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**Continuity of care in general practice**  
**Exploring the balance between personal and informational continuity**

## Colofon

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**Continuity of care in general practice**  
**Exploring the balance between personal and informational continuity**

een wetenschappelijke proeve  
op het gebied van de medische wetenschappen

**Proefschrift**

ter verkrijging van de graad van doctor  
aan de Radboud Universiteit Nijmegen  
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## **Preamble**

The concept of continuity of care has a long history in Dutch general practice. In our collective memory, it originates from January 1959, when -shortly after its foundation- the Dutch College of General Practitioners organised a meeting in the forests around Zeist. In the annals this meeting is known as the Woudschotenconference<sup>1</sup>. The Dutch College initiated this conference in order to reflect on its own immature role, and it aimed to formulate a definition of the work of the general practitioner (GP). The impact of this meeting on the development of general practice in the Netherlands has been considerable.

The story goes that the first day of the conference ended in chaos. On the second day, two men described the function of the general practitioner in a private conversation, perhaps over a glass of red wine and a cigar. Those present at the meeting accepted this definition. From the perspective of many Dutch GPs, the definition is almost intuitively interchangeable with the concept of continuity of care: *'to assume the responsibility for continuous, integral and personal care for the health of the individuals and their families who entrust themselves to him.'*<sup>2</sup> It is interesting that one of the two men who launched this definition was Frans JA Huygen, a famous predecessor in our practice in Lent. His successor, Wil JHM van den Bosch, has become my valued promoter almost 50 years later.

Traditionally, the essentials of continuity of care are linked worldwide to the soloist GP. This archetypical GP takes care of a stable population of families over a long period of time. He knows these patients and their social and cultural context; he is aware of coping patterns within individuals and families; he is involved with prevention; he takes care of his patients, feels himself responsible, and shares life events, such as birth, critical illness, and decease with his patients.

However, a lot has changed in general practice since 1959. Single-handed practices have become a minority now, and the number of more-handed practices and health centres is increasing worldwide. More women have come into the profession. Just as their young male colleagues, they prefer to work part-time. In addition, other health care workers, such as the practice nurse, the triagist and the centre manager, have entered the working floors of general practice. These new professionals manage cure of minor ailments and care for chronic disease, under the GP's responsibility, but without his direct practical involvement. Moreover, on-call services are increasingly being organised large scale. In general, patients will only see a familiar doctor during regular consultations. The gatekeeper role of the general practitioner has been put up for debate, and new initiatives, such as walk-in centres and its derivatives are emerging, which probably will enter the Netherlands within a few years.

Overlooking these changes, the number of potential continuity breaks in the medical care for individual patients is increasing. Access to medical files has become more and more important. The challenge for general practice is therefore to maintain the patient's feeling of continuity of care in these changing circumstances.

This thesis attempts to contribute to this task. The semantic confusion at the Woudschotenconference has been our challenge in the past years. Continuity of care is still not well defined,<sup>3-6</sup> and the start of our research project was laborious. In the end, we have chosen to highlight two aspects of continuity of care that are most fundamental to contemporary general practice. Firstly, this thesis focuses on *personal continuity* representing the interpersonal relationship between GPs and patients. It comprehends the aspects of knowing each other, trust and responsibility or 'being there'. Secondly, it focuses on *informational continuity*, which refers to registration of, and access to information that is considered essential for continuity of care. These aspects are neither the same nor mutually exclusive,<sup>7</sup> but surely they are complementary and the key elements for maintaining continuity of care in the future.

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## **Introduction**

Continuity of care in this thesis

## **Introduction**

This chapter describes and accounts for the elements of continuity of care on which this thesis focuses. It gives a brief overview of definitions, which will be worked out in chapter 2, and continues working out the key-elements of continuity of care, especially in relation to present-day developments in general practice. After mapping the knowledge gaps, it presents the aim of this project and the contents of this thesis.

### *Continuity of care in this thesis*

This thesis explores two aspects of continuity of care: personal continuity and informational continuity. From a literature study, these elements emerged as the most consistent essentials of continuity (chapter 2). For the present-day general practitioner (GP) it will become one of the main challenges in the coming decades to balance the various aspects of personal and informational continuity.

I define *personal continuity* in this thesis pragmatically as ‘having contact with a personal GP’. According to the literature, a personal GP is characterised by several key qualities of the patient-doctor relationship, such as familiarity, mutual trust, and longitudinality. In the Netherlands, about 80% of the patients are listed with 1 GP, and only 20% with a group of GPs. Generally, the ‘personal GP’ is the same person as the ‘regular’ GP or the GP on whose list patients are. However, this is not always the case, and occasionally patients may even feel to have more than one personal GP.

*Informational continuity* is defined as ‘registration of information, access to information, and use of information, which is considered necessary for smooth and co-ordinated progression of patient care’. In this thesis, continuity of information does not include spoken language or verbal transfer of information, which is necessary for good quality of care as well. Furthermore, this thesis will not focus on co-ordination of care, nor will it address issues around interdisciplinary continuity. In addition, the focus is not on the practice and its team as a place where continuity is provided. Quite confusingly, some authors have lately referred to this ‘medical home’ as the longitudinal level of continuity.<sup>1</sup>

### *Continuity of care: definitions and conceptualisations*

Many authors consider continuity of care one of the main characteristics of the discipline of general practice.<sup>2-12</sup> However, the concept of continuity of care has not been worked out very well. An unambiguous definition is not available, and existing descriptions and concepts cover many meanings and interpretations. Even recent reviews of the complete literature put forward essentially different frameworks and definitions.<sup>1;13;14</sup>

Starting from the late fifties, authors have tried to define and conceptualize continuity of care. Some authors have developed models in which continuity is considered an overall concept.<sup>15-17</sup> Generally, these models incorporate many features of general practice care. Above all, they are descriptions of what should be considered the essence of general practice,

obviously meant to distinguish general practice from other - most specialist - disciplines. For instance, they combine characteristics of general practice such as geographical, longitudinal, interdisciplinary, personal, and informational continuity. Regrettably, not one model has been accepted widely as the most suitable.

Other authors take out one of the aspects from these models, and for example identify the longitudinal relationship between patients and doctors as the essential of continuity of care. They define continuity in terms of sociological contracts, feelings of commitment and acts of responsibility.<sup>10;13;18</sup>

Moreover, some authors describe continuity as consistency of management,<sup>19;20</sup> and emphasise the elements teamwork and coordination of care. The patient's perspective is the focus in these descriptions, and proper transfer of information becomes a vital aspect of these conceptualisations of continuity of care in general practice.

### *The two core elements of continuity of care*

Two elements of continuity of care appear to be crucial in the existing literature: personal continuity and informational continuity.

*Personal continuity* signifies the personal aspect of the relationship between a general practitioner and his patients. This characteristic of general practice has been emphasised since a long time. Longitudinality is an important aspect of personal continuity. It refers to an ongoing relationship between a GP and his patients throughout the years.<sup>2;13;21-23</sup> Recently, the matter of course of personal continuity is under pressure, and its relative importance is open to discussion.<sup>19;24;25</sup> However, in everyday practice this aspect of continuity is felt to be quite crucial. Most patients will state that they have only one personal GP, but some may feel that they have more.

In the literature, the personal GP is often synonymous with the regular GP or the usual GP, or the GP on whose list patients are. However, there may be differences between these. For instance, patients may consider another than their regular GP their most important care provider.<sup>26</sup> A considerable number of studies deals with the issue of personal continuity, and sophisticated and complex mathematical formulas have been developed to measure provider continuity.<sup>1;27;28</sup>

Another aspect of personal continuity is referred to as commitment or more simply as the experience of 'being there'. It expresses a feeling of personal responsibility for patients, wherever they are present in the health care system.<sup>29-31</sup> Commitment implicates a pro-active role of the GP in order to monitor a patient's medical life cycle. This characteristic of continuity in general practice is emphasized mainly in opinion papers.<sup>9;32-35</sup> Evaluative studies on this theme are rare.

The second essential of continuity, which emerged from the literature, is *informational continuity*. This element becomes more prominent in recent decades.<sup>19;36;37</sup> When doctors are not always available, and professional standards demand high-qualitative care, the necessity

of proper information transfer gains importance. Access to the medical record becomes necessary for consistent care. Doctors have to register more information than before to fulfil their own professional standards. Certainly, also disciplinary law and legal regulations both have allotted general practitioners with high responsibilities.

Control over the patients' composed medical records is considered an important assignment of general practitioners.<sup>21;38;39</sup> With the growing importance of information and communication technology worldwide, and the gradual exchange of paper records for computerised records, many challenges and obstacles are ahead of us.<sup>40-44</sup> Optimal information transfer with respect to privacy-matters will become increasingly important.<sup>45-47</sup> Although many authors consider informational continuity very important and even the core element of continuity of care,<sup>23</sup> there are hardly any studies that explore the theme conceptually in depth.<sup>37</sup>

#### *Personal continuity in relation to present-day developments*

In everyday practice, personal continuity is not obvious any more: the false myth of the always-available practitioner is waning. Many present-day developments are considered a threat to the provision of classical continuity. These changes involve alterations in the population of GPs, changes in practice organisations, and changes in society and patient priorities.

Firstly, the population of GPs is changing. The profession is feminizing for the greater part. At the time, 25 percent of the practising GPs is female in the Netherlands, but this percentage will rapidly grow, as almost 65 percent of the GP trainees are female in 2001. In addition, GPs of the younger generation tend to prefer to work part-time. Only 15 percent of coming GPs prefers a full time job in the future.<sup>48</sup> GPs increasingly find challenges in combining their GP-job with a research career or another additional job. Essentially, less GPs will be practising fulltime in the nearby future. These developments are by no means exclusive for the Netherlands; concern about similar changes within the population of practising GPs appears to be a global issue.<sup>49-54</sup>

Secondly, the organisation of general practice is changing. Single-handed practices are rapidly fading, and general practitioners work together in more-handed centres increasingly. This development towards scale-enlargement will presumably continue. In many western countries similar changes take place,<sup>51;55;56</sup> but in some this transformation is not yet the case.<sup>57</sup>

Moreover, within practices, the GPs' collective experience of increased workload has facilitated the introduction of practice nurses and triagists, who take over formerly general practitioners' tasks. At the same time, GPs stay legally, as well as according to disciplinary law, responsible for this new staff. The United Kingdom and other countries have preceded the Netherlands in introducing these kinds of help-personnel.

Another major change in Dutch general practice is the recent transformation of out of hours services. Nowadays, most of these services are organised large-scale. As a result, patients see a nearby, familiar GP only during regular consultations, and face a call centre of a distant large-scale organisation during out of hours. In many other countries, including the United Kingdom and Scandinavian countries, the development of such large-scale organisations started already earlier.<sup>58-60</sup> Other countries, where general practice is less strong as a discipline (for instance Belgium and Germany), do not yet practise such out of hours care.<sup>57;61</sup>

Finally, initiatives exist to abolish the gatekeeper role of the general practitioner in the Netherlands. Although this task of the GP is quite typical for the Netherlands— few other countries practice and support this feature— it is believed to contribute to continuity and consistency of care in the Netherlands.<sup>62-64</sup> At the time however, the matter of course of the gatekeeper role is open to debate. Medical insurance companies provide telephonic health services, giving medical advice for their insured cost-free; occupational doctors can refer directly to physical therapists and specialists, and access to these disciplines may be free for patients soon.

Thirdly, the impact of patients and society on the provision of continuity of care is changing worldwide. Patients move houses more often, and have become well-informed consumers of a variety of health care services. Parallel to developments in the United Kingdom, walk-in centres might arise, where people get medical aid directly from an unknown doctor.<sup>65;66</sup> Access at a convenient time seems to be becoming more important for patients. Patients are already known to make trade-offs between access at a convenient time and personal continuity,<sup>67</sup> and they are generally not prepared to drive many extra kilometres to maintain continuity.<sup>68</sup> Moreover, patients are sometimes confronted by forced discontinuity of care by insurance demands.<sup>12;69</sup>

Considering these developments, general practice appears to be developing towards a distant, pragmatic facility that provides a variety of health care services; personal continuity from a familiar GP might become a subsidiary feature of general practice in the nearby future. New definitions of the general practitioner are somehow in line with this presumption.<sup>25;70</sup>

#### *Informational continuity in relation to present-day developments*

Contrary to developments in the field of personal continuity, information and communication technology has acquired a stable position in the health care system. Its impact on health care in the past decennia is considerable. Oral communication between professionals has lost significance, due to part-time work and a growing number of professionals participating in the care for one patient.

Worldwide health care systems, including GPs, are computerising,<sup>71-73</sup> and in the Netherlands more than 90 percent of general practitioners are computerised at the time.<sup>40;74</sup>

This implies that in general practice all medical information is stored nowadays in electronic patient records (EPR).

Registration and proper recordkeeping have become more important, certainly within more-handed practices. Distant access has become possible, but many developments are still at their beginnings. Internet-based patient records have not been introduced large-scale, but this will happen probably within a few years.<sup>4;75;76</sup> The number of health care workers that may have access to these medical records is potentially immense. The patient record is developing into an important tool to maintain continuity of care, in the sense of consistency. On top of being a static, retrospective report of objective medical facts, it may enhance consistency of management within groups of care providers. This has been a goal of medical informatics since long.<sup>43</sup>

Electronic disclosure of medical records has much potential, but at the same time, it also gives reasons for concern. Confidentiality of medical information is at stake. Unfortunately, the establishment of legal and disciplinary regulations for privacy and access matters lags far behind.<sup>47;77</sup>

#### *The knowledge gaps*

Within present-day developments, many questions around continuity are still unanswered. This applies both to issues on personal and informational continuity.

An important aspect of personal continuity is that patients see the personal doctor of choice. Among other characteristics of general practice, this aspect of personal continuity seems much valued by patients.<sup>78;79</sup> Many patients want to be able to see their personal GP over time.<sup>68</sup> Still, more than a few questions on personal continuity remain. For instance, it is unknown how patients value continuity in relation to various reasons for encounter. For instance, do patients want to see their personal doctor for regular checks or minor ailments? The answers to these questions are relevant because it may help us manage personal continuity in daily practice, where practice nurses and other help-personnel are taking over GPs' tasks. Furthermore it may be relevant to identify certain patient categories who value personal continuity particularly, as it is often hypothesised that personal continuity might be particularly important for the elderly and chronically ill.<sup>68;80</sup>

Another important aspect of personal continuity is related to the feeling of being responsible, which is also referred to as 'commitment'.<sup>31;81-83</sup> This responsibility stays prominent during a patient's tour through the health care system.<sup>9</sup> Leaving a few outdated studies,<sup>84</sup> patients' views on this aspect of personal continuity are largely unknown. Do patients need contact with their GP at the time of hospital admission and other life events? And to whom does it matter and why?

Also, insight in professionals' views on both these aspects of personal continuity is largely lacking. We found few studies, which tackle the theme. Mainly heart-felt comments from individual GPs can be found, that either glorify personal continuity,<sup>32;34</sup> or lament a foreseen loss of it.<sup>54;85</sup> In the light of current developments it is very interesting if the profession itself

still values personal continuity. Furthermore, it is unknown if GPs' views on personal continuity match patients' views.

GP-trainees are tomorrow's professionals. It is unclear if training institutes and trainers influence trainees' views on continuity. More knowledge about this topic could have implications for general practice training. How do GP-trainees view continuity at present? The degree to which personal continuity is provided in everyday practice varies considerably between countries. Studies in the United Kingdom and United States have shown that approximately up to 75 percent saw their personal doctor for regular consultations.<sup>86;87</sup> Continuity measurements in the Netherlands in the nineties of the last century yielded even higher percentages.<sup>28;88;89</sup> But the importance of achieving high continuity rates might be relative as such. It may be more important to know if the degree of continuity matches patients' preferences. For instance, there may be a relation between continuity needs and the reason for encounter. Also, it is unknown if the extent of personal continuity is high if patients perceive conditions as serious and worrying. Another interesting question that has not been answered is how preference for a GP is related to patients' evaluations of care. Should continuity be foisted to patients who are indifferent?<sup>90</sup> Some studies have found positive relations between personal continuity –seeing the regular doctor- and intermediate outcome measures such as satisfaction<sup>91</sup> and enablement,<sup>92</sup> Also other characteristics of personal continuity, such as knowing the doctor and trust in the doctor, have been related to higher levels of patient satisfaction and enablement.<sup>26;86</sup> Higher continuity is associated with a higher level of trust between the GP and patient.<sup>93</sup> It is unknown how these aspects of personal continuity – trust and knowing the doctor - interrelate in their impact on consultation outcome.

The questions surrounding informational continuity are as many. The relation between personal and informational continuity is complicated. Generally, we assume that repeating contacts with patients generate knowledge about patients. This is called prior knowledge.<sup>17;94</sup> Prior knowledge has been perceived as an advantage of personal continuity. Knowledge about patients is stored both in the brains of GP(s) and in patients' medical records. Common sense tells that a decrease of personal continuity increases the importance of proper record-keeping and adequate information exchange.<sup>20</sup> ICT developments may facilitate these processes and therefore support consistency of care.<sup>19</sup> However, contacts between doctors and patients are complex in nature, and bring about complex knowledge and thoughts. An example can illustrate this. If a patient visits his GP with a sore throat, the GP probably will register the diagnosis 'tonsillitis' and its treatment into the medical record. Maybe he will type down the duration of symptoms, and the temperature as well. But a GP may have many other thoughts on the basis of his knowledge of, and previous experience with this patient: about compliance and coping behaviour; about alternative treatment; about the impact of symptoms on the patient's life; about possible testing when symptoms will not disappear; about alternative



management such as antibiotics; and about much more which stays tacit under normal conditions.

It is unsure how important the use of such information is for consistency of care, particularly how GPs value this kind of information. For instance, do GPs miss these kinds of information during out of hours where a medical record is often not available? Even so it is unknown if information, which is considered important by GPs for continuous patient care, is actually written into the computer. Moreover, it is not clear how this process of optimal information transfer – according to GPs - could be improved. This applies both to objective medical data and to medical narratives.

Patients' views on the theme of informational continuity are as well largely unknown. There are indications that patients are worried about confidentiality.<sup>45;95-97</sup> But it is unknown how these worries about confidentiality relate to various kinds of medical information and how they vary for access for different health care workers.

One of the ultimate questions is if excellent informational continuity covering the above-mentioned issues, can overcome a decline in personal continuity.

### **Aim of the project**

The aim of the project was to explore current opinions and behaviours related to personal and informational continuity in general practice and to balance these two. Therefore, the project is divided into two parts, one on personal continuity, and the other on informational continuity, both with specific research questions that will be addressed.

#### *1. Personal continuity*

- How do patients and general practitioners value personal continuity a/ for various reasons for encounter and b/ at times of hospital admission and other life events?
- To what extent does everyday practice match these priorities?
- What is the relation between personal continuity and patients' evaluations of care?

#### *2. Informational continuity*

- How do patients balance access to medical information and confidentiality?
- How can informational continuity be improved according to professionals?
- What are professionals' information needs as regards continuity of care in everyday practice?
- To what extent is information, if perceived as being important for continuity of care, actually registered in the electronic patient file?

## **Contents of the thesis**

The two main themes in this thesis -personal and informational continuity- are studied from different perspectives. Firstly, we distinguish patients' and GPs' perspectives. Secondly, we distinguish between actual continuity and opinions on continuity. After an explorative introduction to continuity in chapter 2, the chapters are divided as follows: between personal continuity (chapters 3 – 8) and informational continuity (chapters 9 – 12), between patients' perspectives (chapters 3, 4, 7, 8, 9) and doctors' perspectives (chapters 5, 6, 10, 11, 12); and between views and preferences (chapters 3 – 6, 9, 11) and actuality (chapters 7, 8, 10, 12). In chapter 13, the findings of this thesis are discussed.

## **Introduction to continuity**

In the second chapter I will give a brief overview of the literature on continuity of care. The chapter gives insight into conceptualisations and definitions of continuity of care. Finally, it accounts for the choices made in this project. It shows a matrix of concepts and definitions of continuity of care.

## **Personal continuity**

### *Patients' views*

Chapter 3 describes a scenario study. It will show how patients value personal continuity for different clinical conditions. It was known that patients value personal continuity, but it was unclear to what extent they differentiate between different reasons for encounter. This chapter shows if patients attach diverse importance to personal continuity for specific scenarios, and if patient and practice characteristics can predict patients' need for continuity.

The fourth chapter shows to what extent patients want contact with their GP at the time of hospital admission and serious life events. Initiating contact in these situations is often considered an expression of the GP attribute 'being there'. Although many may feel that such commitment is an important aspect of continuity, it is rarely operationalised. This study attempts to do so, and gives an impression of patients' needs on the subject matter, and clarifies if patient categories with different needs can be identified.

### *Professionals' views*

In chapter 5 I will describe how GPs value personal continuity. It was unknown how recent changes within primary care influenced GPs' views on continuity. However, for the future organisation of general practice this was considered important to know. Until now, these views had not been mapped. This chapter shows how Dutch GPs view personal continuity, personal commitment and personal availability during out of hours, and relates these views to GPs' characteristics.

In Chapter 6 we report on trainees' views on continuity of care. There is a tendency to believe that continuity is declining because of fading interest of coming GPs. This chapter will show if this is the case by presenting trainees' views on continuity in relation to the views of their trainers.

#### *Actual practice and patients' evaluations of care*

I report on a field study on personal continuity in chapter 7. From our survey we learnt that patients differentiate between different reasons for encounter regarding the importance they attach to continuity. But does actual practice match patients' needs? In this chapter, I will show the extent to which patients see a personal GP - a GP they know well - for different reasons for encounter, and how this is related to patients' evaluations of care.

In a short report in chapter 8 I will describe how indifference to the GP of choice is related to patients' evaluations of care. It was known that a considerable part of patients states to be indifferent to which doctor they will be seeing during a consultation. From within the profession there is growing belief that the person of the doctor is less important as well. This study shows to what extent patients' evaluations of care are influenced by their attitudes towards the doctor of choice.

### **Informational continuity**

#### *Patients' views*

In chapter 9, I explore patients' views on continuity of information. In the contemporary ICT epoch, it may be relatively easy to make medical records accessible. However, patients are known to have reservations and worries about confidentiality in general. This chapter will show to what extent patients value confidentiality for different kinds of information, and how this relates to confidentiality towards their personal GP.

#### *Professionals' views*

Chapter 10 describes a small field study, which was carried out at a place with a minimum of personal continuity: an out of hours centre without access to medical records. Previous studies have shown that GPs only viewed a minority of accessible - paper- medical records during out of hours. This study shows the extent to which GPs on call consider a medical record necessary for continuity of care – in the sense of consistency - during actual consultations. Furthermore, it shows the views of the patients' personal GPs on these consultations. Do blind spots exist?

In the literature, many statements can be found that continuity of information is an important issue. Systematic research however, showing evidence how this preferably should be organised, is lacking. In chapter 11, I will present a Delphi study, with the focus on improvement of GP informational systems. An expert panel tried to explore how continuity of care could be improved by adjustments within medical information systems.

*Informational continuity and GPs' evaluations of registration*

Chapter 12 explores the issue that aroused from the work in chapter 9. It will show which information GPs find particularly important for future consistent management during regular consultations. To what extent do GPs register personal considerations about future management for individual patients in relation to the perceived importance of personal continuity?

At last, in chapter 13 I will discuss the findings from this thesis.

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**Definitions and conceptualisations**



### **Introduction**

In this chapter, I will give a brief overview of the available literature on definitions and conceptualizations of continuity of care.

Essentially, continuity of care is not well defined. There is myriad semantic confusion around the theme. The existing concepts, models and definitions of continuity of care appear to be hardly comparable: Several authors have attempted to create models for continuity. In these models, continuity seems the overall concept of general practice care, covering many features of general practice.<sup>1-3</sup> Other authors define continuity just as one characteristic of general practice, such as the availability of a GP around the clock.<sup>4</sup> Continuity is also defined as a quality of care, and for instance is characterized essentially as consistency, meaning that professionals manage patient care in line with previous management.<sup>5</sup> It is also described in terms of a longstanding relation between doctor and patient,<sup>6</sup> or operationalised as a mathematical index, indicating the degree to which a patient sees either his regular doctor,<sup>7</sup> or a variety of GPs.<sup>8</sup> At last, continuity has been defined as a set of GP skills.<sup>9</sup> To make it more complicated, also recent reviews suggest various different concepts.<sup>10-13</sup>

In this chapter, a historical survey of continuity of care is given. It has not been set up as a strict systematic review, but it will cover most key publications on concepts and definitions of continuity of care. The tables 1 and 2 summarize the text. The tables display first authors, year of publication, country, key focus, key conditions, and key descriptions of continuity.

### **A historical survey**

Through history, many authors have tried to define, conceptualise, and describe continuity of care. The first definitions of continuity arise around the late fifties, together with definitions of the core of general practice. In 1975, McWhinney defines continuity as an ‘implicit contract’, and emphasises that the existence of general practice depends mainly on unconditional commitment of GPs to their patients.<sup>14</sup> He focuses predominantly on attitude and working style, rather than on the duration of the relationship. He draws up four rules for a contract between the doctor and patient: a general practitioner provides care regardless of the type of illness; he experiences a permanent feeling of personal responsibility for his patients; patients may not bypass their general practitioner; and the contract can be ended only by mutual agreement.

In the same year, Hennen considers this attitude-model neither assessable nor measurable. He constructs a model that distinguishes between geographical, chronological, interdisciplinary, and interpersonal continuity.<sup>2</sup> Geographical continuity means that the general practitioner contacts patients at home, as well as in the nursery and in the hospital. Chronological refers to the fact that a general practitioner follows his patient over the time. Interdisciplinary means that the general practitioner may treat diverse illnesses in one patient, with the advantage that he sees relationships between illnesses and within families. Interpersonal reflects the relational aspect, the ‘rapport’ and ‘trust’ with patients, families and colleagues. He considers continuity of information a requisite for good continuity of care.

Five years later – 1982 - Rogers and Curtis put forward that mainly information is important in the relation between doctors and patients.<sup>1</sup> This information is called the ‘knowledge base’. Involved persons within medical care hold ‘prior knowledge’ about each other. In the authors’ opinion, a knowledge base exists virtually or it is written down. If there is knowledge, there is continuity. Continuity grows with growing knowledge. Continuity exists in a so called ‘continuity environment’, which is built on the aspects of Hennen.<sup>2</sup> Rogers and Curtis add the aspects stability and accessibility of care to this concept.

In 1981, Wall introduces five dimensions of continuity of care. In essence, the dimensions seem somehow identical with the formerly described. He introduces the term longitudinal for chronological care for a stable population; he refers to geographical as to one location where care is provided, but also to the fact that a general practitioner follows his patients through the health care system; and co-ordination of care is part of relational continuity. His main merit is the systematic attempt to propose measurement instruments and outcome measures for the separate dimensions. ‘It is time to have evidence for what family physicians claim to believe in’.<sup>15</sup>

At the same time, Banahan and Banahan are of the opinion that continuity is approached too much in operational terms, and they want to work out a conceptual model first. Their concept is almost a copy of Mc Whinney’s. Somewhat artificially, they distinguish between type A, B and C continuity. Type A is a non-existing ideal of cradle-to-grave continuity, type B refers to continuity over some years, and type C is continuity within an episode, which obviously is considered to be short of duration.<sup>6</sup>

A few years later in 1984, Freeman describes the relation between personal continuity and ‘consistency of care’.<sup>5</sup> Personal continuity is a pro but not essential for consistency of care. Consistency is built on several corner stones: personal continuity, professional standards, and adequate patient records. Patients’ preferences start to play an important role here, as does continuity of information within health care teams, so called team continuity. In the eighties, there is more emphasis on continuity as a measurable aspect of health care. Some still focus on the relation between past and present care and propagate communication,<sup>16</sup> but continuity becomes a synonym for seeing the same doctor more and more. Several measurement instruments were developed for this purpose, such as the continuity of care index (COC),<sup>17</sup> the number of providers seen (NOP),<sup>18</sup> the sequential continuity index (SCN),<sup>19</sup> and the usual provider index (UPC).<sup>20</sup>

At this time, continuity becomes a serious research field in the Netherlands as well. Since 1959, continuity of care was considered an important aspect of general practice merely implicitly, but the concept was not defined at all.<sup>21</sup> In 1987, the *Basistakenpakket* describes the function and tasks of the general practitioner. Continuity implies that ‘a general

practitioner provides care, taking into account not only an isolated reason for encounter, but also former events and the patient's future life cycle'.<sup>22</sup>

Also in 1987, Grol constructed a theoretical framework for continuity of care.<sup>9</sup> It was derived from the Nijmegen model for communication and consultation skills in general practice. The focus was to position signs, symptoms and reasons for encounter in the life cycle of past, present and future. The management of a general practitioner thus had a place in the framework.

Blankenstein and Van Staveren discriminate between personal and practice-bound continuity. Personal continuity consists of three levels where knowledge is considered important: the level of the illness, the level of the individual patient, and the level of the doctor-patient relationship. Their model was not published.<sup>23</sup>

In 1990 Ijzermans formulates three forms of continuity: Continuity in person, continuity in time and continuity in care. His approach is based on Starfield's concept of continuity of care.<sup>24</sup> Continuity in person exists when a patient sees the same doctor within a certain period of time, continuity of time exists when the doctor is available for patients during many years, and continuity of care means seeing the same doctor within one episode. According to a 1991 report of the Royal Dutch Academy of Sciences this may be considered a study on 'factual' continuity; the report of the Academy distinguishes between factual, personal and content continuity, all put against a time -axis. A GP lays medical relations between the patient's past, present and future.<sup>25</sup>

In 1996 Blankenstein et al try to study the personal aspect of continuity. They elaborate on person-focused continuity, which should be interpreted as a feature of care: directed at the patient's person and provided by the GP as a person; it encompasses former events from the patient's life cycle, mutual experiences between GP and patient, and the GP's own feelings and impressions.<sup>26</sup>

Also in the nineties Hjortdahl combines some old definitions and the work of Hennen. In his thesis, he worked out mainly the idea of duration of the relationship and prior knowledge.<sup>3</sup> He differentiates between four components of continuity of care: the chronological or longitudinal component, which combines prior knowledge and longitudinality (a longstanding relationship), the comprehensive component, which is synonymous with the interdisciplinary aspect, the personal component that focuses on commitment, and the responsibility component that focuses on the sense of responsibility towards patients.

In recent years, the topic of continuity has once again raised both the interest and concern of our profession almost worldwide. This brought about new models and definitions. In his scoping exercise, Freeman launched a patient centred definition of continuity. Continuity means the experience of a co-ordinated and smooth progression of care from the patients' point of view. To achieve this, general practice needs excellent information transfer, effective

communication, flexibility, care from as few professionals as possible, and relational continuity.<sup>10</sup>

A Canadian systematic research on continuity distinguishes two core elements – the experience of care by a single patient with his or her provider(s), and care that continues over time (longitudinal or chronological) -and three types of continuity: relational continuity, management continuity and informational continuity.<sup>11</sup> Relational continuity refers to an ongoing therapeutic relationship, management continuity refers to provision of timely and complementary services within a shared management plan, and informational continuity is the use of prior events and circumstances to make current care appropriate. Information is the linking thread, it tends to focus on specifics of the health condition, but knowledge about the patient's values, preferences and social context – which would need a stable relationship - is equally important.

Olesen launched a definition for general practice, in which continuity is not an explicit component any more.<sup>27</sup> On the other hand, in the European definition of general practice from WONCA 2002, longitudinal continuity is still an important characteristic. It means that general practice's approach to patients is constant from birth until death. The medical file becomes prominent, as it is considered the explicit proof of continuity. Quite surprisingly, in the European definition continuity means also care provision throughout 24 hours.<sup>28</sup>

On the basis of an extensive literature study, Saultz proposed a hierarchical definition of continuity of care. His model involves three levels of continuity: informational, longitudinal and interpersonal continuity. The lowest level is informational continuity, the highest interpersonal continuity. Longitudinal continuity creates a familiar setting in which care can occur and access becomes easy.<sup>12</sup>

In The Netherlands, the Dutch College of General Practitioners, in collaboration with the Dutch Association of General Practitioners, recently completed a new vision project on general practice for the next decade. Like in Woudschoten in 1959, the project focused on the nature, definition and function of general practice. It introduces an important switch in the meaning of continuity: continuity is not necessarily person-bound anymore, but it means care around the clock, and care that stretches over longer periods of life. The person of the GP and its relation with patients is considered less important.<sup>29</sup> Also in the new description of tasks and functions of the general practitioner (Werkgroep functie- en taakomschrijving huisartsenzorg), general practice is mainly depicted as a service, in which the interpersonal relationship between doctor and patient seems less prominent.<sup>30</sup>

## Conclusions

In summary, the studied literature shows that continuity of care has been a diffuse, comprehensive conception throughout the last 50 years. It seems often stuffed with ideological, political, or emotional contents. Many efforts have been made to make the concept of continuity of care transparent and measurable. Authors have come up with

philosophical definitions or measurable aspects within elaborate models. Some have tried to put all the characteristics of general practice in a continuity definition; others have reduced it to a single characteristic of primary care. In most studies on the quality of health care, continuity is used in terms of provider continuity, which refers to the extent to which a certain doctor is seen.<sup>31;32</sup>

Overlooking the literature on continuity of care, two key themes evolve as the most important ones: personal continuity, which refers to the special GP-patient relationship in all its aspects; and informational continuity, which refers to registration and accessibility of medical information about patients. This thesis therefore explores both these themes.

Table 1: Definitions of continuity of care.

