good empirical example of what team working means in terms of restructuring of health care systems (NHS here) and new modes of staff deployment and service delivery.</p>
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Appendix 2 The questionnaire with covering letter

N.B. most layout and typographic features have been removed to reduce the size of the electronic copy of the report.

Project on workforce deployment - April 2003

We are asking for your help with a project to summarise the types of activities that have been introduced to implement the approaches set out in the Changing Workforce and Skills Escalator Programmes and, more generally, in the report on the Human Resources Implications of the NHS Plan. So we want to hear about relevant aspects of workforce planning; local innovations and any related evaluation mechanisms. We are also very interested in details of any reports that you have produced and any literature/examples that have been helpful.

Please return the questionnaire in the enclosed Freepost envelope or send it to the address at the end of the questionnaire. Even if there is nothing or little to report on these topics we are still keen to hear from you. Equally if there are questions that are not applicable to you, please tell us. but if you have lots to say, please continue on separate sheets.

if you have created any new types of post - such as modern matrons - we would be especially interested to see any associated job descriptions and these could be emailed to <rach1@york.ac.uk>

1. Management of nursing and nurse support staff

- a To what extent is the strategic management of nurses and support staff devolved to units, specialities or wards?
- b Do you use any proprietary nursing workload planning systems such as NICSM, GRASP, Criteria for Care and CASH. Please state which system you have:
- c If you have one of these systems, what is it used for?
- d What mechanisms (if any) are in place to vary ward staffing levels or grade-mix in response to changes in patient numbers or dependency?
- e What arrangements (if any) do you have to use nursing support staff to cover or substitute for qualified nurses (such as using clinical support workers)?
- f Please give details of any initiatives to standardise or develop the range of activities of nurses and nurse support staff, including examples of shifting job boundaries.

Skill mix in secondary care

- g What would you say are the most successful forms of flexible working for nurses and nursing support staff that you are currently operating?
- h What have been the greatest changes in ways of deploying nurses and nursing support staff working in your institution over the past five years?

2. Management of professions allied to medicine (PAMs)

Please give similar details to those in sections 1(f), 1(g) and 1(h) in relation to any schemes to develop the role of PAMs in your trust.

3. New types of nursing and related roles

This is a list of some of the new types of nursing roles and associated posts. Please indicate whether these posts exist in your institution and at what grade. We would also be keen to see any job descriptions - especially for those posts that have been most innovative and/or successful.

Post/role	Do you have these?	At what grade?	Post/role	Do you have these?	At what grade?
Clinical skills nurses			Nurse consultants		
Clinical support workers (NVQ3)			Practice placement facilitators		
Critical care outreach workers			Clinical skills facilitators		
Pathway nurses			Modern matrons		
Discharge nurses			Ward housekeepers		
Lecturer/practitioners					

Please write in the titles of any other new posts and their grades below.

4. 'Skills escalator' initiatives

Please give brief details of any programmes and/or training that support the upward development of the roles of nurses and nursing support staff; and any other initiatives inspired by the 'skills escalator' principles.

5. Monitoring the effectiveness of staff redeployment

What mechanisms do/have you used to monitor the effects on patient care of any changes to staff deployment.

6. Changing Workforce Programme

- a Please provide brief details of any initiatives inspired by the 'Changing Workforce' or similar programmes – we are interested in projects for all types of staff, not simply nurses. *(Examples of Changing Workforce Programme projects include: senior House Officer and equivalent roles in Leicester and AHPs in Salford)*
- b Have you attended any events relating to the Changing Workforce Programme – If so, were these helpful in suggesting possibilities for local schemes?
- c How many of your staff have been trained in the use of the 'toolkit for local change'?
- d Please give details of any local schemes that have been developed or modified in the light of the toolkit.

7. Reports, literature and documentation

- a Please tell us about any reports or publications that your trust has produced in the past four years describing, or evaluating changes in staff deployment.
- b Please supply details of any recent documentation, both reports and publications, that you have found particularly helpful when considering or planning workforce deployment.

