



Consultations with general practitioners on patient safety measures based on routinely collected data in primary care

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DECLARATIONS

Competing interests

None declared

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Summary

Objectives To gauge the opinions of doctors working, or interested, in general practice on monitoring patient safety using administrative data. The findings will inform the development of routinely collected data-based patient safety indicators in general practice and elsewhere in primary care.

Design Non-systematic participant recruitment, using personal contacts and colleagues' recommendations.

Setting Face-to-face consultations at participants' places of work, between June 2010 and February 2011.

Participants Four general practitioners (GPs) and a final year medical student. The four clinicians had between eight to 34 years of clinical practice experience, and held non-clinical positions in addition to their clinical roles.

Main outcome measures Views on safety issues and improvement priorities, measurement methods, uses of administrative data, role of administrative data in patient safety and experiences of quality and safety initiatives.

Results Medication and communication were the most commonly identified areas of patient safety concern. Perceived safety barriers included incident-reporting reluctance, inadequate medical education and low computer competency. Data access, financial constraints, policy changes and technology handicaps posed challenges to data use. Suggested safety improvements included better communication between providers and local partnerships between GPs.

Conclusions The views of GPs and other primary care staff are pivotal to decisions on the future of English primary care and the health system. Broad views of general practice safety issues were shown, with possible reasons for patient harm and quality and safety improvement obstacles. There was general consensus on areas requiring urgent attention and strategies to enhance data use for safety monitoring.

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Ethical approval

Not applicable

Guarantor

CT

Contributorship

CT conceived the study idea; CT and AM recruited participants; CT collected and analysed the data and wrote the initial draft of the paper; CT, AM and PA revised the paper and approved the final version

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Reviewer

Nick Steel

Introduction

Staff working directly in patient care are not only in a unique position to conceptualize research questions, but they are also crucial in instigating and maintaining changes to practice and policy.^{1,2} One example of this is the Inquiry into the Quality of General Practice in England commissioned by the King's Fund.³ Clinicians have an unparalleled perspective of patient care and the main driving forces behind instilling a 'safety culture' and improving patient safety in their own workplace.^{4,5}

Studies using data from general practitioners (GPs) on patient safety in primary care have attempted to determine the extent of errors and patient harm.⁶⁻⁸ Gaps in knowledge extend to how routinely collected data can be best used to measure adverse events.^{9,10} Undoubtedly, these data have been under-used for monitoring patient safety in primary care.^{9,11,12} Before further development of safety measures based on routinely collected data can be achieved, more evidence on data use and the views of primary care staff on measuring patient harm are needed.

The consultations in this study addressed the following questions:

- What are the main patient safety issues and priorities for improvements in general practice?
- Are there existing or proposed solutions to these problems?
- What are examples of good safety practice in general practice?
- How are administrative data being used for safety improvement in general practice and what impact have these data had on patient safety?
- What safety and quality improvement initiatives are GPs involved in?

Method

Type of investigation

An opportunistic sampling frame was used. There was no intervention, participant allocation or randomization involved. No ethics approval was sought as the study was hypothesis-generating

and did not fall under the remit of research, but it did share some characteristics with service evaluation and audit.^{13,14}

Sample selection

Participants were recruited using a snowball method, from personal contacts and recommendations by colleagues in the Department of Primary Care and Public Health at Imperial College London. Despite the non-random selection process, the representativeness of the sample to the general GP population was improved by ensuring that potential participants varied in experience and years in active practice, as well as the geographical location and size of their respective GP practice.

All potential participants were contacted by email. Briefing guidance notes were developed (available from authors on request) and a consultation schedule previously used by a colleague in an audit of hospital performance was modified and use to ensure that consultations were conducted consistently (Appendix 1).¹⁵ Discussions were semi-structured to allow for participants to explore topics of particular interest to them.^{16,17}

Data collection

Consultations were conducted between June 2010 and February 2011 at the participants' places of work. All discussions were voice recorded for ease of analysis. Consent to the recording and the use of any generated data for the purposes of the research was obtained from participants at the beginning of each consultation.

Data storage and processing

Consultations were recorded with an Olympus LS-10 voice recorder. Files were transferred onto computer as MPEG Layer 3 audio files, played back using Windows Media Player version 11 and transcribed into text using Microsoft Office Word 2007. No specialist transcribing software was used. Field notes for each consultation were added to the transcripts and annotated as additional information. Data were entered into

Microsoft Excel 2007 and data validation was performed by entering the data twice, into two separate worksheets. Differences between the worksheets were identified using an in-built function of Microsoft Excel 2007 to detect duplicate data.