Author	Year	Country *	Key focus	Key conditions	Definition/ Continuity is...
Bass <sup>16</sup>	1972	US	Relation between past and present care	<ul style="list-style-type: none"> <li>- stability of relationship</li> <li>- informational continuity</li> <li>- client movement if treatment needs</li> <li>- client retrieval if dropping out</li> </ul>	<p>.. the relatedness between past and present care in conformity with the therapeutic needs of the client.</p> <p>Operationally, it exists to the extent that there are no obstacles to a client's either remaining in or moving from any of the center's direct treatment services in conformity with his therapeutic needs and that administrative mechanisms relate past and present care by providing stable client caretaker relationships, necessary written and oral communication among staff members, and contact with clients who appear to be dropping out of treatment.</p>
Shortell <sup>33</sup>	1976	US	Co-ordination of care	<ul style="list-style-type: none"> <li>- personal continuity</li> <li>- care plans</li> <li>- avoidance duplication testing</li> <li>- follow up</li> <li>- care at location</li> </ul>	.. the extent to which medical care is offered as a coordinated and uninterrupted series of events, meeting the patient's care needs.
Rogers & Curtis <sup>1</sup>	1980	US	Importance of knowledge base	<ul style="list-style-type: none"> <li>- prior knowledge</li> <li>- virtual</li> <li>-in medical record</li> </ul>	.. a stage in which knowledge exists between a patient and a professional. If knowledge exists, there is continuity
Banahan & Banahan <sup>6</sup>	1981	US	Relation between doctor and patient	<ul style="list-style-type: none"> <li>- GP's sense of responsibility</li> <li>- patient's entrust to GP</li> </ul>	.. an 'attitudinal contract' phenomenon which exists when the patient perceives a dependency on the physician and the physician perceives a responsibility for the patient's medical care
Freeman <sup>5</sup>	1984	UK	Consistency of care	<ul style="list-style-type: none"> <li>- personal continuity</li> <li>- professional standards</li> <li>- adequate medical records</li> </ul>	.. is consistency in the sense that doctors work to an agreed plan
Eljertsson <sup>7:34</sup>	1984	SW	Personal continuity	- a number of doctors seen in a certain period (arithmetical index)	.. the extent to which a patient sees one or more GPs within a given time

Basistakenpakket <sup>22</sup>	1987	NL	Relation between past, present and future care	<ul style="list-style-type: none"> <li>- GPs' attitudes and skills</li> <li>- patients' life cycle</li> </ul>	.. that a GP provides care, taking into account not only an isolated reason for encounter, but also former events and the patient's future life cycle
Grol <sup>9</sup>	1987	NL	Relation between past, present and future care	<ul style="list-style-type: none"> <li>- basic GP skills</li> <li>- basic GP attitudes</li> </ul>	.. positioning signs, symptoms and reasons for encounter in the patient's life cycle, taking into account developments within the patient's direct social environment, and practice population for the past, present and future
Starfield <sup>35;36</sup>	1994	US	Relation between doctor and patient over time	<ul style="list-style-type: none"> <li>- association</li> <li>- relation</li> </ul>	.. (longitudinality/ person focused care over time) means that both provider and people in the population agree on their mutual association and also the extent to which individuals in the population relate to that provider over time for all but referred care.
Reid et al <sup>11</sup>	2002	CAN	Patient's experience of care	- longitudinality	.. the experience of care by a single patient with his provider(s) bridging separate and discrete elements of care as well as maintaining and supporting intrinsically longitudinal elements of care over time.

\* US United States, NL The Netherlands, CAN Canada, SW Sweden, UK United Kingdom

Table 2: Models and components of continuity of care.

Author	Year	Country	Key focus	Elements/dimensions	Description
Woudschoten conference <sup>21</sup>	1959	NL	Relational responsibility	- longitudinality - responsibility	Aspects of continuity - on the one hand standing by the same patient over many years - on the other hand care that never fades even when the patient is not under treatment
Mc Whinney <sup>37;38</sup>	1975	CAN	Implicitness of relational contract	- commitment - attitude - working style	Characteristics of continuity - GP provides care regardless of the type of illness - GP experiences a permanent feeling of personal responsibility for his pts - Patients may not bypass their general practitioner - A contract can be ended only by mutual agreement
Hennen <sup>2</sup>	1975	CAN	Description of - dimensions - measurability	- geographical - chronological - interdisciplinary - interpersonal	Dimensions of continuity - geographical: GP contacts pts at home, at the nursery, and in the hospital - chronological: GP follows his pts over the time - interdisciplinary: GP treats diverse illnesses in one pt, with the advantage that he sees relationships between illnesses and within families - interpersonal: relational aspect, 'trust' with pts, families and colleagues He considers continuity of information a requisite for good continuity
Rogers & Curtis <sup>1</sup>	1980	US	Importance of knowledge base	prior knowledge, that is - virtual -in the medical record	Knowledge base is crucial for continuity. If knowledge exists, there is continuity Continuity environment has following dimensions - chronological - geographical, - interdisciplinary - relational (all based on Hennen) - informational - accessibility - stability



Wall <sup>5</sup>	1981	US	Description of - dimensions - measurement instrument - outcome measures	- geographical - chronological - interdisciplinary - interpersonal - informational	- geographical: GP at one location, also follows pts through health care system - chronological (longitudinal): care for a stable population - interdisciplinary: GP treats diverse illnesses in one patient - relational: GP has a good relationship with patients - informational: knowledge base
Banahan & Banahan <sup>6</sup>	1981	US	Importance of relational contract  Description of types of continuity	- GP's sense of responsibility - patient's entrust to GP  type A continuity type B continuity type C continuity	Continuity exists if the attitudinal contract works  - type A: everlasting personal continuity, from cradle to grave - type B: personal continuity over a few years - type C: personal continuity within an episode
Grol <sup>9</sup>	1987	NL	Importance of attitude and skills	Matrix of basic GP skills and attitudes	Continuity means positioning signs, symptoms and reasons for encounter in the patient's life cycle, taking into account developments within the patient's direct social environment, and practice population for the past, present and future
Van Staveren and Blankenstein <sup>23</sup>	1989	NL	Importance of - prior knowledge - relationship	- practice-bound continuity - personal continuity	Three levels of personal continuity - level of illness: consistent longitudinal management - level of patient: patient-directed management, patient-bound prior knowledge - GP-patient relationship: dependency and responsibility
Anonymus KNAW <sup>25</sup>	1991	NL	Description of features of general practice	Continuity - factual - personal - content	A GP lays – factually, personally and concerning content - medical relations between past, present and future.
Hjortdahl <sup>3</sup>	1992	NO	Importance of knowledge for outcome	- chronological - comprehensive - personal - responsibility	- chronological: duration and intension of relation - comprehensive: GP treats diverse illnesses in one pt - personal: GPs' empathy, commitment - responsibility: GPs' sense of responsibility towards pts

Ijzermans <sup>39</sup>	1993	NL	Types of 'factual' continuity	<ul style="list-style-type: none"> <li>- continuity in time</li> <li>- continuity in person</li> <li>- continuity in care</li> </ul>	<ul style="list-style-type: none"> <li>- in time: GP is available for patients during many years</li> <li>- in person: a pt sees the same GP within a certain time</li> <li>- in care: seeing the same GP within one illness episode.</li> </ul>
Starfield <sup>35;36</sup> Primary care	1994	US	Person focused care	<ul style="list-style-type: none"> <li>- association</li> <li>- relation</li> </ul>	Continuity (longitudinality/ person focused care over time) means that both provider and people in the population agree on their mutual association and also the extent to which individuals in the population relate to that provider over time for all but referred care.
Blankenstein <sup>26</sup>	1996	NL	Person-focused continuity	Continuity is a characteristic of care	Person-focused continuity can be interpreted as a feature of care: directed at the patient's person and provided by the GP as a person; it encompasses former events form the patient's life cycle, mutual experiences between GP and patient, and the GP's own feelings and impressions.
Sturmberg <sup>40</sup>	2000	AUST	Three essential aspects of continuity	<p>Conditions</p> <ul style="list-style-type: none"> <li>- care environment</li> <li>- communication</li> <li>- improving health care</li> </ul>	<p>Required for continuity (focusgroupstudy)</p> <ul style="list-style-type: none"> <li>- stable care environment</li> <li>- good communication to build a GP-pt relationship</li> <li>- goal of achieving improvement of the patients overall health</li> </ul>
Freeman <sup>10</sup>	2001	UK	Progression of care form the patients' perspective	<p>Elements of continuity</p> <ul style="list-style-type: none"> <li>- experienced continuity</li> <li>- continuity of information</li> <li>- cross-boundary and team cont</li> <li>- flexible continuity</li> <li>- longitudinal continuity</li> <li>- relational/ personal continuity</li> </ul>	<p>Elements of continuity</p> <ul style="list-style-type: none"> <li>- The experiette of a co-ordinated and smooth progression of care form the patients' point of view</li> <li>- excellent information transfer following the patient</li> <li>- effective communication between professionals and services and with patients</li> <li>- to be flexible and adjust to the needs of the individual over time</li> <li>- care from as few professionals as possible, consistent with other needs</li> <li>- to provide one or more named individuals with whom the patient can establish and maintain a therapeutic relationship</li> </ul>
Wiersma <sup>4</sup>	2001	NL	Availability	Around the clock availability	Continuity means 7 days a week, 7 hours per day GP care

WONCA <sup>28</sup>	2002	EUR	Longitudinality	Continuity means - longitudinality cradle to grave - medical file is the explicit proof - 24 hours a day	
Toekomstvisie <sup>29</sup>	2002	NL	Importance of accessibility of general practice care as a service	Two types of continuity - continuity - around the clock - during episodes of life - personal continuity	Continuity has two meanings: - continuous general practice care is durable and extends over longer periods of life, and general practice care is available around the clock.  - personal continuity is not defined very well
Reid <sup>11</sup>	2002	CAN	Description of elements	Two core elements - the experience of care by a single patient with her or his provider(s) - care continues over time (longitudinal or chronological)	Three types of continuity - informational continuity is the use of information on prior events and circumstances to make current care appropriate for the individual and his condition - relational continuity refers to an ongoing therapeutic relationship between a patient and one or more providers. - management continuity refers to the provision of timely and complementary services within a shared care plan (consistency)
Saultz <sup>12</sup>	2003	US	Description of a hierarchical model	Three levels of continuity - informational - longitudinal - interpersonal	- informational continuity is an organized collection of medical and social information about a patient - longitudinal continuity means that each patient has an accessible and familiar 'medical home', where the patient receives health care from a team of providers - interpersonal continuity is the ongoing relationship with a personal GP, characterised by knowing each other and trust

\* US United States, NL The Netherlands, CAN Canada, SW Sweden, UK United Kingdom, AUST Australia, NO Norway

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**Continuity of care in general practice: a survey of patients' views**

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#### **Abstract**

*Background* - It is not known how patients value continuity for different health problems. In addition, it is not clear how different types of patients value continuity. It has been argued, for example, that young and healthy individuals have different ideas about continuity from older people with chronic illnesses. More extensive exploration of patients' views and expectations on personal continuity is important as this may help to organise general practice better in the future.

*Aim* - To explore patients' views on continuity of care in general practice and their relations to patient characteristics.

*Design of study* - Postal questionnaire survey.

*Setting* - Thirty-five general practices throughout The Netherlands.

*Method* - A sample of 25 patients from each practice was sent a questionnaire.

*Results* - The response rate was 644/875 (74%) The percentage of patients feeling that it was important to see their personal doctor varied, from 21% for a splinter in the eye, to 96% for discussing the future when seriously ill. The main reasons for preference of their own general practitioners (GPs) were the GP's assumed better medical knowledge of the patient and understanding of the personal and family background. Multiple linear regression analysis (GLM) showed that patient characteristics could explain 10% to 12% of the variance in these views on personal continuity.

*Conclusion* - The importance that patients attach to continuity of care depends on the seriousness of the conditions facing them. Patients in The Netherlands desire a high level of personal care for serious conditions. Patient characteristics, such as age, sex, and frequency of visits to the GP influence views on continuity of care only to a minor extent.

## **Introduction**

There is evidence that continuity of care matters.<sup>1</sup> In the literature, continuity of care mainly comprises the element of personal continuity. Seeing the same doctor may exert its benefit by the doctor's use of accumulated knowledge about the patient.<sup>1-3</sup> A feeling of responsibility for patients is believed to support quality of care as well.<sup>4-8</sup> Recent developments, such as an increase in part-time work, enlargement of practices, general practitioner (GP) specialisation and more extensive out-of-hours services have all put pressure on the personal doctor as the provider of continuity. As a consequence, it has been argued that continuity has served its time and will matter less in the future.<sup>9</sup>

Although identification and discussion of patient beliefs is considered important for quality of healthcare,<sup>10,11</sup> little is known about patients' views and expectations regarding continuity.<sup>12,13</sup> One study found that patients rated personal continuity as less important than their GPs did when considering different aspects of general practice care.<sup>14</sup> Nevertheless, high levels of personal continuity are related to patients having increased trust in physicians,<sup>15</sup> feeling more satisfied with consultations,<sup>16</sup> and more enabled afterwards.<sup>17</sup>

It is not known how patients value continuity for different health problems. Also, it is not very clear how different types of patients value continuity. It has been argued, for example, that young and healthy individuals have different ideas about continuity from older people with chronic illnesses. More extensive exploration of patients' views and expectations on personal continuity is important, as this may help to organise general practice better in the future.

The main objectives of this study were to assess patients views on personal continuity and to determine the extent to which these views are related to patients characteristics.

## **Method**

This survey was carried out as part of a project investigating aspects of continuity of care in general practice. A self-designed questionnaire was posted to 875 patients from 35 general practices. The questionnaire incorporated items to elicit views on personal continuity.

### *Questionnaire design*

In the process of questionnaire design,<sup>18,19</sup> ten semi-structured interviews were conducted to explore patients' views and expectations of continuity. The interviews suggested that these views were dependent on different situations and circumstances. Therefore, in the questionnaire patients' views were assessed on the need for continuity in relation to different clinical scenarios. For nine problems requiring contact during normal working hours the responders were asked to rate the importance of 'seeing the personal doctor' using a three-point scale. Patients were also asked their reasons for preferring their own GP; here, responders could tick a maximum of five out of ten reasons. Finally, general information was collected on patients, including their personal characteristics, number of visits to the GP in the past 12 months, number of years registered with the practice, practice type, practice area,



chronic illness, chronic medicine use, recent hospital admission, and life events and psychosocial problems in the past five years. A pilot study was carried out with 20 patients. Following this, changes were made to produce a final version. Modifications included the simplification of scales from five points to three points.

#### *Survey sample*

The study was based in the practices of 35 GPs spread throughout The Netherlands. These GPs were members of a panel of 40 who took part in a recent Delphi study on continuity of care. In June 2000, each practice assistant was sent a batch of 25 questionnaires and was asked to post one questionnaire to each of 25 consecutive patients (aged 18 years or older), who had visited the GP on the first day of that week. The questionnaires were sent with a letter of recommendation on behalf of the patients' GPs and a postage-paid envelope so that completed questionnaires were sent back to the researchers. After two weeks, a combined 'thank you' and reminder card was sent to all the patients. To assess possible non-response bias, anonymous baseline characteristics were collected on all patients.

#### *Analysis*

The data were entered into the statistical program SPSS 9.0. Principal components analysis was used to determine whether calculation of scores was possible for patients' desire for personal continuity. Consecutively, a sum score was calculated for the need for personal continuity (seeing the personal doctor: 'very important' - 2 points, 'important' - 1 point, and 'not important' - 0 points). Multiple linear regression analysis (general linear model procedure, SAS) was used to relate sum scores to patient characteristics.

### **Results**

The mean age of the 35 GPs participating in the survey was 48 (range 36-59). Twenty-eight were men and seven were women. Ten practised in a single-handed practice, 11 in a two-person practice, and 14 in a group practice or health centre. Six practices were situated in the countryside, 18 in the commuter belt, and 11 in a city.

A total of 875 questionnaires were sent out and 644 usable replies were received (74%). Older patients, and patients with chronic illness and more frequent attendance had higher response rates (Table 1).

#### *Personal continuity*

For most of the presented situations more than 75% of the responders felt that it was important to see their personal GP for minor problems, such as a splinter in the eye or a sprained ankle, only a minority of patients considered it important to see their personal GP. A majority of patients thought that it was very important to see their personal doctor for family problems and for discussing the future when seriously ill (Table 2). Patients preferred their personal doctor chiefly because he was believed to have the best medical and personal

knowledge of the patient. Also, the perception was that better communication was possible with the patient's personal GP (Table 3).

**Table 1. Response rates. Numbers and percentages responding within sub groups (overall response = 644/873).**

Characteristics	Responses	
	Number <sup>a</sup> of responses/surveys sent	Percentage within characteristic
Age <sup>b</sup>		
18—40	182/284	64
41—60	270/349	77
61—80	170/210	81
>80	20/24	83
Sex		
Female	399/533	75
Male	243/338	72
Chronic illness <sup>b</sup>		
Yes	255/314	81
No	380/548	70
Number of contacts with GP in the last 12 months (including last visit) <sup>c</sup>		
1-2 times	122/177	69
3-4 times	154/221	70
5-10 times	244/310	79
> 10 times	121/162	75

<sup>a</sup> Owing to missing values the count of sent questionnaires was 862-871 and responses 635-642

<sup>b</sup>  $P < 0.001$  ( $\chi^2$ ,  $df = 1$  and  $3$ )

<sup>c</sup>  $P = 0.046$  ( $\chi^2$ ,  $df = 3$ ). (Significant difference between responders and non-responders)

**Table 2. Percentage of patients stating that seeing the personal doctor is important, or very important (n = 644).**

Situations	Importance of seeing personal doctor <sup>a</sup>			
	Important or very important		Very important	
	Numbers	Percentage	Numbers	Percentage
Splinter in the eye	126/608	21	36/608	6
Sprained ankle	142/607	23	12/607	2
Regular blood pressure check	227/610	37	61/610	10
Problems at work	435/575	76	191/575	33
Sudden, severe breast pain	493/624	79	275/624	44
Unexpected blood in stools	511/621	82	243/621	39
Family problems	515/591	87	325/591	55
Anxiety about a-specific abdominal symptoms	566/618	91	253/618	41
Discussing future when seriously ill	591/617	96	456/617	74

<sup>a</sup> On a three-point scale: 'not important', 'important', and 'very important'.

**Table 3. Reasons for general preference for own GP (n = 644).**

Reason	Numbers	Percentage
Knows better what my medical condition is	489/644	76
Knows my personal and family background better	470/644	73
Is easier to talk to	290/644	45
Understands me better	206/644	32
Knows my opinion about treatment	155/644	24
Knows better what I expect from him	155/644	24
Is more interested in me as a person	142/644	22
Can solve my problems better	77/644	12
Will make greater efforts for me than other doctors	45/644	7
Will take offence if I visit another doctor	6/644	1

**Table 4. Relation between need for personal continuity and patient and practice characteristics. Principal components analysis (PCA), mean sumscore and multiple linear regression analysis.**

Characteristics	Personal continuity
PCA (1 component distinguished with Eigen value >1)	
Number of items loading >0.6	9/9
Eigen value	5.6
Cronbach's Alpha	0.92
Variance explained	63%
Mean sumscore (range)	8.8 (0-18)
Standard deviation	3.1
Characteristics related to more need for continuity (GLM -procedure; P-values)	
Younger age	0.146
Female	0.238
Single or divorced (versus widow[er] or married)	0.171
Having children	<0.001 <sup>a</sup>
More GP contacts in the past year	0.424
More years in the practice	0.198
Practice type (two-handed practices)	0.352
Rural or suburban (versus [inner] city)	0.284
Chronic illness	0.271
Chronic medication	0.414
No hospital admission in past year	0.372
Serious life event in past five years	0.018 <sup>a</sup>
No serious psychosocial problem in past five years	0.429
Variance explained	10%

<sup>a</sup>  $P < 0.05$

### *Relations with patient characteristics*

Principal components' analysis showed that a one-factor model could explain 63% of the observed variance; all items loaded high (>0.6) on this component, which justified the making of a sum score.

Only a few significant relations were found between the mean sum score and patient or practice characteristics. Having children and having experienced a serious life event in the past five years was related to a greater need for personal continuity. No significant relationships were found with age, sex, marital status, chronic illness, psychosocial problems, practice area and practice type. A model containing all variables explained 10% of the observed variance (Table 4).

### **Discussion**

This study has shown that patients' desire for personal care depends on the reason for encounter. In the Netherlands, Jung found that a majority of patients (64%) considered it important or very important to see their own GP on each visit.<sup>14</sup> This study shows that a vast majority of patients find it important to see their own GP mainly for serious medical conditions and emotional problems. Very recently, Kearly et al found that, in the United Kingdom, patients valued a personal relationship with their GPs when consulting for more serious or for psychological problems.<sup>20</sup>

It was surprising that views on personal continuity are hardly related to patients' characteristics. In Sweden, Hagman found that patients considered continuity less important than health professionals did.<sup>21</sup> In Ireland, Murphy observed that urban people value personal continuity more than rural people,<sup>22</sup> which our study could not confirm. In the United States, in a hospital study on various aspects of medical care, Fletcher found that younger people gave a lower rank to personal continuity than elder people.<sup>23</sup> In contrast to these findings, this study showed that younger patients valued personal continuity more than older people, although not significantly. Patients with more frequent attendance appeared to expect a higher level of personal continuity, but the difference was not significant in the regression analysis. A broad range of patient characteristics accounted for only a small amount of the variance between responders. Apparently, other factors determine the valued importance of personal continuity. More personal characteristics, such as coping behaviour, trust, and dependency may be of influence in this field. Qualitative research would provide a useful approach to identify these factors.

Patients are known to distinguish between clinical scenarios as regards their preference to see the usual doctor versus a trainee,<sup>22</sup> or a specialist.<sup>24</sup> This survey shows that these differences for various scenarios are considerable. For serious problems, patients want to see their own doctors; for minor ailments, this matters much less. These results agree very strongly with recent data from the UK.<sup>20</sup>

This study had some limitations. The survey carried out focused on a patient sample that

had visited the GP recently, because it was assumed that this group was of greatest interest as regards possible implications for service provision, and would be able to give the most valid information. In the group, patients with frequent attendance were relatively over-represented, and patients who did not attend were not present. Nevertheless, it was found that only a very limited relationship existed between the number of visits in the past 12 months and outcome, and therefore the survey also included a considerable number of patients that had visited their GP only once in the past year. Therefore, bias on this point was limited. The practice assistant was asked to send the questionnaires using the appointment book, thereby preventing any selection by the GPs. Although response rates of over 70% are considered to minimise bias,<sup>18</sup> there were more responders in the older age groups and in the group with chronic illness. This may have caused some bias but, considering the result that outcome was related only very slightly to patient characteristics, the chance of bias is reduced.

What can be learnt from this survey? First, in a changing society with apparent emphasis on turbulence and short-lived interpersonal contacts, most patients within general practice continue to value a personal doctor for serious and emotional problems, regardless of age, sex, place of residence, and present circumstances. Secondly, patients appear to value personal continuity because they think that this will be beneficial to their health. Prior knowledge of the medical condition, as well as knowledge of the personal and family background, is considered important by patients.

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**Patients' needs for contact with their GP at the time of hospital admission and other life events**

A quantitative and qualitative exploration

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**Abstract**

*Purpose* - To explore patients' anticipated needs for contact with their general practitioner (GP) at the time of hospital admissions and other life events.

*Methods* - Questionnaire survey of 875 patients from 35 general practices spread throughout the Netherlands; qualitative interview study with 30 patients.

*Results* – Most patients expected to need contact with their GP if admitted to a hospital for a serious condition such as a malignancy (98%) or a heart attack (97%). For minor conditions, such as a small foot operation, this was considered less important (33%). At the time of major life events, many patients anticipated to need contact as well; in case of a birth within the family 81%, in case of a death in the family 90%. Patients' wants were only to a minor extent related to patient characteristics in the quantitative analysis. However, the qualitative analysis distinguished categories of patients with different needs. Some patients were more technical in their needs, others focussed primarily on the relationship.

*Conclusion* – Patients' needs for contact with their GP at the time of hospital admission and other life events appear to be considerable. The profession should reflect on this underexploited field, and attempt to take a position towards the theme for policymaking.

## Introduction

General practitioners' (GPs') initiatives to contact patients when they have been referred or discharged, and willingness to share life events may be considered as acts of 'commitment'. This feeling of being dedicated to patients is considered one of the essentials of general practice care.<sup>1-3</sup> Generally, patients may value this dedication which goes beyond explicit requests and which is independent of insurance contracts. General practitioners can express their feelings of commitment in various ways, but remarkably few studies have been undertaken to make the concept operational.

In the Netherlands, GPs act as the gatekeepers to secondary care. Patients are listed with one GP as a rule, and they do not change physicians easily. GPs receive daily information from admissions and discharges from hospitals. About half of the practices are still single-handed. We notice a certain tradition of GPs to contact patients at the time of hospital admission or if they go through serious life events, such as the death of a relative or a birth of a child. However, reliable data on the issue are lacking, and merely heartfelt cries encourage GPs to visit hospitals.<sup>4,5</sup> Patients' needs in the field are even largely unknown. As contacts like these are time-consuming and often difficult to integrate into everyday practice, more insight into patients' needs is essential to be able to weigh these needs against other patients' needs for services.

We conducted a study to explore patients' anticipated need for contact with their GP in case the of a hospital admission and on the occurrence of important life events: "If I was in this kind of situation, I think that I would need contact with my GP" We studied the theme quantitatively and furthermore explored patients' thoughts and motives for their needs in a qualitative way. We tried to determine patient categories with different needs. This qualitative approach, in addition to being used generally as preliminary research, is very suitable for this description and understanding of quantitative work, as it attributes to the validation of its outcome and enriches quantitative data by insight in its complexity.<sup>6-8</sup>

## Methods

### *Questionnaire design, survey sample, and data collection*

We developed a structured questionnaire on the basis of pilot interviews. Next, 5 staff members of the department of general practice and the members of the research team validated this questionnaire. In the questionnaire we asked patients if they expected to need contact with their GP for three life events, including death of a family member, birth, and discovery of cancer by a specialist. We asked them if they would need a telephone call or a home visit. The questions were constructed as follows "Suppose you were in this situation, do you anticipate needing contact with your GP then?" Next, we asked patients for their needs around five reasons of hospital admission including a small foot operation, a broken leg, unclear abdominal symptoms, a heart attack, and a malignancy. The provided options were a

telephone call, a home visit, a hospital visit, or a combination of these. For both groups of scenarios we focused on GP-initiated contacts as these may need special attention of GPs. Patient-initiated contacts normally will take place in any case. Therefore we excluded the possibility of a visit to the practice. Moreover, we felt that it was unusual for patients in the Netherlands to initiate contact with their GP in these situations. GPs are inclined to telephone or visit such patients, and will not ask them to visit the practice.

As previous research on predictors was lacking, we collected information on patient characteristics that might be related to patients' needs at face validity: age, gender, number of visits to the GP in the past 12 months, number of years registered with the practice, chronic illness, recent hospital admission, life events and psycho-social problems in the past five years.

We based our survey in the practices of a broad sample of 35 GPs spread throughout the Netherlands. This sample of GPs was representative on main demographic variables. We sent each practice a batch of 25 questionnaires including reminder cards. Next we asked the practice assistants to post one numbered questionnaire to each of 25 consecutive patients (18 years or older), who had visited the GP on the first day of a specified week. This procedure would prevent selection bias by GPs and thus provide a semi-random sample. Patients completed the questionnaire at home and posted it off to the research team. After two weeks, the practice assistants sent a combined 'thank you' and reminder card to all the patients. Furthermore, the practice assistants collected baseline characteristics for all the patients. They returned these anonymised to the researchers, using the unique questionnaire numbers.

### *Interviewee sample and data collection*

For the qualitative part of the study we recruited patients from a wide variety of 25 GPs in the eastern part of the Netherlands. We asked the GPs to hand over a letter to the first five patients who visited them on a day during the week. We explained the purpose and theme of the interviews in the accompanying letter for patients and assured anonymity. Patients sent back the reply form with informed consent, including their age, gender, chronic illness, and number of visits to the GP in the last year. On the basis of these characteristics we were able to choose a wide variety of patients. Two trained interviewers (graduated medical students with interview training) performed the interviews. They used the framework approach<sup>13</sup> and an interview guide, and focussed mainly on views and motives for patients' needs and expectations. We concentrated on the scenarios that had been used in the questionnaires. The interviews were held at the patients' homes and audio taped.

### *Analysis*

We explored the survey data with Principal Components' Analysis. In this way we structured the data and sought to validate our prior assumptions. For the detected components we calculated sum scores to present patients' overall needs. We used multiple linear regression

analysis (General Linear Model-procedure, SAS) to relate sum scores to patient characteristics.

The interviews were written out completely. Two of the authors (HS, GP-researcher; and CvdV, research assistant) independently and systematically analysed the interviews. During the analysis a thematic framework evolved, which we applied to all the interviews by annotating the transcripts with codes.<sup>9</sup> These codes emerged from initial reading of the transcripts. For example: the statement *"I would definitely need a home visit if a close family member died; after all he is my personal doctor... I expect consolation, support ...Why? the emotional bond we have, our relationship, it is his knowledge of my family... I find this very important"*, would be analysed with the following codes: "what"... *I would expect a home visit...*, "function" *..I expect consolation, support...*, "motive" *..the emotional bond we have, our relationship, his knowledge of my family...*, and "assessment" *...I find this very important...* We used the software program Atlas.ti as an aid to the analysis. We present the results semi-quantitatively, with words referring to the number of patients: *a few* to 1-5, *some* to 6-10, *half* to 11-20, the *most* to 21-25, and *all* to 26-30. We present examples of direct comments in italics to clarify the text.

## Results

### *Patients' needs*

We received 644/875 usable survey replies (74%). Respondent analysis showed only small differences within subgroups. Frequent visitors and older patients were slightly over-presented (table 1). More than 80% of the respondents indicated that they anticipated needing contact with their GP following a birth or a death in the close family, or when bad news was received from a specialist. In these situations, most respondents thought of a home visit (table 2). In case of a hospital admission for a small foot operation, 33% wanted contact with the GP, as compared to 98% when a malignancy was discovered during admission. Respondents most often anticipated needing a visit after the hospital admission (table 3).

### *Relationship between patient needs and GP and patient characteristics*

Principal component analysis revealed two components congruent with our prior assignment, one component related to home scenarios, and one to hospital scenarios. The experience of a recent hospital admission, or having lived through a serious life event recently, did not influence patient wants. A model containing 10 patient characteristics could merely explain 16% of the observed variance for home situations, and 8% for hospital situations (Table 4).

### *Qualitative exploration of patients' needs*

We interviewed 30 out of 44 eligible patients, initially by focussing on a variety of basic characteristics. We continued until saturation occurred after the interviews 26-30. Eighteen interviewees were female, 14 suffered from a chronic disease. Eight subjects were between 20 and 39 years old, 10 between 40 and 59, and 12 over 60 years. Sixteen were listed more than

**Table 1. Response rates. Numbers and percentages responding within subgroups. (Overall response = 644/873)**

Characteristic		Responders	
		Numbers <sup>1</sup>	Percentages within characteristic
Age <sup>2</sup>	18-40	182/284	64
	41-60	270/349	77
	61-80	170/210	81
	>80	20/24	83
Sex	Female	399/533	75
	Male	243/338	72
Chronic illness <sup>3</sup>	Yes	255/314	81
	No	380/548	70
No of contacts with GP in the last 12 months (including last visit) <sup>4</sup>	1-2 times	122/177	69
	3-4 times	154/221	70
	5-10 times	244/310	79
	>10 times	121/162	75

<sup>1</sup> Due to missing values the count of sent questionnaires was 862-871

<sup>2</sup> Response rate increasing with age,  $p < 0.001$  (Chi-square for trend).

<sup>3</sup> Response rate higher for patients with chronic illness  $p < 0.001$  (Chi-square)

<sup>4</sup> Response rate increasing with higher contact frequency,  $p < 0.016$  (Chi-square for trend)

**Table 2. Patients' need for contact with their GP in case of life events.**

Situation ..	Need contact		Type of contact	
	numbers	%	Phone only	Home visit
			%	
Birth within family	477/587	81	16	65
Death of family member	569/630	90	9	81
Bad news from specialist	616/632	97	10	87

**Table 3. Patients' need for contact with their GP in case of hospital admissions.**

Hospital admission for	Need contact		Type of contact			
	numbers	%	Phone only	Home Visit after	Hospital visit	Both visits
			%			
Broken leg	447/634	71	33	19	12	7
Small foot operation	210/633	33	23	7	2	1
Vague abdominal symptoms	574/631	91	38	20	21	10
Heart attack	613/633	97	12	37	26	22
Cancer discovered	618/633	98	5	36	27	30

10 years in the practice, 14 less. We saw an equal distribution of the number of contacts with the GP, ranging from one to more than 20 contacts in the last two years.

#### *Whose initiative?*

Far the most of the patients told us that they anticipated needing contact in various conditions but that they would never take the initiative. They considered it a GPs task or a matter of course that the GP would take the first step. If asked why they would refrain from taking the initiative themselves, most interviewees were not able to respond. "Things like these go without saying". Nevertheless, it was clear to most of the patients that they would not be the ones to take the first step. This was often coupled to a clear judgement. The GP could prove its value by showing initiative, but he could also forfeit a lot by omitting this. Only a few interviewees said that they would take the initiative themselves. They spoke less in terms of the relation, but were thinking more of what the GP could do for them.