Appendix 3 List of trusts who returned questionnaires

Table 22 Trusts returning questionnaires

Trust	Number of replies
Addenbrooke's NHS Trust	1
Airedale NHS Trust	1
Ashford and St Peter's Hospital NHS Trust	1
Barking Havering and Redbridge Hospitals NHS Trust	1
Barnet and Chase Farm Hospitals NHS Trust	1
Barnsley District General Hospital NHS Trust	1
Barts and The London NHS Trust	1
Bedford Hospital NHS Trust	2
Birmingham Heartlands and Solihull NHS Trust	1
Birmingham Women's Healthcare NHS Trust	1
Blackburn Hyndburn and Ribble Valley Healthcare NHST	4
Bolton, Salford and Trafford MH Partnership	1
Bradford Hospitals NHS Trust	2
Brighton and Sussex University Hospitals NHS Trust	1
Burnley Health Care NHS Trust	3
Cheshire and Wirral Partnerships NHS Trust	1
Chesterfield and North Derbyshire Royal Hosp NHST	1
Co Durham and Darlington Acute Hosp NHS Trust	1
Co Durham and Darlington Priority Services NHS Trust	1
Community Health Sheffield NHS Trust	1
Doncaster and Bassetlaw Hospitals NHS Trust	2
East and North Hertfordshire NHS Trust	4
East Kent Hospitals NHS Trust	1
Epsom and St Helier NHS Trust	2
Frimley Park Hospitals NHS Trust	1
Gloucestershire Hospitals NHS Trust	3
Hammersmith Hospitals NHS Trust	1
Harrogate Health Care NHS Trust	1
Hereford Hospitals NHS Trust	2
Hertfordshire Partnerships NHS Trust	1
Hull and East Riding Community Health NHS Trust	1
King's Lynn and Wisbech Hospitals NHS Trust	1
Kings College Hospital NHS Trust	2
Lancashire Care NHS Trust	1
Leeds Mental Health Teaching NHS Trust	1
Lincolnshire Partnership NHS Trust	1
Manchester Mental Health and Social Care Trust	1
Medway NHS Trust	2
Mid Cheshire Hospitals NHS Trust	1
Norfolk and Norwich University Hospital NHS Trust	1
North Bristol NHS Trust	1
North Cumbria Acute Hospitals NHS Trust	1
North Cumbria M/H and Learning Disabilities NHST	1
North East London Mental Health NHS Trust	1
North Essex Mental Health Partnership NHS Trust	1

Skill mix in secondary care

North Hampshire Hospitals NHS Trust	1
North Middlesex University Hospital NHS Trust	1
North Staffordshire Combined Healthcare NHS Trust	3
North Tees and Hartlepool NHS Trust	1
Northamptonshire Healthcare NHS Trust	1
Northern Devon Healthcare NHS Trust	1
Northern Lincolnshire and Goole Hospitals NHS Trust	1
Nottingham City Hospital NHS Trust	2
Nottinghamshire Healthcare NHS Trust	1
Oxford Radcliffe Hospitals NHS Trust	1
Oxfordshire Mental Healthcare NHS Trust	1
Papworth Hospital NHS Trust	1
Peterborough Hospitals NHS Trust	1
Plymouth Hospitals NHS Trust	1
Portsmouth Hospitals NHS Trust	2
Queen's Medical Centre Nottingham University Hosp NHST	1
Robert Jones/Agnes Hunt Orthopaedic Hospital NHST	1
Rotherham General Hospitals NHS Trust	2
Royal Berkshire and Battle Hospitals NHS Trust	1
Royal Brompton and Harefield NHS Trust	1
Royal Cornwall Hospitals Trust	3
Royal Liverpool and Broadgreen Univ Hospitals NHST	2
Royal Surrey County Hospital NHS Trust	1
Salford Royal Hospitals NHS Trust	2
Salisbury Health Care NHS Trust	1
Sandwell and West Birmingham Hospitals NHS Trust	1
Scarborough and NE Yorks Health Care NHS Trust	1
Sheffield Children's NHS Trust	2
Sherwood Forest Hospitals NHS Trust	2
South Buckinghamshire NHS Trust	2
South Manchester University Hospitals NHS Trust	1
South Warwickshire General Hospitals NHS Trust	1
Southend Hospital NHS Trust	1
St George's Healthcare NHS Trust	2
St Helens and Knowsley Hospitals NHS Trust	1
St Mary's NHS Trust	1
Swindon and Marlborough NHS Trust	1
Taunton and Somerset NHS Trust	1
The Great Ormond Street Hospital for Children NHST	1
The Princess Alexandra Hospital NHS Trust	1
The Princess Royal Hospital NHS Trust	1
The Royal Wolverhampton Hospitals NHS Trust	1
United Lincolnshire Hospitals NHS Trust	3
University Hospitals Coventry and Warwickshire NHST	1
University Hospitals of Leicester NHS Trust	1
Walton Centre Neurology and Neurosurgery NHS Trust	1
West Dorset General Hospitals NHS Trust	1
West Hertfordshire Hospitals NHS Trust	1
West Kent NHS and Social Care Trust	1
West Suffolk Hospitals NHS Trust	1
Worthing and Southlands Hospitals NHS Trust	1
Wrightington Wigan and Leigh NHS Trust	1
York Health Services NHS Trust	1

