



Brief scoping of the continuity of care evidence base

Introduction

This brief scoping of the continuity of care evidence base was commissioned by the RCM. The briefing paper aims to outline the evidence regarding the impact of models of continuity of care with a focus on evidence from the UK to inform NHS England Guidelines for Maternity Commissioning. This review will briefly assess the impact of health care delivery models which offer increased experiences of continuity, incorporating a wide range of patient groups. The review will complement examples sourced by the RCM of models of care in the UK for women at high social and medical risk.

Report Structure

This report is organised into three sections for ease of reading:

Overview, Findings, Implications and Methods

Overview

Key question

What evidence is currently available on the impact of models of continuity of care in the general population and of models of midwife led continuity of care currently being provided in the UK to women who are at high risk either socially or medically?

Background

As the provision of health care becomes increasingly complex, evidence suggests that failure to transfer patient care between health professionals, particularly where critical incidents are frequent, affects safety and quality of health outcomes. A fragmented and distributed system allows disadvantaged populations to fall through gaps in services (World Health Organization, 2008). Health service users around the world receive varying levels and types of continuity of care that improve the 'patient's journey' through the system and increase the potential for more personalised care.

Patient care is not only improved by effective interpersonal relationships, but also increasingly involves multi-professional teamwork and the involvement of many health care providers. Consequently, optimal collaboration and coordination between professionals in the delivery of integrated care have become essential requirements for the provision of high-quality care (Glouberman and Mintzberg, 2001).



Defining continuity of care

Continuity of care is a means of delivering care in a way which acknowledges that a patient's health needs are not isolated events, and should be managed over time (Reid et al., 2002). This longitudinal aspect allows a relationship to cultivate between a patient and their providers of care, and contributes to the patient's perception of having a provider who has knowledge of their medical history, and similarly an expectation that a known provider will care for them in the future (Haggerty et al., 2003). Continuity refers to a 'coordinated and smooth progression of care from the patient's point of view' (Freeman et al., 2003) and therefore patient-centredness is an important aspect in the delivery of continuity of care (Freeman et al., 2001, Haggerty et al., 2003, Gulliford et al., 2006).

There has previously been little agreement on how to define continuity of care in the literature, and various types, or dimensions, of continuity have been identified. This situation prompted Starfield (1980) to comment on the 'continuous confusion' surrounding the field of continuity of care.

Subsequently, several multidimensional models have been proposed. Much of the work on continuity of care has emerged from the perspective of primary care, and consequently there exists an emphasis on the central importance of the continuity of the relationship between healthcare provider and patient. For example, Saultz (2003) proposes a multidimensional model in which the establishment of interpersonal continuity is hierarchically dependent upon the presence of both longitudinal and informational continuity.

Despite general acceptance that the provision of a therapeutic relationship over time is a key concept of continuity in the context of primary care, there has been less agreement on how the generic term 'continuity of care' has been applied across a range of settings (Haggerty et al., 2003). Three types of continuity are increasingly cited as the fundamental dimensions - informational, management and interpersonal continuity (Freeman et al., 2001, Haggerty et al., 2003, Reid et al., 2002). According to definitions proposed by Haggerty et al. (2003): informational continuity refers to "the use of information on past events and personal circumstances to make current care appropriate for each individual"; management continuity refers to "a consistent and coherent approach to the management of a health condition that is responsive to a patient's changing needs"; and interpersonal continuity refers to "an ongoing therapeutic relationship between a patient and one or more providers".

This has been further simplified by the suggestion that continuity can be considered as referring to two main dimensions: that of management continuity which ensures that patients receive coherent, complementary, and timely care; and relational continuity, referring to the duration and quality of the relationship between the care provider and the patient. There are then 4 components of continuity of care: duration, density, dispersion, and sequence.

Attributes of relational continuity, such as a patient feeling at ease, and able to raise concerns with a clinician that knows them, and the ability of the clinicians to provide



personalised co-ordination and care navigation are distinct from the benefits that other forms of continuity might bring. It is our view that this distinction between continuity at the level of the individual (relational) rather than at the level of the organization of care (management/informational) is most suited to the purposes of this review. It neatly distinguishes between those interventions that are most clearly aimed at improving the relationship aspect of the therapeutic encounter for the patient, and those that are aimed at improving the working of the larger system through which the patient's care is managed.