Analysis strategy

The qualitative method applied to document personal accounts and to highlight common themes identified across the consultations was narrative analysis.¹⁸ Transcripts of the consultations and transposed field notes were read multiple times, and recurrent statements and themes labelled and placed within the prior assigned categories.¹⁹ The transcripts were then systematically analysed to ensure saturation of identified themes and to compare these themes for patterns.

Results

Out of the five potential participants who were approached, all consented and took part in the study. Consultations were conducted in person; four of the meetings were held at general practice surgeries and one was held at a Primary Care Trust (PCT) headquarters. The consultations were conducted in the following locations: Birmingham, London, Norwich and Walsall. Meetings were approximately between 30 minutes and one hour in duration.

Demographic data

All participants were practising GPs, apart from one participant in the final year of medical undergraduate education. Among the four GPs, the years in active practice ranged from eight to 34 years. The GPs held between four clinic sessions a week to whole time equivalent (WTE) posts, with years at their current GP practice ranging from three to 30 years. Practice list sizes ranged from approximately 3000 to 17,500 patients, while the total number of GPs at the practices of work ranged from three to 10 WTE, fully qualified doctors. Other work commitments held by the participants included positions of associate medical director, clinical teaching fellow, GP

prescribing lead for a PCT locality, medical advisor and private GP.

Patient safety issues

There was unanimous agreement from participants that the patient safety issues they perceived to be relevant to the catchment area of their medical practice and PCT reflected safety issues that also occur elsewhere in the country (Table 1). All five participants identified medication as a leading area where medical errors and patient harm may occur (Table 1). These issues were broad and related to prescribing, especially polypharmacy, dispensing, patient adherence, and drug treatment in care homes. Participants also described communication problems, poor quality note-taking, and deference to patient notes written by colleagues.

Delayed and missed diagnoses were highlighted, along with uncertain appropriateness and timeliness of treatment. The increasing complexity of cases managed in primary care was noted as cause for concern, with two participants describing doubts about possessing the necessary skill sets to cope with the changing patient demography. GPs who had been practising for longer lengths of time identified more patient safety problems and were also more likely to question the adequacy of their peers' knowledge in managing complex cases that were previously treated in the acute setting. The potential for performance variation between practices and GPs to affect patient safety was raised and was also discussed within

Table 1
Areas of patient safety concern identified by participants

Area of concern	Participants				
	#1	#2	#3	#4	#5
Access to services			×		
Communication	×			×	×
Complexity of caseload	×				×
Diagnosis	×	×			
Education and training	×				×
Health and safety		×	×		
Medication	×	×	×	×	×
Practice performance	×				
Treatment		×	×		

the context of inadequate undergraduate and postgraduate medical education. Examples of these issues included insufficient teaching of basic pharmacology and a lack of computer training for older GPs.

Solutions to safety problems

Both proposed and currently used methods of reducing the potential for patient harm in primary care were suggested by the participants. First, the transfer of information between secondary care and primary care has been facilitated by electronic discharge summaries, which enable GPs to gain immediate access to details of their patients' hospitalizations. Related to this, participants acknowledged that electronic availability of results from investigations undertaken in hospital, including same day receipt of results, have contributed to safety improvements in their practices. However, one participant explained that complaints to the provider were necessary before there were reductions in the length of time between an investigation being carried out and the results being sent to the GP. Second, sharing of information and partnership among GPs in the locality, and between GPs and practice pharmacists, were recommended by three participants. Third, the use of clinical governance tools, such as reporting, was also named as a safety mechanism being used in primary care.

Barriers to safety improvements

Participants stated that based on historical evidence of low levels of reporting by GPs compared to providers, they did not believe that compulsory reporting will have the desired impact of reducing incidents of harm. Participants felt that reporting systems have not been well publicised, the processes of reporting are poorly understood by clinicians, and there is reluctance among GPs to report incidents of patient harm and 'near misses'. A lack of a safety culture, fear of punishment and the autonomous nature of work in general practice were other obstacles to reducing patient harm that were listed by participants.

