Published in final edited form as:

Prim Health Care Res Dev. 2014 October ; 15(4): 342–354. doi:10.1017/S1463423613000327.

Care plans and care planning in long term conditions: a conceptual model

J Burt*, J Rick, T Blakeman, J Protheroe, M Roland, and P Bower

Abstract

The prevalence and impact of long term conditions continues to rise. Care planning for people with long term conditions has been a policy priority for chronic disease management in a number of health care systems. However, patients and providers appear unclear about the formulation and implementation of care planning. Further work in this area is therefore required to inform the development, implementation and evaluation of future care planning initiatives. We distinguish between ‘care planning’ (the process by which health care professionals and patients discuss, agree and review an action plan to achieve the goals or behaviour change of most relevance and concern to the patient) and a ‘care plan’ (a written document recording the outcome of a care planning process). We propose a typology of care planning and care plans with three core dimensions: *perspective* (patient or professional), *scope* (a focus on goals or on behaviours) and *networks* (confined to the professional-patient dyad or extending to the entire care network). In addition, we draw on psychological models of mediation and moderation to outline potential mechanisms through which care planning and care plans may lead to improved outcomes for both patients and the wider health care system. The proposed typology of care planning and care plans offered here, along with the model of the process by which care planning may influence outcomes, provide a useful framework for future policy developments and evaluations. Empirical work is required to explore the degree to which current care planning approaches and care plans can be described according to these dimensions, and the factors that determine which types of patients and professionals use which type of care plans.

Keywords

Care planning; self-management; shared decision-making; chronic diseases; physician-patient relations

Background

With the burden of disease shifting to long term conditions, health systems are tasked to deliver effective, efficient, accessible and patient-centred care (Singh and Ham, 2006,

*Corresponding author: Jenni Burt, Cambridge Centre for Health Services Research, Institute of Public Health, University of Cambridge, Forvie Site, Robinson Way, Cambridge CB2 0SR. Phone 01223 330596. Fax 01223 762515. jab35@medschl.cam.ac.uk.

Conflicts of Interest: None.

This article has been accepted for publication and will appear in a revised form, subsequent to or editorial input by Cambridge University Press, in Primary Health Care Research & Development published by Cambridge University Press. Copyright is held by Cambridge University Press. The definitive version will be available from [Primary Health Care Research & Development](#)

Wagner et al., 1996, Department of Health, 2006). The Chronic Care Model was developed in response to concerns about the effectiveness of primary care for people with long term conditions (Wagner et al., 1996, Wagner, 2001). The model sets out a vision in which informed patients and proactive health care teams work together within highly organised systems to achieve the highest quality of care. It has been influential in the organization of long term condition care internationally (Bodenheimer et al., 2002b). It recognises that all long term conditions present a “common set of challenges” to individuals and their families. It aims to support management of the “physical, psychological, and social demands” of conditions through “productive interactions” between practice teams and patients that consistently provide (a) assessments, (b) support for self-management, (c) optimisation of therapy; and (d) proactive follow-up (Wagner et al., 1996).

Key potential outcomes of the Chronic Care Model include reduction in health care use and costs, and improved clinical outcomes and patient experience. For example, a broad overview of 39 studies in diabetes found that the vast majority (82%) demonstrated that interventions based on Chronic Care Model components impacted on at least one process or outcome measure, such as glycaemic control (Bodenheimer et al., 2002b), while a smaller number of studies (67%) found reductions in health care utilisation or costs.

There is significant interest in assessment of which aspects of the Chronic Care Model are ‘active ingredients’ (Bodenheimer et al., 2002a). Effective collaboration between patients and providers may be crucial, involving “providers and patients working together to define problems, set priorities, establish goals, create treatment plans and solve problems along the way” (Improving Chronic Illness Care). Such collaboration is the essence of good family practice, but achieving this consistently is a challenge, reflecting professional/patient power disparities (May, 1992), differences in ‘models’ of disease and illness (Cohen et al., 1994), different priorities (Tuckett et al., 1985), and the varying challenges associated with different long term conditions and comorbidities.

A number of methods have been used to improve collaboration (Lorig et al., 1999, Kennedy et al., 2004, Lewin et al., 2001). One is a formal process of ‘care planning’ and production of written ‘care plans’ recording discussions between patients and professionals, a specific element recommended within the Chronic Care Model. Broadly, care planning involves:

- Anticipatory rather than reactive discussions about patient care
- Defining roles and tasks among team members, including the patient
- Negotiating agreements that facilitate care within and across organisation
- Supporting patients to manage their own health
- Promoting shared decision making
- Promoting care that is consistent with scientific evidence and the patient’s preferences

Care planning and care plans have been implemented in health care systems including Australia, Canada, the United States, and the United Kingdom, and in contexts including respiratory disorders (Partridge, 2004, Gibson and Powell, 2004), mental health (Department

of Health, 2008), and palliative care (Epstein et al., 2011). However, despite widespread policy interest, empirical research suggests that patients and providers are uncertain as to the exact nature of care planning and plans (Burt et al., 2012, Newbould et al., 2012). Greater conceptual clarity in this area would benefit both those implementing care planning and care plans, and researchers attempting evaluations in this field (Craig et al., 2008). The aim of this review is to (a) develop a typology of care planning and care plans; (b) present a model of mechanisms by which care planning and care plans may benefit patients, and (c) clarify the outcomes which care planning and care plans might be expected to impact on, to inform future service developments and evaluations.

Discussion

Scope and approach of the review

As part of a mixed methods evaluation of care planning for long term conditions in England, we undertook two different approaches to literature reviews. Firstly, we conducted a systematic search to explore current empirical knowledge in this field. We developed a search strategy including terms related to care plans and planning and long term conditions. We searched PubMed, Cochrane Library, EMBASE, CINAHL and PsycINFO for studies published up until 2011 of (a) interventions for either patients or health care providers which were intended to promote shared decision-making or any aspect of shared decision making (e.g. patient participation), and (b) interventions which included the provision of a care or action plan (whether stand-alone or as part of a wider self-management intervention). See Appendix 1 for details of our search strategy. We do not report the results here, but use located studies (both empirical and theoretical) to support the ideas outlined in this paper.