#### *Home scenarios*

A few patients who stated not needing contact if a family member would pass away, told us that this was because their relatives had another GP, or because they considered it their own responsibility. A few said that they anticipated to be in need of a home visit, but would appreciate just a telephone call, because they were afraid to take up the GP's time. However, most patients rejected contact by telephone if a relative had died; this was often considered "cold", "too easy", and "too distant". Patients found that GPs could fulfil a diversity of roles to meet their needs. These ranged from just being present "a listening ear", to giving consolation, support, and possible prescribing of tranquillising medication for relatives. Most patients would need contact with their GP because of their sensed relationship with him: "he knows the family", "a matter of trust", "because of our emotional relationship". Some patients simply considered seeking contact with the family a GP's task: "it's his job"; "he should be interested".

In case of a birth in the close family, only a few patients thought that the GP had a specific medical task of examining the newborn. Some said that a GP had to welcome the baby just because it would be a new patient; some others thought that a GP should look at how the new family were coping; a few again simply considered it a GP's task. Patients who did not need anything, or just a telephone call, said that this was because of the pressured time of the GP: "he is too busy", "he has more important work to do", or considered it primarily the midwife's concern. Nevertheless, all would value a home visit from their GP. Most patients mentioned the relationship with the GP as the main reason for wanting contact; If a GP initiated contact, this would be a way to show commitment to patients, "just to let know that he is interested", often without thinking of a certain role.

**Table 4. Patients' need for contact with their GP (overall score<sup>1</sup>) in relation to patient characteristics (LS-means, General linear model, p-values).**

<i>Patient characteristics</i>		<i>Patients' need for contact at the time of..</i>			
		<i>Home scenarios<sup>2</sup></i>		<i>Hospital scenarios<sup>3</sup></i>	
			p-value		p-value
Age	18-40	4.98		11.67	
	41-60	4.81	<b>&lt;0.001</b>	13.43	<b>0.040</b>
	61-80	4.25		14.23	
	81-100	3.22		14.14	
Gender	Male	4.26		0.399	
	Female	4.38	13.78		
Having children	Yes	4.99	<b>&lt;0.001</b>	13.68	0.440
	No	3.65		13.06	
Years in the practice	<1	4.65		14.69	
	1-2	4.44		13.60	
	3-4	3.90	0.053	12.36	0.169
	5-10	4.57		14.12	
	>10	4.03		12.09	
GP contacts in the last year	1-2	4.18		14.86	
	3-4	4.21	<b>0.019</b>	13.79	0.069
	5-10	4.35		12.60	
	>10	4.54		12.23	
Chronic illness	Yes	4.22		0.191	
	No	4.42	13.26		
Distance hospital (km)	<5	4.19		13.33	
	5-9	4.21	0.680	13.28	0.933
	10-20	4.35		12.96	
	>20	4.54		13.92	
Hospital admission last year	Yes	4.28		0.552	
	No	4.36	13.68		
Serious life event last five years	Yes	4.39	0.335	13.30	0.787
	No	4.24		13.46	
Serious psycho-social problem last five years	Yes	4.27	0.580	13.64	0.491
	No	4.37		13.10	
Variance explained by model			16%		8%

<sup>1</sup> A higher sumscore means more need for contact<sup>2</sup> Eigenvalue component 1.37; mean sumscore 5.3 (standard deviation 1.64)<sup>3</sup> Eigenvalue component 3.21; mean sumscore 13.9 (standard deviation 7.10)

**Table 5. Patient categories evolving from the qualitative research**

	<i>Emphasis on tasks</i>	<i>Emphasis on relationship</i>
Needs	<p><i>More often telephone contact</i></p> <p>Preferably patient-initiated</p> <p>Explicit request</p>	<p><i>More often home visit</i></p> <p>Preferably GP-initiated</p>
Purposes	<p><i>Mainly tasks</i></p> <p>Prescribing</p> <p>Assessing relatives</p> <p>Organising</p>	<p><i>Mainly support</i></p> <p>Listening</p> <p>Being there</p> <p>Showing commitment</p>
Motives	<p><i>Mainly in terms of function</i></p> <p>GP's task</p> <p>For future management</p>	<p><i>Mainly in terms of emotion</i></p> <p>Having emotional bond</p> <p>Knowing the patient</p>
Assessment	<p><i>Expressed as importance</i></p> <p>Beneficial</p> <p>Profitable</p>	<p><i>Expressed as appreciation</i></p> <p>Kind</p> <p>Nice</p>

After receiving bad news from a specialist most patients wanted a home visit, mainly “to insure that she is informed” or “just to talk”. They expected the GP to be supportive, interested, and discuss the future with them. A few patients would not need contact because they considered the GP’s task finished after referral “The diagnosis has been made..”, “he cannot do anything anymore..”, “others take over..”, or thought that they should take their own initiative to contact or visit the GP.

*Hospital scenarios*

Most interviewees found an admission of a few days for a small foot operation and a two-week admission for a broken leg more or less the same. The duration of stay in the hospital was considered unimportant. These problems were assessed as relatively small, generally not necessitating contact: “not serious”, “small technical problems”, “not dangerous”, “unimportant”. On the discovery of a malignancy however, almost all patients wanted contact, mainly because of perceived mutual trust and the overall need for contact in the case of a serious event. Only a few patients needed nothing. They thought that the hospital would take over all treatment. Most others would want conversation, support, interest, or advice for the foreseen future. Some thought that their GP should translate the hospital’s technical language. Some found that the GP’s role should end and start again at the hospital’s gate, but others stated that they would want a confidante at their bedside.



### *Evolving patient categories*

From the qualitative analysis we identified two major patient categories. One small group of patients concentrated primarily on tasks required of their GP. This group would show more initiative to contact the GP, talked less of a bond and more in terms of tasks and roles. The other large group concentrated primarily on their relationship with the GP, expected things from their GP more implicitly, and would show less initiative to contact their GP themselves (table 5).

### **Discussion**

This study shows that many patients anticipate needing contact with their GP in the case of a serious life event and at the time of hospital admission for life-threatening illness. The qualitative analysis suggests that patients usually will not initiate such contacts themselves. We identified patient groups with different ‘commitment needs’. Some patients focus primarily on GP tasks; these patients expect less, and will show more initiatives themselves. Other patients focus predominantly on the GP-patient relationship, and these patients would want contact more implicitly. Recognising these patient types may be important in everyday practice because it may make GPs aware of possibly unuttered needs, and enable them to balance these needs to other assignments.

The studied concept of commitment is conceptually linked to continuity of care. Some even define continuity in terms of commitment, for instance as ‘being there when the patient needs us’,<sup>10</sup> and ‘assuming ongoing responsibility for patients’.<sup>11</sup> Saultz recently suggested a hierarchical definition for continuity of care, comprising the informational, longitudinal, and interpersonal level.<sup>12</sup> Commitment may be linked both to the longitudinal and the interpersonal levels. It needs dedication and responsibility, qualities that will develop more easily within an ongoing personal relationship. Studies on commitment add to research on patients’ needs on provider continuity<sup>13,14</sup> and co-ordination of care.<sup>15</sup>

So far, commitment has been underexposed in the literature. A systematic review on patient preferences regarding general practice care does not mention the issue;<sup>16</sup> another study of patients’ views on what makes a good general practitioner does neither.<sup>17</sup> We found one outdated study that discusses the conceptual theme more superficially. It concluded that patients appreciated hospital visits, but GPs varied considerably in their habits.<sup>18</sup>

Solid evidence from studies on the value of commitment is lacking. GPs’ visits of older patients soon after discharge resulted in fewer admissions to nursing homes in the following year.<sup>19</sup> GP input into discharge planning did not result in a decline in re-admissions, but more patients felt that their return home was well prepared.<sup>20</sup> Visits soon after discharge by Health Visitor assistants did not benefit patients after discharge,<sup>21</sup> and a debate on the necessity of GP home visits after early discharge for myocardial infarction did not come to a conclusion.<sup>22-</sup>

<sup>23</sup> However, a UK study demonstrated that patients aged over 65 and their carers complained of a lack of support after hospital discharge, and reported to be dissatisfied because of problems with home visits.<sup>24</sup>

GPs are more satisfied with home visits to new-borns, as compared to practice appointments.<sup>25</sup> A small survey in one suburban family practice showed that patients greatly appreciated contact with their GP after the death of a loved one, but only half of the patients expected a telephone call.<sup>26</sup> This may indicate the difference between needs and expectations; the latter may be based more on actual experiences.

A clear limitation of this study is that we asked patients for anticipated needs in hypothetical scenarios. These may be considered different from their needs in reality, and patients' needs thus may be overestimated. However, it was noteworthy that recent admission to a hospital or having lived through a serious life event lately did not influence patients' needs. Moreover, few patients wanted contact after a small operation, indicating that patients did not want just everything. Our research was based in the Netherlands, which is a densely populated country, and the distance to a hospital is probably smaller than in most other countries. Therefore the need for a hospital visit may be relatively high. Also, there is a cultural tradition. We focused on GP-initiated contacts mainly, because this is a Dutch tradition and we excluded practice consultations, which may be a convenient alternative in other countries. We consider insight in needs for GP-initiated actions the most relevant for daily practice, but future research may well include the patient-initiated options. At last, if we had taken a sample from the whole practice populations, this might have shown slightly different needs. However, about 80% of patients see their GP yearly, and we had a broad variety of number of visits to the GP in the past year.

Tuning the practice to patient needs is considered an important way to improve the quality of care. Our findings indicate that many patients implicitly want contact with their GP at the time of hospital admission and other life events. The impression that only few patients would take the initiative themselves needs further quantitative confirmation. In addition to our exploratory findings, further research may help the profession to take a standpoint on these issues. In the mean time, the practising GP will have to weigh patients' needs in this field against other services. Our study however shows clearly that patients' needs at the time of hospital admission and other life events are considerable.

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## **General practitioners' views on continuity of care**

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### **Abstract**

*Introduction* - Continuity of care is historically a cornerstone of general practice in the Netherlands. Therefore the general practitioner is traditionally available for patients, shows commitment, and is also outside of office hours are important components.

*Research question* - We sought GPs' views on the importance of personal contact with their own patients, the degree to which they find it their responsibility to demonstrate unsolicited concern/empathy, and personal availability outside of office hours. We evaluated the relationship between these concepts and physician and practice characteristics.

*Method* - Mailed survey study among a random sample of 500 established Dutch general practitioners

*Results* - GPs find it especially important to have personal contact with their patients when psychosocial factors play a role. They find making contact, even unsolicited, to be their responsibility during important events in the lives of patients, such as the death of a family member or the diagnosis of a serious illness. A majority of GPs find availability outside of office hours necessary for seriously ill patients. GPs' attitudes are hardly associated with physician or practice characteristics.

*Conclusions* - In organizational renewal and developing a future vision, it is important to consider GPs' own views of their responsibilities. Offering personal and continuing care at important moments remains a high priority for GPs.

## Introduction

Providing personal care to a relatively stable patient population is historically an important characteristic of general practice. The general practitioner (GP) is traditionally as available as possible, feeling responsibility and showing commitment, even without an explicit request from patients.<sup>1-3</sup> There is scientific evidence that continuity is effective.<sup>4-6</sup> More personal continuity is associated with higher levels of trust in the doctor,<sup>7</sup> and better compliance with therapy.<sup>8</sup> Patients are more satisfied and feel more enabled when they see their own GP.<sup>9,10</sup> GPs also are more satisfied with their profession if they know their patients better.<sup>11</sup>

However, the certainty of contact with a personal physician is decreasing. Patients are moving and changing practices more often. GPs often work part-time or in groups. Moreover, the increasing experience of work pressure and workload may threaten continuity. While patients still have high expectations of personal care from a particular GP,<sup>12</sup> there are discussions among professional groups worldwide over the future of personal, integrated, and continuous care.<sup>13-15</sup> In the Netherlands, the National Association of GPs (LHV) and the Dutch College of GPs (NHG) have in the last two years developed a new idea of the GP of 2012 in the 'Toekomstvisie' project. The definitive report of this project has been published meanwhile on the internet, and established through member gatherings of the National Association.<sup>16</sup> Considering such developments, it is important to explore ideas and attitudes of GPs. It is unclear whether the younger generation of GPs has a different vision of continuity than their older peers and whether a connection exists between practice characteristics and concepts of responsibilities. We performed an investigation posing the following questions:

- How important do GPs find it to have personal contact with their patients in different circumstances; to what degree do they find it their responsibility to show commitment; and what do they think about availability outside of office hours?
- To what degree are differences among GPs explained by specific physician or practice characteristics?

## Methods

### *Measuring instrument*

Analogously to a questionnaire used in patient research,<sup>17</sup> we developed a questionnaire for GPs with relationship to three important aspects of continuity in general practice.

*Personal continuity:* We asked how important contact was with personal patients for 11 different clinical scenarios, such as a flu or a sudden chest pain. Answers were scored on a five-point Likert scale ('very important' to 'not at all important').

*Personal commitment:* We asked for twelve different situations if they considered it their task to seek unsolicited contact with patients. Situations ranged from a hospitalization for a malignancy to the death of a relative. A number of situations related to transitions in care. Answers used a 5 point Likert scale, noting the preferred form of contact (telephone, home visit, hospital visit).

*Personal availability:* For 5 situations, such as death of a patient or a terminal phase of an illness, we asked if they considered it their responsibility to be personally available outside of office hours. This was also scored on a 5 point scale (never-always).

Besides demographic characteristics of GPs and their practices, we collected data using a validated survey used earlier in the Dutch Institute for Healthcare Research ‘burnout study’ about available time for work, job satisfaction, experienced discrepancies between efforts and results, and improper requests for help.<sup>18</sup>

### *Procedure*

The survey took place in the spring of 2001. We mailed the questionnaire to a random sample of 500 Dutch GPs from the registry of the Netherlands Institute for Health Research. After 3 weeks, all GPs not responding received a reminder with a new questionnaire. A supplementary analysis of non-respondents was possible because we sent an abridged questionnaire to GPs not responding to the reminder, with 10 important questions taken from the original survey.

### *Analysis*

The data were entered in SPSS and errors were corrected. The demographic data of respondents and non-respondents were compared. We used principal component analysis (PCA) to explore the data. Subsequently we calculated sum scores for the three components of continuity. We related the sum scores to characteristics of the GPs and practices using multiple linear regression analysis (GLM-ANOVA), and calculated Pearson correlation coefficients between sum scores and scale scores for job satisfaction and experienced workload.

### **Results**

Ten surveys were returned unopened because of physician departure or incorrect address. Of the remaining surveys 73% were received after the reminder (359/490). Seventy percent (342/490) were completely or nearly completely (less than five missing items) filled in. These surveys were considered in the analyses. There were no important demographic differences between responders and non-responders. Of the GPs not responding after the first reminder, 53 percent (69/131) returned the abridged survey. The respondents to the abridged survey did not answer significantly differently to the ten questions than the primary respondents with the exception of one question; *how important do you find it to see your own patient in the event of a work problem?* (Primary respondents 84% important or very important, abridged survey 70%).

### *Personal continuity, commitment, and availability*

Of the GPs in the study, 75% found it generally ‘important’ or ‘very important’ to see their ‘own’ patients. For the various presented reasons for contact, the percentages ran from 14 for

flu to 100 for a discussion with a severely ill patient (Table 1). Reasons for a general preference to see own patients are summarized in table suppl. 1.

For important life events, many of the GPs found it their responsibility to make contact with patients. For hospital admissions, concepts of responsibilities varied greatly with the reason for admission. The preferred method overall was a home visit after discharge, but a hospital visit was often preferred. Most found telephone contact alone unsuitable (Table 2). The majority of respondents considered it their task to be as available as possible for their terminal patients. That held true to a much lesser degree for childbirth (Table 3).

**Table 1 Personal continuity: Scenarios where GPS value contact with own patients (percentages, n=342)**

Scenarios	Important*	Very important*
Conversation with terminally ill patient	100	78
Problems in the family	94	40
Working problems	85	21
Non-specific abdominal symptoms	70	18
Fecal blood loss	60	12
Myocardial infarction	59	22
Diabetic check	40	5
Blood pressure check	29	3
Ankle distortion	20	4
Corpus alienum eye	18	6
Flu	14	3

\* Important or very important on a 5 point Likert scale

**Table suppl 1. Reasons for general preference to see own patients (n= 342) (unpublished data)**

I prefer to see my own patients in general because ..	Agree*	
	Numbers	Percentage
I know their personal and family background better	331/341	96
I can talk easier to them	247/342	72
I know better what their medical condition is	243/342	71
I know their expectations better	244/342	71
Treating own patients is more satisfying	237/342	69
Own patients cost less energy	200/341	58
Every contacts builds a relationship with patients	190/342	56
I can solve their problems better	140/342	41
I know that patients have more trust in me	137/341	40
Colleagues may bring in other management	136/342	40
It will benefit them medically	103/341	30
I think to be a better GP if I see them myself more often	101/342	30
I find it annoying when they visit another doctor	51/341	15

\*Agree or strongly agree on 5-point Likert scale

### *Relationships with GP characteristics*

The items from the three chosen components (personal continuity, commitment, and availability) appeared by factor analysis to load on three separable factors. Single factor



analysis could explain a high percentage of the variance found for the named components (51%, 43%, and 60% respectively). This made calculating sum scores plausible. A model with seven physician characteristics could only to a limited degree explain the variance in sum scores (explained variance 12-17%). Older GPs especially found availability outside of office hours essential (Table 4). When we related the sum scores for personal continuity, concern, and availability to the 'burnout' scales for satisfaction and experienced workload, we found that having broader concepts of responsibilities correlated with higher professional satisfaction (Pearson correlation coefficients respectively 0.15, 0.17, and 0.13 (all  $p < 0.01$ )). There was no clear relationship between concepts of responsibilities and experienced workload. *Table suppl. 1 shows the reasons that GPs gave for their general preference to see 'own' patients (these data were not published in the original article).*

**Table 2 Personal commitment. Task perceptions for unsolicited contact with patients (percentages, n=342)**

Scenario	Usually or always	Always	Only phone call*
<b><i>Home scenario</i></b>			
– Death in family	99	91	6
– Bad news specialist	86	44	28
– Birth	85	57	6
– Admission family member for threatening illness	49	13	37
<b><i>Hospital scenario</i></b>			
– Malignancy	95	62	5
– Myocardial infarction	83	43	11
– Hip fracture	60	21	10
– Psychiatric hospital	39	8	13
– Nursing home	38	7	7
– Aspecific abdominal symptoms	32	8	11
– Fracture leg	24	6	4
– Small operation foot	3	0	2

\* calculated for respondents who considered showing commitment their task always or usually.

**Table 3 Personal availability. Task perceptions outside of office hours (percentages, n=342)**

Scenarios	Usually or always	Always
Treatment of terminally ill patient	67	30
Suspected passing away patient	44	16
Unexpected passing away patient	29	11
Severe accident family member patient	19	6
Mother child care	12	5

**Table 4. Relation between GP characteristics and sum scores for personal continuity, commitment and personal availability (p-values from multiple linear regression analysis [GLM])**

	Personal continuity*		Personal commitment**		Personal availability***	
	Sumscore	p	sumscore	p	sumscore	p
Age		0,45		0,02		< 0,01
30-39	25,4		29,3		6,7	
40-49	25,7		30,5		8,6	
>50	26,2		32,2		10,3	
Gender		0,27		0,04		0,97
female	25,0		32,0		8,3	
male	26,1		30,7		9,1	
Practice type		0,60		0,15		0,85
One-handed	27,3		31,6		9,2	
two-handed	24,1		30,2		9,1	
more-handed	25,0		32,4		8,8	
Health centre	24,9		29,5		7,9	
Urbanity		0,06		0,06		0,91
Very urban	27,6		28,1		8,8	
urban	26,6		29,3		8,3	
average	25,9		29,4		8,5	
rural	25,3		32,0		9,2	
very rural	24,8		33,1		9,4	
Inferior practice area		0,01		< 0,01		0,49
Yes	24,8		26,4		8,3	
No	26,0		31,6		9,0	
List type		< 0,01		0,96		0,82
<i>Personal list</i>	27,1		31,0		9,1	
<i>Combined list</i>	22,5		31,0		8,8	
Time in clinical activities		0,18		0,35		0,55
0,2-0,6	25,5		31,4		8,9	
0,7-0,9	25,0		31,2		8,6	
1,0	26,8		30,6		9,3	

\* Mean sumscore 25.9 (SD 7.7), explained variance 15%

\*\* Mean sumscore 31.0 (SD 7.7) , explained variance 17%

\*\*\*Mean sumscore 8.9 (SD 4.6), explained variance 12%

## Discussion

It is recognized that patients in the Netherlands find it important in principle always to be able to see the same GP.<sup>19</sup> This study shows that Dutch GPs find it especially important to have contact themselves with their own patients when psychosocial factors clearly play a role. Moreover, GPs consider it their responsibility to show commitment and seek contact with patients during important life events, even when not specifically asked. A majority find it

their responsibility to be available personally outside of office hours for terminally ill patients in their practice. It is noteworthy that only a small percentage of the differences found in ideas and concepts of responsibilities among GPs is explained by physician characteristics such as age, sex, practice form, and hours worked as a GP. The limited concepts of responsibilities of younger GPs outside of office hours was anticipated, but it is thinkable that this changes in time, not only because they slowly form a more intense relationship and bond of trust with patients, but also because their own family situations later in life make work outside of office hours easier. It is interesting that a broader concept of responsibilities correlates with higher professional satisfaction. In developing a new vision of general practice, in which teamwork in group practices is an option,<sup>15</sup> it is therefore essential to see that the GP can continue to deliver personal, continuous, and integrated care. Relatively small-scale teams perhaps would make that simpler. In Great Britain it appeared recently that GPs differentiate among different reasons for contact in attaching importance to their personal continuity.<sup>12</sup> Our data show striking agreement with this study. The fact that a majority of the surveyed GPs did not find performing periodic checks linked to chronic conditions such as diabetes or hypertension very important connects to current developments, in which practice assistants and nurses do such checks. In Great Britain, where this is usual, patients and GPs appeared however to have more need for checks by personal physicians. Nearly all GPs saw visiting significant others of deceased patients as an important task. A recent plea for aftercare for the families of deceased patients was therefore certainly supported by GPs; nearly all considered a home visit desirable.<sup>20-21</sup>

### *Limitations*

This study has a number of limitations. Only a few aspects of continuity in general practice were illuminated. Concepts of responsibilities and ideas about continuity are not synonymous with actual behavior in daily practice. It is very possible that the indicated desire for continuity would not be mirrored in daily actions. It is also possible that respondents gave socially desirable answers, although it is not entirely clear what social desirability precisely includes at the moment. By proposing specific situations to the individual GPs and emphasizing the special importance of knowing what they thought, we have as much as possible tried to avoid this. The response rate of 70% is high for written questionnaires and more or less rules out response bias.<sup>22</sup> We think therefore that the results give a considerable impression of what the Dutch GP finds important now and what he considers his responsibilities.

### **Conclusion**

The Dutch GP finds personal continuity especially important in situations in which psychosocial factors play a role and considers it his task to show concern when important life events occur for their patients. A part-time GP in an urban group practice thinks no differently in this regard from a solo rural GP. That holds equally for younger and older GPs. Recent

changes in GP seem to have had no great influence on GPs' concepts of responsibilities. It therefore deserves recommendation that these core values, even in innovative GP structures, remain prominently placed.

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## **Family medicine trainees still value continuity of care**

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### **Abstract**

*Background and Objectives* - Continuity of care in family medicine is under pressure due to an increase in part-time work, delegation of tasks, and the development of walk-in centers. It is uncertain to what extent newly qualified professionals value personal continuity. Insight into trainees' views may be helpful for training purposes and for improving continuity of care for patients in the future. We explored trainees' views on continuity for hypothetical scenarios and related these to personal characteristics and trainers' views.

*Methods* - We sent a questionnaire to all trainees and trainers of the eight family medicine training institutes in The Netherlands.

*Results* - The response rate was 595/1,048 (57%) for trainees and 478/776 (62%) for trainers. Trainees attached more importance to continuity than trainers. Both highly valued continuity for serious problems, such as discussing the future when seriously ill (99% and 97%, respectively) and valued it low for minor problems, such as an episode of flu (14% and 6%, respectively). Trainees' views were barely related to the views of their personal trainers and to personal characteristics such as age, gender, and training faculty to a minor extent only.

*Conclusions* - The new generation of professionals still value continuity of care. It may remain one of the basic features of general practice in the future.

## Background

For decades, continuity of care has been considered one of the fundamental aspects of family medicine.<sup>1</sup> Higher continuity between patients and physicians has been associated with a higher level of trust,<sup>2</sup> greater satisfaction with consultations,<sup>3</sup> and increased “enablement” of patients.<sup>4</sup> In The Netherlands, general practitioners have longstanding relationships with most of their patients, and they act as gatekeepers to secondary care. They are not directly involved in inpatient care, although they may visit their patients in the hospital. Normally, a full-time doctor serves a practice population of 2,200 patients.

In The Netherlands, as in other countries, there is pressure on continuity due to changes in the organization of health services. These include larger practices, part-time work, the development of walk-in centers, and the delegation of tasks to other professionals such as nurse practitioners. Some argue that personal continuity will become less important and that present-day patients prefer quick and high-quality help from any professional, rather than waiting to see their personal physician.<sup>5</sup> However, recent data demonstrate that patients find personal continuity highly important when dealing with serious and emotional conditions. From the patient's perspective, therefore, it appears that the challenge is to offer continuity at those moments that count.<sup>6,7</sup>

There is doubt, on the other hand, about whether the newer generation of family physicians still value continuity. To our knowledge, valid data on this issue are lacking. More insight into this topic is needed because it may direct the content of training programs and give rise to ideas about the future organization of the profession.

Therefore, we conducted a study to explore trainees' views on continuity of care and related these to the views of their experienced older colleagues who had been educated on the importance of continuity. Moreover, we were interested in learning about factors determining differences in views among trainees. We hypothesized that female trainees differ in their opinions from male trainees, because they might choose to work part time in the future and place less importance on continuity. We also hypothesized that trainees' views on continuity would be influenced by their feelings of “job burden” and job satisfaction.

## Methods

### *Subjects and Sampling Methods*

We sent a questionnaire to all 1,048 general practice trainees who were in Dutch training practices in September 2001 and to all 776 trainers with the eight training programs at the time. We sent the questionnaires with a cover letter from the board of the Dutch College of General Practitioners and the Dutch Association of General Practitioners. A postage-paid envelope was enclosed.

Respondents were asked to send completed questionnaires back to the researchers. After 2 weeks, we sent a reminder card to nonrespondents. Two weeks later, we sent a one-page questionnaire (an abbreviated version of the full instrument) to nonrespondents to collect information about whether nonrespondents might answer differently than respondents. Due to



privacy concerns, five training programs would not supply us with the data necessary to link individual trainees to their trainers.

### *Instruments and Variables*

We adapted a questionnaire that had been developed to examine patients' views on continuity.<sup>6</sup> The questionnaire provided subjects with 11 hypothetical reasons for an encounter with their physician and asked subjects (ie, trainees and trainers) to rate the importance of "seeing their own patients" during office hours. The instrument used a five-point Likert scale. The specific reasons for encounter specified in the questionnaire ranged from minor problems, such as a sprained ankle, to more serious problems, such as discussing the future with a seriously ill patient.

We also collected information on characteristics that might influence trainees' views, such as personal characteristics, future preferences for practice settings, and information on job satisfaction and workload.

A pilot study was carried out with 10 general practitioners. Following this, changes were made to produce a final version of the questionnaire.

### *Data Analysis*

The data were entered into the statistical program SPSS 9.0.® We used principal components analysis to explore the data and to determine whether summing up of scores was possible for trainees' and trainers' views on continuity. Consequently, we calculated a sum score for the importance that respondents attached to seeing their own patients (very important=5 points, important=4 points, neutral=3 points, unimportant=2 points, and very unimportant=1 point).

We used a Bland and Altman plot to show the relationship between individual trainees' scores and the scores of their trainers<sup>8</sup> and multiple linear regression analysis (General Linear Model procedure, SAS) to relate sum scores to the following trainee characteristics: age, gender, training institute, practice of preference in the future, practice setting of preference in the future, workload preference for the future, job satisfaction, and burden of job.

## **Results**

The percentage of complete and viable responses from trainees was 595/1,048 (57%) and for the trainers was 478/776 (62%). The mean age of the responding trainees was 30.6 years, compared to a mean age of 49.2 years for the trainers (Table 1). A total of 133 of 448 nonresponding trainees and 199 of 298 nonresponding trainers returned the abbreviated one-page questionnaire. Nonrespondents did not differ significantly from respondents in how they answered the questions on this abbreviated questionnaire.

**Table 1 Trainees' and Trainers' Characteristics (Percentages)**

Characteristic	Trainees (n=595)	Trainers (n=478)
	%	%
<b>Age</b>		
20–29	43	—
30–39	54	5
40–49	3	46
50–59	—	47
60–69	—	2
<b>Gender</b>		
Female	64	12
<b>Job satisfaction high</b>		
Very	14	16
Rather	68	72
Slightly	17	10
Barely	1	1
Not at all	—	—
<b>Workload high</b>		
Not at all	4	3
Barely	17	11
Slightly	55	42
Rather	23	41
Very	1	3

### *Personal Continuity*

Sixty-seven percent of the trainees indicated that they felt they had their own “personal” patients in the training practice. Seventy-one percent of the trainees stated that they considered it important to see their own patients in general, compared to 60% of trainers who considered it important. For regular diabetes or hypertension checks and for minor problems such as flu, a sprained ankle, or a splinter in the eye, only a minority of trainees and trainers considered continuity important (Table 2). For problems at work, family problems, and discussing the future with a seriously ill patient, the vast majority had the view that it was important or very important to see and have continuity with their own patients (Table 2).

Principal components analysis showed that all items loaded on one factor (>.4), explaining 35% of the observed variance. We calculated sum scores for continuity. Trainees attached significantly more importance to continuity than did trainers (mean overall sum score 38.7 (confidence interval [CI]=38.3–39.1) and 34.2 (CI=33.5–34.8), respectively).

**Table 2. Percentage of Respondents Stating That “Seeing My Own Patients” Is Important or Very Important**

<i>Situations</i>	<i>Trainees (n=595)</i>		<i>Trainers (n=478)</i>	
	<i>“Seeing my own patients” is: (%)</i>			
	<i>Very Important*</i>	<i>Important</i>	<i>Very Important*</i>	<i>Important</i>
Common influenza	14.2	1.5	6.2	.6
Splinter in the eye	23.6	4.7	9.5	2.1
Sprained ankle	23.9	4.8	10.2	.8
Regular blood pressure check	30.6	3.9	13.7	1.5
Regular diabetes mellitus check	40.4	6.1	23.6	1.7
Unexpected blood in stools	70.4	11.6	46.2	4.9
A-specific abdominal symptoms	83.9	17.3	64.5	9.8
Myocardial infarction	67.4	23.0	50.6	15.2
Problems at work	92.8	25.7	74.4	11.9
Family problems	94.3	41.2	90.5	31.4
Discussing future with seriously ill patient	99.2	81.7	96.8	70.4

\* Important or very important on a 5-point scale

#### *Relationship With Personal Characteristics*

Personal characteristics were related to sum scores, but the relationship was not strong. A model containing nine regional characteristics could only explain 9% of the observed variance in responses about continuity ( $P=.02$ ). Only the relationship between job satisfaction and how a trainee valued continuity reached significance in the model. Trainees more satisfied with their jobs valued continuity more highly (Table 3).

**Table 3. Relationship Between Trainees’ Personal Characteristics and Continuity Sum Scores\***

	<i>P Value</i>
Age	.438
Gender	.995
Training faculty	.204
Experience of having own patients	.160
Future practice preference	.687
Future practice setting preference	.716
Preference for full-/part-time work	.266
Job satisfaction	.007**
Workload	.243
Variance explained	8.8%

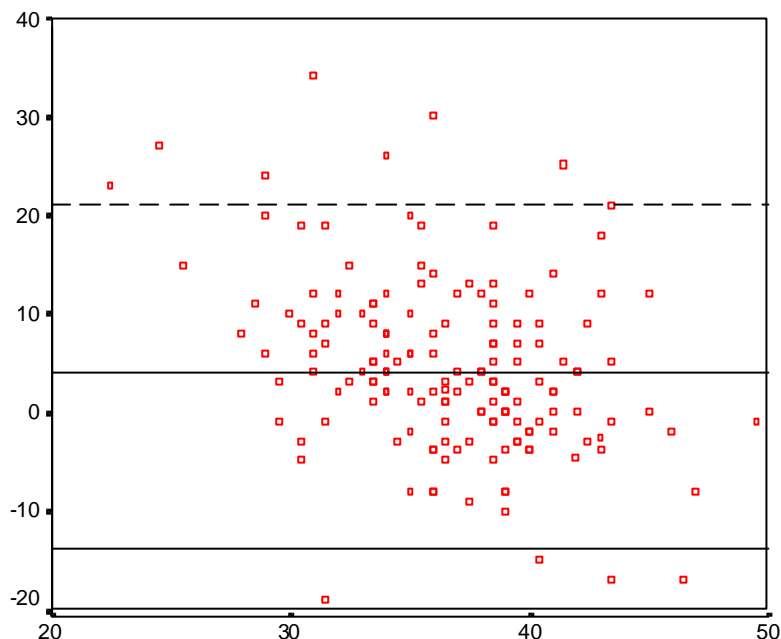
\* P values from GLM procedure

\*\* Significant at  $<.01$

### Relation With Trainers' Views

The sum scores of 162 trainees from three training programs could be linked to the scores of their own trainers. The Pearson correlation coefficient between trainees' and trainers' scores on the importance of continuity was very low (.026). Figure 1 shows the Bland and Altman plot for this relation, indicating that the difference in sum scores between trainers and trainees had no statistical relationship.