Interpersonal continuity often exists in tandem with other aspects of continuity, and it has been argued that neither management nor informational continuity can compensate for lack of an ongoing relationship (Guthrie et al., 2008). The rest of this review focuses on the evidence regarding interpersonal continuity.



Section One - Findings

In this brief overview, we are interested in models of care which are designed to strengthen continuity at an individual (interpersonal continuity) level. Previous reviews (Freeman et al., 2001, Guthrie et al., 2008, Haggerty et al., 2003) have demonstrated that interpersonal, or relational, continuity of care has the greatest potential to impact on a range of care outcomes. The evidence suggests that the interpersonal trust that interpersonal continuity facilitates is important to patients (Saultz and Albedaiwi, 2004, Schers et al., 2002) and has implications for care outcomes (Saultz and Lochner, 2005).

Primary studies are predominantly found in mental health, pregnancy and early infant care, chronic care and cancer care. Interventions include, home visiting by nurses, models of patient discharge and follow-up, models of integrated disease management and structured clinics which design-in a relationship, provide clinical care and co-ordinate care.

Chronic disease management

One of the most recent and thorough reviews looked at chronic disease management in the community setting and whether continuity of care was associated with decreased health resource utilization, improved patient outcomes, and patient satisfaction. Eight systematic reviews and 13 observational studies were identified. The reviews concluded that there is an association between continuity of care and outcomes; however, the literature base is weak. The observational studies found that higher continuity of care was frequently associated with fewer hospitalizations and emergency department visits. Three systematic reviews reported that higher continuity of care is associated with improved patient satisfaction, especially among patients with chronic conditions. Most of the studies were retrospective cross-sectional studies of large administrative databases. The databases do not capture information on trust and confidence in the provider, which is a critical component of relational continuity of care (Health Quality Ontario, 2013).

Similar results were found in a review of the effectiveness of continuing care models in patients with chronic diseases where caseload models were positively associated with improved self-care knowledge, reduced length of stay, decreased medical costs, and better quality of life (Chen et al., 2014). Older people who received a comprehensive continuum of care intervention perceived higher quality of care on items about care planning compared with those receiving the usual care. In addition, they had increased knowledge of whom to contact about care/service, after three and 12 months (Berglund et al., 2013). Continuity, coordination, and transitions of care for patients with serious and advanced illness improve patient and caregiver satisfaction (Dy et al., 2013).

A review of navigation roles to support chronically ill older adults through healthcare transitions provides some evidence that integrated and coordinated care guided by a navigator, using a variety of interventions such as care plans and treatment goals, is beneficial for chronically ill older adults transitioning across care settings. There is a need to further clarify and standardise the definition of navigation, as well as a need for



additional research to assess the effectiveness and cost of different approaches to the health system (Manderson et al., 2012).

The NIHR SDO R&D Programme commissioned a series of research projects, both primary and secondary, on continuity of care, and the synthesised qualitative findings concluded that continuity is a core component in delivering health care effectively and efficiently (Heaton J, 2012, Parker, 2011). Patients valued good relationships with professionals, but this did not always mean seeing the same person. People with more severe ongoing or fluctuating conditions were more likely to value flexible continuity. Having a good relationship meant more than familiarity; it encompassed trust, the professional's style, their communication skills and the time they made available. Co-ordination with carers and other key actors was also important. This went beyond 'informing' carers and included involving them in discharge planning and maintaining treatment. Patients' personal agency was important in co-constructing continuity with professionals and carers. In some circumstances, discontinuity was acceptable, specifically when traded against access.

Maternal and child health

David Olds has published widely on prenatal and infancy home visiting by nurses in the United States. Results of a 2-Decade Follow-up conclude that prenatal and infant/toddler home visitation by nurses is a promising means of reducing all-cause mortality among mothers and preventable-cause mortality in their first-born children living in highly disadvantaged settings (Olds et al., 2014) (Olds et al., 2010).