Secondly, we conducted an additional literature review to explore further how and why care planning might work or fail. Through this, we were seeking key drivers of successful care planning and underlying mechanisms through which care planning may impact on outcomes. To this end, we supplemented the findings of our systematic review by conducting searches to locate relevant additional literature (including grey literature such as policy documents from the UK, US, Canada and Australia on the implementation or evaluation of care planning and care plans; and theory and discussion papers relevant to the management of long term conditions and care planning approaches). Thus, in addition to the databases already mentioned, we searched OpenGrey (<http://www.opengrey.eu>, a European repository including research reports, dissertations, and official publications), NTIS (www.ntis.gov/, a repository of US government-funded scientific and other information), PsycEXTRA (www.apa.org/psycextra/, a repository for research reports, conference presentations and policy statements in the fields of psychology, behavioral science, and health) and HMIC (a UK database combining data from the Department of Health's Library and Information Services and the King's Fund Information and Library Service) using terms related to "care planning" and "long term conditions", for publications up until 2011.

Our focus was limited to care planning for long term conditions within primary care. Definitions of long term conditions vary. For example, the definition used by the English Department of Health focuses on the incurable nature of such conditions: "the definition of a long term condition is any condition that cannot be cured but can be managed by medication

and/or therapy” (Department of Health). We defined long term conditions as those which require ongoing management over a period of years, including non-communicable diseases (e.g. cancer and cardiovascular disease), communicable diseases (e.g. HIV/AIDS), certain mental disorders (e.g. schizophrenia, depression), and ongoing impairments in structure (e.g. blindness, joint disorders). This definition acknowledges the work often required for people to manage such conditions.

In this paper, we present a ‘theory map’ of care planning which focuses on the identification of:

- a. types of care plans and care planning
- b. anticipated relationships between mechanisms and outcomes of care planning, and
- c. potential outcomes of care planning

Types of care planning

‘Care planning’ and ‘care plans’—We make a distinction between ‘care planning’ (verb: the process by which health care professionals and patients discuss, agree and review an action plan to achieve the goals or behaviour change of most relevance and concern to the patient), and a ‘care plan’ (noun: a written document recording the outcome of a care planning process). Data from the English National GP Patient Survey suggest that 84% of patients with a long-term condition report some care planning discussion during the last 12 months, but only 12% report being told they had a care plan (Burt et al., 2012).

Care plans may function as extensions of the medical record, as a guide to action, and/or as a contract between patients, providers and the health care system. As an extension of conventional medical records, they may be used to record additional relevant details for long term condition care. For example, the Australian Team Care Arrangement records details of treatment decisions to ensure all those involved in care are aware of their basis, which may improve management and informational continuity (Haggerty et al., 2003). As guides to action, they may stimulate forward thinking and a focus on goals for patients and professionals. As a contract, they may include mechanisms to ensure actions are undertaken, for example by providing incentives to act. Examples include advance decisions within end of life care, which might be legally binding, and care plans enabling access to resources e.g. personal health budgets in the United Kingdom (Harvey, 2010).

As noted above, the process of care planning may not necessarily result in a written care plan. From a policy perspective, the distinction between ‘care plans’ and ‘care planning’ can be represented in a 2×2 typology (Figure 1) (Burt et al., 2012). Quadrant D represents poor quality care, with no care planning and no care plan. In Quadrant C, care planning has taken place but there is no formal ‘care plan’. This probably represents the majority of care for long term conditions in England at present. Quadrant A represents the ‘gold standard’; care planning supports production of a written care plan, which in turn feeds back into care planning. Box B might reflect ‘gaming’: (Doran et al., 2008) a ‘care plan’ is produced, but without a full care planning process. This behaviour may occur if care plans are poorly defined, if they lack clarity of purpose or if their implementation is not supported by suitable

training and guidance. Additionally, if care plans are mandated or incentivised (either financially or through access to other resources), but are perceived unfavourably by professionals, care plans may be produced without care planning. A further influence may be the use of standardised care plan templates, which could constrain the recording of a comprehensive and personalised care planning discussion.

The use of care plans—‘Care plans’ or ‘action plans’ have been described in a number of contexts. In respiratory disorders, patient-held care plans are focussed on responses to exacerbations, and provide specific instructions for daily treatment, step-up treatment in the event of deterioration, and seeking urgent medical consultation (Gibson and Powell, 2004). In severe mental illness, care plans combine both instruction and needs assessment, focussing particularly on anticipation of crisis situations (Department of Health, 2007). In diabetes, the use of care plans has a more open-ended aim to encourage partnership-building, emphasising the importance of both the professional perspective on ‘disease’ and the ideas and concerns of the patient (Zwar et al., 2007).

Care plans are used in health care systems including the UK, US, Canada and Australia. In Australia, care plans have a needs assessment focus, and were originally defined as “a written, comprehensive and longitudinal plan of action that sets out the health service needs of a patient and the types of services and supports needed to meet those needs” (Zwar et al., 2008). Some types of care plans in Australia (“Team Care Arrangements”) were modified to focus on coordination and team-working for patients under multidisciplinary care (Vagholkar et al., 2007, Zwar et al., 2008). In the US, Medicare and Medicaid certified nursing homes have Minimum Data Set requirements that include the development and modification of care plans describing how to meet each resident’s needs (Unwin et al., 2010). Within the UK, care plans form part of the patient choice agenda; all patients with long term conditions are expected to participate in explicit care planning discussions to enhance self-management, including the setting of personal goals and action planning (Department of Health, 2009).