Inadequacies in medical education, especially at undergraduate level, were identified by participants as a barrier to improvement as well as a

patient safety issue. Besides insufficient training on medications, drug interactions and computer skills, participants expressed concerns about colleagues' unwillingness to adopt new practice methods and undertake training, especially in the use of new technology. Another factor perceived to hinder safety development was conflict with providers.

Evidence of good practice

Experience of good medical practice encountered or demonstrated by participants included: communicating with secondary care to check data quality; junior GPs querying potential diagnostic errors; monitoring quality using case-note review, nationally collected data, and other sources; the change from old paper-based medical records to computerized systems; responding appropriately to pop-up dialogue boxes during consultations; and using quality measures to identify poor performing GPs.

Awareness of measurement and monitoring methods

Three participants initially reported unawareness of measures for detecting medical errors or adverse events within their own practice or PCT. With probing, the participants identified at least two methods that had been used in their locality. Some of the patient safety measurement and monitoring methods described by the participants included meetings (clinical and non-clinical), mortality data, patient reports, significant event audits, supervision of medical students, and use of clinical and non-clinical data (e.g. immunisation records).

Data uses and challenges

All participants reported at least three different uses of routinely collected data for quality and safety improvements that have been applied in their practices. The uses that were identified by participants are shown in Table 2. A broad selection of challenges was associated with the collection, use and management of routinely collected data. These fell into the categories of budget, data, management, staff issues and technology.

Table 2
Uses of routinely collected primary care data identified by participants

<i>Data type</i>	<i>Uses</i>			
	<i>Patient care</i>	<i>Performance monitoring</i>	<i>Research</i>	<i>GP training and review</i>
Clinical audits based on drug or medical condition alerts	Benchmarking using national and local comparisons	Research databases (e.g. GPRD)	Annual GP appraisal and personal development plan	Identify learning needs or action plan
Discussion material for clinical meetings	Incident reports sent to NRLS		360 degree appraisal/ multisource feedback	
Prescribing tools	Local extensions to the NHS QOF Local practice profile (prevalence of conditions) Performance data (QOF, prescribing, national patient survey) Practice based commissioning group data (e.g. inpatient data on A&E attendance)			

A&E = Accident and Emergency department; GP = General Practitioner; GPRD = General Practice Research Database; NRLS = National Reporting and Learning Service; QOF = Quality and Outcomes Framework

The difficulties ranged from: duplication of work; poor data quality and accuracy; complicated navigation of multiple screens on a computer system, especially when patients have complicated histories; high volume of computer information and alerts during consultations; dependence on the commitment of practice staff to adopt new policies and data management; uncertainties about future funding; frequent policy changes; insufficient communication between PCT and practices; too many measures; lack of computer skills; computer hardware breakdowns; technology changes too quickly; and too many clinical systems.

Proposed and implemented safety improvements

Desired changes to the collection and uses of routine data were noted in areas such as collaboration between PCTs and general practices, including: the sharing of knowledge and learning; better documentation; single computer system to ensure common language; up-to-date computer and IT equipment; regular review of existing measures;

feedback from reporting; local selection of measures; and extensive computer training.

Participants provided examples of how routinely collected primary care data have facilitated safety monitoring. Better understanding of the practice population for service provision was one of the identified benefits of using routinely collected data. Other cases were: ensuring comprehensive patient records and care plan; supporting the audit of significant events; availability of indicators for outcome comparisons with other practices; and transparency through non-anonymized data within the PCT.

Experience of quality and safety initiatives

Participants' involvement with patient safety and quality projects varied from memberships of GP commissioning groups and GP consortia, a PCT medicines management group, a QIPP programme, and a regional cardiac and stroke network. Mechanisms used to promote patient safety that were described by participants featured medication review, staff training and use of clinical governance workbooks.

Role of GPs in patient safety

As well as demonstrating fitness to practice, participants emphasized the importance of their duty to the patient despite financial pressures. For example, GPs may feel pressured into restricting the number of referrals due to hospital costs. Additionally, the multidisciplinary partnerships with other staff to ensure safety were highlighted, with nurses assigned the responsibility for routine patient check-ups and practice managers being accountable for collating and submitting practice data for local and national safety and quality monitoring. The discussions emphasized the changing role of GPs and differences between younger, less experienced GPs and older, more experienced GPs in their perceptions of working practice; the former preferring collaborative and collective partnerships while the latter group often desiring more insular and independent practice.