Researchers in the field of neonatal abstinence syndrome have examined home visiting (Butz et al., 2001, Schuler et al., 2003) and specialist follow up clinics (Oei et al., 2001) to assess the impact on child developmental and behavioural health, and ongoing maternal drug use. Sandall and colleagues (Sandall, 2013) found statistically significant differences in outcomes for women who had received midwife-led care throughout the duration of their pregnancy. Six out of the 13 trials were UK based and Levels of continuity (measured by the percentage of women who were attended during birth by a known carer varied between 63% to 98% for midwife-led continuity models of care to 0.3% to 21% in other models of care). A sub-group analysis of women of mixed risk in 5 of the trials found no evidence of differences in treatment effect between the low risk and mixed risk subgroups for any of the outcomes except for preterm birth and overall fetal loss. In pre-term birth, the effect on low risk women was greater than mixed risk women (low risk (averageRR0.71, 95%CI 0.54 to 0.92); mixed risk (average RR 0.92, 95%CI 0.70 to 1.21). For overall fetal loss, the effect was greater in mixed risk women compared to low risk women: low risk (average RR 0.94, 95% CI 0.73, to 1.20);mixed risk (average RR0.76 95%CI 0.59 to 0.97).

Provision of continuity of care to women with social and medical complications has the potential to improve outcomes (NICE, 2010), however there has been little formal evaluation of current service models. One retrospective observational study looking at the impact of caseload care on women with complex social factors at Imperial College NHS Trust found that women who were caseloaded were more likely to; have a



spontaneous vaginal delivery (80% vs. 55% RR 1.88, 95%CI 1.27-2.77), birth in the midwife led centre (26% vs.13% RR 1.48 95%CI 1.12-1.95), have assessment by 10 weeks gestation (24% vs. 8% RR 1.61 95%CI1.24-2.10), have a shorter postnatal stay (1 day vs. 3 days SD 1.2 vs. 2.2, $p < 0.001$), and know their midwife (90% vs. 8% RR 8.98 95%CI 4.97-16.2). More women in the caseload group were referred to multi-disciplinary support services; psychiatry (56% vs. 19% RR 2.06 95%CI 1.59-2.65), domestic violence advocacy (42% vs.18% RR 1.68 CI 1.31-2.15) and other services (56% vs. 31% RR 1.58 95%CI 1.15-2.16). They were less likely to have a caesarean section (11% vs. 33% RR 0.26 95%CI 0.12-0.55), an epidural/spinal for pain relief (35% vs. 56%, RR 0.64 95%CI 0.46-0.86), give birth on the labour ward (70% vs. 88% RR 0.63 95%CI 0.49-0.83) and had fewer antenatal (0.9(SD 1.1) vs. 1.3(SD1.5), $p=0.036$) and neonatal admissions (4% vs. 18%, RR 0.35 95%CI 0.15-0.85) (Jones, 2014).

Mental health

Care based on crisis intervention principles, with or without an ongoing home care package, appears to be a viable and acceptable way of treating people with serious mental illnesses (Murphy et al., 2012). Green et al. (2008) also reported associations between recovery and medication satisfaction with recovery-oriented patient-centred care, from a study of clinician relationships with mental health patients.

Assessing the impact from different models of care which have built in interpersonal continuity would help to inform future programs to direct efforts towards appropriately evaluated continuity interventions (Haggerty et al., 2003). Relational continuity rarely occurs in a vacuum, and it is often strongly associated with other dimensions of continuity when, for instance, the strong service navigation/co-ordination role of the principle care-giver increases the experience of informational or management continuity between different contexts of care and associated healthcare professionals.

At the level of the organization of healthcare, research is also beginning to show how poor information transfer is associated with lower quality of care on follow-up, as well as adverse clinical outcomes. Management and informational dimensions have significant relevance for patient experiences and the safety of care when 'gaps' in provision occur, especially in the context of movement between different care locations and health professionals (Kripalani et al., 2007).