**Figure 1. Bland and Altman plot. Mean of trainee and trainer score (X-axis) in relation to the observed difference between both (Y-axis).**



### Discussion

The finding that family medicine trainees attach a greater importance to continuity than their trainers for hypothetical scenarios was surprising. Both trainers and trainees valued continuity for serious and emotional problems and less for minor medical problems. But, trainees' views about continuity were stronger than those of their trainers. This may be caused by the fact that trainers normally share patients with their trainees, which in itself leads to less personal continuity in their practices. However, trainers' views in this study were similar to the views of a sample of Dutch family physicians.<sup>9</sup>

Studies have shown that training conditions often influence trainees' views. Trainees in practices that provide full obstetric care are, for instance, more likely to believe that family physicians have an important role in obstetric care than are those whose practices do not provide this service.<sup>10</sup> Further, trainees are found to follow their trainers' prescription behavior<sup>11</sup> and imitate their referral patterns.<sup>12</sup> Surprisingly, therefore, our study did not show trainees' views on continuity to be related to their trainers' views. Views on such an important topic might be less pliant than one would think. The finding that job satisfaction was

significantly related to continuity scores was interesting and concordant with our findings in the study of Dutch family physicians.<sup>9</sup>

### *Limitations*

This study had some limitations. First, views on continuity do not necessarily predict actual practice. Respondents may give desirable answers to questions, but the answers may not be related to their true behavior. We tried to minimize this problem by offering realistic scenarios from real practice.

Second, we were not able to link all trainees to their trainers. But, for those trainees and trainers whose responses were linked, the relationship between trainers' and trainees' views was so minimal that we consider it unlikely that a stronger relationship would have been found if all pairs had been included.

Third, the response rate was only fair, though it was comparable to other national trainee studies.<sup>13</sup> We consider response bias to be unlikely, because nonrespondents gave similar answers to the questions in the short questionnaire as respondents did in the regular questionnaires.

### **Conclusions**

What are the implications of this study? We conclude that the future generation of family physicians, at least in The Netherlands, does not consider continuity an unimportant characteristic of general practice. Rather, they see it as a core value when caring for patients with serious conditions. Gender, training program, and future practice setting preferences do not significantly influence trainees' views.

The challenge will be to integrate the old values with new organizational developments and to make sure that personal continuity can be provided if considered necessary. Fortunately, at least for the hypothetical scenarios presented in our study, the future generation of family physicians seems to agree with our patients about the value of continuity of care.

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**Supplement Huisarts Wet 2004;47:322-5**

Besides their views on the importance of seeing own patients, we explored general practice trainees' views on other aspects of personal continuity: personal commitment and personal availability outside of office hours. These data were published in Huisarts en wetenschap and are presented here as separate tables supplement 1 and 2.

**Table suppl 1. Personal commitment. Task perceptions as regards contacting patients unasked for (percentages, 95% confidence intervals in brackets).**

	Contacting patients unasked for is my task (%)*	
	Trainees (n=595)	Trainers (n=478)
<b>Home scenarios</b>		
Death in the family	96.6 (94.9-97.9)	98.3 (96.7-99.3)
Bad news from specialist	86.2 (83.2-88.9)	86.4 (83.0-89.3)
Birth in the family	77.8 (74.3-81.1)	79.1 (75.2-82.6)
Admission family member for very serious illness	46.2 (42.2-50.3)	55.6 (51.0-60.2)
<b>Hospital scenarios</b>		
Cancer discovered 2 weeks	90.1 (88.1-93.0)	91.4 (88.5-93.8)
Heart attack 1 week	71.4 (67.6-75.0)	75.9 (71.9-79.2)
Hip fracture 6 weeks	43.9 (39.8-48.0)	55.6 (51.1-60.2)
Admission psychiatric hospital	41.7 (37.7-45.8)	39.1 (34.7-43.7)
Admission nursing home	39.8 (35.9-43.9)	35.1 (30.9-39.6)
Vague abdominal symptoms 2 weeks	28.2 (24.7-32.0)	27.8 (23.9-32.1)
Fracture leg 2 weeks	11.3 (8.8-14.1)	23.2 (19.5-27.3)
Small operation foot 2 days	1.7 (0.8-3.0)	1.9 (0.9-3.5)

\* For respondents considering it their task *always* or *most of the time* on a 5 point Likert scale: *always*– *most of the time* – *sometimes*– *seldom* – *never*

**Table suppl 3. Personal availability. Task perceptions outside of office hours when not on duty (percentages, 95% confidence intervals in brackets).**

	Trainees (n=595)	Trainers (n=478)
It is my task to be available for own patients out-of hours *		
Treatment terminally ill patient	52.6 (48.5-56.7)	75.3 (71.2-79.1)
Expected dying patiënt	27.4 (23.8-31.2)	46.7 (42.1-51.2)
Unexpected dying of a patient	24.4 (21.0-28.0)	33.7 (29.5-38.1)
Acute serious event, such as a severe car accident family member	15.0 (12.2-18.1)	21.8 (18.1-25.7)
Taking care during puerperium	6.6 (4.7-8.9)	11.5 (8.8-14.7)

\* For respondents coinsidering it their task *always* or *most of the time* on a 5 point Likert scale: *always*– *most of the time* – *sometimes*– *seldom* – *never*

## **Familiarity with a GP and patients' evaluations of care**

A cross-sectional study

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**Abstract**

*Objectives* - Personal continuity is considered a core feature of general practice care. Nowadays, another important concept for general practice may be patients' familiarity with a general practitioner. We studied the extent to which patients see a familiar GP, and how this matches their preferences. Furthermore we studied the impact of knowing the GP on patients' evaluations of consultations.

*Design* - Cross-sectional design.

*Setting* - 17 general practices (30 general practitioners) in the Netherlands.

*Participants* – We approached 2400 patients, visiting the practice for a consultation; 2152 patients completed the questionnaire.

*Main outcome measures* - 1/ The extent to which patients saw a familiar GP in relation to the reason for encounter, perceived seriousness of symptoms, and concern about symptoms. 2/ The impact of 'knowing the GP' on patients' overall satisfaction with the consultation, feeling of being helped to move forwards, trust in the GP, and perceived clearness of treatment plans.

*Results* - Patients saw a familiar GP to a high extent, regardless of the reason for encounter, perceived seriousness of symptoms and worries. Higher levels of familiarity with a GP were associated with higher levels of satisfaction, with increased feelings of being helped forward, with more trust in the GP, and with the perception of clearer treatment plans made. A multivariate model including the variable 'knowing the GP' explained 11% of the observed variance in patients' evaluations of consultations.

*Main Conclusions* - Familiarity with a GP improves patients' assessment of general practice care. Also in the future, personal continuity should be promoted.

## **Introduction**

Personal continuity is considered a core feature of general practice care. However, studies on the achievement and evaluation of personal continuity are methodologically complicated due to the absence of a clear operationalisation of the concept. For instance, the significance of contacting the 'regular' GP is ambiguous, since its impact on outcome measures appears to be limited. Still, there is evidence that seeing a regular GP is associated with significant higher levels of patient and doctor satisfaction,<sup>1;2</sup> and increased enablement.<sup>3</sup> Studies have also shown that seeing the regular GP, trust in the GP, and patient satisfaction are interrelated themes.<sup>7;8</sup> There are indications that mainly certain characteristics of the GP-patient relationship, such as the extent of knowing the GP influence consultation outcome.<sup>4-6</sup> It is hypothesized that repeating contacts with patients build knowledge and trust which leads to better outcome.

In daily practice, many factors may act upon the attainment of seeing a familiar GP. For instance, patients occasionally prefer a convenient appointment time rather than a consultation with their regular doctor.<sup>9</sup> Also, patients may weigh up their GP preference against the reason for encounter. Patients seem to value personal continuity, especially for serious and psychosocial or family conditions, and less so for minor illness or regular checks.<sup>10;11</sup> Professionals' views have shown to match patient preferences in this field.<sup>11-13</sup> It is conceivable that GPs' and practice assistants' attitudes towards continuity,<sup>14</sup> as well as practice type and organisation may influence the chance of seeing a familiar doctor. At the present time, a growing number of GPs work part time in The Netherlands, and strong movements exist to enlarge practices. Patients may perceive to have more than one personal GP in such settings, and the extent of knowing a GP might become more important than the concept of having one regular GP.

Clearness on issues of possible benefits of seeing a familiar GP could give us important clues for planning and directing general practice care in the future. Changes in practice organisation make personal continuity less self-evident. Certainly now triaging by other health professionals becomes more common worldwide, questions on the importance of personal continuity will have to be addressed. The aim of our study was therefore bipartite. Firstly, we explored if the extent of seeing a familiar GP matches patient preferences at present. Secondly, we were interested to study how the extent of knowing the GP relates to patients' evaluations of consultations.

## **Method**

### *Samples*

We invited 49 practices (102 GPs) to participate in a project on continuity of care. We situated the study in one district (covering about 800.000 inhabitants) in the eastern part of the Netherlands. Due to study requisites, we approached all practices that used a

specific GP computerised system. There is no indication that these practices differ from practices using alternative information systems. We aimed to approach 80 consecutive patients per GP who visited the practice. The only exclusion criterion was difficulty understanding the Dutch language. For children, we asked the accompanying parents to participate.

#### *Variables and instruments*

We developed a patient questionnaire consisting of a pre- and post-consultation part. We measured the extent to which patients perceived to know the GP they were seeing today using a 5 point Likert scale. Patients also completed questions concerning the following independent variables: reason for encounter, perceived seriousness of symptoms, extent to which patients were worried, age, gender, perceived health status and the presence of chronic illness. Patients could seal the pre-consultation part, so that the GP was not able to see the answers.

After the consultation, patients completed four questions on consultation quality: overall satisfaction with the consultation, the feeling of being helped forward, trust in the GP, and perceived clearness of treatment plans – all on 5-point Likert scales. Moreover, the participating GPs completed a questionnaire on how continuity in their practice was arranged formally and practically (combined - personal list).

#### *Procedure*

The study was carried out in 2002/2003. We asked the practice staff, mostly practice assistants, to distribute the questionnaires in the course of several days to consecutive patients in the waiting room during consultation hours. We offered help to the practice in order to reduce the workload, and in addition offered payment to compensate proportionally for the extra work being done. Patients would fill in the pre-consultation part of the questionnaire during their waiting time, and returned to the waiting room to finish the post-consultation part. The questionnaires were collected in a sealed box, but patients were as well allowed to take the questionnaire home and post it.

#### *Analysis*

Firstly, we calculated the extent to which patients saw a personal GP for the practices by dichotomising the answers to the question ‘How well do you know the GP you are seeing today’ (‘very well – well - rather well’ versus ‘not well - not well at all’) and related this to the reason for encounter, perceived seriousness of symptoms and worries; we calculated 95% confidence intervals.

Secondly, we related the extent of personal continuity to the separate outcome measures satisfaction, being helped forward, trust, and clearness of treatment plans by calculating mean scores, using a multivariate approach (Mixed Procedure SAS), controlling for

patients' age, gender, health status, chronic illness, reason for encounter and perceived seriousness and worries, and the GP as random effect.

We explored the four outcome measures with principal component analysis and calculated correlation coefficients using standardized Cronbach's alpha. Next, we determined patients' overall evaluations of care by calculating unweighted sum scores (satisfied, being helped forward, trust, and clearness of treatment plans; *very much* 5 points, *very little* 1 point; scale min-max 3-15), and subsequently used multilevel analysis (SAS) to determine how patients, GPs and practices contributed to the variance in outcome. Finally, we used multivariate analysis (Mixed Procedure SAS) to study the contribution of the following independent variables to overall consultation outcome: knowing the GP, patients' age, gender, chronic illness, and health status, reason for encounter, and perceived seriousness and concern about symptoms.

**Table 1 Organisation of practices and reported familiarity with the GP (percentages, 95% confidence intervals in brackets, N=2019)**

Practice	Organisation of practice	Appointment with GP I know well	
		%	(95% CI)
1	Two-handed combined list, with one GP employed	76.8	(69.1-83.7)
2	Two-handed combined list	92.3	(86.7-96.1)
3	Three-handed; one with personal, two combined list	61.1	(53.9-68.0)
4	Single-handed, with one GP employed	78.6	(67.1-87.5)
5	More-handed combined, 100% agreed on regular GP	80.3	(69.5-88.5)
6	Single handed, one GP employed	86.3	(76.7-92.9)
7	Two-handed personal lists, practices as combined list	88.4	(82.0-93.1)
8	Single-handed, one GP employed	84.0	(73.7-91.4)
9	Single-handed	87.3	(77.3-94.0)
10	Single-handed	93.5	(85.5-97.9)
11	Two-handed combined list	77.9	(70.1-84.4)
12	Two-handed combined list	80.6	(72.9-86.9)
13	Three-handed combined, for 80% agreed on regular GP	65.2	(52.8-76.3)
14	Single-handed	78.5	(67.8-86.9)
15	Group of six GPs with personal lists	70.1	(65.1-74.1)
16	Three GPs with combined list	85.4	(78.1-91.0)
17	Single-handed	92.8	(83.9-97.6)
Overall			
	<i>Personal list (n=1005)</i>	77.3	(74.6-79.8)
	<i>Combined list (n=1014)</i>	80.6	(78.0-82.9)

## Results

Seventeen practices participated in the study. Most non-participants declined for reasons of lack of time and the feeling of being overtaxed. From 2400 questionnaires handed out, we received 2197 replies; 2142 had less than 3 missing values (response effectively

92%). One hundred and four (5%) did not know which GP they would be seeing, and 18 left the question how well they knew the GP blank. The mean age of the remaining 2019 respondents was 41.3 (SD 19). Sixty percent of the respondents were female, and 33% stated they suffer from a chronic illness.

### *Familiarity with the GP*

Table 1 shows the characteristics of the participating practices, underlining the diversity in practice organisation. The extent to which patients saw a familiar GP was comparable between practices, and we observed no relevant differences between practices with personal lists and practices with combined lists.

Patients more often saw a familiar doctor for regular checks. Perceived seriousness of symptoms, and concern about symptoms were not related to the extent of familiarity with a GP (table 2).

**Table 2. Reason for encounter, seriousness and concern, and reported familiarity with the GP (n=2019, 95% confidence intervals in brackets).**

	<i>Within group</i> %	Appointment with .. GP I know well	
		%	95% CI
<i>Reason for encounter*</i>			
Physical symptoms	71.6	77.7	(75.5-79.8)
Regular check	16.5	91.7	(88.2-94.3)
Work, psychological, family problems	11.1	82.7	(77.6-87.5)
Other	12.4	75.2	(69.4-80.2)
<i>Anxiety</i>			
Worried	20.6	83.8	(79.9-87.1)
Somewhat	49.6	77.7	(74.9-80.2)
Not worried	29.8	77.2	(73.6-80.4)
<i>Perceived seriousness</i>			
Serious	30.0	80.1	(76.6-83.2)
Moderate	40.9	78.6	(75.6-81.3)
Not serious	29.1	78.0	(74.4-81.3)

\* sum more than 100%, because patients could have more than one reason for encounter

### *Familiarity with the GP and evaluations of care*

If patients saw a familiar GP this was related to higher levels of satisfaction and trust, and moreover to an increased feeling of being helped forward, and the perception of clearer treatment plans made (Table 3).

**Table 3. Relation between knowing the GP and patients' evaluations of care (n=2019, mean sum scores and 95% confidence intervals)**

Consultation with		Satisfied with consultation (range 1-5)		Helped forward (range 1-5)		Trust in the GP (range 1-5)		Clear plans made (range 1-5)		
GP I know ...	n	%	Mean score	(95% CI)	Mean score	(95% CI)	Mean score	(95% CI)	Mean score	(95% CI)
Very well	393		4.60	(4.52 - 4.68)	4.18	(4.09 - 4.28)	4.72	(4.63 - 4.80)	4.61	(4.53 - 4.68)
Well	582		4.32	(4.25 - 4.39)	3.94	(3.86 - 4.02)	4.34	(4.26 - 4.41)	4.32	(4.26 - 4.38)
Rather well	616		4.25	(4.18 - 4.31)	3.83	(3.76 - 3.91)	4.18	(4.11 - 4.25)	4.27	(4.22 - 4.33)
Not well	291		4.17	(4.08 - 4.26)	3.71	(3.61 - 3.81)	3.96	(3.87 - 4.05)	4.19	(4.11 - 4.27)
Not well at all	137		4.06	(3.93 - 4.20)	3.72	(3.57 - 3.87)	3.85	(3.72 - 3.97)	4.06	(3.94 - 4.18)

Principal component analysis demonstrated that all 4 items loaded more than 0.6 on one factor (Eigenvalue 2.6), which could explain 65% of the variance. Standardized Cronbach's alpha for the four items was 0.82. This justified the calculation of sum scores. From the multilevel procedure, it appeared that differences between patients' overall evaluations of consultations were explained by the practices only for 0.3%, and by the GPs for 4.0%. The remaining variance could thus be explained at the patient level. Therefore we excluded practice and GP characteristics, such as GPs' and practice assistants' attitudes to continuity in the multivariate analysis, but included patient and consultation characteristics.

We found that older patients and patients reporting a better health status evaluated consultations significantly more positively. Knowing the GP well was most strongly related to more positive consultation outcome (Table 4). The overall variance that could be explained by the model including the variable 'knowing the GP' was 11%. The proportion of variance explained only by the factor 'knowing the GP' was 8%.

**Table 4. Multivariate analysis of independent variables including 'knowing the GP' contributing to more positive consultation outcome: Regression coefficients and p-values.**

		Estimate	p-value
<i>Patient characteristics</i>			
Older age	(continuous)	0.007	0.009
Gender (female)		0.039	0.701
Having a chronic illness		0.016	0.906
Reporting better health status	(5 point)	0.298	<0.001
<i>Consultation characteristics</i>			
Symptoms perceived as more serious	(5 point)	0.017	0.812
Less concern about symptoms	(5 point)	0.102	0.146
Reason for encounter			
<i>Check</i>		-0.131	0.495
<i>Physical symptoms</i>		0.072	0.686
<i>Psychological/ emotional</i>		0.227	0.230
<i>Other</i>		0.436	0.036
Knowing the GP better	(5 point)	0.376	<0.001
Explained variance ( $R^2$ )			11%

## Discussion

This study shows that familiarity with a GP matters. We found that patients in the Netherlands - still - often see a familiar GP, also for serious and emotional conditions. This tailors to patient priorities, which have been studied in postal surveys. Although it appeared from these surveys that patients do not particularly value personal continuity for checks,<sup>10;11</sup> this study

shows that patients see a familiar doctor frequently for these conditions. Patients evaluate consultations more positively if they know a doctor well. Positive patients are in average older and experience less health problems.

This study adds to a growing amount of evidence suggesting the benefits of personal continuity. Other studies have already shown that provider continuity is related to higher levels of patients' trust, satisfaction, and enablement.<sup>6;15;16</sup> It appears to be cost-effective as well.<sup>17</sup> Higher levels of provider continuity may enhance trust.<sup>18</sup> The feeling of knowing the doctor well, more than seeing a regular doctor, has been shown to be an important predictor of patient enablement.<sup>5</sup> One study in the US and UK showed that trust in the GP is related to more patient satisfaction with consultations.<sup>7</sup> This study again shows that knowing the GP well is related to better evaluations of care.

In general, patients evaluate consultations with a general practitioner very positively. The superlative degree is reached mainly in consultations with a GP that is known very well. This applies both to minor conditions and serious illness, as we found no relation between perceived seriousness and concern and outcome in the multivariate analysis. Strikingly, differences in patients' evaluations could only to a negligible extent be explained on the practice or GP level. In other words, we did not find differences between practices or GPs as regards patients' evaluations, meaning that prototypes of a trustworthy GP, or a trustworthy practice may not exist.

Our study results indicate that higher levels of knowing the GP are correlated to patients being more positive about their care. Therefore, it may be recommendable for patients to visit the same doctor on most available occasions, which include contacts for minor conditions and regular checks. On the other hand, studies have shown that it may be important for patients to have the opportunity to choose their 'regular' doctor. Only if a well-known GP is also trusted, the 'personal doctor chemistry' works.<sup>7</sup> In that sense, it may be well possible to have two or three personal GPs.

This study had some limitations. Firstly, it applies to the Dutch environment and measured personal continuity only in day-to-day consultations. Moreover, only 35% of the approached practices actually took part. Although this may induce some bias, this is unlikely as the variance explained on the levels of practice and GP was minimal. The study shows mainly relative continuity measures: practice differences, differences for varying conditions and relations with outcome. Moreover, the interpretation of the relationship between personal continuity and intermediate outcome measures is complicated. Positive evaluations may be the reflection of a general positive feeling towards the familiar doctor and may not reflect actual care quality. On the other hand, there is some consensus that patients' evaluations of care are important indicators of quality in themselves.



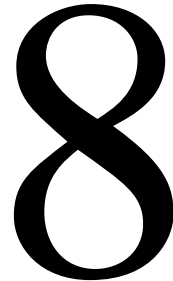
What are the implications of this study? Although the relation between higher continuity and better outcome is not a proof of causality, we think – with coming reforms and changes of the organisation of general practice – that there should be emphasis on guarding personal continuity as a valued pillar of general practice care in the future. Expansion of primary health care teams should not affect the feeling of knowing individuals from this team. At this point, a small, well-known team is likely to suit patients better than larger teams. If general practice of the future is organised and managed large-scale, it will likely still benefit from smaller units within these organisations, which are able to supply the essence of general practice care: personal and nearby care of familiar professionals. Policy-makers, health services, and reorganising GPs should take this into account.

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**Preference for a general practitioner and patients' evaluations of care**

A cross-sectional study

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**Abstract**

Personal continuity is no longer always evident in general practice. Changes in society and in general practice seem to have shifted away from an emphasis on personal patient-doctor relationships. We studied how patients' lack of preference for a particular general practitioner (GP) or preference for a different GP is related to patients' evaluations of care. Patients who were indifferent to the GP seen and patients who would have preferred another GP, evaluated consultations significantly less positively than patients who saw their GP of preference. Developments towards less personal doctoring in general practice should, therefore, be considered carefully.

## **Introduction**

Personal continuity no longer seems to be evident in general practice. Although reviews have shown reasonable evidence for the positive effects of personal continuity,<sup>1-3</sup> there appears to be denial of its importance. Patients make trade-offs between availability and accessibility,<sup>3</sup> and consider contact with their personal general practitioner (GP) relatively unimportant for minor illness or regular checks.<sup>5,6</sup> GPs seem to agree with them,<sup>5</sup> and policy makers, health services, and doctors now put emphasis on general practice as a primary care service, in which a personal doctor is considered less important than previously. This may have repercussions on patients' perceptions and evaluations of care. We, therefore, explored whether dissent or indifference towards the GP contacted was related to patients' evaluations of consultations.

## **Methods**

In the Groot Gelre district in the east of The Netherlands, 30 GPs from 17 practices participated in a project on continuity of care. Fourteen GPs worked with combined patient lists and sixteen with personal lists. We developed a two-part questionnaire, with pre- and post-consultation questions (see Supplementary information). Practice staff distributed 80 questionnaires per GP to consecutive patients in the waiting room, starting on the first day of the week. This impeded GPs from causing selection bias. Before the consultation, patients indicated whether they would have preferred to see another doctor that day, had it been possible, with a 'yes', 'no' or 'no preference' answer. Patients could seal this pre-consultation part. After the consultation, we measured patients' evaluations of consultations using the following four 5-point Likert questions: overall satisfaction with the consultation, the feeling of being helped forward, trust in this GP, and clearness of management plans. Responses were dichotomised by means of clustering 'positive' and 'very positive' and 'neutral', 'negative' and 'very negative'. Patients with more than three missing values on a questionnaire were excluded from analysis. We used univariate analysis to explore the data, and the mixed model procedure (SAS), with the practice as a random effect, to calculate odds ratios with confidence intervals and corrected for practice type (personal or combined list), reason for encounter, perceived seriousness of symptoms, anxiety, age and sex.

## **Results**

From a total of 2400, we received 2142 completed questionnaires with fewer than three missing values. One hundred and four patients (5%) did not know which GP they would be seeing. Of the remaining 2038 respondents 6% stated that they would have preferred to see another GP, and 18% said that they had no preference. Patients from practices working with combined lists had no preference significantly more often than those from practices with personal lists (for combined lists 22% were indifferent, for personal lists 14% were indifferent;  $P < 0.001$ ). This also applied to younger patients (for patients aged 20-39 years 19.7% were indifferent, for 40-59 years 15.8%, and for 60-79 years 11.1%;  $P < 0.001$ ), and to

patients who were less worried (using a 5-point scale from ‘much worried’ to ‘not worried at all’: 10.8%, 14.6%, 19.8%, 19.2%, 16.2% were indifferent;  $P = 0.032$ ). Perceived seriousness of symptoms, sex, and reason for encounter were not found to be related to indifference. Most responders gave positive evaluations of care. Table 1 shows that patients who had no preference as to which doctor they would be seeing were significantly less satisfied, had less trust in the GP, felt less helped forward, and felt that management plans were less clear compared with patients who contacted their preferred GP. To a stronger degree, this also applied to patients who would have rather seen another GP.

**Table 1. Odds ratios<sup>a</sup> for preference for a GP and patients’ evaluations of care (n=2038).**

		Patients’ evaluations of care							
		Less satisfied (n=182)		Less helped forward (n=605)		Less trust in GP (n=284)		Less-clear plans made (N=137)	
<i>Would the patient have preferred different GP?</i>		OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
No	(n=1556)	-		-		-		-	
Indifferent	(n=366)	2.0	(1.4 to 3.0)	1.5	(1.1 to 1.9)	3.3	(2.4 to 4.5)	2.1	(1.4 to 3.3)
Yes	(n=116)	3.1	(1.8 to 5.3)	2.2	(1.5 to 3.3)	4.6	(3.0 to 7.2)	3.8	(2.2 to 6.8)

<sup>a</sup> Corrected for practice type, patients’ age, gender, perceived seriousness and anxiety, with the practice as random effect. OR = odds ratio

## Discussion

Patients who were indifferent to the GP they would be seeing and patients who would have preferred another GP evaluated their consultations relatively less positively than patients who saw their GP of preference. The high numbers of patients who saw a GP of preference were not unusual for The Netherlands - yet. However, the outcome of this study questions the tendency in general practice to consider personal continuity unimportant, as this may lead to patients being indifferent as to which doctor to consult. Our results show clearly that less personal care is less-efficient care from the patient’s point of view.

As yet, the results should be interpreted with caution. Our design could not show causality, as patients with a strong bonding to their GP will probably make efforts to see this personal GP. These patients may, in any case, be more positive about consultations. On the other hand, patients from practices working with combined lists were more often indifferent as to which doctor they would be seeing, and this was related to poorer outcome. An explanation for the observed difference between practices with personal and combined lists may be mediated by both patient and practice factors. In practices with combined lists, patients may have less bonding with individual GPs and thus be indifferent more often. On the other hand GPs may feel less responsible for patients and induce indifference. In The

Netherlands, patients generally are not inclined to change practice easily or to choose their practice intentionally on the basis of practice organisation. Therefore, it is unlikely that bias occurred before the study through patient diversity. More studies on the value of personal continuity are needed to verify our findings. Until then, developments towards promoting less personal care should be reconsidered carefully.

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**Continuity of information in general practice**

Patient views on confidentiality

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**Abstract**

*Objectives* - To explore patient views on access to a variety of information in the medical record by the on-call general practitioner and by the practice assistant in relation to the perceived importance of this information for the personal doctor. To relate patient views to patient and practice characteristics.

*Design* - Postal questionnaire survey.

*Setting* - General practice.

*Subjects* - 873 patients from 35 general practices dispersed throughout The Netherlands.

*Results* - 20% of the patients stated that the on-call GP should not have access to their entire medical record and 44% did not support full access for the practice assistant. Patient consent to the on-call GP being allowed to access a variety of information ranged from 62% for life events to 93% for medication; and to the practice assistant from 37% for home details to 82% for medication. Patients distinguished between “medically oriented information” and “lifestyle and psychosocial information”. Their views could hardly be explained by patient and practice characteristics.

*Conclusion* - Patient consent to access their medical record should not be taken for granted. We need research on the effectiveness of accessible prior knowledge, and on possibilities to segregate information. Patients should be informed more fully about everyday practice.

## **Introduction**

Continuity of care is one of the cornerstones of general practice. There is evidence that the process and outcome of care are influenced by the general practitioner's prior knowledge of his/her patients.<sup>1-3</sup>

In recent decades, personal continuity has declined because of the changing organisation of the profession. Meanwhile, the medical record has developed from being merely a mnemonic device for single-handed practitioners towards an important tool maintaining the continuity of care. The medical record contains prior knowledge about the patient's medical history and family history, life events, coping style, psychosocial background and health care needs and preferences. Access to prior knowledge will support consistency of care.<sup>4,5</sup> Continuity of information necessitates proper record-keeping and information exchange by using electronic medical records and Internet technologies.<sup>6</sup>

Within primary care teams, different healthcare workers often have access to the electronic patient records. To a growing extent, this is so in the case of the on-call GP and the practice assistant. The Dutch practice assistant is a receptionist, but is also directly involved in patient care. Her work resembles that of the practice nurse more than the work of the receptionist in the UK.

However, from the patient's point of view, large parts of the medical record may contain confidential and personal information, which is supposed to be shared only with the personal GP. Security of information is therefore a prerequisite for integrated record-keeping,<sup>7</sup> and, as the content and use of patient records evolves, the right to privacy and control over who views the record is now considered a major issue.<sup>8-10</sup> Indeed, patients are known to have significant reservations about this information being shared across all members of primary care teams.<sup>11</sup> Concerns have been expressed about hurried developments in the field.<sup>12</sup> More insight into patient views can help us better inform consumers and manage their records suitably.

The aim of this study was therefore to explore patient views on access to a variety of prior knowledge in the medical record by different providers quantitatively, and to relate this to the perceived importance of information for the personal GP. Furthermore, we relate patient views to patient and practice characteristics.

## **Materials and methods**

In a general practice survey we posted a self-designed questionnaire to 873 patients.

### *Questionnaire design*

Before constructing the questionnaire, we conducted 10 semi-structured patient interviews. It appeared that the need for confidentiality depended on the type of prior knowledge, and on the patient's estimation of the importance of this knowledge for the personal doctor(s), unknown doctors and practice assistants. We were able to develop a structured questionnaire

in which we assessed patient views on accessibility of different aspects of the medical record. A pilot study was carried out with 20 patients. Following this, changes were made to produce a definitive version of the questionnaire: 1) In general, we measured patient agreement using six statements about accessibility of the record on a 3-point Likert scale (agree-indifferent-disagree). 2)

Next, we operationalised prior knowledge by choosing 12 aspects from a list of 50, covering a broad range of information. In a preceding Delphi study we found that GPs considered these 12 aspects important for continuity of care.<sup>13</sup> Aspects ranged from medical information, such as medication and present illness, to more social information, such as life events and home details. We asked patients if they felt that this information was important for their personal GP to know, and if it should be accessible for the on-call GP and the practice assistant (3-point Likert scales).

Finally, we collected basic information on patients and their GPs: gender, age, practice type and practice area. Additionally, we collected characteristics that might be related to patient views on confidentiality, including psychosocial problems, life events, chronic illness, number of years in the practice, and number of visits to the GP in the previous 12 months.

#### *Survey sample*

The study was based in the practices of 35 GPs dispersed throughout The Netherlands. We sent the practice assistants a batch of 25 questionnaires and asked them to post one to each of 25 consecutive patients (18 years or older) who had visited the GP on the first day of that week. This included a letter of recommendation on behalf of the patients' GPs and a reply paid envelope so that completed questionnaires were returned to the researchers. One practice assistant forgot to post the last two questionnaires. After 2 weeks, a combined thank you and reminder card was sent to all the patients. In order to assess response bias, we collected baseline characteristics on all 873 patients.

#### *Analysis*

The data were entered into the statistical program SPSS 9.0. Differences for response rates were tested by chi-square and chi-square for trend. We dichotomised agreement to access by grouping the answer categories 'agree' and 'indifferent' together. We thus discriminated between patients who definitely disagreed with access to particular information, and patients who agreed or were neutral. We compared the results with the degree to which patients assessed information as important for their own GP to know. For this purpose, we discriminated between patients who considered it important that their own GP would know this information (category 'agree') and patients who considered it rather unimportant (categories 'indifferent' and 'disagree'). Exact binomial 95% confidence intervals were computed. Factor Analysis (Principal Component Analysis) was used to explore the data for structure. For the detected components, we calculated sum scores for consent to access (*agree* 2 points, *indifferent* 1 point, *disagree* 0 points). Missing values were replaced by mean values

if respondents had one answer missing from a group of statements within a component. If respondents had more than one missing value, they were excluded from further analysis. We used Multiple Linear Regression analysis (General Linear Model; SAS) to compute sum scores for consent to information access (adjusted sum scores; LS means), and related sum scores to patient characteristics.

**Results**

Of the 873 questionnaires sent out, we received 644 useable replies (74%). Patients over 40 years of age, those with chronic illness, and those attending their GP more frequently had higher response rates (Table 1).

*Views on access in general*

Twenty percent of the respondents felt that the on-call GP should not have full access to their medical record and 40% distinguished between GPs from their own practice and on-call GPs. Forty-four percent indicated that their medical record should not be accessible to the practice assistant. Only a minority of the respondents saw a role for themselves in being responsible for their own medical records (Table 2).