Appendix 4 List of new nursing posts (and associated grades) additional to the 11 listed in question 3

Role	Grade
1st assistant/surgeon's assistant	g,h
Attention deficit hyperactivity disorder (ADHD) specialist nurse	g
Admission nurses in accident and emergency	
Bed manager	
Bereavement worker	
Clinical based educators	f,g
Clinical education advisors	h
Clinical educator	f
Clinical lead for pre-admission services	h
Clinical matrons undertaking junior doctor roles	
Clinical nurse specialist team manager	h
Clinical practice educators	g
Clinical site practitioners	Grade
Clinical specialist in physiotherapy	
Clinical support nurses	f
Clinical teachers	g
Consultant physiotherapist in cystic fibrosis	
Continuing professional development officer	h,l
Critical care outreach worker	
Developing trauma co-ordinator	f
Dementia care nurse	g
Dialysis co-ordinator	g
Drug and alcohol nurse	
Drug misuse liaison midwife	g
Education advisors	h
Education facilitators	g
Emergency nurse practitioner	f,g
Emergency nurse practitioners	g,f
Healthcare assistant training co-ordinator	g
Head nurses	l

Skill mix in secondary care

International recruitment support nurse	g
Lead nurse anti-coagulation	g
Liaison nurses	g,f
Mentorship support nurse indicator	h
Neonatal advanced practitioner	h
Neonatal practice development nurse	g
Night nurse practitioners	g,f
Nurse clinician	f,g
Nurse clinicians	trust pay
Nurse educator posts in some areas	g
Nurse-led thrombolysis	g,f
Nurse practitioner	g
Nurse practitioner	f,g
Nurse practitioners	g
Nurse practitioners	g
Nurse practitioners	f,h
Nurse practitioners	f,g
Nurse practitioners	f,g
Nurse specialist	
Nurse specialists	f,g
Nursing practitioner facilitator	h
NVQ co-ordinator	g
NVQ3	a,b,c
NVQ3 first set just completing	
Orthopaedic nurse specialist	h
Patient access team	f,e
Patient co-ordinator	
Patient management team	g
Practice development nurse	f
Practice development nurse	g
Practice development nurses	g,h,i
Practice development nurses	f,g
Primary care workers	g
Respiratory outreach nurses	
Senior health care assistant	c
Senior nurse managers trust grade	4,5

Skill mix in secondary care

Senior housekeeper	b
Specialist nurse, infant and baby	
Specialist nurse, physiotherapy and family work	
Specialist training officers	g
Sure Start midwives	g
Surgeon's assistant	g
Teenage pregnancy midwife	g
Thrombosis nurses	
Trauma co-ordinator	
Trauma nurses	
Various specific specialise nurses	g,1
Workforce development officer	h,i
Youth worker	

