

## Supplementary file 2. CMO2: Systems to support SDM

### Studies that evaluate an intervention

Author and country	Study design	Participants	Intervention	Supporting evidence
Coulter 2015 (1)	Systematic review	Adults with long-term health conditions	Personalised care planning (authors say SDM is considered essential for personalised care planning). <b>Training</b>	<ul style="list-style-type: none"> <li>Achieving PCP in practice authors say 'it will probably require training for health professionals in how to elicit patients' goals and priorities, while avoiding the imposition of an overly directive model of care that could undermine patients' confidence to self-manage their conditions". p30</li> </ul>
Cramm 2012 Netherlands (2)	Before/after – survey – at start of intervention and 1 yr later	Primary care	Implementation of the Chronic Care Model (CCM) by 22 primary care practices. Involved integration and collaboration amongst different groups of HCPs - e.g. GPs and hospitals. <b>Interprofessional working</b>	<ul style="list-style-type: none"> <li>Chronic illness care delivery improved to advanced levels (measured by Assessment of Chronic Illness Care short version).</li> <li>Gains were attributed primarily to improved relational coordination—that is, raising the quality of communication and task integration among professionals from diverse disciplines who share common objectives.</li> </ul>
Cramm 2016 Netherlands (3)	Before/after evaluation	Primary care - intervention aimed at patients with COPD (n=411)	Multicomponent interventions within all six dimensions of the CCM (organizational support, community, self-management, decision support, delivery system design, and information and communications technology).	<ul style="list-style-type: none"> <li>For patient's the perceived quality of chronic care delivery is significantly related to productive interaction/ relational coproduction of care (this includes SDM).</li> <li>Highest degree of relational coproduction was with GPs and practice nurses - familiarity with one another and a history of working together leads to higher levels of relational coproduction.</li> </ul>

Author and country	Study design	Participants	Intervention	Supporting evidence
The Year of Care 2011 (Diabetes UK, DH, The Health Foundation) (4)	Case study, questionnaires, data from practice records	People with diabetes	Care planning for DM - DM yearly review replaced by 2 consultations with blood test results & explanation sent to the patient in advance. The first consultation with a HCA is to work out what the patient wants to know, and to do the weights & measures. The second, with a GP or specialist nurse, to discuss the above and look at blood test results and make a plan for DM care and SM.	<ul style="list-style-type: none"> <li>• Pts reported improved experience of care and demonstrate changes in self-care behaviour.</li> <li>• Practices report better organisation and team work</li> <li>• Biomedical outcomes improve.</li> <li>• Possible mechanisms - Patient understanding of DM increases through explanation of biomedical 'goals', feel included in the discussion.</li> </ul>
Dwamena 2012 (5)	Systematic review (43 RCTs)	Primary and secondary care. Patients were predominantly adults with general medical problems	Interventions for providers to promote a patient-centred approach in clinical consultations. (in background authors note that SDM has important role in PCC)	<ul style="list-style-type: none"> <li>• Generally positive effects on consultation processes on a range of measures relating to clarifying patients' concerns and beliefs; communicating about treatment options; levels of empathy; and patients' perception of providers' attentiveness to them and their concerns as well as their diseases. Short training (less than 10 hours) was as successful as longer training.</li> <li>• Mixed results on satisfaction, behaviour and health status.</li> <li>• Authors say results suggest that the addition of condition-specific educational materials supports further improvement in patient-centred care.</li> </ul>

Author and country	Study design	Participants	Intervention	Supporting evidence
Edwards 2004 Elwyn 2004 (6,7)	Cluster RCT	20 recently qualified GPs in urban and rural general practices	Training GPs in SDM, and the use of simple risk communication aids in general practice <b>Training</b>	<ul style="list-style-type: none"> <li>• No statistically significant changes in patient-based outcomes due to the training interventions were found.</li> <li>• The provision of more time and a protected environment for consultations led to improvement in confidence in decisions – leading to the expectation that people were more likely to adhere to chosen treatments.</li> <li>• Training in SDM had a negative impact on pts satisfaction with communication score but risk communication training had a positive effect.</li> <li>• Patients’ confidence in the decision (2.1 increase, 95% CI 0.7–3.5, P 0.01) and expectation to adhere to chosen treatments (0.7 increase, 95% CI 0.04–1.36, P 0.05) were significantly greater among patients seen in the research clinics (when more time was available).</li> <li>• Training in SDM improved GPs SDM skills as measured on the option scale.</li> <li>• Pt outcomes deteriorated at follow up - suggesting general but short lived benefit from consultations.</li> </ul>