A typology of care planning and care plans—In an effort to develop conceptual clarity in this area, we present a typology which can be used to categorise and describe care planning and care plans (Figure 2). Firstly, it is important to make the distinction between care planning *for conditions* and care planning *for people*. Care planning policy often emphasises the importance of taking account of the entirety of a person’s conditions, circumstances, attitudes and preferences in developing an effective care plan. Multimorbidity among long term conditions is common (Valderas et al., 2009). Patients with multiple long term conditions report difficulties in determining priorities among conditions and their management, and managing multiple conditions can lead to a significant treatment burden (Bayliss et al., 2007b, Lin et al., 2006, Fried et al., 2008b). Whilst such concerns may drive the formulation of care planning policy, in practice, care plans have often been developed and implemented on a condition-specific basis (e.g. for diabetes). We propose a typology with three core dimensions that takes into account these differences in emphasis.

The first dimension (*perspective*) represents the degree to which the process of development and the content of the care plan reflects the perspective of the professional (with the patient

as the ‘target’) or the perspective of the patient (with the professional as the ‘target’). In Australia, patient accounts suggest care plans were seen as being about the professional, and frequently documented ‘clinical goals and activities about which they had no expertise’ (Shortus et al., 2007). Self-management policies aimed at empowering patients have been criticised for ignoring the complexities and impact of professional power and the gatekeeping role within the doctor-patient relationship (Tang and Anderson, 1999, Wilson, 2001). Whilst care planning policy sets out a patient-driven process, supported by the professional, the Australian example shows questions may be asked about leads the decision-making. It cannot be assumed that introduction of care plans or care planning will immediately impact on existing and longstanding power relationships.

The second dimension (*scope*) reflects the degree to which the plan is focused on discrete behaviours and items (e.g. steps to take in an exacerbation), or on broader goals (such as a reduction in HbA1C at the next diabetes review). The content of care plan templates may be a key driver of their scope. An analysis of primary care consultations in the UK suggested that the use of standardised computer templates led to self-management dialogue being framed around discrete behaviours (Blakeman et al., 2011).

Combining these two dimensions creates four types of care plans:

1. Professional-centred/behaviour-focussed: e.g. written asthma self-management plans
2. Professional-centred/goal-focussed: e.g. depression treatment goals in stepped care
3. Patient-centred/goal-focussed: e.g. advance directives in end of life care, attending a key social event
4. Patient-centred/behavior-focussed: e.g. healthy eating plans, talking to family about the impact of a condition

A third dimension (*network*) can be added to this typology. This describes whether care plans are focused on the core professional-patient dyad (e.g. patient and GP), or a wider care network (e.g. a multi-disciplinary team, and/or social networks) (Rogers et al., 2011).

Mechanisms of care planning

To explore mechanisms, we drew on the mediation-moderation model from psychology. In Baron and Kenny’s influential formulation, a mediator is a “transformation process” by which the effects of stimuli impact on a behaviour or health outcome (Baron and Kenny, 1986). A mediator variable explains, in full or part, the relationship between two other variables. For example, care plans may improve health outcomes if they increase shared decision making. A moderator is “a qualitative (e.g. sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable” (Baron and Kenny, 1986). The definition and investigation of moderators requires understanding the circumstances or groups where an explanatory variable most strongly influences an outcome variable. For example, care planning may be more effective in patients with long term conditions with a significant burden of treatment (Department of Health, 2006). Mediators

and moderators may interact in various complex ways; identification and understanding of even the basic underlying relationships has the potential to optimise the design of care plans of most utility and relevance to patients and professionals.

Mediators of change in care planning

We suggest three core mediators of relevance to care planning: participation and shared decision-making, supporting self-management behaviour change, and coordinating treatment (Figure 3).

Participation and shared decision making—Patient-centred care encourages (a) shared control of the consultation, decisions about interventions or management of the health problems with the patients, and/or (b) a focus in the consultation on the patient as a whole person who has individual preferences situated within social contexts (Lewin et al., 2001). There may be different approaches to patient-centredness, and evidence suggests variable associations with patient outcomes: for example, approaches which seek to “activate” the patient rather than simply take their perspective have been more consistently associated with good health outcomes (Michie et al., 2003). Some innovations to promote patient-centred care have been criticised for superficiality, with insufficient grounding in the key aims of improving patient-doctor relationships and facilitating participation and shared-decision making (Epstein and Street, 2011).

Decision-making may be seen as a staged sequence of “information exchange, deliberation or discussion of treatment preferences, and deciding on the treatment to implement” (Levinson et al., 2005). Key components of patient participation include: 1) the patient’s contribution to the direction of dialogue, 2) their influence in setting the agenda, 3) their share in the reasoning process, 4) their influence in the decision-making, and the 5) emotional reciprocity within encounters (Perakyla and Ruusuvaori, 2007). Care planning initiatives such as Year of Care in the UK have been specifically built on a patient-centred approach, with the aim of fostering patient participation and shared decision making through system re-design and practitioner and patient training (National Diabetes Support Team, 2008). Research suggests, however, that many decisions in health care are still not shared (Levinson et al., 2005, Murray et al., 2007), and there remain a number of questions about peoples’ desire to assume an identity of the active, informed patient (Sinding et al., 2010).

Supporting self- management behaviour change—Care planning should support changes in behavior that result from patients being more involved in management of their conditions. Incorporating theories of behavior change strengthens the design, implementation and evaluation of interventions such as care planning (Abraham et al., 2009, Cane et al., 2012). Care planning involves a number of potential influences on behavior, and may require a variety of techniques of behavior change. For example, the United Kingdom introduced health trainers to improve the delivery of preventive care and health behaviour change in deprived communities. Those focussed on individual behaviour change often use Personal Health Plans, designed to list core client goals which can be worked on with the trainer. These plans were explicitly linked with behaviour change techniques developed from a psychological framework, including goal-setting, self-monitoring and building social

support (British Psychological Society, 2008). There is developing interest in other techniques to support people with long-term conditions to sustain behavior change, such as motivational interviewing (Scott, 2010). However, the efficacy, skills and competencies required to facilitate a meaningful and comprehensive care planning process leading to effective behavior change may be challenging for health professionals to develop without sufficient support and time.

