

## HOW DOES CONTINUITY OF CARE AFFECT QUALITY OF CARE IN PRIMARY HEALTHCARE?

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### SUMMARY

*Continuity of care is generally considered beneficial in primary healthcare, and in this paper the evidence for such assumptions is examined. Studies and reviews showed that continuity of care is able to decrease unnecessary hospitalisation, length of hospital stay and attendance at Accident and Emergency departments, as well as improve patient and doctor experience. It has also been found that the continuity of care provided to patients varies greatly depending on patient demographic, GP surgery policy and size. As the evidence suggests that continuity of care has such great health benefits for the patient, addressing the deficit in continuity that some patients receive would be an effective way to improve quality of care.*

**Key words:** continuity of care - quality of care - doctor-patient relationship - primary healthcare

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### How does continuity of care affect quality of care in primary healthcare?

Continuity has long been a concept at the heart of primary health care. Family doctors used to see patients they delivered as babies grow up and have children of their own. However, current healthcare policy is moving towards a service which is more readily accessible at the cost of the loss of continuity of care (CoC) (NHS England 2015). In times such as these, with the NHS facing the strains of huge financial challenges and demands on resources (NHS Confederation 2014), is it right to neglect the personal relationship between doctor and patient that has been so long treasured? In this article, we will examine the evidence to see whether continuity of care has any effect on the quality of care provided by general practitioners.

### Continuity of Care

CoC is commonly referred to in medical literature, and has been enshrined in the history of general practice, but is itself hard to define. There are discrepancies in the definitions of CoC across published articles and studies, which lead to difficulties in comparisons and generalisation. A systemic review of 379 items of literature (Saultz 2003) came to the conclusion that CoC is best described as a three-tier hierarchy. On the lowest level, CoC is informational; the availability of a comprehensive medical history of the patient which is accessible to whichever healthcare professional is treating them. The next level of continuity is longitudinal, which refers to the ongoing provision of healthcare by the same person. This facilitates the development of a doctor-patient relationship, but does not guarantee it. The final tier of continuity is interpersonal: with doctor and patient interacting with mutual trust and respect. In this way, interpersonal continuity requires longitudinal

continuity, which itself requires informational continuity. For the purpose of this article, we will be using this hierarchal definition of CoC.

### Quality of care

Quality of care is another concept which cannot be easily quantitatively measured. The authors have decided to consider components that contribute to high quality healthcare, namely patient outcome and patient experience. As well as looking at research directly investigating these components, it is worth considering the opinions and personal experiences of practising GPs.

### Current patterns of continuity

A number of studies have shown discrepancies in CoC for different groups of people within the same geographical areas, and even the same practices (Hetlevik 2012, Guthrie 2002, Freeman 1990, Sweeney 1995).

Perhaps unsurprisingly, one of the most common variables associated with lower CoC is large practice size (Barker 2017, Guthrie 2002). A study of UK general practices in 1998 showed that patients in the largest two-fifths of practices have an 80% decrease in the chances of seeing their usual doctor, compared to those in the smallest practices (Guthrie 2002). However, the effect of a large GP practice appears to be effectively counteracted by using personal list systems. The same study found that patients in practices which used personal lists were three times more likely to be seen by their personal doctor than those who attended practices without these lists (Guthrie 2002). This finding is supported by a study of four practices in Southampton, each with roughly the same number of patients, which showed that the presence of a personal list system can increase the likelihood of patients seeing their registered doctor by almost 70% (Freeman 1990).

Another strong association can be found between patient age and the CoC they receive. It has been repeatedly found that older patients are more likely to be seen by their regular doctor than younger patients (Hetlevik 2012, Guthrie 2002, Freeman 1990, Sweeney 1995); the Southampton study found a 16-fold increase in likelihood for patients aged 65 and over to receive this longitudinal continuity when compared with patients aged 14 and under (Freeman 1990). The positive association between age and longitudinal CoC could be explained in number of ways. It is possible that people of older generations expect more longitudinal and interpersonal continuity than younger patients, perhaps because this is what they experienced from the health-care system whilst growing up. Also, a greater number of elderly patients will have retired so they may be more flexible with their appointment times, and consequently more likely to be available at the same time as their registered GP. Another possibility is that the increased CoC of the elderly is a result of the increased health problems of patients in this age bracket; older patients are more likely to have chronic diseases (Ward 2013). This could affect CoC in one of two ways. Firstly, the GPs of these patients may feel more responsibility to see the patients personally, so they can follow the progression of the diseases and avoid missing any important information. Secondly, it has been found that longitudinal continuity increases as the number of appointments made with the practice increases (Hetlevik 2012), so the increased number of appointments required to manage chronic health conditions facilitates an increase in CoC. Studies into the definitive cause or causes of the correlation between age and CoC seem to be currently lacking, but would be useful in understanding whether this discrepancy between care for different generations is something that must be corrected, or if it is simply an artefact of deteriorating health in old age.

