Continuity of care through medical records—an explorative study on GPs’ management considerations

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**Background.** The growing complexity of care with more professionals involved is a threat to the delivery of coherent and consistent care. Excellent exchange of information between professionals may be a way to maintain continuity of care. Relevant information to be passed over includes thoughts about future management for individual patients.

**Aim.** To explore the nature of GPs’ thoughts about future management, and to determine the extent to which such thoughts are actually recorded in medical records.

**Design of study.** Cross-sectional study of 5741 consultations.

**Setting.** Thirty GPs from 17 practices in a region in the eastern part of The Netherlands.

**Methods.** The GPs responded to an electronic questionnaire, directly after 200 successive consultations. The questionnaire included items on management considerations, consultation characteristics and personal continuity. We compared the data from the questionnaire to the actual recording of management considerations in the patient records.

**Results.** The GPs had 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 recorded in the electronic patient record; additional testing (3.0%) adjustment of medication (2.9%) and alternative treatment plans (4.1%). Surprisingly however, GPs rarely found that management considerations from earlier consultations were lacking in the medical record.

**Conclusion.** GPs often have thoughts on how to deal with this patient, but hardly ever record such considerations. We recommend the development of tools that facilitate the recording of management considerations in electronic patient records.

**Keywords.** Continuity of patient care, computerized medical records systems.

**Introduction**

Health care management for patients in general practice is becoming increasingly complex. The quantity of data recorded in patient records is growing, and patients are often treated by a group of primary care professionals.¹ ² In this situation, it is a challenge for primary health care teams to show a consistent and coherent approach to the management of a patient’s health condition. This approach is defined as management continuity. Management continuity is achieved when services are delivered in a complementary and
timely manner. Moreover, it is vital to adapt care to individuals’ needs and circumstances. Informational continuity is the common thread linking care by one provider to another. By definition, informational continuity refers to information on past events and personal circumstances.3

However, with reference to management continuity, it is vital that GPs not only recognize what others did during earlier consultations, but also what was planned or considered. In other words, it may be important to share considerations about future management. For instance, such considerations may include thoughts about a possible referral, an anticipated switch of medication, or thoughts about paying attention to one’s compliance in the next consultation. We suggest defining such thoughts as management considerations. These may differ from, or even contradict the straightforward advice that guidelines and protocols often give. This is due to the very nature of general practice, in which contextual knowledge and individualized treatment play vital roles. In a previous study we already found that GPs felt that it was important to make such considerations explicit to colleagues.4 In order to deepen this theme further, we performed an explorative study formulating the following research questions:

- To what extent do GPs consider management considerations important?
- To what extent do they actually record such thoughts in electronic patient records?

Method

In a cross-sectional study design, GPs completed a computerized questionnaire directly after 200 successive consultations. From the same consultations, we extracted data anonymously from the electronic patient records. This enabled us to compare management considerations perceived as important, to their actual recording in the EPR.

Samples

We asked GPs, who used a certain family practice information system (Promedico®) in a district in the eastern part of The Netherlands (approximately 800,000 inhabitants) to participate in this study. During a 2–4-week period, we asked the participants to complete the computerized questionnaire directly after 200 successive consultations. We used no exclusion criteria for the consultations.

Variables and measurement instrument

Pilot study. In a preceding qualitative pilot study, we asked five GPs during 50 patient contacts (a) if management considerations were lacking in the electronic patient record (b) to make a note of their own management considerations for future contacts. The study group collected and grouped these qualitative thoughts, transformed them into items and defined a set of management considerations, including, for example, thoughts about switching medication, about ordering additional tests, and about paying attention to coping behaviour.

Questionnaire. Following this, we developed a computerized questionnaire in order to measure GPs’ considerations for future management. Furthermore, it incorporated items on management considerations considered to be lacking in the EPR. The questionnaire also held items on the perceived importance of personal continuity (because we assumed that this would influence considerations and the recording of information), and on other independent variables, such as the reason for encounter, consultation type and seriousness of symptoms. Face validity of the questionnaire was established by five other GPs, all staff members from the department of general practice.

We built the questionnaire into the information systems of the participating GPs.