Coordinating treatment—Care coordination is the need to process and integrate information relevant to patient care. It reflects both *variability* and *complexity* (Perrow, 1967). Variability refers to the diversity of patient problems that present; complexity is the degree to which decision making algorithms can be used to determine necessary actions for task performance. Tasks which demand high levels of information processing are best performed by teams in which there is a high level of interdependent working among members (Thompson, 1967). However, co-ordination of care is often poor, and teams may need processes and structures to facilitate sharing of information. Care planning might provide the basis for shared patient information systems that allow each person to access information on the care provided by others.

Moderators of the effects of care planning

Potential moderators of the effect of care planning include patient level factors (clinical, psychosocial and socio-demographic) as well as system level issues (clinical information systems, templates and protocols; and health care team climate).

Clinical issues—There are significant commonalities between long term conditions in decision making, self-management, and treatment co-ordination requirements. However, important differences may moderate the impact of care planning. For example, diabetes can remain asymptomatic for many years: a lack of explicit symptoms may make care planning appear of low priority for both patients and professionals. In symptomatic disease, the greater ‘visibility’ of the condition may stimulate interest in methods to improve self-management. Care planning approaches may move in and out of perceived relevance, depending on the current stage and severity of a condition: for example, COPD management plans are usually invoked only for acute exacerbations (Turnock et al., 2005). Perhaps the most important clinical moderator for care planning is in meeting the needs of patients with multimorbidity, who represent a large proportion of the workload in primary care (Salisbury et al., 2011). Such patients frequently face difficult decisions about priorities among conditions (Bayliss et al., 2007a, Fried et al., 2008a), and time restrictions in primary care may make it difficult to meet their needs for support and information (Bower et al., 2011). Care planning approaches implemented to date are frequently disease-specific: completing a diabetes care plan template for someone with multimorbidity may not be the most appropriate way of meeting their needs.

Psychosocial issues—There is extensive evidence that preferences for shared decision making vary by patient demography (Cullati et al., 2011, Say et al., 2006, Protheroe et al., 2012). It remains a key research question whether the effectiveness of care plans will be lower in those groups who routinely prefer professionals to lead, or whether intervention in

these groups will lead to enhanced outcomes, as they have greatest capacity to benefit. Variations in patient competency to participate in care planning processes may affect uptake and outcomes.

Much of the consideration of care planning focuses on the individual patient, in consultation with individual or teams of professionals. However, support for long term conditions does not occur at an individual level alone, and often involves significant ‘networks of support’ including family, friends, professionals outside health services, and community groups (Rogers et al., 2011). Effective care planning may therefore place a greater emphasis on events and support outside of formal health care services.

Sociodemographic issues—A number of sociodemographic issues may moderate the effect of care planning on outcomes. In an analysis of whether care planning discussions had helped improve management of a health problem, benefits of care planning were reported more by men and older patients, as well as those reporting better access to and continuity of care (Burt et al., 2012). Other relevant factors may include level of deprivation, ethnic background, language, and carer responsibilities, although empirical evidence is currently lacking. The capacity of patients to benefit may also be moderated by health literacy (Nutbeam, 2008). Health literacy is the “degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions” (Institute of Medicine, 2004). Low health literacy is associated with a range of markers of poor health including: higher rates of long-term conditions, poor self-management, poorer understanding of one’s medical condition and adherence to medical instructions, reduced responsiveness to health education and higher health care costs (Berkman, 2011). In addition, low health literacy may be associated with higher mortality in older adults. This may have important implications for the delivery and impact of care planning in those with poorer health literacy (Bostock and Steptoe, 2012).

Clinical information systems, templates and protocols—Potential constraints on the process of care planning and the production of care plans arising from the use of templates or particular clinical information systems have already been mentioned. Patient data systems may be organized around service needs and data monitoring requirements rather than patient experience of illness (Procter et al., 2013). An ethnography of computer templates in chronic disease management concluded that their use in consultations contributes to “how disease is defined; how care is delivered; what it means to be a patient; and what it means to be a clinician” (Swinglehurst et al., 2012). Effective individualized care planning and care plans are likely to be influenced by the nature of the clinical system, including for example whether clinicians are prompted to review the implementation of the plan at a later date.

Health care team climate—Climate has been defined as a team’s shared perceptions of organisational policies, practices and procedures (Anderson and West, 1998). There is evidence that strong team orientation and perceptions of supportive team interactions in primary care teams may impact on health status of older patients, with stronger effects in more serious diagnoses (e.g. cancer, COPD) (Roblin et al., 2011). Studies of primary care teamwork highlight that developing trust and respect is necessary for co-operation, and there

are potentially problematic issues within groups of GPs, and between GPs and other health professionals, concerning the distribution of practice workload and conflicts about roles (Belanger and Rodriguez, 2008). The effective uptake and implementation of care planning and care plans may in part be moderated by the quality of teamwork within a provider, especially in patients with multimorbidity and significant multidisciplinary input.

Process and health outcomes of care planning

Quality of health care for individuals has been defined as “whether individuals can access the health structures and processes of care which they need and whether the care received is effective” (Campbell et al., 2000). This approach clearly differentiates the *structure* of health care (through which care is delivered and received) from the *process* of health care (the care that is given). Outcome of care is a result of the interaction between individuals and the health care system; a consequence rather than a part of care (Campbell et al., 2000). Through improving the processes of care, it is anticipated that care planning could contribute to improved health outcomes including health status, user experience and costs of care. However, there is currently little evidence on the impact of the care planning process as a whole on health or other outcomes, although the beneficial effects of many of the components of care planning are better understood (Graffy et al., 2009). Mapping aspects of care planning onto the framework of the Chronic Care Model, we highlight five measurable outcomes of interest that may support the development of an evidence base (Improving Chronic Illness Care).