## **Outcomes**

Common outcomes of disease include hospitalisation, attending the Accident and Emergency department (A&E), using alternative therapy or outpatient services, management of disease and mortality. All of these possible outcomes have been found to be influenced by the CoC experienced by the patient. As mortality is the most extreme and least desirable outcome, it will be discussed separately below.

Hospitalisation is a potentially flawed marker of poor care, because it is often the most appropriate and caring next step in treatment. To overcome this problem, the number of hospital admissions for ambulatory care sensitive conditions (ACSCs) is often investigated; that is the admissions for diseases which are considered to be manageable or avoidable with appropriate care in a primary care setting such as a GP practice. For example, diabetes mellitus is commonly managed sufficiently well by GPs and the patients themselves,

without the need for admission to hospital. An English study of over 230000 patients between 62 and 82 years of age, found that increasing longitudinal CoC by 20% would reduce the number of hospital admissions for ACSCs by over 6% (Barker 2017); a small but significant difference. Moreover, a study looking at patients in the same age bracket and particularly measuring interpersonal CoC showed that it also has a protective effect against admission for ACSCs (Bentler 2014). The pattern is supported by critical reviews (van Walraven 2010, Saultz 2005). This evidence suggests that continuity of care does have an effect on quality of care. It can not only improve outcome by avoiding unnecessary hospitalisation, but also improve patient experience by avoiding the stress associated with hospitalization, and save the NHS money.

On a similar theme, length of hospital stay has also been found to be inversely correlated to CoC. In a study of 776 men over 55, the presence of longitudinal continuity was found to reduce the average length of stay in hospital by ten days, when compared to the group without longitudinal continuity (Wasson 1984). This is another way in which small changes on the primary care level could cause great improvements in quality of care whilst saving money. However, it is worth noting that the cohort for this study was not representative of the population, and was also relatively small. It would be beneficial to carry out another study with a much more varied patient sample. Also, measuring the degree to which patients received longitudinal continuity, instead of merely its presence or absence, would allow the exact nature of the association to be determined.

Use of A&E is associated with decreased CoC. When longitudinal continuity is lacking, as defined in this particular study (Baker 1995) by four consecutive consultations which did not take place with the registered doctor, the probability of the patients repeatedly using A&E increased. Interpersonal continuity is also found to protect against A&E use (Bentler 2014). A larger scale literature review supported these conclusions (van Walraven 2010). This relationship could reflect the fact that patients with low CoC are more likely to experience their health get suddenly worse and require emergency treatment than those with good continuity. Alternatively, or additionally, increased use of A&E facilities may be the result of a lack of awareness of the patients about when it is appropriate to use A&E and when it is not, resulting in them using A&E more often. Regardless of the reason, it is evident that CoC does affect A&E usage.

Use of outpatient specialist services, and complementary and alternative medical (CAM) providers, are found to increase as CoC decreases. One Norwegian study found that patients with longitudinal CoC, which was defined in this instance as a doctor-patient relationship of two years or more, were less likely to be using CAM providers than patients who had less longitudinal continuity, with an odds ratio of 0.81

(Hansen 2014). CAM providers were considered to be those who were not authorised health personnel working in the established health service. An investigation into the same data used for this paper found that this longitudinal CoC is also associated with reduced use of outpatient services (Hansen 2013). It is debatable whether these are useful measures of quality of care, because many could argue that CAM providers and outpatient services offer an extra dimension to healthcare that would not be provided by even the best GPs (Ernst 2000). However, it is also possible that patients turn elsewhere for healthcare because they feel dissatisfied with their current, more conventional, doctor-patient relationship and believe they may find a better relationship with a CAM provider (Ernst 2000).

The ability to effectively manage a chronic condition has been found to increase as longitudinal CoC increases. A study with diabetic patients (O'Connor 1998) found that those who had a consistent healthcare provider showed better glycaemic control than those patients lacking such longitudinal continuity. They also had a higher chance of accessing most of the recommended elements of their diabetic care, which is a mark of quality care.