**Table 1. Response rates. Numbers and percentages responding within subgroups (overall response = 644/873).**

<i>Characteristic</i>		Numbers <sup>1</sup>	Response within characteristic
Age <sup>2</sup>	18-40	182/284	64%
	41-60	270/349	77%
	61-80	170/210	81%
	>80	22/24	83%
Sex	Female	399/533	75%
	Male	245/338	72%
Chronic illness <sup>3</sup>	Yes	255/316	81%
	No	389/550	70%
Contacts with GP last 12 months <sup>4</sup>	1-2 times	122/177	69%
	3-4 times	154/221	70%
	5-10 times	244/310	79%
	>10 times	124/162	75%

<sup>1</sup> Because of missing values for baseline characteristics, the total number of sent questionnaires in the table is 866-871.

<sup>2</sup> Response rate increasing with age, p<0.001 (chi-square for trend).

<sup>3</sup> Response rate higher for patients with chronic illness, p<0.001 (chi-square).

<sup>4</sup> Response rate increasing with higher contact frequency, p 0.016 (chi-square for trend).

*Views on access to various types of information*

Patients agreed that most aspects of prior knowledge were important for their personal GP to know. Respondents felt that most information should be accessible to the on-call GP. Patients more easily agreed with access to information about medication or illnesses than to

information about life events or home details. Respondents clearly had reservations about the availability of information for the practice assistant, with the exception of medication (Table 3). Two components were detected within information that might be accessible, both for the on-call GP and the practice assistant. One component might be considered more “medically oriented information” and the other “lifestyle and social information” (Table 4).

**Table 2. Patient opinions on accessibility of the medical record (percentages, 95% confidence intervals in parentheses, n = 644).**

<i>Statements</i>	Agree %	Indifferent %	Disagree %
1. The GP on call should have access to my medical record	65.6 (61.6-69.3)	14.8 (12.1-17.9)	19.6 (16.5-23.0)
2. I want to decide myself what information is accessible to the GP on call	39.3 (35.4-43.4)	31.3 (27.6-35.2)	29.4 (25.7-37.2)
3. The practice assistant should have access to my medical record	33.4 (27.7-37.3)	22.4 (19.1-25.9)	44.2 (40.2-48.2)
4. I want to decide myself what information is available to the practice assistant	48.5 (44.5-52.6)	28.1 (24.6-31.2)	23.4 (20.0-26.6)
5. Within-practice GPs are different from GPs on call as regards confidentiality of my medical record	39.8 (35.8-43.8)	27.4 (23.9- 31.1)	32.8 (29.1-30.7)
6. I want to administer my own medical record	13.6 (11.0-16.6)	26.3 (22.8 29.9)	60.1 (56.1-64.0)

**Table 3. Patient opinions on access to prior knowledge for the GP on call and the practice assistant in relation to perceived importance of information for the personal GP (percentages, 95% confidence intervals in parentheses, n 644).**

<i>Aspects of prior knowledge</i>	May be accessible for <sup>1</sup>		Important for personal
	GP on call %	Practice assistant %	GP to know %
Medication	92.9 (90.5-94.9)	81.8 (78.4-85.0)	99.4 (98.3-99.9)
Present illness	91.1(88.5-93.4)	67.3 (63.3-71.2)	99.3 (98.2-99.8)
Past illness	83.2 (79.9 86.2)	53.6 (49.4-57.7)	99.5 (98.5-99.9)
Compliance with advice	79.2 (75.7-82.4)	58.9 (54.8-62.9)	98.1(96.7-99.1)
Life events	62.2 (57.7 66.4)	39.1 (34.9-43.4)	96.2 (94.3-97.7)
Social and mental problems	72.6 (68.4-76.6)	43.7 (38.8-48.7)	95.0 (92.6-96.8)
Compliance with medication	83.1 (79.7-86.0)	65.7 (61.6-69.6)	94.9 (92.6-96.8)
Worries about health	79.0 (75.4-82.3)	57.4 (53.2-61.6)	93.9 (91.5-95.8)
Smoking habits	79.9 (75.4-82.3)	58.8 (53.7-63.8)	91.8 (88.3-94.7)
Who takes care when ill?	78.1 (74.4-81.5)	61.6 (57.4-65.6)	87.5 (84.4-90.2)
Alcohol	67.8 (63.0-72.4)	43.7 (38.8-48.7)	86.7 (82.9-89.9)
Home details	64.1 (59.9-68.2)	36.9 (31.8-41.2)	77.8 (73.8-81.4)

<sup>1</sup> “Agree” or “indifferent” on a 3-point Likert scale (agree indifferent disagree).

**Table 4. Components of prior knowledge (principal component analysis with Varimax rotation)'.**

	Prior knowledge accessible for			
	GP on call		Practice assistant	
	I	II	I	II
Medication	0.78		0.71	
Present illness	0.70		0.73	
Past illness	0.66		0.62	
Compliance with advice	0.82		0.78	
Cornpliance medicine	0.85		0.86	
Who takes care when ill?	0.63		0.64	
How easily worried about health?	0.69		0.72	
Social and mental problems		0.71		0.65
Life events		0.71		0.65
Home details		0.60		0.60
Smoking habits		0.67		0.66
Alcohol		0.77		0.78
Eigenvalues	4.2	2.9	4.2	2.7
Variance (%)	35	24	35	22

Eigenvalue > 1.0, loadings > 0.6. I: Medically oriented information. II: Lifestyle and psychosocial information.

*Relation with patient and practice characteristics*

Multiple linear regression analysis showed that a model containing nine characteristics could explain 7-10% of the observed variance. Older patients more frequently agreed with access to their medical records. The difference in agreement with age was highly significant mainly for medically oriented information (Table 5).

**Discussion**

This study shows that patient agreement to access being allowed to their medical record to an extended team should not be taken for granted. Patients clearly distinguish between different types of professionals and different types of information. The personal GP is entrusted with more knowledge than the on-call GP or the practice assistant. A considerable percentage of patients indicated that access was inappropriate for the practice assistant. In everyday practice, this assistant often has full access to the records, as has the British and Scandinavian practice nurse.

This study may indicate how to handle the problem of differential access. It suggests that designers of computer record systems should look at ways of segregating different types of information, and they should make differential access an important topic. As integrated record-keeping evolves, this will become even more important. Individual patients should be enabled to protect their privacy. Naturally, adverse effects of differential access are conceivable, and in-complete records may occasionally be harmful to the patient's health. Patients will not always be capable of appraising this. On the other hand, we have to consider



**Table 5. Agreement with access to information in relation to patient characteristics (GLM model; adjusted sum scores (ASS) range 1—10; a higher sum score means more agreement with access; p p-value for characteristic).**

		Agreement with access to information for the ...							
		GP on call				Practice assistant			
		Psychosocial and lifestyle		Medical		Psychosocial and lifestyle		Medical	
<i>Characteristics</i>	mean sum score	5.9 (SD = 3.8)		7.7 (SD = 2.9)		3.4 (SD = 3.6)		5.5 (SD = 3.6)	
		ASS	p	ASS	p	ASS	p	ASS	p
Age	18—40	5.1	0.07	6.8	<0.001	2.4	0.06	4.7	<0.001
	41—60	5.9		7.3		3.2		5.7	
	61—80	6.3		8.3		3.8		6.8	
	>80	9.1		9.6		5.2		7.3	
Gender	Male	6.7	0.70	8.2	0.19	3.8	0.44	6.1	0.96
	Female	6.5		7.9		3.5		6.1	
Having chronic illness	Yes	6.8	0.35	8.2	0.21	3.7	0.70	6.3	0.52
	No	6.4		7.8		3.6		6.0	
Life event(s) past 5 years	Yes	6.2	0.06	7.8	0.09	3.9	0.21	6.3	0.23
	No	7.0		8.2		3.4		5.9	
Psychosocial problem(s) past 5 years	Yes	6.8	0.53	8.2	0.32	3.9	0.39	6.2	0.68
	No	6.4		7.8		3.5		6.0	
No. of visits to GP in the past year	1 - 2	6.2	0.25	7.9	0.74	3.4	0.35	6.1	0.44
	3 - 4	6.6		8.0		3.9		6.5	
	5 - 10	6.4		7.9		3.3		5.8	
	> 10	7.2		8.3		4.1		6.2	
No. of years in the practice	<1	6.9	0.14	8.6	0.25	3.9	0.60	5.9	0.89
	1-2	7.0		8.1		3.7		5.9	
	3 - 4	7.8		8.2		4.5		6.3	
	5 - 10	6.8		8.4		3.5		6.4	
	>10	4.5		7.0		2.5		6.2	
Practice area	City	6.0	0.39	8.4	0.18	3.2	0.59	6.4	0.22
	Town	6.9		7.3		3.8		5.9	
	Comm. belt	6.5		8.3		3.6		5.7	
	Countryside	6.9		8.2		4.0		6.4	
Practice type	Single-handed	6.7	0.96	7.9	0.38	3.7	0.11	5.8	0.44
	Two-person	6.7		8.5		3.2		6.0	
	Group	6.7		7.9		3.9		5.8	
	Health centre	6.3		7.9		4.5		6.5	
Variance (R <sup>2</sup> )		8%		10%		7%		8%	
		(p=0.07)		(p<0.001)		(p=0.10)		(p=0.01)	

that doubts about confidentiality of information will induce patients to confide in their doctors less.<sup>11</sup>

This study has had some limitations. We did not choose a random selection of general practices. Although this may have caused some bias, the practices were dispersed throughout the country, and the characteristics of the participating practices were comparable to a random sample of Dutch general practices. We chose to select the first 25 patients who visited the practice within a certain week using the diary, thus preventing GPs from making their own patient selection. This may have caused some bias, but we have no indications that these patients differed from patients who visited the practice later in the week.

We had more older respondents, and more respondents with a chronic illness. Taking into account that these characteristics were related to more agreement to access, patient needs for confidentiality may even have been underestimated. Nevertheless, response rates of over 70% are considered to minimise this problem.<sup>14</sup> In our survey, patient opinion on confidentiality could only be recorded for hypothetical examples. It may be said that patients are not able to give adequate answers to such questions. However, we did not find that patient views on confidentiality of information about life events and social problems differed, even between respondents who themselves differed in these characteristics.

Our results add to views and expectations of patients comprising patient panels and consumer groups who are vocal on the matter of privacy of information in several countries. These panels are usually composed of a select group of patients. Patient views in our study may be considered conservative, but they are in line with a recent UK study where a minority of patients indicated that the practice nurse should have access to their records.<sup>11</sup> Patient expectations on confidentiality have appeared to be quite different from actual practice with regard to access by secretarial staff. Patients expected more confidentiality.<sup>15</sup> Furthermore, it has been shown that doctors and medical students are less reserved in sharing information than patients believe<sup>16</sup> and patients have been found to be concerned about a loss of confidentiality when computers are used.<sup>17,18</sup> This gives reason for concern.

What are the implications of this survey? These days, patient records are accessible not just to the personal GP, but also to other staff, such as the practice nurse, the practice assistant, and the on-call GP. We have to realise that a considerable number of patients disapprove of this practise. We may have to reconsider the structure of the electronic patient record, and enable a division of medically oriented information and information concerning lifestyle and psychosocial circumstances. An alternative challenge would be to study the relationship between accessibility of various kinds of information and the quality of patient care. Recent reviews conclude that there is no evidence that the use of the electronic patient record improves the quality of care, but, so far, studies have been limited to the effectiveness of electronic reminders.<sup>19,20</sup> If access to different types of prior knowledge improves the quality

of care, we must be able to explain its benefits to our patients. Until more research in this domain is carried out, our patients should at least be more fully informed about everyday practice, and should be asked to consent to access to their medical record by medical professionals other than their personal doctor.

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**Informational continuity during out-of-hours**  
General practitioners' need for medical records

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**Abstract**

*Background* - Out-of-hours general practice care in the Netherlands is changing. There is an increasing emphasis on large-scale services. During these services patients' records are generally not accessible. It is not clear to what extent this influences the consultations.

*Aim* - To determine how often out-of-hours providers need patients' medical records and to examine the range of data needed. To explore to what extent these services are affected by the lack of medical records.

*Methods* - Observational study of GP/patient contacts during out-of-hours general practice services. Questionnaires concerning necessary prior knowledge during the consultations, completed by GPs on duty and by patients' family doctors. In addition, their views on the effects of the lack of medical records were asked.

*Results* - GPs on duty needed medical records in 26% of all consultations, in particular to have access to information about previous illnesses, earlier episodes of the same complaint and chronic diseases. There was hardly any need for confidential information, such as psychosocial problems, life events, living conditions, and coping behaviour. Family GPs considered prior knowledge about patients to be relevant in 42% of the cases. These specific aspects however, were not always brought up during the consultations.

*Conclusion* - More research needs to be done. In order to improve out-of-hours general practice care it may be necessary to record certain aspects of prior knowledge separately. A patient record that allows separating strictly medical data from confidential personal information may be a starting point.

## **Introduction**

Continuity of care by one general practitioner (GP) only is increasingly less obvious. General practice care is expected to develop into teamwork, with GPs, practice assistants and other helpers collaborating, each within their field of expertise.<sup>1</sup> Out of hours there is a tendency towards working on a larger scale as well. Out-of-hours care by small groups of GPs is replaced by large-scale primary care organisations, particularly in the inner cities.<sup>2</sup> Quality improvement and a decrease of workload are starting points in the organisation of these centrally controlled services. An impaired record keeping and a lack of individually passing on of information before and after the consultation are found to be bottlenecks in this system.<sup>3,4</sup> The effect on patients' satisfaction shows varying results.<sup>3,5</sup> It is as yet unclear if large-scale work is a threat to continuity of care.<sup>3,4,6</sup> Personal continuity is obviously difficult to achieve in small-scale out-of-hours care structures either, but problematic patients are usually well known within the group. Oral passing on of information before starting the out-of-hours service, as well as reporting afterwards are important instruments to maintain continuity as much as possible. During large-scale out-of-hours cover, problems may be avoided by passing on information properly through an accessible record. Patients, too, consider it important that their records are consulted out of hours.<sup>7</sup> GPs' medical records are an important source of information on patients' histories. On the one hand these contain specific medical information, such as knowledge on previous illnesses and complaints, chronic diseases, medication, knowledge on earlier contacts with the GP and specialist check-ups; on the other hand these also contain other information such as social backgrounds, important life events, coping behaviour, conformation to therapy and knowledge on living conditions.<sup>8,9</sup> Ideally, the record has a directing function: it makes the GP on duty act in a similar way as the regular GP, thus avoiding therapy inconsistencies. Full-proof scientific evidence of the effectiveness of prior knowledge or medical records is not available. It is also unclear how urgent the need for information from the EMR actually is during out-of-hours service, what specific information is needed and what bottlenecks are found. The following questions are raised during this explorative research:

- How often do GPs on duty need the medical records during their contacts, which diagnoses are involved, what specific prior knowledge is needed?
- To what extent is prior knowledge necessary during on duty contacts according to the regular GP, was this information brought up during the consultation, and did the GP on duty agree in these cases?
- To what extent is the therapy influenced by the lack of medical records, according to both the GP on duty and the family GP?

**Methods***Organisation and population*

It concerns an explorative, investigating research into the need for prior knowledge during GP-patient out-of-hours contacts. Seventeen GPs, on evening or weekend duties during the research period, were asked to take part. Night duties were excluded from the research due to the low contact frequency at night. One of the researchers (SAR) was present during all contacts concerning the research, with oral permission of the patients involved. The family GPs were contacted in writing, asking them to take part in the research, too. Research was done in the Cooperative GP Service Nijmegen (CHN) in the period May-June 2000. This is a large-scale GP service, that covers the out-of-hours practice for over 70 GPs (> 150,000 patients).<sup>10</sup> Medical records are not available and information on possibly problematic cases is passed on in writing by means of a problem folder.

*Collecting data*

During the GP-patient contacts the researcher filled in a structured questionnaire. She recorded the reason of the contact, the diagnosis and the therapy. Furthermore, she determined by means of the questionnaire which kinds of prior knowledge were brought up during the contact. Immediately after the consultations, she asked the GPs on duty if they had wanted access to medical records during the consultations. It was explicitly recorded what kinds of information were needed. The GPs on duty were also asked if they thought the consultations had been affected by the lack of records, the reasons of which were gone into in more detail by open questions.

The family GPs were contacted by phone within a week after the consultations. The GPs were also interviewed, in order to determine what prior information on the patient was available. On a five point Likert scale it was marked how important the family GP considered prior knowledge to be for the contact concerned. Moreover, it was asked whether the GP on duty's therapy was consistent with the resident's therapy or whether the consultation had been affected by the lack of a record. If the GP on duty was also the family GP the patient was excluded from the research.

**Analysis**

The data were processed and analysed in the Statistical Package for the Social Sciences (SPSS). The diagnoses made were categorised into International Classification of Primary Care (ICPC) main groups. The need for records was correlated to contact type by means of the chi-squared test (consultation or house call), the patient's gender and age, and the ICPC main group code. An explorative, qualitative analysis of the answers to the open questions was performed.

## **Results**

### *Population*

The seventeen GPs on duty that were asked to collaborate, took part in the research; seven of them were women. The out-of-hours services attended, involved 12 consultations shifts and five house calls shifts. All 61 family GPs collaborated in the research. The mean number of attended on duty-contacts per GP was 8.9 (spread 2-15). All 151 patients that were seen out of hours gave their permission to be included in the research. Records on 4 patients could not be retrieved from the family GP, as these patients turned out not to be registered in the practice. The remaining 147 contacts involved house calls (22%) and consultations (78%). 44% of the patients were male, their ages being: 0-4 years 21%, 5-24 years 17%, 25-64 years 40% and over 64 years 22%. According to the family GPs' data 58 patients (39%) suffered from chronic illness, 54 (37%) took medication chronically, 38 (26%) were regularly checked up by specialists and 27 (18%) had consulted their family GP in the previous week concerning the same complaint.

### *Need for records*

It was 39 (26%) times that the GPs on duty after the contact reported to have felt they had needed a medical record. There was no difference between house calls and consultations (27% and 26% respectively). It was a significant larger number of times a medical record was wanted in patients over 24 years old than in younger patients (34% and 14% respectively;  $p=0,012$ ); there was no difference with respect to gender (27% and 25% respectively;  $p=0,9$ ).

Table 1 shows that diagnoses made, could mainly be categorised into ICPC main groups respiratory tract, digestive tract, loco motor tract, skin and sub cutis and urinary organs. The need for medical records was relatively large concerning complaints about urinary organs (6/11) and respiratory tract (12/39), less with complaints about loco motor tract (4/20), skin and sub cutis (3/16) and the digestive tract (4/30). No significant differences were noticeable.

Table 2 shows that in 39 contacts during which the GPs on duty felt they needed records, they were mainly interested in information on previous illnesses and in earlier episodes of the same complaints. There was hardly any or no interest in information on social problems, life events and living conditions. In 21 cases there was an interest in 2 kinds of prior knowledge. There was no significant distinction between the needs for different kinds of prior knowledge about different diagnosis groups. The family GPs claimed to have this information in 46% (46/99) of the cases and considered it to be important or very important to the consultation in 16% (16/99) of the cases only.

In 62 of 147 (42%) of the out-of-hours contacts the family GPs thought the GPs on duty should have had access to specific prior knowledge on the patients. Table 3 shows information on chronic disease, previous illness and use of medication in particular, were considered important. These elements were brought up in 52% (70/135) of the contacts only.



**Table 1** Survey of ICPC-codes and diagnoses of contacts and the GP on duty's need for medical records (n=147)

<i>Diagnosis ICPC</i>	Work diagnosis	Number	GP on duty needs medical record
General (4)	Shock	2	1
	Malaise	1	
	Fever eci	1	1
Digestive (30)	Gastro-enteritis	11	2
	Aphth	3	
	Dyspepsia	3	
	IBS	3	
	Acute abdomen	2	
	Salivary-gland stone	2	2
	Hematemesis	1	
	Pancreatitis	1	
	Stomach complaints eci	4	
Eye (8)	Conjunctivitis	4	
	Cornea injury	4	1
Ear (3)	Otitis media	2	
	Otitis externa	1	1
Circulation (4)	Myocardial infarction	2	1
	Atrium fibrillation	1	
	Haemorrhoids	1	
Loco motor (20)	Distortion/contusion	15	2
	Myalgia	4	1
	Fracture	1	1
Nervous system (3)	Trauma capitis	2	
	CVA/TIA	1	
Psychological (5)	Nervous functional	3	2
	Psychogenic stupor	1	
	Depression	1	1
Respiratory (39)	Upper airways infection	25	7
	Exacerbation COPD/asthma	6	2
	Hyperventilation	4	1
	Pneumonia	2	1
	Hay fever	1	
	Dyspnoea in lung carcinoma	1	1
Skin and sub cutis (16)	Local skin infection	7	2
	Skin defect/abrasion	5	
	Erysipelas	2	1
	Tick bite	2	
Endocrine (1)	Hypoglycaemia	1	
Urinal tract (11)	Uncomplicated UTI	9	4
	Kidney stones	1	1
	Bladder retention	1	1
Pregnancy (2)	Feeling less movement	1	
	Mastitis	1	1
Female organs (1)	Vaginal loss of blood	1	1

**Table 2 GP on duty's need for prior knowledge on 39 contacts and the extent to which this was available and important according to the family GP (numbers)**

<i>Prior knowledge on...</i>	<i>GP on duty</i>	<i>Family GP</i>	
	Information needs*	Information available	Information important**
Previous illnesses (and surgery)	30	14	6
Chronic diseases	11	8	5
Medication	10	8	4
Contacts/appointments for this complaint	10	4	0
Earlier episodes of this complaint	18	7	1
Specialist checkups	10	4	0
Coping behavioural aspects	5	1	0
Psychosocial problems	1	0	0
Life events	0	0	0
Living conditions	0	0	0
Other	4	0	0

\*several elements of prior knowledge may be wanted during one contact

\*\*important or very important on a five point Likert scale

**Table 3 Important prior knowledge according to the family GP, the extent to which this was brought up and the need for records during 62 contacts (numbers)**

<i>Prior knowledge on...</i>	<i>Family GP</i>	<i>Observer</i>	<i>GP on duty</i>
	Important*	Brought up	Need
Previous illnesses (and surgery)	20	17	6
Chronic diseases	28	20	5
Medication	26	19	4
Contacts/appointments for this complaint	9	4	0
Earlier episodes of this complaint	15	2	1
Specialist checkups	12	7	0
Behavioural aspect/coping	9	0	0
Psychosocial problems	5	1	0
Life events	1	0	0
Living conditions	3	0	0
Other**	15	1	0

\*important or very important on a five point Likert scale. More elements of prior knowledge may be considered important.

\*\*Alcoholism (3×), patient's opinion on possible surgery, patients' character structures (generally easily concerned (2×), information on caregivers (3×), absence without notice, extremely worried about current complaint (2×), opinion on possible reanimation (2×), agreements on prescriptions.

#### *Influence on the therapy*

If the GPs on duty reported that they had wanted specific information from medical records, they had in all cases asked their patients to give them this information. Important information on previous episodes of the same complaint, as well as earlier contacts with the family GP, were less often brought up during a contact. This also goes for psychosocial problems, coping

behavioural aspects and specific patient characteristics. In none of these cases the GP on duty wanted this information from the record.

In 14 out of 39 cases in which the GPs on duty had wanted medical records, they thought the consultation had been affected by the lack of access. In eight cases this involved technical aspects such as effects on the anamnesis and duration of the consultation. In the other six cases the GP on duty thought that the therapy, too, had been affected. The family GPs thought in none of these six cases that the chosen therapy differed from the therapy they favoured, nor did they think the therapy had been affected. There was one case in which the GP on duty had doubts about the treatment of a suspected pneumonia, however the family GP considered this a clear case. A second case involved doubts about choosing an antibiotic for a urethritis, as allergies had not been excluded. The family GP considered this irrelevant since the patient was not known to have any allergies. In a third case there was no clarity on referring a terminally ill patient to the hospital: the family GP thought this complied with his policy of abstinence. In the fourth case the family GP's therapy for suspected kidney stones was not clear, but the family GP agreed with the decision to prescribe an NSAID. The fifth case involved doubts if a patient with recidivation of otitis externa always had to be prescribed oral antibiotics; in this case, too, the family GP thought the local drug fitted his policy. Finally, a GP on duty had doubts about the long term therapy for a patient with recidivation of cellulitides; this was not shared by the family GP: the patient did in fact need oral antibiotics.

In 20 out of 147 cases the family GPs argued that the GP on duty's therapy did not fit their own. In 14 cases this had to do with a specific therapy that was unrelated to record-issues, according to the family GP: he did not agree with the prescription, would have chosen a different examination or referral policy, would have made an appointment for a check-up, or thought the complaint should not have been treated out of hours at all. In six cases the family GP thought that the inaccessibility of records as well as the lack of prior knowledge might be the cause. According to the family GP one patient was not immediately given antibiotics, even though the disorder was known to deteriorate rapidly without antibiotics; the GP on duty did collect relevant prior knowledge by asking about the medical history, yet decided to wait; he did not need the medical record. Another patient was diagnosed with sinusitis and was given antibiotics. The family GP however, thought this could be related to a trigeminal neuralgia that the patient suffered from. The family GP of a feverish two year old child thought that the GP on duty should have started antibiotics. She had already seen the patient the previous day and had considered the child to be ill. The GP on duty had been informed, but decided to wait after an extensive physical examination and after having consulted a paediatrician. One patient that suffered from "mucus" should not have been seen in the family GP's opinion, as this patient was known to somatise. After the examination the GP on duty advised the patient to give up smoking and prescribed a different cough mixture. The latter was regarded nonsense by the family GP. A different patient with psychosocial issues and a

stomach complaint was examined for physical defects, which had not been necessary, according to the family GP. The GP on duty knew that this patient had already been seen by the resident and had been advised to wait. Finally, an 85 year old patient was reanimated even though his record contained a 'not to be reanimated' (NTBR) form. This should not have happened in the resident's opinion. The GP on duty had not been informed on this form. It was only in two out of these six cases that the GP on duty reported the need for a record after the contact. These involved the case on whether or not to prescribe antibiotics and the case of the cough mixture.

### **Discussion**

This exploring research in a large out of hours service showed that GPs on duty needed information from medical records in 26% of the contacts. The family GPs thought this important in as much as 42% of the contacts. In a majority of the contacts in which records were needed, this was not considered to be important by the family GP.

About half of the information that was considered important by the family GP was brought up during the contact. In a number of these cases the GP on duty still needed the record. In the other half of the cases the information was not brought up, nor was there a need to check the record. In a few cases this led to an unfavourable therapy being given by the GP on duty which was not regarded as such, not even after the contact.

There are indications that GPs' actions are influenced by the extent to which they know their patients.<sup>11,12</sup> The adequate use of knowledge about patients is therefore regarded as one of the key elements of continuity.<sup>13-15</sup> The limited need for accessibility of medical records out of hours that was found by us is consistent with previous research. In Great Britain only 17% of the accessible medial records were used out of hours. This was caused by the fact that collecting records was time-consuming. We found that the family GPs as well as the GPs on duty hardly ever felt that the therapy had been affected by the lack of a record. The research referred to also showed that the accessibility of records did not lead to an increase or decrease in the number of house calls.<sup>17</sup> We did not find any research into the need for records that was specified into certain elements. Two recent reviews into the effectiveness of electronic medical records concluded that the effects have not been sufficiently researched.<sup>18,19</sup> None of the research brought up in the reviews was related to electronic availability of information during GP out-of-hours service. At an internal medicine ward in the United States the accessibility of an electronic medical record to a doctor on duty by phone did not have any effect on the number of visits to the ER, nor to the number of hospital admissions.<sup>20</sup> In our research, the nature of the presented diagnoses partly explains the reason for the limited effect: there was a lot of "minor" pathology. The division among ICPC main groups and diagnoses however was comparable to previous research during out-of-hours care.<sup>21</sup>

This research had some limitations. The reliability of information given by phone proved difficult to judge, however it turned out that the family GPs answered the questionnaire by actually using the electronic medical records in their practice. We chose the method of direct observation by a researcher as this is more reliable than self-observation.<sup>16</sup> It is therefore likely that prior knowledge that was brought up was also actually registered. We also considered the family GP to be the best person to judge the importance of prior knowledge, even though his judgement is subjective. Attending the contacts and interviewing the family GPs on the influence on the contacts and the therapies, and subsequently analysing the consultations could assess the relevance of the accessibility of prior knowledge. This was also acceptable by the explorative nature of the design.

Our conclusion is similar to Van der Werf's, in that we need to further analyse the effect of the accessibility of medical records out of hours.<sup>4</sup> The discrepancy that we found between the need of the GP on duty and the judgement of the family GP makes a case for this. Evaluation on the basis of solid end points such as morbidity and mortality remains difficult, but doctors' and patients' satisfaction, the feeling to have been helpful to patients are possibly useful parameters. The effect of access to more confidential information, which was hardly used in this explorative research, could then be included.

Until then, reasoning from the family GPs' points of view, a limited amount of information could be made accessible out of hours. It merely concerns medical information, such as previous illnesses, chronic diseases, medication and specialist information. Other kinds of information were hardly ever required, moreover, patients report their concerns about confidentiality issues in their records.<sup>22</sup> This division requires an Electronic Patient Record (EPR) structure that separates purely medical from non-medical information. In addition, an EPR structure with a file for "vital" information, such as a NTBR form, could fill this need. This information should be immediately obvious on checking the record. More research into this should be done. The same goes for long-term therapy as well as for positive and negative experiences with previous (medication) therapy for individual patients. This implies an increasing responsibility for the family GP. Information that could be of importance to a GP on duty, should be recorded explicitly. Even though this explorative research shows there is a need for such information, only a test-case research can answer the question if this improves the quality of care.

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## **General practitioners' views on improvement of informational continuity**

A Delphi study

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**Abstract**

*Introduction* - The aim is to explore GPs' views on continuity of care, to inquire what kind of prior knowledge on patients is considered important, and to investigate priorities and demands for electronic patient record (EPR) support.

*Methods* - A panel of 40 GPs completed four consecutive written questionnaires. After each session the panel members received feedback.

*Results* - The panel considered continuity to be round-the-clock general practice care with accessibility to patient records. The majority of the panel members regarded 41 out of 67 presented elements of prior knowledge on patients as important to continuity of care. The majority also considered improvement of the EPR relevant with respect to 16 of the topics presented. There proved to be a demand for new entries on hereditary and genetic diseases, long-term policy and, less strongly, for psychosocial information and life events. GPs were opposed against recording subjective information, such as coping behaviour, personality structure and compliance.

*Conclusion* - Prior knowledge is considered to be important in order to maintain continuity of care. Improving the EPR-structure may help to guarantee continuity of care.

## Introduction

Continuity of care is regarded as one of the pillars of general practice care, both in The Netherlands<sup>1-5</sup> and abroad<sup>6-10</sup>. Continuity used to be taken for granted, it being synonymous with care by the family doctor, the so-called *personal doctor*<sup>11;12</sup>. However, general practice care changed rapidly over the past decennia. GPs more often work in group practices, part-time, and are less frequently on duty for their own practices. Patients have become more mobile and move house more often. Many aspects<sup>13</sup> are threatened by discontinuity. Society and disciplinary rules have therefore become stricter with respect to reporting and keeping medical records.

Accessible and carefully kept records may largely prevent discontinuity.<sup>8;14</sup> This is not a new insight, it was already mentioned during the Woudschoten conference: "GPs are not expected to bury their treasures (i.e. medical records, ed.) in their memories, but to use them, multiply them, and pass them on to others, then to get them back with interest and thus to magnify their treasures by their work"<sup>d</sup>. The whole of this prior knowledge on patients is also called the knowledge base. This comprises information on individual patients that partly determines GPs actions: medical data concerning content, family-contextual data, information on psychosocial problems, compliance, and collective experiences<sup>5;11;15;16;17</sup>. Patients' complete histories matter to GPs<sup>18</sup>.

Even though there is no scientific evidence to prove it<sup>19</sup>, it is assumed that more knowledge on patients leads to better care. GPs that have known their patients for a long time, act differently from GPs who know their patients less well<sup>20;21</sup>.

We have not come across research that methodically describes which elements from GPs' knowledge bases are important with respect to continuity. Moreover, it is not clear if the electronic patient record (EPR) that is currently used by over 80% of Dutch GPs<sup>22</sup> is sufficiently equipped to record and to structure knowledge bases. We therefore, and as part of a project developing instruments that support continuity, did a hypothesising research into the following subjects:

- What is GPs' definition of continuity? What threats do they acknowledge, and what are possibilities for support?
- Which aspects of prior knowledge do GPs consider to be important with respect to continuity of care?
- What are GPs' priorities and wishes regarding these aspects within an EPR?

## Methods

### *Choice of methodology*

We chose to do a Delphi-study in order to determine GPs' wishes and priorities. A Delphi-study comprises a number of sessions of written questionnaires with an expert panel<sup>23;24</sup>. The main characteristics are: anonymity of panel members amongst each other and feedback after each session. Anonymity prevents dominant persons from influencing the group's opinions and it enables panel members to feel free to give their opinions. A project group analyses the

group's answers after each session and processes these into feedback, which is returned to the panel members with the next set of questions.

### *Population*

We looked for potential panel members meeting the following profile: employed as a GP, having an interest in the subject of continuity of care and an interest in EPR. First, 45 GPs were contacted within the group of the Dutch GP Society and the university General Practice Research Institutes. Moreover, we asked all 23 District GP Societies to select three GPs.