Firstly, supporting self-management is at the core of care planning. The Chronic Care Model highlights the importance of empowering and preparing patients to manage their health. Measurable outcomes of care planning for self-management may therefore include an assessment of engagement in healthy behaviours, self-efficacy (a perception of confidence to complete activities) (Lorig et al., 1989), management of medication regimes, and perceived barriers to self-management.

Secondly, care planning involves the provision of support for decision-making. Within the Chronic Care Model, the aspiration is to promote care which is consistent with scientific evidence and patient preferences, including the sharing of guidelines and information with patients to encourage participation. Measurable outcomes of care planning in this domain could include patient perceptions of the degree to which their health care professional is ‘autonomy supportive’ as opposed to ‘controlling’. Autonomy support has been defined as providing patients with effective options for treatment, supporting patient initiatives, and minimising professional judgment (Williams et al., 1996).

Thirdly, care plans that are focussed on multiple professionals may make explicit the roles and tasks of each (Zwar et al., 2008, Zwar et al., 2007). The planning aspect of care plans may facilitate follow up, and including values and preferences may make care more responsive to patient’s background and preferences. This highlights the Chronic Care Model’s call for careful design of the delivery system, including the clear definition of roles and distribution of tasks among team members (including the patient), and regular follow-up by the health care team. Assessment of the impact of care planning on this domain may include patient experience of care, including in particular perceptions of continuity,

coordination and follow-up (see Haggerty *et. al* 2012 for a recent generic measure of continuity of care (Haggerty et al., 2012)).

Fourthly, care plans that are focussed on multiple professionals may lead to the development of mechanisms to co-ordinate care at an organisational level (Zwar et al., 2008, Zwar et al., 2007). The Chronic Care Model suggests that there is a need to foster the right culture, organization and mechanisms to promote safe, high quality care, which includes the development of agreements to facilitate coordination in and across organisations. Assessment of changes in team effectiveness and cross-organisational working (using, for example, the Team Climate Inventory (Anderson and West, 1998, Anderson and West, 1999)) and overall patient experience (such as assessed by the GP Patient Survey (Department of Health)) could be useful here.

Finally, the Chronic Care Model requires high quality clinical information systems, which are also needed to facilitate care planning, via the effective recording, retrieval and sharing of the content of plans over time. The developing field of electronic health records has clear implications for care planning processes; as already noted, templates may restrict discussions between providers and patients, but electronic data shared across health care teams and organisations may also streamline the recording and reviewing of care planning discussions and care plans. Measurable outcomes of the impact of care planning on effective use of clinical systems could include patient assessment of information provision and coordination of care, for example as in the follow up/coordination scales of the PACIC (Patient Assessment of Chronic Illness Care) instrument (Glasgow et al., 2005, Rick et al., 2012).

Summary

There is significant policy interest in the potential of care plans and care planning. However, empirical evidence suggests that, at ground level, there remains a lack of specificity concerning the nature of care plans and care planning, as well as insufficient consideration of their likely influence on processes; anticipated outcomes; and factors which might influence benefit. The proposed typology of care planning offered here, along with the model of the process by which care planning may influence outcomes, provide a useful framework for future policy developments and evaluations. Empirical work is required to explore the degree to which current care plans can be described according to these dimensions, and the factors that determine which types of patients and professionals use which type of care plans.

Acknowledgments

We thank Anne Rogers and Anne Kennedy for their advice throughout this project. We also thank two reviewers for their extremely thoughtful suggestions, which greatly improved the manuscript.

Financial Support: Funding body: Department of Health Policy Research Programme Reference Number: 077/0016. This is an independent report commissioned and funded by the Policy Research Programme in the Department of Health. The views expressed are not necessarily those of the Department of Health.

Appendix 1: Search strategy

The following is the specific search strategy used in PubMed. This search strategy was applied to the other databases (Cochrane Library, EMBASE, CINAHL and PsycINFO).

#1 patient care planning[mh:noexp] or advance care planning[mh:noexp] or patient participation[mh:noexp] or care plan*[tiab] or care-plan*[tiab] or action plan*[tiab] or action-plan*[tiab] or management plan*[tiab] or management-plan*[tiab] or management program*[tiab] or personal health plan*[tiab] or personal-health-plan*[tiab] or self manag*[tiab] or self-manag*[tiab] or self car*[tiab] or self-car*[tiab]

#2 chronic disease [mh] or chronic disease[tiab] or chronic-disease[tiab] or (ongoing[tiab] adj (illness*[tiab] or disease[tiab] or condition*[tiab])) or (ongoing[tiab] adj health adj (illness*[tiab] or disease[tiab] or condition*[tiab])) or (persistent[tiab] adj (illness*[tiab] or disease[tiab] or condition*[tiab])) or (long[tiab] adj term adj (illness*[tiab] or disease[tiab] or condition*[tiab]))