### **Mortality**

In a study of over 1000 male patients aged 65 years or over, mortality was only found to be protected against by one aspect of duration continuity, whilst eight other CoC measures had a positive association with mortality (Bentler 2014). This data seems to be in conflict with another larger study of 5457 patients, which found higher continuity to be associated with lower mortality (Wolinsky 2010). However, it is duly noted that the measure used for continuity in this study took into consideration the concentration of appointments with the same doctor, something not included in the definition of longitudinal CoC used by the authors. It was found that there was not a dose-response relationship between continuity and mortality prevention; the more continuity increased, the lesser the protection it afforded. They speculate that older adults with chronic health conditions need a higher concentration of care so the benefit of continuity is diminished: part of the continuity is due to the necessity of treatment, which detracts from the intrinsic value of CoC itself.

### **Patient experience**

Studies have shown that patients consider CoC to be important (Carmody 2007, Kearley 2001, Aboulghate 2012). For example, 85% of the 400 patients from Ireland questioned said that they considered seeing the same doctor on each visit to the practice to be fairly or very important (Carmody 2007). In another study of 988 patients (Kearley 2001), 64% said that having a personal GP, a mark of longitudinal CoC, was very or extremely important to them. It was also found that 77-88% of patients valued a personal doctor-patient rela-

tionship over appointment convenience. All of this data is supported by a large study into the desires of English patients (Aboulghate 2012) which found that 62% of the 2.17 million patients surveyed had a preference for seeing a particular GP. Listening to and respecting the views of patients, on their preferences and what they consider to be important, is one component of the provision of quality care.

Patient satisfaction is also positively correlated to CoC. A study of 3918 primary care patients in Norway (Hjortdahl 1992) found that an overall personal relationship between doctor and patient, which would feature longitudinal and interpersonal CoC, could increase the odds of the patient being satisfied with the consultation sevenfold when compared to consultations without any longitudinal CoC. It was also found that as the patient believes their personal doctor is responsible for an increased proportion of their healthcare, the patient's satisfaction with their doctor also increases: a doctor who was considered to be responsible for most of the patient's primary healthcare needs gave a consultation that was 2.5 times more satisfying than a new relationship, whereas a doctor considered responsible for only some of the patient's primary healthcare needs gave a consultation only 0.5 times more satisfying. Furthermore, patients have been found to have increased satisfaction if the practice they attend operates a personal list system (1995). As previously discussed, a personal list system increases longitudinal CoC, consequently facilitating the development of interpersonal CoC (Guthrie 2002).

However, although it is evident that patients desire to see their usual doctor, the importance attached to this continuity is greatly affected by the magnitude and nature of the health problem they are experiencing. When 969 adult patients from Oxfordshire were presented with a list of reasons to see their doctor, ranging from minor to major problems (Kearley 2001), personal care was rated as more important for the major ones. 87% thought it would be very or extremely important to be seen by their personal GP for incurable cancer, whereas only 9% had the same strong preferences when being treated for an itchy rash on the arm. This trend was repeated in a more recent study in the Netherlands (Schers 2002). 96% considered it important to see their personal doctor when making an appointment to discuss the future when they were seriously ill, but only 21% would consider it important for removal of a splinter in the eye. It was noted that the main reasons for preference for personal GPs were patients assuming their doctor had an understanding of their personal and family information, and better medical knowledge.

It could be argued that patient experience is even more important than usual in treatment for a serious mental illness. Research with the help of 177 patients being treated for schizophrenia, schizoaffective disorder, affective psychosis or bipolar disorder (Green 2008) found that a common theme in treatment was the importance of trust: the patient being able to trust the

clinician, and feeling like the clinician trusted them. This mutual trust developed in long term relationships, which require interpersonal CoC, and was able to increase patient's feelings of self-esteem and self-worth. Greater continuity of care was again found to be associated with greater patient satisfaction, and indirectly with a greater quality of life.

### **General practitioner opinion**

Practising GPs also believe that CoC is important when managing mental health conditions. A study in Canada (Fleury 2012) showed that seeing patients with mental disorders in walk-in clinics, especially new patients, was stressful for GPs; the lack of longitudinal CoC caused stress which is likely to decrease the quality of care the GP is capable of providing. The doctors questioned insisted on the importance of the doctor-patient relationship when detecting a mental disorder, as well as managing one. A different study (Tavabie 2009) found that a good patient-doctor relationship increased the GP's commitment to the patient, and made them more tolerant of recurring depression and lack of improvement in the patient's mental health.