### *Collecting and analysing data*

The study was done during the period 1999-2000 and consisted of four written sessions. After each session, non-responders were sent a written reminder and, if necessary, they were later contacted by phone.

During the *first session* the panel were asked a number of questions. They were asked to write a definition of continuity, to describe its threats, and to list possibilities for support of continuity. Then, two members of the project group each classified the answers in topics.

During the *second session* we presented the panel with a list of 51 topics. This list had been made by means of literature study, discussions within the project group, as well as the answers from the first session. The topics listed, had been linked to continuity in the literature studied, and could be classified in eight categories: medical prior knowledge (eleven items), general patient characteristics (ten items), life style aspects (five items), information on the social system (six items), information on social backgrounds (six items), compliance (three items), coping behaviour (six items) and communicational aspects (four items). We used yes-or-no questions to ask the panel which subject they considered to be important with respect to continuity of care, and which topics in their views needed to be adapted or changed in the EPR. Furthermore, panel members were allowed to submit new topics.

During the *third session* we went further into the topics that were considered relevant by more than half of the panel members. This pragmatic decision on numbers had been taken by the project group during the first session. In this session, the extent of the relevance was determined by scores on a 5-point Likert scale. Then it was investigated by means of questions to what extent the current possibilities within the EPR were satisfactory, and the panel were asked to supply specific wishes for improvement.

The questionnaires of the *fourth session* comprised the panel members' wishes, translated into concrete functionalities (for example: "a separate section within the EPR to record information on caregiving"). The relevance of the functionalities was determined on a 5-point Likert scale.

The paragraph on results describes each session. The topics that were submitted by the panel members are described with the session that they belong to with respect to their contents; in reality these were judged in the following session.

**Results**

Out of the first group of 45 GPs that were asked to take part in the study 23 agreed to cooperate. The others refused, mainly because of the required time investment. Nine of the 23 District GP Societies each supplied three candidates. 18 out of these 27 candidates agreed to help in the study. The other societies had various reasons for not taking part. One of the GPs from the first group did not return the questionnaire from the first session. The remaining 40 panel members, 6 of whom were women, were on average 47 years of age (range 34-58). Thirteen practiced in the inner city, 19 in suburbs and 8 in rural areas; 9 practiced on their own, 14 worked in pairs, 10 worked in group practices and 7 in health care centres. The questionnaires of the second session were returned by 37 panel members (93%), those of the third session by 33 members (83%).

*First session: continuity*

The panel gave varying definitions of continuity in general practice care, mainly “the availability of general practice care round the clock”, often in combination with the accessibility to medical records. The panel regarded too many GPs as well as working part-time as threats to continuity (see table 1).

**Table 1** *First session. Definitions, threats, and possibilities for support of continuity according to the panel (n=40).*

<i>Continuity</i>	The panel's themes	Number of times mentioned *
definition	-7 x 24 hours of general practice care	16
	-7 x 24 availability of medical records	12
	-the same GP as much as possible; personal continuity	10
	-care by a steady team	5
	-proper oral reporting and communication	5
	-consistent policy	4
threat	-too many GPs	16
	-working part-time	13
	-patients' consuming behaviour/demanding behaviour	11
	-workload	6
	-passing on/shift of care	5
	-shortage of GPs	5
support	-improving communication and recording through EPR	26
	-changing organisation structure of general practice care	26
	-improving oral communication/reporting	16
	-change organisation practice	15
	-more personal continuity	7

\* Added numbers are over 40 as panel members were allowed to mention several elements. The table shows elements that were mentioned more than three times.

**Table 2** *Second session. Numbers of panel members that thought aspects of prior knowledge important to continuity, as well as relevant for adjustment of the EPR (n=37)*

<i>Medical prior knowledge</i>	<i>Social system</i>	<i>Coping behaviour</i>
Drug allergies*	Family/living situation*	Personality structure* @
Counter indications*	Patient's position in above	Medical consumption*
Risk profile* @	Family interactions	Preferences yes/no medication
Hereditary diseases* @	Data on parents/siblings	Frequency/reason absence from work
Previous diseases*	Data on family members*	Coping with life events
Chronic illness*	Relationship other practice members	Psychosocial issues
Referrals/admissions*		
Current medication*		
Medication history*		
Results further examination*		
Abnormal results* @		
<i>General patient characteristics</i>	<i>Social situation</i>	<i>Communicational aspects</i>
Marital status*	Caregiving* @	Type doctor-patient relationship
Age*	Housing	Preferred GP*
Gender*	Class	Length of relationship with GP
Ethnic background	Hobbies	Long-term plans* @
Religion	School	
Sexual preference	Working conditions*	
Occupation* @		
Education		
Intelligence		
Life events*		
<i>Life style</i>	<i>Compliance</i>	<i>Panel's submitted topics first session</i>
Eating pattern	Compliance medication* @	Self-medication
Smoking	Meeting appointments*	Vaccination status*
Alcohol	Following advice	Donor codicil
Other stimulants		Wishes as regards terminal care*
Exercise		Wishes euthanasia*
International travelling		Day care
		Application nursing home
		Check chronic prescriptions*
		Supply drugs by pharmacist*
		Survey care workers * @
		Previous GP
		Patient's expectations as regards care
		Accessibility records out of hours
		Data problematic patients out of hours
		Data specialist care
		Monitoring chronic illnesses

\* >50% panel regards item as important to continuity (18-37 panel members)

@ >50% panel thinks EPR adjustment relevant (18-37 panel members)

A detailed table is shown on our website ([www.artsennet.nl/henw](http://www.artsennet.nl/henw))

*Second session: the importance of the topics*

The panel added 16 topics to the 51 topics presented. The panel considered topics from the category "medical prior knowledge" in particular, to be important to continuity (table 2, for a more detailed table see our website [www.artsennet.nl/henw](http://www.artsennet.nl/henw)). Over half of the panel regarded adaptation of the EPR for 16 topics as relevant (table 2). More than 75% of the panel members thought adaptation of the EPR relevant for the subject "long-term plans", described as the policy that remains important on the long term, such as checking up on renal functions and electrolytes with diuretics, or the decision not to treat pneumonia on a terminally ill patient. More than half of the panel regarded four of the topics that had been submitted relevant: survey of health care workers involved, access to records out of hours, reporting on problematic patients out of hours and monitoring chronic diseases.

*Third session: listing the desired adjustments*

After reassessment on a 5-point Likert scale the majority of the panel regarded 10 out of 16 EPR topics as relevant or very relevant for improvement (table 3). On closer consideration, the panel was generally not interested in information being delivered automatically in certain circumstances, such as a memo or support, for instance by means of a policy advice. This idea however, was considered desirable with respect to the category of medical prior knowledge, concerning hereditary disease and risk profile in particular. The answers showed objections to recording non-objective information. The objections to recording data on coping behaviour, personality structure, and compliance mainly concerned doubts about relevance, parochialism and labelling. The panel were interested in recording other non-medical information, such as psychosocial problems and life events, but they did not agree about the manner in which this should be done. About half of them thought an adjustment to be useful for easy reference, the other half however, considered the current possibilities within the journal or the problem file to be sufficient.

**Table 3** *Third session. Numbers of panel members that regarded adjustment of EPR relevant or very relevant on a 5 point Likert scale for aspects of prior knowledge (n=37)*

<i>Medical prior knowledge</i>	<i>Social situation</i>	<i>Submitted by panel in 1st session</i>
Risk profile**	Caregiving*	Survey care workers
Hereditary diseases**		Accessibility records out of hours
Abnormal results**	<i>Compliance</i>	Data problematic patients out of hours
	Compliance medication	Monitoring chronic illnesses
<i>General patient characteristics</i>		
Occupation	<i>Coping</i>	
Life events	Personality structure	Psychosocial issues*
<i>Life style aspects</i>		
Smoking**	<i>Communicational aspects</i>	
Alcohol**	Long term planning	

\* = 25-50% (10-18 panel members)

\*\* = 50-70% (19-28 panel members)

A detailed table is shown on our website ([www.artsennet.nl/henw](http://www.artsennet.nl/henw))

*Fourth session: judgment on functionalities*

The panel were mainly interested in the functionalities of the following topics: risk profile cardiovascular diseases, hereditary diseases, abnormal results, and long term planning (table 4). The contents were for instance calculating the risk to manifest cardiovascular diseases, a separate entry for hereditary diseases, marking abnormal results, and noticeably recording long term plans in a separate section. There was hardly any need for functionalities of topics such as compliance, psychosocial problems, and personality profile.

**Table 4** *Fourth session. Numbers of panel members that regarded functionalities as relevant or very relevant on a 5 point Likert scale (n=33)*

<i>Total risk profile</i>	
Insight in course of risk profile***	<i>Smoking</i>
Calculating future risk to CD***	Separate entry for smoking**
Generating patient education material***	Automatic reminder smoking related diagnosis**
<i>Hereditary diseases</i>	
Separate entry***	<i>Alcohol</i>
Disorder related advice to be asked for**	Automatic reminder alcohol related diagnosis**
Possibility for transferring data to relatives**	Integrated section smoking and alcohol**
<i>Abnormal results</i>	
<i>Planning</i>	
Automatic marking of abnormal results***	Automatic reminder long term planning**
Reminders of abnormal result for certain period of time**	Check-up system executing plans**
Display course of abnormal results over time**	Possibility to distinguish short term from long term plans**

\*Only functionalities that were regarded as relevant by more than half (>17panel members) have been displayed (maximum of 3 per category)

\*\* = 50-75% panel members

\*\*\* = 75-100% panel members

## Discussion

In this study the panel mainly regarded continuity in general practice care as a logistic characteristic: permanent care with accessibility of (electronic) patient records. Personal continuity was relatively not often mentioned. It was striking that the threats that the panel distinguished, were however related to a decline of personal continuity: working part-time, having more care workers, and fragmentation of care, were experienced as jeopardising continuity the most. These in particular, are elements of future general practice care. Better communication, especially through the EPR, can handle the threats, according to the panel. A number of elements from the current EPR, such as medical history and medication survey, lived up to the panel's expectations, other topics could be improved, like the risk profile for cardiovascular diseases. The panel felt the need for an adjustment of the EPR on aspects of knowledge base that have no specific entry in the current EPR, such as long term planning and hereditary diseases. They also needed a simple section for recording data on caregiving, life events and psychosocial issues. A structural section for subjective and biased patient

information, like compliance, coping behaviour and personality structure was on the other had not considered to be relevant.

A Delphi-study is a good method to list priorities and needs of users<sup>23-25</sup>. The study does not require a representative panel, but a broad reflection of the field is important<sup>24</sup>. Our panel did form a broad reflection on all but one aspects: all GPs were interested in automation and continuity. We selected this group because answering the long questionnaires carefully takes up a lot of time and thinking, as well as a strong involvement. By selecting involved GPs, we hoped to prevent one of the main problems in Delphi-studies: drop out of panel members<sup>23</sup>. The Delphi-method has another restriction: the project-group chooses the procedure and determines limitations in order to decide what items will return in a following session. Normally, Delphi-studies show converging of opinions. We had therefore expected the items of the third session, having been explained and motivated, to have led to more consensus. This turned out not to be the case, perhaps since even though the topics were considered relevant, after further contemplation on concrete possibilities for support, clear solutions could not be found.

The discussion on the meaning of the word continuity is mainly controlled by visions on the desired content of general practice care.<sup>26-28</sup>. Some authors emphasise the structure and logistics of care<sup>8;29;30</sup>, others emphasise the doctor-patient relationship and the aspect of personal doctoring<sup>31-33</sup>. There is universal attention for recording and reporting<sup>34;35</sup>. Prior knowledge, acquired by an intensive doctor-patient relationship, by personal doctoring, is of crucial importance to the family GPs actions<sup>33;36</sup>. The Woudschoten report, for the task "Registration and management of all medical data", already asked attention for this matter in 1966<sup>1</sup>. "Apart from purely somatic notes, there should also be "integral" notes, i.e. notes that are related to the patient's situation and psyche... In short, all data that are available." This is regarded as necessary to "accept responsibility for continuous, complete and personal care for the health of those individual persons and families that entrust themselves to him."

In the day of the Woudschoten conference this mainly concerned GPs working on their own. The question if this part of 'personal doctoring' can be submitted to others remains unanswered. Our panel considered subjective prior knowledge to be important with respect to continuity, but thought structuring this within the EPR, which was suggested during the Woudschoten conference over 40 years ago, to be of little relevance or even undesirable. Patients, too, object to recording such information.<sup>37;38</sup> The GPs from our panel regarded information on the family and the social system ("the modern GP is by all means a family doctor"<sup>1</sup>) as important to continuity in some degree, but they did not consider improving the structure of this information within the EPR to be relevant. What can be concluded from this? There is a discrepancy between what GPs think important to their "treasure of prior knowledge", and the extent to which they wish to share this treasure with colleagues. Do we hereby accept that the history of and the story about a patient will partially get lost in larger



GP practice structures? General practice care will no doubt eventually become more impersonal and businesslike. Or will we experiment with structures that display confidential information, also for other GPs? Further insight in the patients' judgments of this is needed, both quantitative and qualitative study may be helpful. In addition, there is a need for monitored experiments that assess the value of the accessibility of subjective prior knowledge. This can be achieved by developing objective indicators, that simplify submission of information.

Optimising ICT possibilities is no panacea for declining personal care by the family GP<sup>39</sup>. It is however unmistakable that recording and submitting information is increasingly important to maintain continuity in general practice care<sup>40</sup>. It is therefore worthwhile to develop instruments for achieving this.

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## **General practitioners' considerations on future management**

A cross-sectional study on perceived importance, needs and actual registration in relation to personal continuity

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**Abstract**

*Background* - The growing complexity of care for individual patients with more professionals involved is a threat to the delivery of consistent care. Realising excellent transfer of information may overcome this. Besides objective facts and management decisions, such information might include considerations on future management.

*Aim* - To explore the extent to which GPs have prospective management considerations during everyday consultations, the extent to which considerations are actually registered, and the extent to which GPs miss such considerations retrospectively in the electronic patient record (EPR) in relation to personal continuity.

*Method* - Cross-sectional study of 5741 consultations by 30 GPs from 17 practices in a region in the Eastern part of the Netherlands.

*Results* - GPs had prospective management considerations in 66.4% of the consultations, involving mainly considerations about additional testing (15.5%), adjustment of medication (22.5%), alternative treatment plans (18.6%), possible referral (11.8%) and coping behaviour (18.0%). These considerations were seldom registered in the electronic patient record, for instance about additional testing (3.0%) adjustment of medication (2.9%) and alternative treatment plans (4.1%). Surprisingly however, GPs rarely found that they missed prospective management considerations from earlier consultations in the medical record.

*Conclusions* - GPs often have prospective management considerations, but hardly ever register them. As GPs do not miss them either, this may point at blind spots. We recommend the development of tools in EPRs that enhance making management considerations explicit.

## Introduction

Health care management for individual patients is becoming more complex, also in general practice. Preserving consistent care is a challenge, certainly now that patients are often treated by a group of primary care professionals.<sup>1,2</sup> In addition, patients themselves may choose to see another than their personal GP within episodes.<sup>3</sup>

In order to maintain consistent care at times of declining personal continuity, it might be indispensable that professionals not only know what was done during earlier consultations, but also what was planned or considered for future contacts. In other words, it may be important that professionals are able to share considerations about future management. This may for instance include thoughts about a possible referral, an anticipated switch of medication or thoughts about paying attention to one's compliance in the next consultation. In earlier research we found that GPs felt that making such considerations explicit was important for a smooth and co-ordinated progression of care.<sup>4</sup> We suggest defining such thoughts as *prospective management considerations*.

Traditionally, the medical record is the means by which practitioners share information for management of individual patients. However, until now the medical record is mainly used by the personal doctor as a database of prior knowledge that was collected in the course of time.<sup>5</sup> Now that personal continuity seems to be declining and opportunities for information and communication technology are rapidly increasing,<sup>6</sup> the electronic medical record is expected to develop into an important means for support and maintenance of consistency of care.<sup>7</sup> The extent to which a medical record can substitute the loss of personal continuity is open to debate. Some argue that merely information can not replace a GP's integrated knowledge about patients, much of which is considered to be tacit and gathered from several sources.<sup>8,9</sup> On the other hand others are optimistic that continuity of information and medical records may replace personal continuity in the long term.<sup>2</sup> WONCA Europe even labels the (electronic) medical record as the ultimate proof of continuity.<sup>10</sup> Indeed, one of the goals of medical informatics is augmenting optimal use of medical information for collaborative care.<sup>5,11,12</sup> Although structuring of medical narratives in electronic records is still developing,<sup>13</sup> excellent informational continuity as regards prospective management considerations certainly may facilitate the patient's experience of co-ordinated and smooth progression of care.<sup>14</sup> We presumed that GPs would weigh importance and registration of prospective management considerations largely against the perceived need of personal continuity. If GPs anticipate seeing patients themselves during the next consultation, they may attach less importance to registration, as compared to consultations in which GPs foresee personal discontinuity.

Until now, a systematic structure for registration of prospective management considerations in the EPR does not exist in most countries. In order to study if such a structure should be considered and how this might be worked out, we performed an explorative study formulating the following research questions:

- To what extent are prospective management considerations regarded as being important for continuity of care, to what extent are these actually registered in electronic patient records, and how often do GPs miss management considerations retrospectively in electronic patient records.
- How do these issues relate to personal continuity?

### **Method**

We performed a cross-sectional study, in which we explored GPs' views on prospective management considerations during consultations and their actual registration in the EPR. For this purpose, we developed a computerised questionnaire, which GPs completed directly after the consultation. From the same consultations, we extracted anonymously data from the patients' records. This enabled us to link the prospective management considerations that were considered important for continuity of care to their actual registration in the EPR.

### *Samples*

We approached all 102 GP-users of one family practice information system in a district in the eastern part of the Netherlands (approximately 800.000 inhabitants) to participate in this study. We asked the GPs to complete the computerised questionnaire directly after the consultation for 200 successive consultations during a two to four-week period. We used no exclusion criteria for the consultations.

### *Variables and measurement instrument*

We defined a set of prospective management considerations as dependent variables, including for example thoughts about switching medication, about ordering additional tests, and about paying attention to coping behaviour. On the one hand we studied to what extent GPs held a variety of prospective management considerations during the actual consultation, on the other hand we explored if GPs missed such management considerations actually in the medical record from earlier consultations. Independent variables on which we collected data focused on personal continuity and moreover on other characteristics such as consultation type, reason for encounter, seriousness of symptoms, general practitioners' age and gender and practice characteristics.

The electronic questionnaire was developed through a preceding qualitative pilot study, in which we asked 5 general practitioners during 50 patient contacts a/ if they missed prospective management considerations in the electronic patient record that were considered necessary for good consistent care and b/ to register their actual prospective management considerations. We collected and grouped these qualitative thoughts, and transformed them into items for questions. Following this, we developed a computerised questionnaire, which measured the extent to which GPs missed prospective management considerations in the EPR, and the degree to which GPs had such considerations for future management. Furthermore the

computerised questionnaire incorporated questions on provider continuity and the other independent variables such as the reason for encounter, consultation type and seriousness of symptoms. We built the questionnaire into the GP information system.

#### *Procedure*

We asked the GPs to fill in the questionnaire directly after the consultation and emphasised that they should not skip consultations. Completing the questionnaire would take 30-60 seconds in average. The study took place from December 2002 to May 2003. During study time, we contacted the practices weekly in order to track down difficulties. The GPs sent anonymised data back to the researchers on floppy disk. Each completed questionnaire contained the patient's unique identification number from the GP information system. We developed software to extract anonymised text-data from the electronic patient files of these patients, and asked practices to execute this procedure. The procedure selected for each patient all text files that had been written into the medical record on the same day on which the questionnaire was filled in. Thus, we were able to compare the answers in the computerised questionnaire to actual record keeping.

#### *Analysis*

Electronic questionnaires with missing values were excluded. Moreover, we excluded the first 5 consultations for every GP, as these were labelled as exercise consultations. Two authors (HS and CvV) independently compared the answers to the questionnaire with the text files from the patient records for the first 500 consultations. Because of nearly total agreement, the rest of the observations was evaluated by one assessor.

We calculated frequencies with 95% confidence intervals for the dependent variables and used bi-variate descriptive analyses to relate provider continuity both to actual prospective management considerations and to management considerations missed in the EPR.

#### **Results**

We obtained data from 30 general practitioners practising in 17 practices. Seven GPs were soloists, 10 worked in a two-handed practice, seven in a more-handed practice, and six in a health centre. Twenty GPs were male. Due to insurmountable technical problems, we could not extract the text data from the electronic patient records of one practice (no 16). An estimated 300 computerised questionnaires of another practice (no 12) were also lost to analysis.

Table 1 shows the characteristics from 5741 registered contacts. For checks and follow-up consultations within one episode, 81.0% of the patients saw the same GP as the last time.

This was more often the case for psychological and sociological problems (90.3% and 95.6% respectively), or when symptoms were perceived as serious or very serious (87.0% and 94.8% respectively). If GPs anticipated possible future contacts for the same episode (72.8%), they considered personal continuity important in 50.1% of the cases. GPs considered personal



continuity more important for checks (59.7%) and continuing problems (60.9%), in case of psychological (76.7%), or sociological (81.2%) problems, and if they perceived symptoms as serious (74.9%) or very serious (78%).

**Table 1 Characteristics of all consultations; GPs' opinions on the importance of personal continuity for follow-up consultations (GP perceptions; numbers and percentages (95% CI between brackets)).**

<i>All consultations (n=5741)</i>	Numbers	Percentages	(95% CI)
<i>Consultation type</i>			
New contact episode	3032	52.8	(51.5 - 54.1)
Follow-up contact	1852	32.3	(31.1 - 33.5)
Regular check	743	12.9	(12.1 - 13.8)
Other	114	2.0	(1.6 - 2.4)
<i>Nature symptoms</i>			
Physical	4423	77.0	(75.9 - 78.1)
Emotional/ Psychological	1050	18.3	(17.3 - 19.3)
Social	84	1.5	(1.2 - 1.80)
Other, not specified	184	3.2	(2.8 - 3.7)
<i>Seriousness symptoms</i>			
Serious	840	14.6	(13.7 - 15.6)
Neutral	1965	34.2	(33.0 - 35.5)
Not serious	2911	50.7	(49.4 - 52.0)
Not applicable	24	0.4	(0.3 - 0.6)
<i>Follow-up consultation is..</i>			
Not applicable	12	0.2	(0.1 - 0.4)
Unnecessary	1551	27.1	(25.9 - 28.2)
If need be	2330	40.7	(39.3 - 41.9)
Necessary	1848	32.2	(31.0 - 33.4)
<i>Consultations with follow-up applicable (n=4178)</i>			
<i>Follow-up preferably with</i>			
Other GP	100	2.4	(2.0 - 2.9)
Does not matter	1988	47.6	(46.1 - 49.1)
Same GP	2090	50.0	(48.5 - 51.6)
<i>Importance same GP (n=2090)</i>			
Somewhat important	1049	50.2	(47.9 - 52.4)
Important	817	39.1	(37.0 - 41.2)
Very important	224	10.7	(9.4 - 12.1)

The mean percentage of contacts in which GPs had prospective management considerations was 66.4%, ranging from 13.8 to 91.0% per GP (26 out of 30 GPs had prospective thoughts in more than 50% of the contacts). These prospective considerations related mainly to additional testing, attention to coping behaviour, adjustment of medication, and to alternative treatment

or referral. The existence of prospective management considerations proved to be strongly related to the perceived need for a follow-up appointment. If a follow-up contact was considered unnecessary (27.1% of the cases), GPs had relevant considerations just in less than 5% of the contacts. If follow-up was considered necessary, or may be necessary, GPs had these thoughts much more often. Some types of considerations for follow-up consultations, such as attention to coping behaviour and compliance, were strongly linked to a perceived stronger importance of seeing the same doctor next time (Table 2).

**Table 2. Prospective management considerations during actual consultations in relation to the perceived importance of provider continuity (if follow-up applicable; percentages (95% Confidence intervals)).**

<i>Considerations relevant for future management</i>	Provider continuity considered					
	Not important		Somewhat important		(Very) important	
	(n=1988)		(n=1049)		(n=1041)	
	%	95% CI	%	95% CI	%	95% CI
Additional testing	19.9	(18.1 - 21.7)	21.8	(19.4 - 24.5)	17.8	(15.5 - 20.3)
Attention to coping behaviour	13.3	(11.8 - 14.9)	22.3	(19.9 - 25.0)	41.8	(38.8 - 44.9)
Attention to compliance	4.4	(3.6 - 5.4)	8.3	(6.7 - 10.2)	14.1	(12.1 - 16.4)
Attention to medical consumption	0.9	(0.6 - 1.5)	0.5	(0.2 - 1.2)	1.9	(1.2 - 3.0)
Adjustment of medication	27.3	(25.3 - 29.2)	30.6	(27.9 - 33.5)	34.9	(32.0 - 37.9)
Patient information to give	7.2	(6.1 - 8.4)	13.0	(11.0 - 15.2)	16.8	(14.6 - 19.3)
Alternative treatment	19.8	(18.1 - 21.7)	26.3	(23.7 - 29.1)	25.4	(22.8 - 28.1)
Possible referral	15.2	(13.7 - 16.9)	15.8	(13.7 - 18.2)	16.2	(14.1 - 18.6)
Individual targets	5.4	(4.5 - 6.5)	8.9	(7.3 - 10.8)	18.7	(16.4 - 21.3)
Attention not deepened symptoms	0.6	(0.3 - 1.0)	1.1	(0.6 - 2.1)	2.1	(1.4 - 3.2)
Other	4.8	(3.9 - 5.8)	3.7	(2.7 - 5.1)	5.9	(4.5 - 7.5)

GPs seldom stated to miss future management considerations from the previous consultation in the EPR. For all types of information, this was less than 5%. GPs more often missed information if the patient had been seen by another GP the last time, but these differences were relatively small. GPs most often missed information about alternative treatment considerations if patients had been seen by another GP (table 3).

Comparison of prospective management considerations to their actual registration in the EPR revealed that all types of information that GPs considered important for good consistent care, were seldom registered in the EPR. This applied actually to all types of information. Considerations about additional testing, adjustment of medication, alternative treatment and possible referral were registered most often (Table 4).

**Table 3. Prospective management considerations missed in the EPR, in relation to actual provider continuity (for follow-up consultations; percentages (95% Confidence intervals)).**

Type of information missed <i>Considerations relevant for future management</i>	Previous contact with same GP (n= 2101)		Previous contact with other GP (n=494)	
	%	95% CI	%	95% CI
	Patient information to give	1.5	(1.0 - 2.1)	3.0
Alternative medication to prescribe	2.8	(2.1 - 3.6)	3.8	(2.4 - 6.0)
Attention to coping	2.4	(1.8 - 3.2)	3.8	(2.4 - 6.0)
Attention medication compliance	1.2	(0.8 - 1.8)	1.2	(0.5 - 2.8)
Possible additional testing	1.4	(1.0 - 2.1)	1.4	(0.6 - 3.0)
Possible referral	1.2	(0.8 - 1.8)	2.2	(1.8 - 4.1)
Alternative treatment	1.1	(0.7 - 1.7)	6.1	(4.2 - 8.7)
Other	0.2	(0.1 - 0.6)	0.4	(0.1 - 1.6)

**Table 4. Prospective management considerations actually registered in the EPR, in relation to their being existent (percentages (95% confidence intervals) n=4178).**

<i>Considerations about</i>	Registered in questionnaire		Registered in EPR	
	%	95% CI	%	95% CI
Additional testing	15.5	(14.6 - 16.5)	3.5	(2.9 – 4.2)
Attention to coping behaviour	18.0	(17.0 - 19.0)	1.3	(1.0-1.8)
Attention to compliance	5.9	(5.3 - 6.5)	0.3	(0.1-0.5)
Attention to medical consumption	0.9	(0.7 - 1.2)	0.0	-
Adjustment of medication	22.5	(21.5 - 23.6)	4.1	(3.5-4.9)
Patient information to give	8.7	(8.0 - 9.5)	0.4	(0.3-0.8)
Alternative treatment	18.6	(17.6 - 19.7)	4.1	(3.5-4.9)
Possible referral	11.8	(11.0 - 12.7)	4.1	(3.5-4.9)
Individual targets	7.1	(6.5 - 7.8)	1.5	(1.1-2.0)
Attention not deepened symptoms	0.9	(0.7 - 1.2)	1.1	(0.8-1.7)
Other	3.6	(3.2 - 4.1)	1.1	(0.8-1.7)

## Discussion

### *Principal findings*

This study has shown that GPs often have thoughts about future management, which they consider important for good and consistent care. The existence of various types of considerations relates to the perceived importance of personal continuity. Personal continuity was considered especially important if considerations existed about coping, compliance, information to give, and treatment targets. On the other hand, it was striking that GPs seldom

stated to miss prospective thoughts from an earlier consultation, although such specific management considerations were hardly ever written down in the medical record.

#### *Strengths and weaknesses*

This study was explorative and as such its main goal was to give input into the development of an electronic aid to improve continuity and consistency of care. Its strength is that it explores a relative new area and in that sense it is quite innovative. The study departed from GPs' experiences in daily practice, which connects its results directly and quite pragmatically to the GPs' frame of mind in consultations. Its weakness therefore lies mainly in the fact that the study lacks a thorough theoretical framework, and its validity is difficult to probe as the study focuses especially on thoughts and considerations. Moreover, it presupposes that registration and sharing of prospective management considerations will benefit consistency of care, which has not been proven yet. However, it yields important conclusions on content and quantity of GPs' prospective management considerations during consultations in relation to their registration. On logical grounds, sharing of prospective management considerations will contribute to consistent care.

#### *Meaning of the study*

From earlier studies, it appeared already that GPs consider knowledge of their colleagues' prospective thoughts important for continuity of care, as this would enable various doctors to achieve consistency of management for one patient. In a field study at an out of hours centre, we found that GPs on call sometimes needed information about the personal doctor's management considerations.<sup>15</sup> In a Delphi study, a panel of GPs prioritised the development of a structure for prospective thoughts in electronic patient records.<sup>4</sup> It is known that GPs are sometimes reluctant to write down private or subjective information. GPs may solve this problem by not registering such information, but emphasising that personal continuity is important in these cases. Our data support this hypothesis. Although GPs have proven to write down more in EPRs than was expected,<sup>16</sup> this obviously excludes prospective management considerations. It appears that GPs are quite diverse as regards the extent to which they perceive to have prospective management considerations. This may reflect from working styles, or be a result from differences in filling out the questionnaire. However, a vast majority of the participating GPs had considerations in more than 50% of the consultations. This indicates on the one hand that prospective management considerations are important in everyday practice, and that a certain consensus existed among participants about how to fill in the questionnaire.

Now that major changes take place in primary care, with emphasis on working in teams, managed care and larger units, consistency of management becomes an important issue. Medical records are being disclosed and out-of-hours services are huge organisations now. Certainly in these circumstances, patients value doctors knowing what other doctors did,<sup>17</sup> and

they find it very important not to receive contradictory information.<sup>18</sup> In our opinion, this needs excellent informational transfer, not only on actual management, but also on long-term and short-term planning. Our study shows that management considerations are substantial, but they appear to be almost exclusively stored in doctors' brains, not in records. Theoretically as well as pragmatically, there might be a lot to win in this field.

#### *Unanswered questions and future research*

In a more complex primary care system it may become more and more important to develop a EPR structure that enables a diversity of health care workers to maintain consistency of care.<sup>19</sup> This may include information that – according to the data in this article – is hardly ever passed over. Our findings indicate that GPs currently have many considerations, which are seldom registered. This may indicate that these types of information indeed are not really needed, but it may as well focus us on existing blind spots. It is unclear if this affects the quality of care. This contradicting finding in our view should encourage the development of EPR tools to enhance registration of such information. Uniformity of registration should be safeguarded, as it should be clear where in the record what information can be found. Future research should focus on the feasibility of a tool that gives room to explicitly stating prospective management considerations. After that, we recommend a prospective study evaluating the introduction of such a tool. Such a study might focus on patients' and GPs' experiences of smooth and coordinated progression of care as outcome measures.

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## **Discussion**



This thesis explored the balance between personal and informational continuity, as these aspects are considered core elements of continuity of care at the time.

Because of the complexity of the theme, we carried out several interrelated studies. We started with an elaborate literature study, which focused on mapping concepts and definitions of continuity of care. Next, we explored the element *personal continuity* by surveying both patients and professionals on their views relating to several aspects of personal continuity of care including 'seeing the personal doctor', 'commitment', and 'personal availability outside of office hours'. This theme was broadened by an interview study.

In addition, in a cross-sectional study, we measured the extent to which personal continuity is actually achieved. We explored its relation to the reason for encounter, and we studied how personal continuity and patients' preference for a GP is related to several intermediate consultation outcome measures.

Furthermore, we explored various aspects of *informational continuity*. We surveyed patients on their attitudes towards confidentiality of medical information, in relation to the type of professional having potentially access. Furthermore, in an observational study, we explored GPs' needs for various types of information from the medical record when working at a large-scale out-of-hours service. Next, we sought out how informational continuity could be improved carrying out a Delphi study with general practitioners. Finally, we explored one of the topics, which appeared to be suitable for improvement of informational continuity in a cross-sectional design. We measured the extent to which GPs have thoughts about a diversity of management plans, and related this to the perceived importance of personal continuity, and to actual registration of considerations in the electronic patient record.