References

- ABRAHAM C, KELLY M, WEST R, MICHIE S. The UK National Institute for Health and Clinical Excellence public health guidance on behaviour change: A brief introduction. *Psychology Health Med.* 2009; 14:1–8.
- ANDERSON NR, WEST MA. Measuring climate for work group innovation: development and validation of the team climate inventory. *Journal of organizational behavior.* 1998; 19:235–258.
- ANDERSON, NR.; WEST, MA. Manual and Users' Guide. NFER-Nelson; Windsor, UK: 1999. The Team Climate Inventory (Revised).
- BARON RM, KENNY DA. The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *J Pers Soc Psychol.* 1986; 51:1173–82. [PubMed: 3806354]
- BAYLISS EA, BOSWORTH HB, NOEL PH, WOLFF JL, DAMUSH TM, MCIVER L. Supporting self-management for patients with complex medical needs: recommendations of a working group. *Chronic Illness.* 2007a; 3:167–175. [PubMed: 18083671]
- BAYLISS EA, ELLIS JL, STEINER JF. Barriers to self-management and quality-of-life outcomes in seniors with multimorbidities. *Ann Fam Med.* 2007b; 5:395–402. [PubMed: 17893380]
- BELANGER E, RODRIGUEZ C. More than the sum of its parts? A qualitative research synthesis on multi-disciplinary primary care teams. *J Interprof Care.* 2008; 22:587–97. [PubMed: 19012139]
- BERKMAN, ND.; SHERIDAN, SL.; DONAHUE, KE.; HALPERN, DJ.; VIERA, A.; CROTTY, K.; VISWANATHAN, M. Health literacy interventions and outcomes: An updated systematic review. Agency for Healthcare Research and Quality; Rockville, MD: 2011. Evidence Report/Technology Assessment, No. 199
- BLAKEMAN T, CHEW-GRAHAM C, REEVES D, ROGERS A, BOWER P. The Quality and Outcomes Framework and self-management dialogue in primary care consultations: a qualitative study. *British Journal of General Practice.* 2011; 61:e666–e673. [PubMed: 22152849]
- BODENHEIMER T, WAGNER EH, GRUMBACH K. Improving primary care for patients with chronic illness. *JAMA.* 2002a; 288:1775–1779. [PubMed: 12365965]
- BODENHEIMER T, WAGNER EH, GRUMBACH K. Improving primary care for patients with chronic illness - The chronic care model, part 2. *JAMA.* 2002b; 288:1909–1914. [PubMed: 12377092]
- BOSTOCK S, STEPTOE A. Association between low functional health literacy and mortality in older adults: longitudinal cohort study. *BMJ.* 2012; 344:e1602. [PubMed: 22422872]
- BOWER P, MACDONALD W, HARKNESS E, GASK L, KENDRICK T, VALDERAS JM, DICKENS C, BLAKEMAN T, SIBBALD B. Multimorbidity, service organization and clinical

- decision making in primary care: a qualitative study. *Family Practice*. 2011; 28:579–87. [PubMed: 21613378]
- BRITISH PSYCHOLOGICAL SOCIETY. *Improving Health: Changing Behaviour*. Department of Health; London: 2008. NHS Health Trainer Handbook
- BURT J, ROLAND M, PADDISON C, REEVES D, CAMPBELL J, ABEL G, BOWER P. Prevalence and benefits of care plans and care planning for people with long-term conditions in England. *J Health Serv Res Policy*. 2012; 17(Suppl 1):64–71. [PubMed: 22315479]
- CAMPBELL SM, ROLAND MO, BUETOW SA. Defining quality of care. *Soc Sci Med*. 2000; 51:1611–25. [PubMed: 11072882]
- CANE J, O'CONNOR D, MICHIE S. Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implementation Science*. 2012; 7:37. [PubMed: 22530986]
- COHEN MZ, TRIPP-REIMER T, SMITH C, SOROFMAN B, LIVELY S. Explanatory models of diabetes: patient practitioner variation. *Soc Sci Med*. 1994; 38:59–66. [PubMed: 8146716]
- CRAIG P, DIEPPE P, MACINTYRE S, MICHIE S, NAZARETH I, PETTICREW M. Developing and evaluating complex interventions: the new Medical Research Council guidance. *BMJ*. 2008; 337:a1655. [PubMed: 18824488]
- CULLATI S, COURVOISIER DS, CHARVET-BERARD AI, PERNEGER TV. Desire for autonomy in health care decisions: a general population survey. *Patient Educ Couns*. 2011; 83:134–8. [PubMed: 20605695]
- DEPARTMENT OF HEALTH. [Accessed 18 December 2012] The GP Patient Survey [Online]. Available: <http://www.gp-patient.co.uk/>
- DEPARTMENT OF HEALTH. [Accessed 07/06/2012] Millions of patients set to benefit from a modern NHS [Online]. Available: http://webarchive.nationalarchives.gov.uk/+www.dh.gov.uk/en/MediaCentre/Pressreleases/DH_125042
- DEPARTMENT OF HEALTH. *Our health, our care, our say: a new direction for community services*. Department of Health; London: 2006.
- DEPARTMENT OF HEALTH. *Making the CPA work for you*. Department of Health; London: 2007.
- DEPARTMENT OF HEALTH. *Refocusing the Care Programme Approach: Policy and Positive Practice Guidance*. Department of Health; London: 2008.
- DEPARTMENT OF HEALTH. *Supporting People with Long Term Conditions : Commissioning Personalised Care Planning - a guide for commissioners*. Department of Health; London: 2009.
- DORAN T, FULLWOOD C, REEVES D, GRAVELLE H, ROLAND M. Exclusion of patients from pay-for-performance targets by English physicians. *N Engl J Med*. 2008; 359:274–84. [PubMed: 18635432]
- EPSTEIN AS, VOLANDES AE, O'REILLY EM. Building on Individual, State, and Federal Initiatives for Advance Care Planning, an Integral Component of Palliative and End-of-Life Cancer Care. *J Oncol Pract*. 2011; 7:355–9. [PubMed: 22379415]
- EPSTEIN RM, STREET RL. The Values and Value of Patient-Centered Care. *Ann Fam Med*. 2011; 9:100–103. [PubMed: 21403134]
- FRIED TR, MCGRAW S, AGOSTINI JV, TINETTI ME. Views of older persons with multiple morbidities on competing outcomes and clinical decision-making. *Journal of the American Geriatrics Society*. 2008a; 56:1839–1844. [PubMed: 18771453]
- FRIED TR, MCGRAW S, AGOSTINI JV, TINETTI ME. Views of older persons with multiple morbidities on competing outcomes and clinical decision-making. *J Am Geriatr Soc*. 2008b; 56:1839–44. [PubMed: 18771453]
- GIBSON PG, POWELL H. Written action plans for asthma: an evidence-based review of the key components. *Thorax*. 2004; 59:94–99. [PubMed: 14760143]
- GLASGOW RE, WAGNER EH, SCHAEFER J, MAHONEY LD, REID RJ, GREENE SM. Development and validation of the Patient Assessment of Chronic Illness Care (PACIC). *Med Care*. 2005; 43:436–44. [PubMed: 15838407]
- GRAFFY J, EATON S, STURT J, CHADWICK P. Personalized care planning for diabetes: policy lessons from systematic reviews of consultation and self-management interventions. *Primary Health Care Research & Development*. 2009; 10:210–222.