Doctors showed similar patterns to patients, in that they deem CoC to be important, but the emphasis they place on it is affected by the nature of the consultation. In the Oxfordshire study (Kearley 2001) GPs were questioned as well as the patients; 80-98% of GPs valued a personal doctor-patient relationship more than a convenient appointment time, but the importance of longitudinal CoC changed as the clinical cameos changed. 97% thought it was very or extremely important for a personal GP to treat someone with incurable cancer (10% more than the patients questioned) whereas only 2% thought it was very or extremely important for a personal GP to treat someone with an itchy rash on arm (7% less than the patients). Another study (Ridd 2006) found that whilst doctors generally valued personal continuity in their work, it was particularly valued when treating patients with serious, chronic, complex or psychological problems.

Continuity of care can cause GPs to interpret the information they receive from their patients in different ways to those they would use with new patients (Ridd 2006). This could have both positive and negative consequences on quality of care. On one hand, GPs feel able to 'adjust their threshold for intervention' with patients, based on previous knowledge and experience. This could avoid unnecessary treatment and investigation, making the care delivered more efficient and targeted, as well as saving money. It was also considered that continuity allowed the doctor to filter symptoms and interpret results in a more personal manner. This can be beneficial in saving time, but also increases the risk of the doctor making assumptions about the patient, which could lead to missing important signs and incorrectly ruling out possibilities.

### **Conclusion**

Looking at the available literature has shown overwhelming evidence in favour of CoC. It has been found to increase patient satisfaction, decrease hospitalisation and A&E usage, and improve patient health. It also appears to be associated with decreased mortality, but the discrepancies in the definition of CoC used by the studies makes the authors hesitant to draw any firm conclusions, for uncertainty of their validity. The relationship between CoC and mortality is one area which would greatly benefit from further research.

The remarkable ability of personal lists to increase longitudinal, and therefore potentially interpersonal, CoC, is encouraging; if CoC has such a large positive impact on quality of care, the implementation of a personal list system seems like an easy way to improve health services. Currently in the NHS, a patient is legally assigned to a specific doctor when they register with a GP practice. However, this continuity can be lost in group practices, when patients are allowed to or encouraged to book appointments with doctors other than their personal GP. If, in these practices, doctors and receptionists informed patients about the benefit of CoC and advised them to book appointments with a personal GP, a greater level of CoC could be achieved relatively easily. It is worth noting that sometimes such continuity can be inconvenient, especially with limited working hours of specific doctors. However, the positive impact CoC can have on patient health and wellbeing is so great that this seems to be an option worth seriously considering.

The medical field would benefit from more studies on the consequences of CoC. Although there was sufficient information to write this paper, many of the topics discussed only had a few studies that were appropriate to use. Often, these studies were completed in different parts of the world with different healthcare systems, making it harder to pool the evidence in a common conclusion. There is a distinct lack of evidence about how CoC affects diagnosis: its nature of delivery and its accuracy. As the quality of care provided by a doctor can be greatly influenced by this, it would be a beneficial field to research further.

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Katherine A. Irwin drafted the text and carried out part of the literature search. She is first author.

Mark Agius suggested the topic, carried out part of the literature search and supervised the project.