Appendix 5 Follow-up letters to SHAs and WDCs

Centre for Health Economics

University of York

YORK

YO10 5DD

Tel 01904 432 306

Fax 01904 434 574

e-mail irss23@york.ac.uk

28th May 2003

Dear Mr (Name of chief exec)

Request for workforce chapter from your local delivery plan

We have been commissioned¹ by the NHS Service Delivery and Organisation (SDO) Research & Development Programme to scope what evidence exists to provide answers to a broad range of questions about skill mix in secondary care:

- What modes of deployment are in use to ensure effective use of available staff, and how successful are they?
- What impact does training have on staff deployment?
- What impact does continuing professional development have on the deployment of staff?
- What are the current patterns of delegation from one staff group to another, and what are the processes that underpin these?
- To what extent is use being made of unqualified assistants?
- What impact does the substitution of one professional group by another in secondary care have on quality of care, patient satisfaction and clinical effectiveness?

The exercise started in April and is to be completed by the end of July. The purpose is to set a research agenda for the SDO that will be responsive to the needs of the service.

¹ This is one of three scoping exercises that have been commissioned at the same time. The other two concern workforce issues and health outcomes and the impact of local labour markets and local pay bargaining on the delivery of services

Skill mix in secondary care

We are, of course, therefore very interested in the Local Delivery Plan that you have just produced and, in particular, in the Workforce chapter and any supporting Appendices. We checked your website a couple of days ago and it had not yet been mounted; so we are writing to ask if you could please send us a copy of that chapter and of any supporting Appendices.

Thanking you in advance, I remain

Yours sincerely

Roy Carr-Hill

Centre for Health Economics

University of York

YORK

YO10 5DD

Tel 01904 432 306

Fax 01904 434 574

e-mail irss23@york.ac.uk

28th May 2003

Dear [Name of health care scientist in WDC from attached list]

Request for information about skill mix in secondary care

We have been commissioned by the NHS Service Delivery & Organisation (SDO) Research and Development Programme to scope what evidence exists to provide answers to a broad range of questions about skill mix in secondary care:

- 1 What modes of deployment are in use to ensure effective use of available staff, and how successful are they?
- 2 What impact does training have on staff deployment?
- 3 What impact does continuing professional development have on the deployment of staff?
- 4 What are the current patterns of delegation from one staff group to another, and what are the processes that underpin these?
- 5 To what extent is use being made of unqualified assistants?
- 6 What impact does the substitution of one professional group by another in secondary care have on quality of care, patient satisfaction and clinical effectiveness?

The exercise started in April and is to be completed by the end of July. The purpose is to set a research agenda for the SDO that will be responsive to the needs of the service.

As part of this scoping exercise, we have sent out a questionnaire to Trusts relating to these issues. But, clearly, many of these issues are related to what you have been doing for several years especially in terms of considering the training implications of service innovations and expanded or new roles. In addition, after discussing these issues in person with the WDCs of North and East Yorkshire and North Lincolnshire and of West Yorkshire, we have realised that we were, at least in part, duplicating what many of you have been doing recently as part of the preparations for the Workforce Chapter of your SHA's Local Delivery Plans. On this basis, we are asking you whether you could send us the following:

Skill mix in secondary care

First have you published any reports on training needs for specific staff groups? If so could you please send us a copy of the report if it is not available electronically. Our postal address is Roy Carr-Hill, Centre for Health Economics, University of York, YORK, YO10 5DD.

Second, as part of the preparations for the Workforce Chapter of your SHA's Local Delivery Plan, did you collect any information on workforce modernisation – for example about new or expanded roles - related to the Modernisation Agenda from the Trusts. If so, we would be very interested in receiving any summary of those responses that you wrote or copies of the responses from the individual Trusts.