Moore et al. (2003) found that communication failures related to diagnostic evaluations were associated with a significantly higher risk of readmission, and Van Walraven et al. (2002) demonstrated a trend toward increased risk of readmission among patients who received follow-up from a physician who had not received a discharge summary. Similarly, a report by Roy et al. (2005) demonstrates that 40% of patients have test results that return after hospital discharge and that physicians are commonly unaware of these results, even though approximately 10% of them require action to be taken. There are also many examples in the literature, such as Ouwens et al. (2005), of integrated care management programmes for different chronic patient groups, and how these impact upon functional health status and other health outcomes, such as hospitalization, mortality, quality of life and patient satisfaction.



Section Three – Implications

The findings confirm that the existing evidence for continuity of care highlights benefits to the patients and service users across health care including chronic conditions, mental health and older people.

The general literature highlights the following positive outcomes which are associated with continuity of care:

- improved self-care knowledge, reduced length of stay, decreased medical costs, and better quality of life
- increased knowledge of whom to contact about care/service (short and long term)
- improved patient and caregiver satisfaction with greater interpersonal trust
- perceived higher quality of care on items about care planning
- fewer hospitalisations and emergency department visits and the potential for counteracting the negative impact of communication failures which have been associated with a significantly higher risk of readmission

Within maternity care,

- Midwifery-led continuity (with interpersonal continuity) showed statistically significant differences in outcomes for women who had received midwife-led care throughout the duration of their pregnancy
- For overall fetal loss, the effect was greater in mixed risk women compared to low risk women.
- Caseloading for women with complex social factors in London, spontaneous vaginal delivery, birth in the midwife led centre, have assessment by 10 weeks gestation, have a shorter postnatal stay, know their midwife, less likely to have a caesarean section, an epidural/spinal for pain relief, give birth on the labour ward, fewer antenatal and neonatal admissions, more women in the caseload group were referred to multi-disciplinary support services

Impact for pregnant women with medical or social risk

All the studies highlighted in this paper shows positive outcomes for patients (and caregivers) with continuity of care and there are no known negative impact from this intervention. Translating the findings to potential opportunities for, and impact on care provided for women with medical and social risks could be quantified through the study conducted in London (paper in progress and described in the findings section). This highlighted positive outcomes across a range of health outcomes with fewer interventions for women. In this study, 90% of the women in the group with continuity of care reported knowing their midwife compared with 8% in the comparison group, the key findings are summarised below.



Increasing access to care

	With continuity of care	Comparison group
Have assessment within 10 weeks	24%	8%
Referrals to psychiatry services	56%	19%
Referrals to domestic violence	42%	18%
Referrals to other services	56%	31%

Mode of birth and pain management

	With continuity of care	Comparison group
Epidural/pain relief	35%	56%
Spontaneous vaginal delivery	80%	55%
Caesarean sections	11%	33%

Reduced use of hospital/acute care services with impact on cost of care

	With continuity of care	Comparison group
Birth in midwife-led centre	26%	13%
Give birth in the labour ward	70%	88%
Shorter postnatal stay	1 day	3 day
Fewer antenatal admissions	0.9%	1.3%
Fewer postnatal admissions	4%	18%

The target group for continuity of care

Women who may be identified as socially at risk (based on definitions used by Oakley et al., 2009¹, specific disadvantages and vulnerable groups may include:

- Women in prison
- Travellers
- Homeless women
- Asylum seekers and refugees
- Recently arrived migrants
- Other immigrant groups
- Non-native language speakers
- Victims of abuse
- Women with mental illness/mental health problems

¹ <https://www.npeu.ox.ac.uk/downloads/files/infant-mortality/Infant-Mortality-ANC-Uptake-Review.pdf>



- Women with learning disabilities
- Sex workers
- Victims of female genital mutilation/cutting
- Teenagers
- Women who are HIV positive
- Substance users
- Alcohol misusers

More general groups of disadvantaged women, including:

- Women of low-socioeconomic status
- Women living in deprived areas
- Socially disadvantaged ethnic minority groups

Specific groups for medically at risk as taken from NICE stakeholder meeting in preparation of Guidelines Development² are (please note that this focusses on risk factors for intrapartum care):