Procedure. We asked the GPs to fill in the questionnaire directly after each of 200 consultations and emphasized that they should not skip consultations. Before the start of the study, we visited the practices, explained the purpose of the study, and clarified distinctness in the questionnaire. The completion of one questionnaire would take 30–60 seconds on average. GPs received reimbursement for participating. The study took place in 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 disks. 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. This would select all text lines in the medical record that the GP typed down on the same day on which he filled in the questionnaire. Thus, we were able to compare the answers to the computerised questionnaire to actual record keeping. We ascertained that ethical approval was not necessary, as—through the use of ID-numbers—patient data left the practices only anonymised.

Analysis. We excluded electronic questionnaires with missing values, and the first five consultations for every GP. The latter were considered exercise consultations. For the analysis, we selected the consultations for which a follow-up was considered. Two authors (HS and Caroline van de Ven, research assistant) 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, only one of the assessors evaluated the rest of the observations. We calculated frequencies with 95% confidence intervals for the dependent variables.
Results

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

The GPs filled in the questionnaire after 5741 consultations. For 4178 (72.9%), they considered a follow-up consultation applicable. Table 1 shows the characteristics of these consultations. The perceived importance of personal continuity for follow-up consultations was diverse. In 49%, GPs stated that it was unimportant which GP would see this patient for a follow-up consultation. In 26% of the consultations they would find it a bit important that the patient would see himself or herself, and in 25% of the consultations, they felt that this was important or very important.

GPs had management considerations in 66.4% of the consultations; 26 out of 30 GPs had considerations in more than 50% of the contacts. These management considerations related mainly to additional testing, attention to coping behaviour, adjustment of medication and to alternative treatment or referral. It appeared that GPs seldom recorded management considerations in the EPR. This applied to all types of considerations. Considerations about additional testing, adjustment of medication, alternative treatment and possible referral were recorded most often (Table 2).

Discussion

Traditionally, medical records consist of prior knowledge, which is collected over time by one practitioner. Nowadays, electronic medical records serve increasingly as a tool by which practitioners share medical information. Opportunities for information and communication technology are rapidly increasing, and the electronic medical record is expected to develop into an important means to support and maintain consistency of care. Global leaders in medical informatics consider augmenting optimal use of medical information for collaborative care as one of its major goals. This implies that medical records should guide providers to the delivery of consistent care for individual
patients. Apart from medical facts, medical records might hold providers’ considerations for future management and treatment of patients.

This study suggests that this is not yet optimally established. It was striking that GPs seldom lacked management considerations in the record, although they often do have considerations, which on the other hand they seldom record in the EPR. It may be argued that the recording of considerations is often irrelevant as they are covered by guidelines and protocols. Although this might be valid in some cases, in most cases it implies a denial of the singularity of patient care in general practice, which is individualised and dependent on contextual factors. Moreover, many important considerations, such as thoughts about coping behaviour and compliance, cannot be derived from guidelines.

In a former study at an out of hours centre, we found that GPs on call sometimes felt they needed insight into management considerations of the patient’s personal GP. In a Delphi study, a panel of GPs prioritised the development of a structure for management considerations in electronic patient records. Although GPs have proven to record more in EPRs than was expected, this obviously excludes management considerations. Patients value doctors knowing what other doctors did, and they find it very important not to receive contradictory information. In our opinion, that needs excellent informational transfer, also on long-term and short-term management issues. Our study shows that management considerations are substantial, but they appear to be almost exclusively stored in doctors’ brains.

**Strengths and limitations**

This study explores a 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 was explorative and therefore, it lacks a thorough theoretical framework. Its validity is difficult to determine as the study focuses especially on thoughts and considerations. However, it yields important clues to content and quantity of GPs’ management considerations during consultations.

**Implications for future research or clinical practice**

Optimal informational continuity through electronic patient records is a vital boundary condition which enables a diversity of health care workers to maintain consistency of care. The available literature so far does not provide evidence on how this should be achieved, but in our opinion, good record keeping might include recording of management considerations. This study showed that GPs often consider these important, but on the other hand seldom record them. Therefore, we recommend that EPR designers create smart possibilities for recording management considerations. Such developments will support continuity of care in the contemporary complexity of general practice.

**References**