### **General conclusions**

The concept of continuity of care in general practice is not well defined. Many concepts and definitions are used, none of which is universally accepted. However, there seems to be global consensus that the concept of continuity of care comprises at least personal continuity as well as informational continuity.<sup>1-4</sup> Both personal and informational continuity may be considered conditional elements that facilitate *the patient's experience of a smooth and co-ordinated progression of care*,<sup>4</sup> which is one of the most sensible patient-oriented definitions of continuity of care at the moment. Personal continuity relates to the longitudinal and interpersonal aspect of the relationship between GPs and patients. Informational continuity is linked to adequate registration and optimal transfer of relevant information in order to achieve consistent care.<sup>5</sup>

#### *Personal continuity*

As regards the perceived importance of seeing the personal doctor, patients differentiate between clinical conditions. They value seeing their 'own' personal doctor for serious, psychosocial, and family conditions. For minor illness and regular checks, personal continuity

is considered less important. Patients' characteristics, such as age, gender, or medical consumption do not predict their views on this point: Young and healthy individuals value personal continuity as much as the ill and elderly.

Another important aspect of personal continuity is referred to as *commitment*. This is almost equivalent to 'being there if the patient needs us'. We operationalised the concept of commitment by means of presenting scenarios around hospital admissions and life events to patients and GPs. Many patients anticipate being in need of contact with their GP if a health related serious event is happening in their lives. This extends from a birth in the family to a hospital admission for a more serious condition. Again, patient characteristics do not predict their needs in this field, but we have indications that patients themselves generally might not take initiatives for these contacts. We identified patient categories with different needs; one category focussing predominantly on the relationship and anticipating to need support and commitment implicitly, another category perceiving more technical tasks for their GP, needing well-defined actions and showing more initiative themselves.

We found that professionals' views on personal continuity match patients' views to a high extent. Both GPs and GP-trainees value personal continuity, discriminating between various conditions and circumstances. This applies both to views on seeing the personal GP and attitudes to commitment. Age and gender differences do not predict GPs' and GP-trainees' views. An often-assumed dogmatic shift between the 'older male' and the 'younger female' generation can therefore not be affirmed. Only with regard to the availability outside of office hours, GP-trainees have more limited task perceptions. We found a small but consistent positive relation between professionals' attitudes to continuity and work satisfaction.

The extent to which personal continuity is achieved in everyday practice is high; for follow-up consultations within episodes, it is especially high for social, psychological, and serious conditions. This matches patients' needs largely. If they know the GP better, patients evaluate consultations significantly more positive on the consultation outcome measures satisfaction, trust, being helped forward and clearness of management plans. Patients who are indifferent to the GP they will be seeing evaluate consultations significantly less positive. These indifferent patients are seen more often in more-handed practices. It is noteworthy that the individual practice and the individual GP characteristics explain differences between patients' evaluations only to a very small extent.

GPs consider personal continuity important for about half of the consultations with possible follow-up when they are asked directly after the consultation. This applies mainly to consultations that concern more serious, psychological, or sociological symptoms. Indeed, high levels of personal continuity are achieved for these episodes.

#### *Informational continuity*

Patients appear to have considerable reservations about sharing various types of information with others than their personal doctor. Patients distinguish roughly between life style and

psychosocial on the one hand and more medical information on the other. Patients are reserved to share psychosocial information with others than their personal doctor. This reservedness applies to other GPs to some extent, but even more to practice assistants. Younger patients appear to have just as much reservations as the elderly.

During out-of-hours GPs actually figure to need information from the medical record only in a minority of cases. If they recognize the need for information, this is often about actual medical facts, such as the medical history and medication, but also on more subjective considerations such as coping behaviour and alternative treatment suggestions from the patient's personal GP. From the Delphi study, it emerged that GPs consider the structure of their EPD insufficient for this type of information and they support initiatives to improve their information systems on this topic. Desirable improvements include also attention to familiar disease, to compliance, and to the patient's personality and psychosocial problems. Registration of prospective management considerations was considered one of the most important topics.

In day-to-day practice, it appeared that GPs often have considerations for future management. These concern mostly ideas about additional testing, about possible referral, change of medication, or alternative treatment plans. The extent to which such considerations exist, relates to the perceived importance of personal continuity. However, actual registration of considerations in the EPD lags far behind. Remarkably, GPs seldom perceive to miss such prospective management considerations in the EPR retrospectively, although only a very small percentage of considerations that GPs consider important for consistent care was actually registered. Particularly, information about subjective aspects, such as coping behaviour and compliance, were hardly ever written down. In these cases however, doctors valued personal continuity and often considered it important that patients would visit themselves next time. Therefore, it seems that they balance possibilities for handing over prior knowledge and information to the perceived importance of personal continuity.

### **Strengths and limitations**

The design of this thesis was explorative. By doing a diversity of small studies, it focused on several distinguishable aspects of continuity of care in general practice. We used common experiences in daily practice as the major input factor, and we operationalised the studied aspects quite pragmatically. We have not tried to redefine continuity of care, as in our opinion this contributes little to our knowledge about the thematic complexity.

Logically, exploring a theme across the width has its limitations. The most important limitation is that it makes a true in depth exploration hardly possible. On the other hand, the contents of this thesis cover many important topics, which offer interesting starting-points for further research. Another major limitation is that a large part of the thesis reports on data generated through surveys. These may be considered susceptible to bias as surveys may generate socially desirable answers. However, we consider research on views and attitudes an important part of continuity research, and these can only be explored by using such

measurement instruments. The cross-sectional design of this study has its weaknesses as well. Although it makes relationships and correlations clear, it cannot prove causality. Therefore the question whether or not personal and informational continuity directly cause better outcomes cannot be answered by our study.

## Discussion

What can we learn from this study? How do our findings relate to data from other studies? How can this thesis help us improve our patients' health in a changing world of primary health care both in the Netherlands and worldwide?

### *Personal continuity*

In the first place, according to both patients and professionals in our study, personal continuity must be valued as a corner stone of general practice. This applies to the major attributes of personal continuity which we studied: 'seeing the doctor of choice', 'seeing a well-known doctor' and to 'commitment'. Also from other studies it is known that patients consider personal continuity an important aspect of general practice care. For example, concerning the organisation of services, patients rated personal continuity the second most important out of a set of 8 items, following the item 'not been given contradictory information' which relates strongly to informational continuity.<sup>6</sup> In a related multi-national study in 9 western countries, patients ranked 38 aspects of general practice care. They rated 'the possibility of seeing the same GP on every visit' the most important from the section 'services' which included 7 aspects.<sup>7</sup> In a Finnish study patients ranked 'seeing the same doctor' as the third important from a set of five primary care attributes including continuity, availability, empathy, comprehensiveness and knowledge.<sup>8</sup> In a US study, patients thought that continuity was the most important from a set of eight attributes of general practice, including also the attributes coordination of care, cost and convenience.<sup>9</sup> This positive attitude towards continuity may partly be caused by patients' beliefs in positive effects. These appear to be considerable.<sup>10</sup> In the United States, where continuity with one provider is less common, patients value personal continuity with a familiar doctor even more than in the United Kingdom.<sup>11;12</sup>

However, it is difficult to quantify the measure of importance that patients attach to personal continuity. Studies using trade-off scenarios may give us some insight in the relative importance of continuity of care. For instance, a considerable number of patients in the USA were prepared to drive one hour extra to be able to see their regular GP, or were prepared to spend an additional 50-euro per month for such personal care. In average, these patients were older and more vulnerable.<sup>12</sup> A UK study showed that most patients valued continuity, but generally were hardly prepared to wait more than two days to see the same doctor. Patients in group practices valued continuity less than patients in practices with personal lists.<sup>13</sup>

Studies have shown that also GPs value continuity of care. A Norwegian study found that eighty percent of GPs found the concept of continuity of care important or very important,<sup>14</sup> and a British study showed that sixty-nine percent of the surveyed GPs found having a personal GP very or extremely important in general.<sup>15</sup> In another study in the UK, GPs ranked the possibility of seeing the same doctor the highest among 6 priorities in general practice.<sup>16</sup> A Dutch study found that having the possibility to see the same GP on every visit was more important to patients, and having the same GP for the entire family was more important to GPs.<sup>17</sup> In a Finnish study, GPs and patients agreed largely on the relative importance of seeing the same doctor.<sup>8</sup>

Our study shows that the perceived importance of seeing the personal GP varies with the condition. Both patients and professionals agree undisputedly on the importance of personal continuity for serious, psychological, and sociological conditions. It appears that most patients do not value personal continuity particularly for regular checks, and even less for minor disease. These findings are very similar to recent data from studies in the UK and the USA. These explored patients' and GPs' attitudes to personal continuity for various conditions as well. In the United Kingdom patients and GPs valued a personal doctor-patient relationship mainly for more serious and for psychological problems,<sup>15</sup> and patients with acute problems in the USA found continuity less important than patients who visited the GP for regular appointments and checks.<sup>9</sup>

Surprisingly, we did not find that personal continuity is declining now. Earlier research in the Netherlands yielded comparable levels of personal continuity,<sup>18;19</sup> also when GPs were working part-time.<sup>20</sup> Only one in every 20 patients in our study stated to have preferred another GP, while one in five was indifferent. For serious, psychological, and sociological conditions, high levels of personal continuity were achieved. It is therefore questionable if higher overall levels of continuity are really desirable and achievable. Apparently, personal continuity matches patient needs more than we dare presume presently. Also in other countries, such as the UK and USA, relatively high levels of personal continuity were observed,<sup>21</sup> mainly for major problems.<sup>22</sup> Generally, studies show that levels of personal continuity are higher in smaller practices,<sup>13;23;24</sup> and in practices with personal lists.<sup>22;25</sup>

Moreover, our study shows that patients have considerable needs for contact with their GP at the time of hospital admissions for serious conditions and at the time of other serious life events. Practice experience suggested that the concept of commitment would be linked strongly to personal continuity, and this was confirmed in the qualitative interview study. Patients appear to expect often that their GP initiate these contacts. Some other authors consider commitment also an important aspect of personal continuity.<sup>26-28</sup> It is about feeling responsibility for patients. This may originate from having compassion.<sup>29;30</sup> A sense of responsibility towards patients increases with the density of contacts and the duration of the relationship.<sup>31</sup> Hitherto however, few studies have tackled this theme. Mainly opinion papers

were found, which are in favour of showing commitment.<sup>32-36</sup> To our knowledge a systematic study on patients' views and attitudes on the theme has not been done before. The topic is not mentioned in a thorough survey on what makes a good practitioner,<sup>17</sup> nor in a systematic review on patient preferences for general practice care.<sup>37</sup> However, one study found that patients appreciate hospital visits from their GP very much,<sup>38</sup> and another showed that older patients complained of a lack of support after discharge from the hospital.<sup>39</sup> The GPs' attitudes in our studies, including attitudes of trainees and their trainers, matched patients' anticipated needs to some extent. However, with the exception of serious disease, GPs' perceived tasks were less comprehensive than patients' anticipated needs around hospital admissions. We did not measure to what extent these contacts are actually achieved in daily practice, and how these contacts are assessed both by GPs and patients.

Essentially, the topic is largely ignored, and national professional organisations do not have explicit views on this issue. For patients however the topic is important and our interview study shows that it is clearly linked to what patients feel to have a GP for. More studies on this subject are needed, especially on how patients weigh this aspect against other services. Looking at the future, it was interesting to see that GPs working part-time and younger GPs were not more limited in their task perceptions compared to older full-time GPs. However, GP trainees and the younger generation of general practitioners had more limited task perceptions outside of office hours. It is unclear how these needs develop when the bonding between a GP and his patient evolves. In other words, the findings may reflect a generation difference, but may also be labelled as changing attitudes in a GP's own professional life cycle.

#### *Informational continuity*

The confidentiality of the medical discourse is undebated. However, continuity of information among health care teams is an immediate threat to the secure ness of this private information. Patients in our study found continuity of information not self-evident. They distinguish between more medical on the one hand and psychosocial and lifestyle information on the other. The current structure of electronic patient records does not support a division of these types of information. It is challenging to find the balance between the warrant for confidentiality and the medical need for informational continuity, and patients may have an important say on this matter. In a multi-national study, in which patients ranked 38 aspects of general practice care, 'guarantee of confidentiality of information about patients' was ranked the third important from 38 aspects directly after 'having enough time' and 'offering quick service in case of an emergency'.<sup>7</sup> However, a British study found that 80% of patients were quite comfortable with electronic patient records being shared, although a significant minority was not.<sup>40</sup> Another study showed that 60% of the respondents would not restrict access, 17% would restrict access by hospital doctors, and about half would restrict access to some of their record by other health professionals.<sup>41</sup> These findings are quite congruent with our findings.

Other studies also found that patients were reserved about confidentiality as regards use of computers during the consultation,<sup>42</sup> and various legal concerns are evident.<sup>43</sup>

On the subject of informational continuity, we observed some contradicting findings. On the one hand, when working at an out-of-hours service, GPs stated to need information from the medical record only in surprisingly few consultations. This finding is congruent with data from a UK study that also found that doctors are seldom prepared to look up the medical files during out-of-hours.<sup>44</sup> At the same time it is surprising in an ICT-era where it is quite standard to have access to all kinds of information electronically. However, reviews have shown that the effectiveness of the availability of medical records has not been proven yet.<sup>45;46</sup> For example, in a general medicine clinic for adults in the USA, an available record did not result in less use of the emergency department, and not in fewer admissions to the hospital,<sup>47</sup> while on the contrary personal continuity has proven to have these effects indeed.<sup>48;49</sup>

On the other hand, the patients' regular GPs in our study considered a variety of information important for out-of-hours consultations by their colleagues. The GPs on duty were mostly unaware of the existence of such information. Also during day-to-day practice, GPs have many considerations that are thought to be important for good and consistent care. Most of these considerations relate to possible changing of medication, to referral, to alternative treatment plans, and to attention to coping behaviour. Some considerations, such as thoughts about coping behaviour, compliance, and individual targets were seldom registered, and GPs often stated to value personal continuity just for contacts in which these conditions were present.

Yet, the GPs in the Delphi study found it very important to develop an aid to support consistency of care for these informational items. The existing structure of the EPR in force is quite static and focuses largely on registration of facts from the actual consultation. In this way it follows the structure for problem-oriented medical records.<sup>50-52</sup> In the Plans for management-line (P from SOAP) there is room for advice given, treatment, investigation, certification, and referral.<sup>50;53</sup> In the current EPR-systems there is often also structured room for some management plans such as prescribing and writing referral letters. Considerations about future management can only be registered as free text. At the time, system developers take initiatives to make the EPR more dynamic, and try to do justice to the narrative and continuing structure of the medical discourse.<sup>54-57</sup> This means that medical records must be able to follow the discourse and hold relevant information, while discarding irrelevant data.<sup>58</sup> Long-term planning and considerations about management are typical data that need such 'smart' information systems. There are initiatives to capture medical narratives better in medical records.<sup>59</sup> One of the major goals for medical informatics has been described as enhancing use of medical data for cooperative care.<sup>60</sup> A sophisticated tool to register management considerations parallel to registration of actual management would be a valuable step to take in this process.

*Discussion in relation to present-day developments*

It is interesting to reflect on the findings described in this thesis in the light of major changes that currently take place in primary care. Nowadays the soloist GP has become a minority and the size of practices is growing steadily.<sup>61</sup> This phenomenon of scale enlargement is observed not only in the Netherlands, but also in other industrialized countries.<sup>62-64</sup> Moreover, the profession is feminizing worldwide.<sup>61;65;66</sup> Working part time in a practice is more commonly accepted. Only 15 percent of coming GPs in the Netherlands prefer a full time job in the future.<sup>61</sup> As a result, personal continuity is less self-evident.

Moreover, in order to reduce the GPs' workload, a variety of health care workers such as practice nurses, nurse practitioners, and specialized nurses are increasingly positioned in the heart of primary care settings in many countries.<sup>67-70</sup> Also during out of hours, general practice care has changed dramatically. Within a time of space of five years, more than 90% of the GPs in the Netherlands have joined in large-scale GP-run organisations providing out-of-hours care. This development to scale-enlargement during out-of-hours started already earlier in other countries, such as the UK and Scandinavian countries.<sup>71-73</sup>

At the same time, information and communication technology have acquired a strong position in general practice. The percentage of GPs using computer-based patient records in the Netherlands, increased from 38% in 1992,<sup>74</sup> to more than 90% in 1998.<sup>75;76</sup> Also in other countries, computerization among GPs is high.<sup>77-79</sup> In the Netherlands some groups of GPs share medical information systems with 'their' pharmacies but most practices have stand-alone systems with few possibilities to communicate with colleagues. However, this will probably change soon in the nearby future, as distant access is technically easily achievable and internet technologies will certainly be used for this purpose.<sup>80-82</sup> Patients will increasingly have access to their records, and these developments will be global. In summary it can be concluded that in the past decades general practice is exchanging a small service run by a soloist male GP trusting largely on his own memory, for a larger managed care service with a group of employed, mostly female GPs cooperating with other health care workers in and outside of the practice. Computerised medical records will support this collaboration with possibilities for distant access. These advances have major impact on organisational and managerial aspects of primary care. But how can the concept of personal continuity be fit in such a new organisation with regard to our study findings? What place is there for informational continuity? How can personal and informational continuity be balanced?

Patients as well as GPs in our study consider personal continuity relatively unimportant for minor illness, and this may be considered a strong argument in favour of triaging and delegation of care for minor illness to practice nurses and other help-personnel. Although doctors have been found to have reservations about this development,<sup>83</sup> there are indications that care given by practice nurses is not inferior to care given by the general practitioner for same-day consultations.<sup>84</sup> For chronic illness and regular checks, this might be a bit more



complicated. A substantial part of patients as well as professionals attached importance to continuity for these conditions. However, there is no solid evidence for positive effects of personal continuity on primary outcome levels. For example, one study found that diabetes care by one provider was not superior to continuity in one practice with more providers as regards glycaemic control.<sup>85</sup> In another study it appeared that more personal continuity did not result in better hypertension control.<sup>86</sup> Still, our study shows that seeing a well-known GP is related to better intermediate outcome measures. This includes consultations for checks. Also others studies found that higher levels of personal continuity are linked to more satisfaction,<sup>21;87</sup> better enablement scores,<sup>88</sup> and higher levels of trust in the doctor.<sup>11</sup> In addition, there are indications that provider continuity is cost-effective, also for chronic conditions.<sup>49</sup>

There might be another snake in the grass of continuity. Our findings come from the reality that the majority of patients just have one personal GP. In these cases, it may be a relative problem to see an unfamiliar doctor. However, if patients can only consult their regular doctor for serious conditions, will this GP remain a personal doctor? This concern about the viability of the personal doctor is by no means new. It has been expressed since decades.<sup>89-92</sup> In this sense, it is interesting that we found a clear relation between indifference to the doctor and less positive evaluations of care, and also knowing the GP well was related to more positive intermediate consultation outcomes. Furthermore, it was notable that GPs who value continuity have significant higher levels of work satisfaction. Although this does not prove causality, it is very well possible that work satisfaction will go down with decreasing continuity, as might patients' evaluations of general practice care. This needs more research in the future.

Present-day patients value choice and are often capable of making deliberate choices concerning office appointments.<sup>13</sup> They are known to have high demands on both access and personal continuity.<sup>93</sup> It seems reasonable for practices to strive for a maximum of possibilities to see a well-known GP, certainly in case of serious, emotional, and sociological conditions. We should, in other words, not preach indifference, as this might very well erode our position as physician healers.<sup>94</sup> Indifference and formality of doctors already has been proven to be related to poorer outcome.<sup>95</sup> On the other hand, it is far from proven that foisting of continuity on patients will work.<sup>96</sup> An ongoing relationship can be quite unsustainable as well.<sup>97</sup> Therefore, personal continuity should not be considered a primary goal of family practice, but more as a means to improve the quality and efficiency of care in general.<sup>98</sup>

As regards management of chronic illness, like diabetes and cardiovascular disease, the profession might reconsider current policy, and tailor management more to preferences of individual patients. To some patients personal continuity with their regular provider is important, to others it is not. The results from our study indicate that this attitude may

influence patients' evaluations of care. Instead of directing all hypertension and diabetics to practice nurses and other helping personnel, we might tailor management of chronic illness more to individual patients and their preferences. Such patient-directed care is in the tradition of general practice. General patient characteristics such as age, gender or medical consumption can't help us much at this point. Contrary to other studies,<sup>12;99-101</sup> we did not find that patients' need for personal continuity was related to age, chronic illness, or the number of visits to the practice. Instead, we found that patients with recent life events and patients having children had significant stronger continuity needs, but this relation was weak and not very helpful in daily practice.

Organisational interests and logistics of appointment systems may interfere strongly with the extent to which personal continuity is achieved. Our study suggests that organisation should not be given priority to personal continuity thoughtlessly, as it may easily affect positive effects of personal continuity, both on patients' evaluations of care and on professionals' work satisfaction.

It was surprising that consultation outcome could be hardly predicted on the levels of the individual practice or individual GP in the multilevel analyses. This means that patients in all practices evaluated consultations comparably. In everyday practice it must therefore be considered especially worthwhile for professionals to establish strong relationships with patients. In this respect, smaller teams will fit patients better than larger teams.

Today, there is a general assumption that emancipated and well-informed consumers can direct and manage their own health care needs. Although some patients can be found who actually play this role at times of critical illness and life-threatening disease, the majority of them is quite helpless. Examples of the confusion of extremely well-informed patients such as colleagues who became patients can be found in the literature.<sup>7</sup> It appears therefore that 'compassion'<sup>29;102</sup> or 'being there'<sup>28</sup> are suitable concepts embodying patients' needs at times of major illness. We found that patients expressed considerable needs as regards contact with their GP at critical moments such as the discovery of a serious disease or if a serious life event is happening. GPs and GP-trainees agreed on the importance of such contacts. Opinion papers support this finding.<sup>32;33;103</sup> Patients often will not ask for such contacts. However, to many patients these moments may be crucial, and they may feel that their GP is pre-eminently there for such moments.

There is little literature on the topic,<sup>38;104</sup> but among other issues it deserves a place in discussions around the core business of general practice. Certainly, it may be difficult for GPs to weigh the importance of these moments of contact against other services provided. Contacting or visiting patients is time-consuming, and GPs already feel overtaxed now. Still this should not impede discussion on the theme. It would be very interesting to know how patients themselves balance these needs to other priorities, and to gain insight into the importance they attach to contacts with their personal GP at these moments. It appears to be hardly possible to select patient categories that deserve extra attention. But GPs who neglect

contacting their patients for serious conditions run a certain risk of disappointing patients and not meeting their needs. Showing commitment is highly valued by patients and as such it may be a strong builder of the personal relationship between GP and patient. The least thing to do is to clarify to patients what can and what cannot be expected from a GP in these situations.

With the expansion of primary health care teams, consistency of management is increasingly built on electronic medical records. The world is computerising, and it was surprising that patients appear to have considerable reservations about practice assistants, and to a less extent GPs on call, having access to medical information. Recent other studies however show comparable data.<sup>41</sup> In daily practice, practice assistants often have full access to records. We did not include views on practice nurses or nurse practitioners in our study as these professionals were yet hardly present in practices at the time of our study. It was also interesting that patients from different types of practices do not have different views on this point, as we expected that patients from larger practices would be less reserved, as they are familiar with larger practice organisation and its implications for sharing information. Apparently, the awareness of more professionals having access makes patients more reserved. Also, it was surprising that younger patients were more reserved. This may give concern for the future, as these patients who are more familiar with computerisation and globalisation, might be willing to guard their privacy more firmly. Development of new standards and rules of conduct on informational continuity is emerging.<sup>105</sup> This development should be promoted, certainly now that the scale of on-call services is so huge that patients can not oversee all the involved professionals. There is consensus that authorised and differential access should be possible, but division of differential information in present-day records is far from easy. Therefore, a more thorough structure of the EPR which enables a clear division of medically oriented from more lifestyle and psychosocial information should be considered, certainly as broad access will become easily practical within short. This puts high demands on the registration by GPs, and might be a threat to recording of the narrative structure of the medical discourse.<sup>55</sup>

Another important attribute of an accessible medical record is that professionals must be able to find what they search for in a swamp of data. It was remarkable that GPs on call seldom state to miss the medical record. GPs are known to be completely inconvenienced when the computer system breaks down during office hours; if they must refrain from computerised records during out-of-hours they are quite at their ease. It is undecided if this is related to perceived differences in patients' expectations during and outside of office hours, or to a different task perception by GPs themselves during out-of-hours. For example, they might hold the view that out of hours care is less demanding on this point.

Our study suggests that it may be important that a GP also finds what he is unaware of, or what is considered important by the patient's personal GP. This will require EPR

functionalities that catch the attention. Preferably, such alterations will not affect the medical narrative structure.<sup>59</sup> The present medical record is not constructed for this, and its appropriateness for supporting collaborative care is questionable. We recommend modifying the EPR on this point. Although GPs in daily practice seldom state to miss these types of information, special attention should be paid to functions that enable insight into the patient's coping behaviour, compliance, psychosocial information and life events. Furthermore, to achieve consistency, it would be advisable to create a functionality for prospective considerations, such as thoughts about changing medication, alternative treatment and referral. A structured way to put these thoughts about future management into a medical record might enhance their actual registration. Certainly because of a suspected decrease in personal continuity this might be a logical development. It may not be the panacea for the foreseen loss of personal continuity, but it may help to achieve consistency. Worldwide, patients are known to value not been given contradictory advice, and to notice that one doctor knows what the other has done and considered.<sup>17:106:7</sup>

In the cross-sectional study, it appeared that GPs register aspects of compliance, coping and medical consumption quite easily in a structured questionnaire, but hardly ever in the existing EPR. A framework in the GP information system may enhance the registration of such information. It was surprising that patients in our study appeared to be less reserved about access to information about aspects of health behaviour by other health professionals, as compared to access to psychosocial and life style details.

Concerning the balance between personal and informational continuity many questions persist. Optimal informational continuity can replace personal continuity to some extent. But what aspects of personal continuity can be substituted by informational continuity? It is known that patients rate the item 'doctors should know what the previous did' more important than the item 'personal continuity' from a list of six.<sup>6</sup> Our study shows that patients value personal continuity mainly because they find it important that a GP knows both their medical and their personal and family background. Medical background knowledge may be derived largely from (electronic) medical records and communicating this during consultations with unfamiliar patients may enhance trust. However, knowledge of the family and contextual background knowledge is considered equally important by patients. Much of this information can barely be transferred to colleagues.<sup>3:107</sup> Moreover we found that patients have reservations about sharing such private information with others than their personal GP, even more than subjectively coloured information such as coping behaviour and compliance. On the one hand this might set the borders for informational continuity, but on the other hand it may be possible to develop and test tools that enable both doctors and patients to register facts about coping, compliance and other coloured information.

Trust is a basic feature of the doctor-patient relationship. Trust in the GP is related to positive effects on the consultation.<sup>108</sup> Trust is not similar to personal continuity, but higher levels of

personal continuity are related to higher levels of trust,<sup>21</sup> also in our study. Getting to know patients and their contexts needs at least one, and often 5 years, or at least 4-5 visits in the last year.<sup>31</sup> Trust appears to be built by repeating contacts,<sup>11</sup> but not always.<sup>109</sup> Also, a very well-known doctor may not be trusted. This makes it relevant for patients to be able to choose. Enlargement of practices provides patients this opportunity, as long as the essence of personal continuity is not being eroded. Generally spoken, patients prefer smaller practices.<sup>110</sup> It would be interesting to explore to what extent excellent informational continuity can build levels of trust, and what elements of informational continuity are mostly valued by patients if transferred. Certainly proper information transfer can not replace personal continuity, but informational continuity appears to be necessary for good and consistent care in case of personal discontinuity, and it is highly valued by patients. In that way it is a helpful tool to give patients the experience of smooth and co-ordinated progression of care.<sup>4</sup>

Coming to a conclusion, it comes out that the relation between personal and informational continuity is complex. We think that the patient's experience of consistent care depends largely on an excellent balance between personal and informational continuity. Patients might sometimes prefer or be pushed to personal discontinuity. In these cases they should have trust that information can be shared excellently, taking into account their confidentiality needs. Personal and informational continuity both should be considered facilitators of continuity of care, both work on different levels.<sup>2;3</sup> It seems that both elements can contribute to a smooth progression of care from the patient's point of view. In this sense personal and informational continuity are somehow complementary. Excellent informational continuity may give patients the impression that this doctor knows them well, although it may be the first time they see her. High levels of personal continuity however put less pressure on the quality of informational continuity, are related to better intermediate outcomes, and are valued by both patients and doctors.

### **Recommendations**

Continuity of care traditionally is a core component of general practice care. This thesis supports the feeling that continuity matters. Seeing a well-known doctor is related to more positive patients' evaluations of general practice consultations. Future research should also focus on effects of personal continuity on providers themselves, for instance on work satisfaction, and should include new professionals in primary care teams, such as nurse practitioners and practice nurses. In the meanwhile, general practice should shape the conditions in which seeing a familiar doctor is propagated and in which strong patient-doctor bonds can evolve. This is more likely to be possible within small units. Research should also focus on attitudes towards groups of GPs and shared care, in relation to consultation outcome.

The concept of commitment deserves further exploration. It would be particularly interesting to study how patients weigh their needs for commitment against other services provided. Also

GPs' views and preferences could be more fully explored, for instance in qualitative research. Moreover, a cross-sectional study on present-day practice and effects on several outcome measures such as patients' evaluations of contacts is recommendable.

Another recommendation from this study is to strive for an EPR structure that enables the division of various types of information. As patients will soon have opportunities to direct differential access a more thorough EPR structure is needed, and GP will have to adhere to such a new framework. This aspect of informational continuity may initially be best explored in a feasibility study.

GPs have many considerations on future management that they consider important for good and consistent care. However, they state not to need this information in everyday practice. Moreover, such information is seldom registered. This may partly be due to a lacking structure for such information in the EPR. Further research should focus on possibilities to turn records from static reports into tools for purposes of collaborative care. These should include functionalities facilitating registration of prospective management considerations. A division in short-term considerations for a next consultation and long-term considerations is advisable. An adjustment of the P-line from SOAP might be convenient. We recommend to start with a feasibility study, and continue with a prospective study evaluating the introduction of such a tool using patients' and GPs' experiences of coordinated care as possible outcome measures, as well as experienced breaks in continuity.

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## **Summary**

## **Introduction**

Continuity of care is said to be a corner stone of general practice since decades. However, the concept of continuity of care has not been worked out very well. There is a lack of consensus about its meaning. This thesis reports on a number of explorative studies on continuity of care in general practice. As such, it tries to contribute to a further operationalisation of the concept. Two elements of continuity of care are prominent in this thesis: personal continuity and informational continuity. *Personal continuity* is defined as having contact with a personal GP, *informational continuity* as registration of, access to, and use of information that is considered necessary for a smooth progression of the process of care. Contemporary general practice needs to find the balance between these two cornerstones of general practice care, in order to improve the quality of care and to tailor care to patients' needs.

**Chapter 1** defines the concepts of personal and informational continuity. It places continuity of care in the framework of current societal and professional developments. Furthermore, it shows where knowledge gaps exist. The research questions for this thesis emanate from these gaps logically.

### *Personal continuity*

- How do patients and general practitioners value personal continuity (chapters 3-6)?
- To what extent does everyday practice match these priorities, and what is the relation between personal continuity and patients' evaluations of care (chapters 7-8)?

### *Informational continuity*

- How do patients balance access to medical information against confidentiality, and what are professionals' information needs as regards continuity of care in everyday practice? (Chapters 9-10)?
- How can continuity of information be improved according to professionals (chapter 11)?
- To what extent is information, if perceived as being important for continuity of care, actually registered in the electronic patient file (chapter 12)?

**Chapter 2** reports on a literature study and shows a historical review of definitions and conceptualisations of continuity of care. It appears that in the course of time many different concepts and definitions have been used dependent on various motivations. Some authors describe models in which continuity is depicted as a collection of different characteristics of general practice care; others reduce the meaning of the concept to a sole characteristic, such as the availability of general practice care around the clock. Many publications deal with the concept of personal continuity in all its appearances, and in recent years there is growing emphasis on informational continuity, operationalised mostly in terms of access to information.

One of the most reasonable definitions of continuity of care stems from 2001. It describes continuity as ‘a smooth and coordinated progression of care from the patient’ point of view’. Personal and informational continuity are the most important facilitators to achieve this. This thesis therefore focuses on both.

### **Personal continuity**

**Chapter 3** shows how patients value personal continuity for various reasons for encounter, and how this is related to patient characteristics. We sent a postal survey to 875 patients from 35 practices spread throughout the Netherlands. The response rate was 74% after one reminder. Patients attached importance to continuity dependent on the reason for encounter. For example, 21% of the respondents valued seeing their personal GP for a splinter in the eye, and 96% for a conversation around a terminal illness. The most important reason for valuing contact with the personal GP was the perception that he had better knowledge of the patient’s medical history (76%) and better knowledge of the personal and family background (73%). A set of 13 patient characteristics, such as age, gender, having chronic illness, frequency of contacts, and number of years in the practice could explain only 10% of the observed variance between respondents as regards the perceived ‘overall’ importance of personal continuity.

**Chapter 4** shows how patients value contacts with their GP at the time of hospital admissions and other life events. It combines quantitative and qualitative data. The quantitative data are derived from the same survey, on which we report in chapter 3. Furthermore this chapter reports on in-depth interviews with 30 patients. Many respondents anticipated needing contact with their GP at the time of a hospital admission for a serious illness, such as a malignancy (98%) or a myocardial infarction (97%). Fewer patients anticipated this for less serious illnesses, such as a small foot operation (33%). In addition, for other events, such as a death in the family (90%), or a birth in the family (80%) many respondents anticipated needing contact. From the qualitative data, it appeared that patients who would need contact most saw the relationship with their GP as being personal and emotional, whereas patients who would need contact less regarded the relation with their GP as being predominantly functional and instrumental. The first group thought that the GP should initiate these contacts, the latter saw a role for themselves as patients of age.