Author and country	Study design	Participants	Intervention	Supporting evidence
Holmside Medical Group 2014 UK (8)	Case study	Primary care	<p>The Year of Care - an initiative to give holistic care for people with multimorbidity. Involving all clinical staff and the patient/family in producing, monitoring and updating a care plan which focuses on the QoL for the patient.</p> <p>A lot of cross-disciplinary training. E.g. receptionists trained as Phlebotomists, nurses gaining generic skills etc.</p> <p><b>Patient &amp; Carer preferences &amp; goals</b></p> <p><b>Interprofessional working</b></p>	<ul style="list-style-type: none"> <li>• Patient satisfaction and engagement has increased, there are less unplanned attendances at the practice (not clear how this was measured).</li> <li>• ‘Experience from elsewhere would suggest that it takes two or three years to make a difference to clinical outcomes as habits of both patients and professionals die hard and engagement increases over a number of care planning cycles’. p8</li> <li>• QOF figures remained the same.</li> </ul>
Glenpark Medical Practice 2016 (9)	Report of the introduction, implementation & impact of Care & Support Planning for ppl with multiple LTCs.		<p>The Year of Care initiative</p> <p>Practice staff all focused on holistic approach to care for ppl with multimorbidity.</p> <p>Longer appointment times with algorithm for adding extra time.</p> <p>Combines all chronic disease monitoring into one annual review.</p>	<ul style="list-style-type: none"> <li>• ‘The implementation of the process has valued the development of the staff as much as it has valued the expertise and lived experience of the patients’. p2</li> <li>• ‘The practice partners are very supportive of the changes’. p2</li> <li>• ‘The team feels strongly that by interacting with the patient and spending less time on the computer gathering information (because it has been done in advance) they are having better conversations’ p3</li> </ul>

				<ul style="list-style-type: none"> <li>• Pts have ability to opt out of results sharing although ‘no one has done this so far’, p2 – letter reassures pts that they would be contacted by telephone if there were any worrying or urgent results that needed acting on before their next appointment</li> </ul>
Joseph-Williams 2017 (10)	Qualitative	Primary and secondary care in UK	Test, and identify the best ways to embed shared decision making into routine primary and secondary care using quality improvement methods.	<ul style="list-style-type: none"> <li>• ‘We found interactive skills training workshops based on a shared decision-making model helped build coherence, improving skills, and promoting positive attitudes’. p1</li> <li>• Role play based training, which emphasised practical skills, worked better than theory heavy presentations.</li> <li>• Training challenged embedded attitudes.</li> <li>• Clinical teams need support to review current practice, to build a shared understanding of how shared decision making differs from their current practice.</li> <li>• Visible organisational buy-in and support are essential. During the MAGIC programme, key organisational leaders showed clinicians that shared decision making was an important organisational priority to drive improvement.</li> </ul>
Sanders 2016 (11)	RCT	GPs Patients with lower back pain - mean age 45 yrs	To determine whether GPs trained in SDM and reinforcing patients’ treatment expectations showed more trained behaviour during their consultations than untrained GPs.	<ul style="list-style-type: none"> <li>• Trained GPs exhibited less paternalistic decision making but did not engage in SDM (corresponding to a scores of 2 on the Control Preference Scale).</li> <li>• The trained physicians spent significantly more time on the intake phase and the evaluation and plan phase but significantly less time on the physical examination. Total duration of consultation 15.8 vs 13.1 minutes (trained vs untrained).</li> </ul>

## CMO2 non-intervention studies

Author and country	Study design	Participants	Focus	Supporting evidence
Barrett 2016 (12)	Discussion/ opinion	GPs and pts eligible for statins	Discusses the importance of patient's needs, views, preferences etc. in SDM/making clinical recommendations.  <b>Patient &amp; Carer preferences</b>	<ul style="list-style-type: none"> <li>• Future guidelines should strive to incorporate decision-aids and media tools to help illustrate the risk continuum across treatment choices.</li> <li>• Expert panel recommendations should explicitly acknowledge that medical decisions should be based on the preferences and values of well-informed patients, and not just on RCT evidence.</li> </ul>
Berger 2015 (13)	Discussion piece	HCPs	To discuss the importance of addressing uncertainty in SDM and suggest some methods for addressing the issue.  <b>Uncertainty</b>	<ul style="list-style-type: none"> <li>• The author proposes an uncertainty toolbox that includes the following principles: honesty, recognition of emotion, hope, support/coordination of care, willingness to readdress, respecting personal decisions and a lack of decision is possible.</li> </ul>
Bridges 2015 (14)	Qualitative	HCPs (hospital)	To investigate how cancer treatment decisions are formulated for older people with complex health and social care needs and the factors that shape these processes.	<ul style="list-style-type: none"> <li>• Lack of time is a problem.</li> <li>• MDT meetings focused on pathology rather than pt.</li> </ul>