- HAGGERTY JL, REID RJ, FREEMAN GK, STARFIELD BH, ADAIR CE, MCKENDRY R. Continuity of care: a multidisciplinary review. *BMJ*. 2003; 327:1219–1221. [PubMed: 14630762]
- HAGGERTY JL, ROBERGE D, FREEMAN GK, BEAULIEU C, BRÉTON M. Validation of a Generic Measure of Continuity of Care: When Patients Encounter Several Clinicians. *Ann Fam Med*. 2012; 10:443–451. [PubMed: 22966108]
- HARVEY, J. Key elements of personalised care planning in long term conditions and personal health budgets. NHS; London: 2010.
- IMPROVING CHRONIC ILLNESS CARE. [Accessed 08/08/12] The Chronic Care Model [Online]. Available:http://www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2
- INSTITUTE OF MEDICINE. Health literacy: a prescription to end confusion. Institute of Medicine; Washington DC: 2004.
- KENNEDY AP, NELSON E, REEVES D, RICHARDSON G, ROBERTS C, ROBINSON A, ROGERS AE, SCULPHER M, THOMPSON DG. A randomised controlled trial to assess the effectiveness and cost of a patient orientated self management approach to chronic inflammatory bowel disease. *Gut*. 2004; 53:1639–1645. [PubMed: 15479685]
- LEVINSON W, KAO A, KUBY A, THISTED RA. Not all patients want to participate in decision making. A national study of public preferences. *J Gen Intern Med*. 2005; 20:531–5. [PubMed: 15987329]
- LEWIN SA, SKEA ZC, ENTWISTLE V, ZWARENSTEIN M, DICK J. Interventions for providers to promote a patient-centred approach in clinical consultations. *Cochrane Database of Systematic Reviews*. 2001:CD003267. [PubMed: 11687181]
- LIN EH, KATON W, RUTTER C, SIMON GE, LUDMAN EJ, VON KORFF M, YOUNG B, OLIVER M, CIECHANOWSKI PC, KINDER L, WALKER E. Effects of enhanced depression treatment on diabetes self-care. *Ann Fam Med*. 2006; 4:46–53. [PubMed: 16449396]
- LORIG K, SELEZNICK M, LUBECK D, UNG E, CHASTAIN R, HOLMAN H. The beneficial outcomes of the arthritis self-management course are not adequately explained by behaviour change. *Arthritis Rheum*. 1989; 32:91–95. [PubMed: 2912467]
- LORIG KR, SOBEL DS, STEWART AL, BROWN BW JR, BANDURA A, RITTER P, GONZALEZ VM, LAURENT DD, HOLMAN HR. Evidence suggesting that a chronic disease self-management program can improve health status while reducing hospitalization: a randomized trial. *Med Care*. 1999; 37:5–14. [PubMed: 10413387]
- MAY C. Individual Care? Power and Subjectivity in Therapeutic Relationships. *Sociology*. 1992; 26:589–602.
- MICHIE S, MILES J, WEINMAN J. Patient-centredness in chronic illness: what is it and does it matter? *Patient Educ Couns*. 2003; 51:197–206. [PubMed: 14630376]
- MURRAY E, POLLACK L, WHITE M, LO B. Clinical decision-making: Patients' preferences and experiences. *Patient Educ Couns*. 2007; 65:189–96. [PubMed: 16956742]
- NATIONAL DIABETES SUPPORT TEAM. Getting to Grips with the Year of Care: A Practical Guide. National Diabetes Support Team; London: 2008.
- NEWBOULD J, BURT J, BOWER P, BLAKEMAN T, KENNEDY A, ROGERS A, ROLAND M. Experiences of care planning in England: interviews with patients with long term conditions. *BMC Family Practice*. 2012;13. [PubMed: 22405186]
- NUTBEAM D. The evolving concept of health literacy. *Soc Sci Med*. 2008; 67:2072–8. [PubMed: 18952344]
- PARTRIDGE MR. Written asthma action plans. *Thorax*. 2004; 59:87–8. [PubMed: 14760139]
- PERAKYLA, A.; RUUSUVUORI, J. Components of participation in health care consultations: A conceptual model for research. In: COLLINS, S.; BRITTEN, N.; RUUSUVUORI, J.; THOMPSON, A., editors. *Patient Participation in Health Care Consultations: Qualitative Perspectives*. Open University Press; Maidenhead: 2007.
- PERROW C. A framework for the comparative analysis of complex organizations. *American Sociological Review*. 1967; 32:194–208.
- PROCTER S, WILSON PM, BROOKS F, KENDALL S. Success and failure in integrated models of nursing for long term conditions: Multiple case studies of whole systems. *Int J Nurs Stud*. 2013; 50:632–43. [PubMed: 23131723]