Thanking you in advance, I remain

Yours sincerely

Roy Carr-Hill

Professor of Health and Social Statistics

Appendix 6 Notes of workshop meeting

Skill mix workshop

Thursday 9 October 2003, University of York

Notes of meeting

Present:

Roy Carr-Hill (CHE – co-author of report)

Liz Currie (CHE – co-author of report)

Paul Dixon (CHE – co-author of report)

Michelle Ellwood (CHE)

Barbara Fittall (Audit Commission)

Barry Foley (Changing Workforce Programme – Mental Health)

Ann Gavin-Daley (WDC – Cumbria and Lancashire)

Sue Jenkins-Clarke (CHE)

Annette Lankshear (Health Sciences)

Steve Manders (Changing Workforce Programme – Mental Health)

Penelope Shuttleworth (Changing Workforce Programme – Care for the Older Person)

Commentary:

1) Roy Carr-Hill commenced the meeting by giving brief details of the background to the report. He pointed out that the objective was to carry out a comprehensive but not systematic literature review to generate ideas relevant for policy research. Grey literature was explored through a questionnaire survey to Trusts, contacting WDCs, visiting selected sites and attending a EHMA conference.

2) Liz Currie gave an overview of the formal literature review. The aim was to identify broad themes and came up with five main categories:

- health care reform and hospital restructuring
- workforce: general staffing, management and service provision
- skill mix
- staffing roles
- multi/interdisciplinary teamworking

Notes of the 'Literature Review' and 'Summary of Review Findings' as presented by Liz at the workshop are attached as Annexes I and II, respectively.

3) Paul Dixon gave an explanation of the survey that was done to roughly map types and level of activity in secondary care trusts. This

Skill mix in secondary care

was a small part of the over all exercise. A four page postal questionnaire was sent to everyone with HRM responsibility in Trusts. It was too small scale to get a detailed picture but it was hoped that the survey would produce details of local innovations as well as references to locally produced reports and provide information on useful sources. There were 131 replies from 99 of the 247 trusts (mainly from Directorate Nurse Managers and HR Directors). The survey was designed to investigate flexibility, responsiveness and change in relation to workforce initiatives. It mirrored Liz Currie's report in that it was looking at the level of devolution, evaluating skillmix initiatives, identifying greatest changes and most successful mechanisms.

4) Roy concluded the workshop by looking for ideas about possible policy relevant research areas that have arisen from this report. The following table lists the possible areas with numbers attending the workshop who saw these as a priority.

Possible Research Area	No. of participants seeing as priority
Workforce planning	1
Use and training of HCAs	2
Implementing change	0
Cross-boundary working	1
Research/evaluation methods	4

On the subject of HCAs, the question was raised as to how we make the team pull together (reference was made to the Greater Manchester study), do NVQ qualifications make a difference, are HCAs being trained in the areas they need to be trained in, is the training cost-effective given the turnover of staff, what level of consistency in training is there across areas and what is the effect on patients?

Housekeepers: It was wondered whether there was any way of getting routine data and how this might be defined. Barbara Fittall said that she was looking at some areas and that there was going to be an in-patient survey (asking questions such as 'Is there a housekeeper, what do they do and what hours do they work?'). Barry Foley said that his experience and feeling was that housekeepers make a positive difference. There is, however, no evidence to support or disprove this notion. What, for example, is the impact on nursing staff, etc? – their may be tension because of where the budget is. Similar pay concerns may affect the acceptability among staff of cross-boundary working.

A list of further ideas and questions that were raised in relation to the topic of research priorities are contained at III. The following is a summary of what appeared to be the main priorities:

Skill mix in secondary care

- 1) Support workers, in general – how much impact are they having on process (time), patients and staff? How effective would it be to train them given the costs involved?
- 2) What routine data could be collected as the basis for an audit?
- 3) The issue of hierarchy, role-blurring and role definition.
- 4) What are the obstacles to systematic audit and evaluation?