Author and country	Study design	Participants	Focus	Supporting evidence
Couet 2015 (15)	Systematic review	studies that have used the OPTION assessment tools	Observe the extent to which health-care providers involve patients in decision making across a range of clinical contexts.	<ul style="list-style-type: none"> <li>Measures of patient involvement were low overall; some slight improvement where consultations were longer and where intervention aids were used.</li> <li>If clinicians are trained to involve patients in SDM, once established within their working practice, they may continue to incorporate it.</li> </ul>
Dardas 2016 (16)	Survey	Older adults	To determine the preferred decision-making role among older adult patients regarding elective hand surgery and whether it varied according to demographics, health literacy or diagnosis type. <b>Longer appointments</b>	<ul style="list-style-type: none"> <li>Spending more time with a doctor addressing questions and explanations was most frequently ranked as useful in making a health care decision</li> <li>Returning pts significantly more likely to prefer shared decision making.</li> <li>62% wanted more information before the appointment.</li> </ul>
Elwyn 2012 (17)	Discussion/ opinion	NA	Propose a model of how to do shared decision making that is based on choice, option and decision talk. <b>Training systems</b>	<ul style="list-style-type: none"> <li>Suggest that brief decision support intervention may act as a catalyst for new discourse but this is not tested in this paper</li> <li>Suggest that the best way for clinicians to learn SDM skills is using simulations – either with colleagues or with trained actors.</li> <li>New systems are needed to appropriately reward patient centred practice.</li> </ul>

Author and country	Study design	Participants	Focus	Supporting evidence
Farrelly 2016 (18)	Qualitative (focus groups and interviews)	People with mental health problems	Facilitated SDM to generate treatment preferences. <b>Care planning</b>	<ul style="list-style-type: none"> <li>SDM may be perceived as more unnecessary work or the 'decisions' may be perceived as impossible to implement.</li> <li>Patient outcomes not reported.</li> </ul>
Politi 2011 USA (19)	Development of a model – knowledge synthesis	NA	To present a communication model to help better understand quality medical decision making, and how patient-centred, collaborative communication enhances the decision-making process. <b>Uncertainty</b>	<ul style="list-style-type: none"> <li>Say that 'collaborative decision making assumes that the uncertainty that complicates medical decisions is explicitly discussed with patients either through decision support tools or through discussions in medial consults yet this rarely occurs'.p580</li> </ul>
Robben 2012 The Netherlands (20)	Qualitative	Frail older people (n=11) and informal care givers (n=11)	To explore the experiences of frail older people and informal caregivers with receiving information from HCPs as well as their preferences for receiving information. <b>Longer appointments</b>	<ul style="list-style-type: none"> <li>Having enough time considered of great importance.</li> <li>Participants preferred receiving verbal information from physician during consultation but would also appreciate additional written information.</li> </ul>

Author and country	Study design	Participants	Focus	Supporting evidence
Sinnott 2013 (21)	Systematic review of qualitative studies	GPs	Synthesise existing literature on GPs views regarding the management of patients with multimorbidity.  <b>Training.</b>	<ul style="list-style-type: none"> <li>• GPs needed enhanced communication skills to facilitate discussion with patients on the complexity of their conditions and in relation to deprescribing.</li> </ul>
Sheaff 2017 UK (22)	Qualitative	66 general practice patients, mean age 78, with at least two LTCs (had an average of 4)	Analyse the information-sharing difficulties arising from differences between patients' oral narratives and medical sense-making. Look at implications for care coordination and continuity.  <b>Patient &amp; Carer preferences</b>	<ul style="list-style-type: none"> <li>• 'Patients distinguished between GP-initiated overviews and what they saw as NHS 'box ticking' (Patient I), referring to the recent proliferation of nurse-led reviews focusing on specific chronic diseases, each with their own template' (suggest need reviews that look at health as a whole) p8</li> </ul>