## References

1. Aboulghate A & Abel G: Do English patients want continuity of care, and do they receive it? *Br J Gen Pract*. 2012; 62(601): e567–e575.
2. Barker I, Steventon A & Deeny SR: Association between continuity of care in general practice and hospital admissions for ambulatory care sensitive conditions: cross sectional study of routinely collected, person level data. *BMJ* 2017; 356:j84.
3. Baker R & Streatfield J: What type of general practice do patients prefer? Exploration of practice characteristics influencing patient satisfaction. *Br J Gen Pract*. 1995; 45(401):654-9.
4. Bentler S, Morgan R, Virnig B & Wolinsky F: The Association of Longitudinal and Interpersonal Continuity of Care with Emergency Department Use, Hospitalization, and Mortality among Medicare Beneficiaries. *PLoS One*. 2014; 9(12): e115088.
5. Carmody P & Whitford D: Telephone survey of private patients' views on continuity of care and registration with general practice in Ireland. *BMC Fam Pract*. 2007; 8:17.
6. Ernst E: The role of complementary and alternative medicine. *BMJ*. 2000; 321(7269): 1133–1135.
7. Fleury M, Imboua A, Aubé D, Farand L & Lambert Y: General practitioners' management of mental disorders: a rewarding practice with considerable obstacles. *BMC Fam Pract*. 2012; 13:19.
8. Freeman K & Richards C: How much personal care in four group practices? *BMJ* 1990; 301(6759):1028-30.
9. Green C, Polen M, Janoff S, Castleton D, Wisdom J & Vuckovic N et al.: Understanding how clinician-patient relationships and relational continuity of care affect recovery from serious mental illness: STARS study results. *Psychiatr Rehabil J*. 2008; 32(1):9-22.
10. Guthrie B: Continuity in UK general practice: a multilevel model of patient, doctor and practice factors associated with patients seeing their usual doctor. *Fam Pract*. 2002; 19(5):496-9.
11. Hansen A, Halvorsen P, Aaraas I & Førde O: Continuity of GP care is related to reduced specialist healthcare use: a cross-sectional survey. *Br J Gen Pract* 2013; 63:482-9.
12. Hansen A, Kristoffersen A, Lian O & Halvorsen P: Continuity of GP care is associated with lower use of complementary and alternative medical providers: a population-based cross-sectional survey. *BMC Health Serv Res* 2014; 14:629.
13. Hetlevik Ø & Gjesdal S: Personal continuity of care in Norwegian general practice: a national cross-sectional study. *Scand J Prim Health Care* 2012; 30(4):214-21.
14. Hjortdahl P & Laerum E: Continuity of care in general practice: effect on patient satisfaction. *BMJ*. 1992; 304(6837):1287-90.
15. Kearley K, Freeman G & Heath A: An exploration of the value of the personal doctor-patient relationship in general practice. *Br J Gen Pract*. 2001; 51(470):712-8.
16. NHS Confederation, 2014. NHS finances: A service at boiling point? [online] Available at: <<http://www.nhsconfed.org/resources/2014/07/nhs-finances-a-service-at-boiling-point>> [Accessed 19 July 2017]
17. NHS England, 2015. NHS walk-in centres. [online] Available at: <<http://www.nhs.uk/NHSEngland/AboutNHSservices/Emergencyandurgentcareservices/pages/Walk-incentresSummary.aspx>> [Accessed 19 July 2017]
18. O'Connor P, Desai J, Rush WA, Cherney L, Solberg L & Bishop D: Is having a regular provider of diabetes care related to intensity of care and glycemic control? *J Fam Pract*. 1998;47(4):290-7.
19. Ridd M, Shaw A & Salisbury C: 'Two sides of the coin'--the value of personal continuity to GPs: a qualitative interview study. *Fam Pract*. 2006; 23(4):461-8.
20. Saultz J: Defining and Measuring Interpersonal Continuity of Care- a systematic review. *Ann Fam Med* 2003; 1(3): 134–143.
21. Saultz J & Lochner J: Interpersonal Continuity of Care and Care Outcomes: A Critical Review. *Ann Fam Med*. 2005; 3(2): 159–166.
22. Schers H, Webster S, van den Hoogen H, Avery A, Grol R & van den Bosch W: Continuity of care in general practice: a survey of patients' views. *Br J Gen Pract*. 2002; 52(479):459-62.
23. Sweeney G & Gray P: Patients who do not receive continuity of care from their general practitioner--are they a vulnerable group? *Br J Gen Pract*. 1995; 45(392):133-5.
24. Tavabie J & Tavabie O: Improving care in depression: qualitative study investigating the effects of using a mental health questionnaire. *Qual Prim Care*. 2009;17(4):251-61.
25. van Walraven C, Oake N, Jennings A & Forster AJ: The association between continuity of care and outcomes: a systematic and critical review. *J Eval Clin Pract*. 2010; 16(5):947-56.
26. Ward B & Schiller J: Prevalence of Multiple Chronic Conditions Among US Adults: Estimates From the National Health Interview Survey, 2010. *Prev Chronic Dis*. 2013; 10: E65
27. Wasson J, Sauvigne A, Mogielnicki R, Frey W, Sox C & Gaudette C et al.: Continuity of outpatient medical care in elderly men. A randomized trial. *JAMA*. 1984; 2;252(17):2413-7.
28. Wolinsky F, Bentler S, Liu L, Geweke J, Cook E & Obrizan M et al.: Continuity of Care with a Primary Care Physician and Mortality in Older Adults. *J Gerontol A Biol Sci Med Sci*. 2010; 65A(4): 421–428.

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