- PROTHEROE J, BROOKS H, CHEW-GRAHAM C, GARDNER C, ROGERS A. 'Permission to participate?' : A qualitative study of participation in patients from differing socio-economic backgrounds. *J Health Psychol.* 2012
- RICK J, ROWE K, HANN M, SIBBALD B, REEVES D, ROLAND M, BOWER P. Psychometric properties of the patient assessment of chronic illness care measure: acceptability, reliability and validity in United Kingdom patients with long-term conditions. *BMC Health Serv Res.* 2012; 12:293. [PubMed: 22938193]
- ROBLIN DW, HOWARD DH, JUNLING REN, BECKER ER. An evaluation of the influence of primary care team functioning on the health of Medicare beneficiaries. *Med Care Res Rev.* 2011; 68:177–201. [PubMed: 20829237]
- ROGERS A, VASSILEV I, SANDERS C, KIRK S, CHEW-GRAHAM C, KENNEDY A, PROTHEROE J, BOWER P, BLICKEM C, REEVES D, KAPADIA D, BROOKS H, FULLWOOD C, RICHARDSON G. Social networks, work and network-based resources for the management of long-term conditions: a framework and study protocol for developing self-care support. *Implement Sci.* 2011; 6:56. [PubMed: 21619695]
- SALISBURY C, JOHNSON L, PURDY S, VALDERAS J, MONTGOMERY A. Epidemiology and impact of multimorbidity in primary care: a retrospective cohort study. *British Journal of General Practice.* 2011; 61:e12–e21. [PubMed: 21401985]
- SAY R, MURTAGH M, THOMSON R. Patients' preference for involvement in medical decision making: a narrative review. *Patient Educ Couns.* 2006; 60:102–14. [PubMed: 16442453]
- SCOTT G. Motivational interviewing. 2: How to apply this approach in nursing practice. *Nursing Times.* 2010; 106:21–2.
- SHORTUS TD, MCKENZIE SH, KEMP LA, PROUDFOOT JG, HARRIS MF. Multidisciplinary care plans for diabetes: how are they used? *Med J Aust.* 2007; 187:78–81. [PubMed: 17635087]
- SINDING C, HUDAK P, WIERNIKOWSKI J, ARONSON J, MILLER P, GOULD J, FITZPATRICK-LEWIS D. "I like to be an informed person but..." negotiating responsibility for treatment decisions in cancer care. *Soc Sci Med.* 2010; 71:1094–1101. [PubMed: 20633970]
- SINGH, D.; HAM, C. Improving care for people with long-term conditions: a review of UK and international frameworks. University of Birmingham; NHS Institute for Innovation and Improvement; Birmingham: 2006.
- SWINGLEHURST D, GREENHALGH T, ROBERTS C. Computer templates in chronic disease management: ethnographic case study in general practice. *BMJ Open.* 2012; 2:e001754.
- TANG SY, ANDERSON JM. Human agency and the process of healing: lessons learned from women living with a chronic illness--'re-writing the expert'. *Nurs Inq.* 1999; 6:83–93. [PubMed: 10696200]
- THOMPSON, JD. *Organizations in Action.* McGraw-Hill; New York: 1967.
- TUCKETT, D.; BOULTON, M.; OLSON, C.; WILLIAMS, A. *Meetings Between Experts: An Approach to Sharing Ideas in Medical Consultations.* Tavistock Publications; London: 1985.
- TURNOCK, A.; WALTERS, H.; WALTERS, J.; WOOD-BAKER, R. Action plans for chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews* [Online]. 2005. Available:<http://www.mrw.interscience.wiley.com/cochrane/clsystrev/articles/CD005074/frame.html>
- UNWIN BK, PORVAZNIK M, SPOELHOF GD. Nursing home care: part I. Principles and pitfalls of practice. *Am Fam Physician.* 2010; 81:1219–27. [PubMed: 20507046]
- VAGHOLKAR S, HERMIZ O, ZWAR NA, SHORTUS T, COMINO EJ, HARRIS M. Multidisciplinary care plans for diabetic patients: what do they contain? *Aust Fam Physician.* 2007; 36:279–82. [PubMed: 17392947]
- VALDERAS JM, STARFIELD B, SIBBALD B, SALISBURY C, ROLAND M. Defining comorbidity: implications for understanding health and health services. *Ann Fam Med.* 2009; 7:357–63. [PubMed: 19597174]
- WAGNER EH. Meeting the needs of chronically ill people. *BMJ.* 2001; 323:945–6. [PubMed: 11679369]
- WAGNER EH, AUSTIN BT, MICHAEL VON K. Organizing Care for Patients with Chronic Illness. *The Milbank Quarterly.* 1996; 74:511–544. [PubMed: 8941260]

- WILLIAMS GC, GROW VM, FREEDMAN ZR, RYAN RM, DECI EL. Motivational predictors of weight loss and weight-loss maintenance. *J Pers Soc Psychol.* 1996; 70:115–26. [PubMed: 8558405]
- WILSON PM. A policy analysis of the Expert Patient in the United Kingdom: Self-care as an expression of pastoral power? *Health and Social Care in the Community.* 2001; 9:134–142. [PubMed: 11560729]
- ZWAR N, HASAN I, HERMIZ O, VAGHOLKAR S, COMINO E, HARRIS M. Multidisciplinary care plans and diabetes--benefits for patients with poor glycaemic control. *Aust Fam Physician.* 2008; 37:960–2. [PubMed: 19037474]
- ZWAR NA, HERMIZ O, COMINO EJ, SHORTUS T, BURNS J, HARRIS M. Do multidisciplinary care plans result in better care for patients with type 2 diabetes? *Aust Fam Physician.* 2007; 36:85–9. [PubMed: 17252093]

		CARE PLANNING	
		YES	NO
CARE PLAN	YES	A 'Gold standard'	B Potential target-driven outcome
	NO	C Current typical care for long term conditions	D Poor care for long term conditions

Figure 1. Care plans and care planning

Figure 2. Three-dimensional typology of care plans and care planning

1. Perspective: Is the focus on the patient's or the professional's perspective?
2. Scope: Is the focus on discrete behaviours or on broader goals and values?
3. Network: Is the focus on patient-professional dyad or the wider care system?

Figure 3. Conceptual model of the process and outcomes of care planning