Annex 1 Literature review

Review was designed principally as a mapping exercise to identify areas in which to target future research. It:

- aimed to identify broad themes, patterns and processes
- found much overlap between the broad themes identified
- found little quality evidence found in terms of well-designed studies or reviews of evidence.

What emerged

- not unique to the UK, but a process happening in most 'industrialised' countries with developed health care systems, therefore a substantial literature from outside the UK, particularly from the US
- a lot of activity and 'talk', but very little clarity and much confusion
- problems of opposing priorities, for example:
 - between cost containment (implicit) and patient need (explicit)
 - between need for role blurring and cross boundary working vs need for better role definition to meet problems of role confusion
- changes which are being introduced are not being initiated from a firm evidence base; there appears to be a general lack of serious evaluation;
- generally contradictory findings: enthusiasm (case reports from units) vs concern (empirical research/reviews of empirical research/comments from informed personnel). This is particularly the case in respect of the widespread substitution by so-called 'unqualified' clinical personnel of registered nurse posts/responsibilities.

WDCs

- The WDC/SHA chapter aims to present a selection of what is actually happening 'out there' to complement the survey.
- It broadly confirms findings of the literature review in that there is 'widespread evidence of work intensification'.
- Much of this appears to be in response to problems of shortfalls in staff, to meet National Assumptions of increasing workforce productivity by optimising 'flexible ways of working'.
- Much role development and related activity appears to be taking place outside of a formal relationship to a Changing Workforce Programme scheme and therefore outside of any formal process of evaluation.

Summary of review findings

Despite a certain level of contradiction in the findings, there are nevertheless a number of key points to have emerged from this review, summarised below:

- There is a demonstrable need for an appropriately trained and flexible, fully skilled workforce of stable core, responsive to change, capable of developing skills and, if necessary, of specialising¹.
- Many of the current difficulties being experienced with health care reform and workforce changes are consequent on the tension between opposing priorities: cost-containment versus patient need.
- It is necessary to ensure that workforce and service developments reflect patient needs rather than professional aspirations or short term expedience².
- There is widespread evidence of inflexibility in traditional ward rota systems and considerable scope for improvement in many areas³.
- There is a perceived lack of evidence of the impact of skill mix initiatives on standards, outcomes and efficiency⁴.
- There is a clear need for more or better evaluation as changes which are being introduced, particularly in terms of staff deployment models, different staff mix ratios or role changes, are not always initiated from a firm evidence-base⁵.
- Proper evaluations should be carried out through appropriate research comparing the relative cost-effectiveness of alternative skill mix combinations as little is known of the true impact on costs or quality of care of a range of staff mix models and few new staff mix models have been examined over time with empirical methods, or with control for confounding factors⁶.
- Future research is recommended in a clearer definition of the level of expected quality, the relationship between outcomes and different staffing levels and measuring patient acuity or need for nursing interventions to further knowledge and policy development⁷.
- Research indicates that quality of care is influenced not only by the staff to dependency ratio, but also the mix of registered

¹ Chant, 1998; Moore, 2002.

² Masterson, 2002.

³ Hansed, 2002.

⁴ Hunter, 1996.

⁵ Hall, 1997.

⁶ Richardson and Maynard, 1995; Hall, 1997.

⁷ Buerhaus and Needleman, 2000.

nursing staff to HCAs and unlicensed practitioners, and factors such as staff training, flexibility of care, policies and facilities in the location⁸.