- Women taking anti-coagulants therapeutically
- Women with cardiac disease
- Neurological disorders
- Haematological disorders
- Obesity

More general groups included for medically at risk are:

- pre-existing medical conditions
- multiple pregnancies
- Complex social factors
- Obesity BMI >35 or underweight BMI <18
- Physical Disabilities
- Indications from previous obstetric history

The implications for commissioning and provision of care

Although continuity of care is associated with positive outcomes for all pregnant women, focussing on those with medical and social risk is feasible for service improvement in England and the evidence indicates that it is likely to increase health outcomes, impact on health inequalities, provide timely access to all services and satisfaction with health care services. Interpersonal continuity of care provided at individual level is also linked to informational and managerial continuity of care which leads to more efficient and effective organisation of health care. The introduction of continuity of care is not associated with negative outcomes and has been shown to provide benefits. There are, however, known implications for the organisation of maternity care and allocation of resources for the midwifery workforce. These include the introduction on team midwifery, flexible out-of-hours working, and greater integration of care for pregnant

² <https://www.nice.org.uk/guidance/gid-cgwave0613/documents/intrapartum-care-for-high-risk-women-scoping-workshop-notes2>



women across community and acute sector and this is balanced with reduced use of high cost acute sector services.

Section Four - Methods

Aim of the brief scoping review – to outline current and recent research in continuity of care with a focus on evidence from the UK to inform NHS England Guidelines for Maternity Commissioning.

Research Question - To determine the impact that models of continuity of care and models of midwife led continuity of care for women who are at high risk either socially or medically and outcome have on outcomes for patients and childbearing women.

The study population will include patients from all healthcare domains, of all ages, of all nationalities, who receive care in a range of economies.

Potential issues to address

- How is continuity defined?
- What might be the mechanism and key principles?
- How relevant are findings from general healthcare to maternity care and a childbearing population?

Framework for the brief scoping review – The review document is based around a framework/typology in order to present the information gathered in the brief scoping exercise. Models of care are included where they meet the following criteria:

1. They are designed to provide a relationship that is based on trust, guided by a professionally trained clinician who is providing hands-on care, and where the provider has a responsibility to co-ordinate care with other professionals, and provides a care/service navigation role.
2. They are designed to improve communication of information within care teams and/or between care settings or otherwise designed to improve the 'seamlessness' of service provision and coordination between individual care providers.
3. Patient outcomes are measured objectively.

Settings for providing care are not limited and include home, hospital and community.

Methods – The method for the brief scoping review was desk based research, primarily of key websites and databases and previous systematic reviews. Only systematic reviews and syntheses, randomised trials and observational studies were included.



Sources searched

Source Type	Source
Search Engines	Google searches
Database searches	NHS Evidence
	Cochrane Library
	PubMed
	NIHR Research database

Limitations of the brief scoping paper

We reviewed evidence and information with a focus on very recent evidence, except in the case of highly influential systematic reviews. The review is necessarily brief. The searches for the review were not exhaustive. This opens the review to sources of heterogeneity which may be *as a result* of health status (disease severity, co-morbidities) as well as variations in patient populations which arise as a result of environmental and social influences such as age, ethnicity, geographical area and socio-economic status. A full review looking at subgroup analysis would be needed to explore these issues.

The following search string was used in PUBMED and adapted for other databases:

systematic[sb] AND ("continuity of patient care"[MeSH Terms] OR ("continuity"[All Fields] AND "patient"[All Fields] AND "care"[All Fields])) OR "continuity of patient care"[All Fields] OR ("continuity"[All Fields] AND "care"[All Fields]) OR "continuity of care"[All Fields].

Therapy/Broad[filter] AND ("continuity of patient care"[MeSH Terms] OR ("continuity"[All Fields] AND "patient"[All Fields] AND "care"[All Fields])) OR "continuity of patient care"[All Fields] OR ("care"[All Fields] AND "continuity"[All Fields]) OR "care continuity"[All Fields] AND Clinical Trial[ptyp].

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