**Chapter 5** shows how GPs value continuity of care for the dimensions personal continuity, commitment, and availability outside of office hours. Moreover, it shows how their views are related to practice and personal characteristics. We send a questionnaire to a random sample of 500 Dutch GPs. After two reminders, the response rate was 73%. GPs valued contacts with their own patients especially for contacts relating to serious illness or for contacts with high psychosocial impact. For example, GPs valued personal continuity for a talk to a terminally ill patient (100%), problems in the family (94%), and for working problems (85%). For minor illness such as flu (14%) or a splinter in the eye (18%) this was regarded less important.

GPs often found it important to take initiatives themselves when patients had serious health related problems, such as a death in the family (99%), or a specialist diagnosis of serious disease (86%).

A majority of the GPs found that they should be available outside of office hours for terminally ill patients; this was mainly the case for older GPs. We found a positive relationship between GPs perceived importance of continuity and work satisfaction.

**Chapter 6** demonstrates how GP-trainees value the various dimensions of continuity of care, especially in relation to their trainers' views. We sent a questionnaire to all 1048 GP-trainees and to all 776 trainers of the eight training institutes in the Netherlands. Fifty-seven percent of the trainees responded, as compared to 62% of the trainers. GP-trainees valued personal continuity more than their trainers did, whereas trainers perceived it more often their task to be available outside of office hours in special circumstances, such as a terminally ill patient. The views of individual GPs were barely related to their trainers' views. Trainees' characteristics such as age, gender, GP-training-institute, and preference for future practice setting could only explain 8.8% of the observed variance between trainees. The importance that GP-trainees attached to continuity related significantly to work satisfaction.

**Chapter 7** describes a cross-sectional study exploring the relationship between knowing the GP and patients' evaluations of care. Moreover, it shows if the extent to which patients know the contacted GP relates to the reason for encounter. We asked 2400 patients, visiting a variety of 30 GPs from 17 practices to fill in pre- and post consultation questionnaires. Eighty-nine percent of the patients returned the questionnaire. The extent to which patients saw a well-known GP was independent of the reason for encounter, and independent of the degree to which patients were worried or judged their symptoms as serious. In average 78.9% of the patients saw a well-known GP. We observed a positive relation between the extent to which patients knew the GP and their evaluations of care on the outcome measures satisfaction, being helped forward, trust, and clearness of plans made. The variable 'knowing the GP' explained 8.0% of the observed variance.

**Chapter 8** describes how indifference or dissent to the contacted GP relates to consultation outcome. In the same cross-sectional study it appeared that 5% of the patients did not know which GP they would visit, 6% would have rather visited another one, and 18% were indifferent towards the contacted GP. This was more often the case if patients were in a practice with shared lists. Patients being indifferent towards the contacted GP evaluated the consultation more often less positive than patients visiting the preferred GP did. This was more often the case if patients would have rather seen a different GP.

**Informational continuity**

**Chapter 9** shows patients' views on confidentiality of various types of information in the medical record. We surveyed patients on their views as regards access for practice assistants and GPs on call. This chapter shows data from the survey among 875 patients from 35 practices spread throughout the Netherlands. It came out that patients entrust their personal GP with more information than the GP on call. This reservedness applies to a stronger degree to access for practice assistants. Twenty percent of the respondents thought that the GP on call should not have access without their explicit consent. For the practice-assistant, 44% were of this opinion. Patients discriminated between various types of information. For example, 93% of the patients would consent to access for the GP on call for the medication history, and 62% for information about 'life events'. Patients were more reserved as regards access for the practice assistant. For example, only 37% thought that access to information about family problems should be possible for the practice assistant. From the principal components analysis it appeared that patients discriminate between 'medical' and more 'life style and psychosocial' information. Patient or practice characteristics barely influenced patients' views on confidentiality.

**Chapter 10** looks at GPs' needs for various types of information from the medical record at a large-scale centre without accessible records during out of hours. Especially, it explores how the need for information relates to the extent to which the patient's personal GP considers certain information important. We performed an observational study of 151 consultations by 17 GPs on call. Patients came from 61 different practices. An interviewer surveyed the GP on call directly after the consultation and within a few days, she surveyed the patients' personal GPs by telephone. In 26% percent of the consultations, GPs on call were in need of the medical record. They needed information especially about the medical history, earlier episodes of the illness, and chronic illnesses. GPs seldom needed information about psychosocial background and coping behaviour. GPs on call only in a few cases thought that their management was influenced by a lack of the medical record. The only cases in which they thought it mattered were cases, in which they needed information about what the personal GP would have done. The patients' personal GPs thought that information relevant for the actual consultation was present in 42% of the cases. More than once this information did not come up during the consultation. In 14% of the contacts, the patient's personal GP did not agree with the GP on call's management, but only in 4%, this might be related to the lacking medical record.

**Chapter 11** explores how informational continuity might be improved in the electronic patient record (EPR). We completed a 4-round-Delphi procedure with a panel of 40 GPs. The panel's majority saw continuity of care as general practice care around the clock with accessible medical records. A minority considered continuity of care mainly in terms of personal continuity. The panel prioritised 16 from 67 presented elements for improvement of



the EPR. It reached consensus on the appropriateness of new EPR functionalities for long-term management, for hereditary disease, and to a less extent for registration of coping aspects, compliance and personality structure.

**Chapter 12** reports on a study that further explores how registration of long-term management (in other words prospective management considerations) can benefit continuity of care. It shows the extent to which GPs have considerations about future management during everyday consultations and the extent to which these are registered in relation to personal continuity. Thirty GPs from 17 practices filled in a computerised questionnaire directly after the consultation. They registered 5741 consultations, for which we compared the answers from the questionnaire to the EPR registration. GPs had important considerations about future management in 66% of the consultations. These related mainly to referral (11.8%), additional testing (15.5%), adjustment of medication (22.5%) and coping behaviour (18%). GPs registered these considerations only seldom. It was notable that GPs seldom stated to miss such information.

**Chapter 13** discusses the findings of this thesis and relates these to the existing literature. Furthermore, it gives implications for daily practice and presents recommendations for further research.

## **Samenvatting**

Sinds de Woudschotenconferentie in 1959 is ‘continuïteit in de zorg’ onlosmakelijk verbonden met de huisartsgeneeskunde. Toch is het concept ‘continuïteit’ nooit zodanig uitgewerkt, dat er overeenstemming bestaat over wat het precies inhoudt. Dit proefschrift doet verslag van een aantal exploratieve onderzoeken naar continuïteit in de huisartsenpraktijk, en tracht daardoor bij te dragen aan een verdere operationalisatie van het begrip continuïteit. Twee elementen van continuïteit staan daarbij steeds op de voorgrond: persoonlijke continuïteit en continuïteit van informatie. *Persoonlijke continuïteit* betekent ‘contact hebben met een ‘eigen’ huisarts’, *continuïteit van informatie* betekent ‘registratie, toegankelijkheid en gebruik van informatie die noodzakelijk is voor een soepel verlopend zorgproces’. De hedendaagse huisartsgeneeskunde moet de balans vinden tussen deze twee onderdelen teneinde de zorg kwalitatief te optimaliseren en zo goed mogelijk aan te laten sluiten bij de behoeften van patiënten.

## **Introductie**

**Hoofdstuk 1** definieert de begrippen persoonlijke continuïteit en continuïteit van informatie. Daarnaast plaatst het hoofdstuk continuïteit in de context van de hedendaagse ontwikkelingen, en geeft het aan op welke gebieden kennis en wetenschappelijk inzicht ontbreekt. De vraagstellingen voor dit proefschrift volgen hier logisch uit:

### *Persoonlijke continuïteit*

- Hoe belangrijk vinden patiënten en huisartsen persoonlijke continuïteit in diverse omstandigheden? (hoofdstuk 3-6)
- In hoeverre komt de gewenste continuïteit overeen met de praktijk van alledag, en hoe is de relatie tussen persoonlijke continuïteit en het oordeel van patiënten over de verleende zorg? (Hoofdstuk 7-8)

### *Continuïteit van informatie*

- Hoe denken patiënten over vertrouwelijkheid van informatie uit het medisch dossier, en in hoeverre hebben huisartsen behoefte aan informatie uit het dossier tijdens diensten? (hoofdstuk 9-10)
- Hoe kan continuïteit van informatie volgens huisartsen verbeterd worden? (hoofdstuk 11)
- In hoeverre registeren huisartsen informatie die ze in het kader van continuïteit belangrijk vinden? (hoofdstuk 12)

**Hoofdstuk 2** is het verslag van een literatuurstudie, waarin een historisch overzicht wordt gegeven van de diverse definities en conceptualisaties van continuïteit zoals die in de loop van de tijd zijn gepubliceerd. Het hoofdstuk laat zien dat steeds andere definities en concepten zijn gebruikt, en dat over geen enkele ervan overeenstemming bestaat. Sommige auteurs beschrijven modellen waarin continuïteit een verzameling van vele kenmerken van de

huisartsgeneeskunde is, terwijl anderen het begrip reduceren tot een enkele karakteristiek van huisartsenzorg zoals de 24-uurs beschikbaarheid. Veel publicaties behandelen de dimensie persoonlijke continuïteit in al zijn facetten, en daarnaast is er toenemende aandacht voor registratie en toegankelijkheid van het medisch dossier als een belangrijk element van continuïteit, de zogenaamde continuïteit van informatie. Een van de meest bruikbare definities lijkt de definitie van Freeman et al. uit 2001 die continuïteit omschrijft als ‘een soepel en gecoördineerd verloop van het zorgproces, gezien vanuit het perspectief van de patiënt’. Belangrijke condities die een soepel zorgverloop faciliteren zijn derhalve persoonlijke continuïteit en continuïteit van informatie. Dit proefschrift richt zich daarom op deze twee dimensies van continuïteit, en probeert iets te zeggen over de balans tussen beide.

### **Persoonlijke continuïteit**

**Hoofdstuk 3** beschrijft hoe belangrijk patiënten persoonlijke continuïteit vinden voor diverse contactredenen, en hoe dat gerelateerd is aan diverse patiëntkenmerken. We stuurden een vragenlijst aan 875 patiënten afkomstig uit 35 huisartspraktijken. Van de verstuurdere vragenlijsten ontvingen we 74% retour na één herinnering. Het percentage patiënten dat het belangrijk vond om de ‘eigen’ huisarts te zien varieerde van 21% voor een vuiltje in het oog tot 96% voor een gesprek wanneer men terminaal ziek zou zijn. De belangrijkste redenen om de eigen huisarts te willen zien waren de aanname dat deze beter op de hoogte was van de medische voorgeschiedenis (76%), en van de persoonlijke achtergrond en gezinssituatie (73%). Een set van 13 patiëntkenmerken waaronder leeftijd, geslacht, het hebben van een chronische ziekte, de contactfrequentie en het aantal jaren dat men was ingeschreven in de praktijk, kon slechts 10% van de variantie tussen patiëntenoordelen verklaren.

**Hoofdstuk 4** laat zien hoe belangrijk patiënten persoonlijke continuïteit vinden rondom ziekenhuisopnames of wanneer zich andere belangrijke levensgebeurtenissen voordoen. Het toont gecombineerde kwantitatieve en kwalitatieve gegevens. De kwantitatieve gegevens zijn afkomstig van hetzelfde vragenlijstonderzoek als beschreven in hoofdstuk 3 en de kwalitatieve gegevens betreffen interviews met 30 breed gerekruteerde patiënten. Veel patiënten verwachtten behoefte te hebben aan contact met hun huisarts rondom een opname voor een ernstige aandoening zoals een kwaadaardige aandoening (98%) of een hartinfarct (97%). Voor minder ernstige aandoeningen zoals een voetoperatie lag dat percentage veel lager (33%). Ook voor andere gebeurtenissen, zoals een sterfgeval in het gezin (90%) of de geboorte van een kind (80%) verwachtte een hoog percentage van de ondervraagden behoefte te hebben aan contact met hun huisarts. Uit de kwalitatieve gegevens komt naar voren dat patiënten die de relatie met hun huisarts vooral persoonlijk en relationeel zien, veel behoefte hebben aan contact, terwijl patiënten die de relatie meer functioneel en instrumenteel zien deze behoefte minder lijken te hebben. De eerste groep leek te vinden dat de huisarts zelf het initiatief tot contact zou moeten nemen, de tweede groep vond dat het initiatief veel meer bij henzelf lag.

**Hoofdstuk 5** beschrijft hoe belangrijk huisartsen persoonlijke continuïteit vinden a/ voor verschillende contactredenen b/ rondom ziekenhuisopnames of andere belangrijke levensgebeurtenissen en c/ buiten kantooruren. Bovendien laat het zien in hoeverre hun oordelen beïnvloed worden door praktijk- en persoonskenmerken. We stuurden een vragenlijst aan een steekproef van 500 gevestigde huisartsen. Na twee herinneringen reageerde 73% van de huisartsen. Huisartsen vonden het vooral belangrijk hun eigen patiënten te zien voor ernstige aandoeningen en wanneer psychosociale factoren een belangrijke rol speelden, zoals bij een gesprek met een terminale patiënt (100%), problemen in het gezin (94%) en problemen op het werk (85%). Voor kleine kwalen zoals een vuiltje in het oog (18%) of een griep (14%) achtte men het veel minder belangrijk. Huisartsen gaven aan het belangrijk te vinden om ook zelf initiatief te nemen wanneer er belangrijke gezondheidsproblemen waren of wanneer er andere gezondheidsgerelateerde gebeurtenissen plaatsvonden, zoals een overlijden in het gezin (99%) of wanneer een patiënt slecht nieuws zou hebben gehad van de specialist (86%). Een meerderheid van de huisartsen vond dat ze buiten kantooruren zelf beschikbaar moest zijn voor terminale patiënten, dit gold vooral voor de oudere huisartsen. Er was een significant positieve relatie tussen het belang dat wordt gehecht aan continuïteit en de ervaren voldoening over het werk.

**Hoofdstuk 6** laat zien hoe huisartsen-in-opleiding (HAIO's) denken over de diverse dimensies van continuïteit, in het bijzonder in relatie tot de oordelen van hun opleiders. We stuurden een vragenlijst aan alle 1048 huisartsen-in-opleiding en aan 776 opleiders (HAO's) van de diverse Nederlandse opleidingsinstituten. Van de HAIO's reageerde 57% en van de HAO's 62%. HAIO's hechtten gemiddeld wat meer waarde aan persoonlijke continuïteit dan HAO's voor de diverse contactredenen, terwijl de HAO's vaker vonden dat ze buiten kantooruren beschikbaar moesten zijn. De mening van de individuele HAIO's was nauwelijks gerelateerd aan die van hun eigen opleiders. Ook een set van diverse HAIO-kenmerken, zoals leeftijd, geslacht, opleidingsinstituut, en toekomstige praktijkvoorkeur kon slechts 8.8% van de gevonden variantie in continuïteitsscores verklaren. Alleen de gevonden voldoening over het werk correleerde significant met het belang dat aan continuïteit werd gehecht.

**Hoofdstuk 7** laat zien hoe het kennen van de huisarts gerelateerd is aan het oordeel van patiënten over de huisartsenzorg. Daarnaast toont het of patiënten voor bepaalde contactredenen vaker een bekende huisarts zien. In een cross-sectionele onderzoeksofzet, vroegen we 2400 patiënten die afkomstig waren van 30 huisartsen uit 17 huisartsenpraktijken om een vragenlijst in te vullen vlak vóór en vlak na het consult. Van de benaderde patiënten vulde 89.7% de vragenlijst in. De mate waarin patiënten een huisarts zagen die ze kenden, verschilde niet voor de verschillende contactredenen, en ook maakte het geen verschil of patiënten zich zorgen maakten of hun klachten als ernstig beoordeelden. Gemiddeld zag 78.9% van de patiënten een huisarts die ze tamelijk goed of goed kenden. Naargelang

patiënten de huisarts beter kenden, beoordeelden ze het consult positiever op de aspecten tevredenheid, vertrouwen in de huisarts, duidelijkheid van de gemaakte afspraken, en op het gevoel vooruit te zijn geholpen. De variabele ‘hoe goed kent u de huisarts die u vandaag ziet’ verklaarde 8% van de gevonden variantie tussen patiënten.

**Hoofdstuk 8** beschrijft in welke mate voorkeur voor een huisarts gerelateerd is aan het oordeel van patiënten over de huisartsenzorg. Maakt het uit of patiënten vóór het consult aangeven dat ze liever een andere huisarts zouden hebben gezien? Het betreft data uit hetzelfde cross-sectionele onderzoek als beschreven in hoofdstuk 7. Van de 2152 patiënten wist 5% tevoren niet welke huisarts ze zouden zien. Zes procent gaf aan liever een andere huisarts te hebben gezien en 18% gaf aan dat ze voor dit contact geen voorkeur hadden voor een huisarts; dit laatste was significant vaker het geval wanneer er geen duidelijke afspraken waren bij wie patiënten waren ingeschreven. Patiënten die het niet uitmaakte welke huisarts ze zouden zien beoordeelden het consult significant minder positief dan patiënten die de huisarts van voorkeur zagen. Dat gold in sterkere mate wanneer patiënten liever een andere huisarts hadden gezien.

### **Continuïteit van informatie**

**Hoofdstuk 9** laat zien hoe patiënten denken over toegang tot diverse soorten informatie uit het medische dossier door de dienstdoende huisarts en de praktijkassistente. Het betreft het vragenlijstonderzoek onder 875 patiënten zoals eerder beschreven in hoofdstuk 3. Patiënten vertrouwen hun eigen huisarts meer informatie toe dan aan de dienstdoende huisarts en de praktijkassistente. Twintig procent van de patiënten vond dat de dienstdoende huisarts zonder expliciete toestemming geen inzage zou mogen hebben in het gehele dossier en 44% vond dat de praktijkassistente geen inzage zou mogen hebben. De patiënten maakten hierbij onderscheid tussen diverse soorten informatie. Zo vond 93% van de patiënten dat de dienstdoende huisarts inzage zou mogen hebben in de medicatiehistorie, terwijl bijvoorbeeld 62% inzage van recente ‘life events’ goedkeurde. Over inzage door de praktijkassistente was men nog gereserveerder: slechts 37% vond dat praktijkassistentes bijzonderheden over de thuissituatie in mochten zien. Uit de principale componenten analyse bleek dat patiënten bij hun oordeel over inzage-mogelijkheden onderscheid maken tussen medische informatie enerzijds en ‘life style’ en psychosociale informatie anderzijds. De meningen van patiënten over mogelijkheden tot inzage van het medisch dossier werden nauwelijks beïnvloed door persoons- of praktijkenmerken.

**Hoofdstuk 10** laat zien aan welke informatie huisartsen behoefte hebben tijdens de dienst op een grootschalige huisartsenpost, en hoe zich dat verhoudt tot datgene wat volgens de eigen huisarts belangrijke informatie is. Het betreft een observationeel onderzoek van 151 dienstcontacten door 17 dienstdoende huisartsen. De patiënten waren afkomstig uit de praktijken van 61 huisartsen. Een interviewster nam na ieder contact mondeling een

vragenlijst af bij de dienstdoende huisarts, en ook vulde ze - kort na de contacten - telefonisch een vragenlijst in met de eigen huisartsen van de patiënten. In 26% van de contacten gaven dienstdoende huisartsen aan behoefte te hebben aan het medisch dossier, vooral had men behoefte aan informatie over de medische voorgeschiedenis, aan eerdere episodes van dezelfde klacht, en aan informatie over chronische ziektes. Er was nauwelijks behoefte aan vertrouwelijke informatie zoals voorkennis over psychosociale problemen en coping gedrag. De dienstdoende huisartsen hadden zelden het idee dat het beleid tijdens het consult was beïnvloed door het ontbreken van informatie. Dat was wel het geval wanneer kennis ontbrak over wat de eigen huisarts zou hebben gedaan in dit geval. De eigen huisartsen vonden in 42% van de contacten dat er relevante voorkennis aanwezig was over de patiënten. Deze voorkennis kwam tijdens de contacten nogal eens niet ter sprake. In 14% van de contacten was de eigen huisarts het niet eens met het beleid van de dienstdoende huisarts, slechts in 4% had dit – mogelijk -te maken met het ontbrekende dossier.

**Hoofdstuk 11** onderzoekt hoe continuïteit van informatie in het elektronisch medisch dossier (EMD) verbeterd kan worden. In een onderzoek waarin we gebruik maakten van de Delphi-procedure, vulde een panel van 40 huisartsen vier opeenvolgende vragenlijsten in. Een meerderheid van het panel zag continuïteit in de huisartsenzorg vooral als 24-uurs beschikbaarheid van huisartsenzorg met een toegankelijk EMD. Een minderheid beschouwde continuïteit vooral als persoonlijke continuïteit. Met het oog op continuïteit prioriteerde het panel in de loop van het onderzoek 16 van 67 gepresenteerde elementen voor verbetering van het EMD. Het panel bereikte consensus over de wenselijkheid van nieuwe EMD-functionaliteiten ten behoeve van het formuleren van langere termijn plannen en de registratie van erfelijke ziekten, en in mindere mate ten behoeve van registratie van coping-aspecten, therapietrouw en persoonsstructuur.

**Hoofdstuk 12** werkt aanknopingspunten uit de hoofdstukken 10 en 11 uit dat ‘langere termijn plannen’, of overwegingen over toekomstig beleid - en de registratie ervan - van belang zijn voor continuïteit in de zorg. Daartoe laat het zien in hoeverre huisartsen dergelijke overwegingen hebben tijdens consulten van alledag, in hoeverre ze deze missen in de verslaglegging, en in hoeverre overwegingen over toekomstig beleid geregistreerd worden in het EMD. In een cross-sectioneel onderzoek van 5741 consulten door 30 huisartsen afkomstig uit 17 praktijken vulden huisartsen aansluitend aan het consult een kort gecomputeriseerd vragenlijstje in. De antwoorden op deze vragenlijsten werden vergeleken met de gewone verslaglegging over dezelfde consulten zoals de huisartsen die in het EMD noteerden.

Huisartsen bleken in 66% van de contacten belangrijke overwegingen te hebben voor toekomstig beleid. Het betrof vooral overwegingen over verwijzing (11.8%), aanvullend onderzoek (15.5%), medicatieaanpassing (22.5%), alternatief behandelplan (18.6%), en coping-gedrag (18.0%). Deze overwegingen werden slechts zelden in het EMD genoteerd. Opmerkelijk genoeg gaven de huisartsen ook slechts zelden aan deze informatie te missen.

**Hoofdstuk 13** beschouwt het proefschrift en plaatst de bevindingen in het licht van de hedendaagse ontwikkelingen in de huisartsgeneeskunde en doet aanbevelingen voor toekomstig onderzoek.





*Continuity of care in general practice*

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## **Dankwoord**

Een paar maanden geleden deden we een onderzoek naar de academische interesse bij onze regionale huisartsen. Slechts weinig huisartsen bleken zin te hebben in het zelf doen van wetenschappelijk onderzoek. En toch is het aan te bevelen, het combineren van werk en wetenschap. Voor mijzelf was het een steeds terugkerend genoegen om de hectiek van de praktijk even weg te laten zinken in de geduldigheid van de overvolle mailbox op de universiteit. Én ik kon weer thuis lunchen.

Maar goed, dit is een dankwoord. Zelf lees ik het dankwoord altijd als eerste, en geregeld blijft het daarbij. Dan stel ik me de vraag of het bijbehorende proefschrift geschikt is als kastvulling of dat het bij het oud papier moet. De vorm speelt bij die afweging meestal een belangrijkere rol dan de inhoud. Ik ben dan ook erg benieuwd hoe het mijn eigen boekjes zal vergaan in de komende tijd: de Kaplan-Meier curve tekenen van al mijn proefschriften, dat lijkt me wel wat. En dan als toetje nog wat kwalitatieve ervaringsdata verzamelen: het relaas van vette chips en hete koffievlekken, het geklaag over klemzitten tussen lotgenoten, de misère van het verspinnerd raken, de pijn van de scherpe ezelsoren, en het ultieme geluk van het zo nu en dan eens opengeslagen worden.

Hoe dan ook, het boekje ligt er. Aan het einde van een leerzame rit. En dat is te danken aan heel veel mensen. Een aantal daarvan ga ik hier bedanken, een aantal zal ik niet bedanken, en ongetwijfeld zal ik er ook een aantal vergeten. Dat schijnt een absolute doodzonde te zijn. Bij voorbaat mijn nederige excuses...

De begeleidingscommissie SGO/ NWO initieerde het onderzoek onder de bezielende leiding van Prof. Dr. Jan van Es. Jan, gefeliciteerd, het is toch eigenlijk ook een beetje jouw project. Joost Zaat, André Knottnerus, Margriet van Rees en natuurlijk Bert Schadé, jullie gezichten heb ik de eerste projectvergadering gelukkig niet hoeven aanschouwen, maar ik heb begrepen dat ze wel eens vriendelijker stonden. Ikzelf heb ze, na mijn aantreden, overigens alleen maar vriendelijk gezien. Hartelijk dank voor het vertrouwen, het opbouwende commentaar, en alle vriendelijke woorden tijdens de vergaderingen.

‘Ha maatje’ Wil van den Bosch, beste Wil, het komt niet zo vaak voor dat de promotor zijn promovendus zo kan aanspreken in de wandelgangen van een vakgroep. Het was dan ook een bijzondere situatie. Je was in het project de man van de grote lijnen, creatief, positief, uitermate energiek en steeds vooruitdenkend. Je gaf me al snel alle ruimte voor eigen initiatief

en daardoor een hoop extra werk. Ik heb veel van je geleerd op allerlei terrein, maar op het gebied van wijn twijfel ik: die oude Bordeaux was, zoals ik al vermoedde, niet meer te drinken. Je bent me een flesje schuldig.

‘In der Beschränkung zeigt sich der Meister’. Henk van den Hoogen, beste Henk, ik kan jouw bijdrage aan dit proefschrift eigenlijk niet treffender typeren. Er zijn maar weinig mensen die met minder woorden meer kunnen zeggen dan jij. Er zijn ook maar weinig niet-dokters die hun kennis van methodologie én hun kijk op de dagelijkse huisartsenpraktijk zo goed kunnen combineren. En gelukkig heb je ook nog verstand van voetbal.

‘Een typisch vastlooppject.’ Richard Grol, beste Richard, nog vóór je betrokken raakte bij het onderzoek gaf je er deze weinig opbeurende typering van. Gelukkig bleef de boel uiteindelijk op koers, mede door je eigen bemoeienis. Onze voorgeschiedenis was niet bepaald chique, de Walküren waren bij wijze van spreken al op pad, en daarom waardeer ik het des te meer dat je mijn promotor hebt willen zijn. Je invloed op het proefschrift is groot geweest. Op het moment dat ikzelf tevreden was, vond je dat we er nog een schepje bovenop moesten doen (waar heb ik dat eerder gelezen?). Je had gelijk, het was de investering waard.

‘Je baas’ althans dat was ik voor je kinderen. Caroline van de Ven, lieve Caroline, in al die jaren mijn onderzoeksassistente en kamergenootje. De afgelopen tijd wisselden we elkaar er vaker af dan dat we er samenwerkten, dat was niet altijd gezellig, maar soms wel efficiënt. Met jou in het team was er balans. Je hebt me logistiek en organisatie, bepaald niet mijn sterkste kanten, volledig uit handen genomen. Ik hoop van harte dat je voor de afdeling behouden blijft. Het was eigenlijk vanzelfsprekend dat je paranimf zou zijn, en ook dat je de prachtige omslag van dit boekje zou maken. Aan wie had ik het béter kunnen uitbesteden?

De heren van IVES: mijn overburen Hans Bor, Reinier Akkermans, en Jan van Doremalen; jullie hebben me steeds geduldig geholpen met de analyses die ik nog steeds niet begrijp. Ik kon iedere minuut bij jullie binnenlopen.

‘Een leuk projectje’ Dames, ja allemaal dames studenten die een wetenschappelijke stage bij me deden, bedankt voor jullie bijdrage. Sandra Raes, Chantal Maat, Maaïke van Gerwen en Renate Koops. And of course Sophie, Sophie Webster, you even managed to bring Christmas presents for my children. Stop doing clinical stuff now, and start your GP-training.

Eunice Moura begon als onderzoeker aan dit project. Bij aankomst trof ik daardoor een gevulde literatuuurbak aan. Onder andere de literatuurstudie van Joost Zaat die bij aanvang van het project al was uitgevoerd. Michel Wensing begeleidde me toen ik in 1998 bij de WOK mijn eerste stappen zette in de wereld van het wetenschappelijk onderzoek; de opgedane ervaring was veel waard toen ik geacht werd dit onderzoek weer vlot te trekken. Carla Walk hielp fantastisch bij de uitvoering van het veldonderzoek. Twanny Jeijnsman-Rouwhorst verzorgde tijdens mijn vakantie de lay-out, een heerlijke thuiskomst. Het Nederlands Huisartsen Genootschap, in het bijzonder Arno Timmermans, en de projectgroep “Toekomstvisie” ondertekenden de aanbevelingsbrieven bij de vragenlijsten. Paul Giessen hielp bij het onderzoek op de Cooperatieve Huisartsendienst Nijmegen.

George Freeman, dear George, I am very honoured that you managed to come today, and read the Frans Huygen lecture. Being one of the leading men on continuity of care globally, I was very honoured to be able to join the fringe meetings of our ‘personal care study group’. They have been very inspiring for me.

Ton Serrarens, beste Ton, wie anders moest de tweede paranimf worden? Ik schrijf er wel wat stukjes over, maar jij bent de continuïteit in onze praktijk. Ik heb je nooit horen mopperen op de momenten dat er gaten gedicht moesten worden. Maar ja, meestal was ik dan ook weg. Ook de praktijk-assistenten hebben het niet altijd gemakkelijk gehad. Mijn 06 is heel wat keertjes afgegaan omdat ik weer van alles vergeten was.

En natuurlijk dank aan al degenen die de data genereerden, want wat moet een onderzoeker zonder data? Alle huisartsen die op de een of andere manier meededen aan het onderzoek: 428 ‘gewone’ huisartsen, 728 huisartsen-in-opleiding en 677 huisarts-opleiders vulden de vragenlijsten in, 40 huisartsen vormden het panel van het Delphi-onderzoek, 30 huisartsen deden mee aan de veldstudie; en alle patiënten: 644 patiënten aan het vragenlijstonderzoek, 30 aan de interviews. Allen hartelijk dank hiervoor.

De Frans Huygenstichting bedank ik voor de financiële injectie bij het laten drukken van het proefschrift.

Op een dag als deze voelen de gaten op de eerste rij nog wat leger aan dan anders. Mijn beide ouders mogen het helaas niet meer meemaken. Dan had ik maar op moeten schieten. Ze waren vast en zeker trots geweest.

‘Papa, ga je nou naar die kant, of naar die kant?’ Naar die ene kant is de praktijk, en naar de andere kant ‘computeren’. Elze, Camiel, Flora en Anne, ik vrees dat aan onze ochtendverwarring bij de voordeur voorlopig geen einde komt. Al doet de geïnvesteerde tijd soms anders vermoeden, jullie zijn mij duizend keer meer waard dan dit boekje.

‘Stuur toch gewoon je standaardbriefje!’ Juliette, liefste Juliette, het is nauwelijks voorstelbaar dat jouw *slip of the tongue* van 5 jaar geleden een dergelijke impact heeft gehad. Het hielp me alsnog over de drempel, toen ik al besloten had om maar niet te solliciteren op een prachtige praktijkplek in het Lentse, die was gekoppeld aan dit onderzoek. Ze zochten immers een vrouw... Ik geloof niet dat je er spijt van hebt gehad.

Vier prachtige kinderen, je eigen praktijk, en ik die teveel in het sousterrain zit. Het is soms zoeken naar de juiste balans, of is de balans juist soms zoek? Hoe dan ook, de continuïteit ligt thuis vooral in jouw handen. Sommigen onderschatten hoe sterk je daarvoor moet zijn. En in de toekomst? *Nec luisse pudet, sed non incidere ludum*. Laat ik hier dus maar niet beloven dat het allemaal anders wordt ...



## **Curriculum vitae**

Hendrik Jozef Schers werd op 13 december 1964 geboren aan de Maas in het Noord-Limburgse Broekhuizen. Na het behalen van het VWO-diploma aan het Boschveldcollege te Venray, studeerde hij van 1983 tot 1991 geneeskunde in Nijmegen. Daarna was hij gedurende enkele jaren arts-assistent in het ziekenhuis in Wageningen. Van 1993 tot 1995 deed hij de toen nog tweejarige huisartsopleiding in het Betuwse Zetten. Na enkele jaren als waarnemend huisarts te hebben gewerkt, begon hij in 1998 een onderzoek naar implementatie van richtlijnen bij lage rugpijn bij de WOK in Nijmegen. Dit combineerde hij met deeltijdwerk als huisarts in Nieuw-Bergen. In 1999 maakte hij de overstap naar de afdeling huisartsgeneeskunde van het UMC te Nijmegen, en vestigde hij zich als huisarts in de academische huisartsenpraktijk in Lent.

Henk Schers woont in Nijmegen, samen met Juliette en hun 4 kinderen Elze, Camiel, Floor en Anne.