## References

1. Coulter A, Entwistle Vikki A, Eccles A, Ryan S, Shepperd S, Perera R. Personalised care planning for adults with chronic or long-term health conditions. *Cochrane Database of Systematic Reviews*. John Wiley & Sons, Ltd; 2015.
2. Cramm JM, Nieboer AP. In the Netherlands, rich interaction among professionals conducting disease management led to better chronic care. *Health Aff (Millwood)*. United States; 2012 Nov;31(11):2493–500.
3. Cramm JM, Nieboer AP. The changing nature of chronic care and coproduction of care between primary care professionals and patients with COPD and their informal caregivers. *Int J COPD*. 2016;11:175–82.
4. Diabetes UK. Department of Health. The Health Foundation. NHS Diabetes. Year of Care Report of findings from the pilot programme. 2011.
5. Dwamena F, Holmes-Rovner M, Gaulden CM, Jorgenson S, Sadigh G, Sikorskii A, et al. Interventions for providers to promote a patient-centred approach in clinical consultations. *Cochrane Database Syst Rev*. 2012/12/14. 2012;12:Cd003267.
6. Edwards A, Elwyn G, Hood K, Atwell C, Robling M, Houston H, et al. Patient-based outcome results from a cluster randomized trial of shared decision making skill development and use of risk communication aids in general practice. *Fam Pract*. 2004;21(4):347–54.
7. Elwyn G, Edwards A, Hood K, Robling M, Atwell C, Russell I, et al. Achieving involvement: process outcomes from a cluster randomized trial of shared decision-making skill development and use of risk communication aids in general practice. *Fam Pr*. 2004;21.
8. Holmside Medical Group. The Holmside story Person centred primary care: Care and support planning. Newcastle-upon-Tyne; 2014.
9. Glenpark Medical Practice. The Glenpark Story Implementing care and support planning for people with long term conditions. Gateshead; 2016.
10. Joseph-Williams N, Lloyd A, Edwards A, Stobbart L, Tomson D, Macphail S, et al. Implementing shared decision making in the NHS: lessons from the MAGIC programme. *Bmj*. 2017;1744:j1744.
11. Sanders ARJ, Bensing JM, Essed MALU, Magnée T, de Wit NJ, Verhaak PF. Does training general practitioners result in more shared decision making during consultations? *Patient Educ Couns*. Elsevier Ireland Ltd; 2016;100(3):563–74.
12. Barrett B, Ricco J, Wallace M, Kiefer D, Rakel D. Communicating statin evidence to support shared decision-making. *BMC Fam Pract*. England; 2016 Apr;17:41.
13. Berger Z. Navigating the Unknown: Shared Decision-Making in the Face of Uncertainty. *J Gen Intern Med*. 2015;30(5):675–8.
14. Bridges J, Hughes J, Farrington N, Richardson A. Cancer treatment decision-making processes for older patients with complex needs: a qualitative study. *BMJ Open*. England; 2015 Dec;5(12):e009674.
15. Couët N, Desroches S, Robitaille H, Vaillancourt H, Leblanc A, Turcotte S, et al. Assessments of the extent to which health-care providers involve patients in decision making: A systematic review of studies using the OPTION instrument. *Heal Expect*. 2015;18(4):542–61.
16. Dardas AZ, Stockburger C, Boone S, An T, Calfee RP. Preferences for Shared Decision Making

- in Older Adult Patients With Orthopedic Hand Conditions. *J Hand Surg Am*. United States; 2016 Oct;41(10):978–87.
17. Elwyn G, Frosch D, Thomson R, Joseph-Williams N, Lloyd A, Kinnersley P, et al. Shared decision making: a model for clinical practice. *J Gen Intern Med*. 2012/05/24. 2012;27(10):1361–7.
  18. Farrelly S, Lester H, Rose D, Birchwood M, Marshall M, Waheed W, et al. Barriers to shared decision making in mental health care: Qualitative study of the Joint Crisis Plan for psychosis. *Heal Expect*. 2016;19(2):448–58.
  19. Politi MC, Street RL. The importance of communication in collaborative decision making: Facilitating shared mind and the management of uncertainty. *J Eval Clin Pract*. 2011;17(4):579–84.
  20. Robben S, van Kempen J, Heinen M, Zuidema S, Olde Rikkert M, Schers H, et al. Preferences for receiving information among frail older adults and their informal caregivers: a qualitative study. *Fam Pr*. 2012/04/26. 2012;29(6):742–7.
  21. Sinnott C, Mc Hugh S, Browne J, Bradley C. GPs' perspectives on the management of patients with multimorbidity: systematic review and synthesis of qualitative research. *BMJ Open*. 2013;3(9):e003610.
  22. Sheaff R, Halliday J, Byng R, Øvretveit J, Exworthy M, Peckham S, et al. Bridging the discursive gap between lay and medical discourse in care coordination. *Sociol Health Illn*. 2017;xx(xx):1–16.