- Education, motivational levels, leadership and the staff deployment skills of directors of nursing are as important as staffing numbers or staffing mix or other such management indicators⁹.
- Although there is a certain body of (largely anecdotal) evidence supporting many of the role changes and substitutions currently taking place in health care systems, particularly those of nurse-for-doctor, findings from large empirical studies and systematic literature reviews still support the view that a 'rich' skill mix of qualified personnel, particularly of registered nurses to HCAs, is associated with better clinical outcomes¹⁰.
- Despite generally positive findings from empirical research, not all studies find in favour of developing nursing roles. Although some skill mix changes may be desirable, others, such as for nurses, occupational therapy or social work are neither supported by theories advanced to support the intervention nor the available evidence¹¹.
- Despite some positive findings on role development or substitution, particularly in the development of different nursing roles, there are unquestionably also problems caused by the confusion of roles.
- Most papers emphasise a need for better role clarity and clearer boundaries, for example between the roles and duties of clinical assistants and those of the personnel they work alongside of.
- New posts or roles developed primarily as 'rapid ad hoc responses of senior doctors and nurses to urgent medical workforce problems'¹², rather than as part of a planned programme of workforce change informed through appropriate processes of monitoring and evaluation, will be those likely to cause the most difficulties.
- An appropriate balance should therefore be sought in the tension between role 'blurring' to allow effective cross-boundary working and better role definition, to address the issues of confusion.

8 Bradley, 1999.

9 Bradley, 1999.

10 for example Aiken *et al.*, 2002; Caine, 2003; Jenkins-Clarke and Carr-Hill, 1991 Carr-Hill *et al.*, 1992; Carr-Hill *et al.*, 1995; Carr-Hill and Jenkins-Clarke, 2003; Blegen, Goode and Reed 1998; Blegen and Vaughn, 1998; Huston, 2001; Melberg, 1997; Bloom, Alexander, and Nuchols, 1997; Buchan, 2002b; Buchan and Dal Poz, 2002; McKenna, 1995; Wynne, 1995

11 Adams *et al.*, 2000; Griffiths, 2002.

12 Dowling, 1997.

Skill mix in secondary care

- Concentration on team dynamics alone will not deliver the teamwork required in the new NHS¹³.
- Many of the problems in health care services are as a result of failure in working effectively across organisational and professional boundaries, with the present structure of doctor training being treated separately from other health professions¹⁴.
- The main obstacles to the implementation of effective interdisciplinary teams is seen in the barriers from restrictive practices, rituals and 'dysfunctional (working) cultural norms'¹⁵.
- The need for effective educational/training programmes on how to function within a team is considered essential, which includes issues of 'role blurring', group skills, communications skills, conflict resolution, and leadership skills¹⁶.
- There is a need for professional bodies from nursing and medicine to monitor changes and ensure appropriate education and learning¹⁷.
- The policy assumption that suggests a sufficiency of nurses is available for doctor-nurse substitution while still allowing the nursing element to function may be false¹⁸.

Annex 2 Skill mix workshop conclusions – research priorities

HCA's

- Are the core competencies acquired by HCAs actually being used?
- What is the impact on other team members on the ward?
- Does patient get adequate information on procedures if HCAs do majority of care?
- Is training cost effective? – are trained HCA staff retained? What are opportunity costs, sickness rates and substitution?
- Is this a special problem in acute general wards?
- Is HCAs' work organised around task allocation? Is this helpful?
- What arrangements are there for time management and motivation of HCAs?
- Specifically, what is the impact of housekeepers on quality of care?

13 Boaden and Leaviss, 2000.

14 Hunter, 1996.

15 Brooks, 1996.

16 Boaden and Leaviss, 2000; Hall and Weaver, 2001.

17 Calpin-Davies and Akehurst, 1999.

18 Calpin-Davies and Akehurst, 1999.

Skill mix in secondary care

Working time directive and general wards

- What is the impact on quality of care of nurse replacement of doctors?
- What are the implications for weekend staffing?

Cross-boundary working

- How do people work across boundaries? Acceptability and cost-effectiveness?
- What are the main boundaries to inter-agency working?
- Perhaps outreach teams are most relevant of these to secondary care.
- Numbers of hand-offs? Are they increasing? Patients' views of increased hand-offs?
- What are the opportunity costs of teamworking?

Research/evaluation methods?

- How do we assess the opportunity cost of training and clinical supervision?
- While we don't want extensive research into quality of care, it is important to identify and validate appropriate markers
- Why don't people do evaluations?
- Research into methods of collecting basic data on staffing patterns and outcomes
- Piloting routine data, for example why no use of dependency measures (is this self-evident)?

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Addendum

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