Discussion

This exploratory study provided a snapshot of clinicians' views on patient safety concerns, uses of routinely collected data to measure adverse events and existing methods for monitoring incidents of patient harm in primary care. Medication-related issues were unanimously identified as causes for patient safety concern yet computer pop-up dialogue boxes that were partly designed to reduce prescribing errors were reported to hinder, rather than aid, consultations. This finding reiterates known limitations to the patient safety features of computer systems in general practice.^{6,20–23}

Mechanisms to promote a patient safety culture may help to remove a residual culture among some GPs of unwillingness to learn and to seek help in general practice.^{5,8} Indeed, one participant described PCT-wide efforts for cultural change based on reassurance that punitive action would not be taken against individual GPs. As well as enhancing communication between clinicians and healthcare providers, effective dialogue between GPs and patients will improve patient satisfaction and the efficiency of care.^{24,25} Not least, sharing of knowledge between healthcare professionals can also reduce diagnostic errors.^{7,26} Under-promotion and low use of

routinely collected data for safety monitoring in general practice were reaffirmed by poor awareness of how these data are used in patient safety initiatives, especially at the local level.

Strengths and limitations of the consultations

This research benefitted from a systematic approach to the transcribing and analysis of the consultations. The views of a diverse group with varying clinical experience and different practice characteristics were documented. Given resource limitations and the scope of the consultations within a doctoral research project, rigorous sampling methods were not applied. Therefore, there may have been sampling bias, despite apparent diversity between participants. This type of bias would be due to the snowball recruitment approach and small group of contacts, resulting in participants being more similar to each other and less like the general GP population. Future qualitative studies may apply random sampling to reduce bias, such as selecting participants from the General Medical Council register of GPs.²⁷ Studies with larger samples may adopt analysis strategies such as the constant comparative method to improve scientific rigour.^{28,29}

It can be difficult to distinguish between originality of thought and the influence of the questions asked.²⁸ Information bias was reduced by guiding discussions with a structured inventory. However, as participants were pre-notified of the consultations' theme and as the first author was a personal acquaintance of some of the participants, these factors may have encouraged social desirability bias. The presence of such bias can only be determined with further research using triangulation of data from consultations with colleagues working at the same practice as the participants, PCT annual reports, Quality and Outcomes Framework (QOF) data, patient records, and observation. One researcher (the first author) conducted, transcribed and analysed all the consultations. By using at least one other researcher for the analyses, the subjectivity of interpretations would have been reduced and theoretical saturation of the data may have been enhanced.²⁸

The opinions expressed by the participants may not be typical. General practices vary across

the country in their catchment populations, expertise of staff, sophistication of equipment and the availability of services. Likewise, awareness and use of guidance on general practice safety improvement, such as the National Patient Safety Agency's (NPSA) *Seven Steps to Patient Safety in General Practice*, will not be homogenous.⁴ Thus, health professionals' experiences and understanding of patient safety issues will also vary. From the consultations, common themes were identified, demonstrating that learning can be gained from case studies and used to adapt existing solutions to safety problems.³⁰ Not all of the patient safety measures discussed in the consultations can be feasibly implemented at present, due to currently limited availability of routinely collected administrative data.

Implications for future research

The King's Fund completed a national investigation into the quality of primary care in the UK in 2011.³ The findings from this small-scale, doctoral-level piece of work will complement the considerably larger body of work that is being led by the King's Fund and which will have direct implications for clinical practice.³⁰ Further examination of the topics addressed in the informal consultations should include the ways in which participation in safety initiatives influences staff motivation and safety learning. The sustainability of patient safety campaigns and their impact on patient safety beyond the years of the campaigns also require consideration.

Conclusions

As primary care in England enters a transitional phase, a dichotomous message was presented by the participants. With the realization of the need for GPs and other healthcare professionals to work together to improve safety, there is also a reiterating message that GPs value the autonomy that comes with working in general practice. This needs to be considered in the current NHS reform process and in developing strategies to improve patient safety and the quality of healthcare.

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Appendix 1 Consultation schedule

1. General information

- 1.1. Date and place of consultation
- 1.2. Job title (and other qualifications)
- 1.3. Country of qualification (medicine and post)
- 1.4. Years in active practice post-GP qualification
- 1.5. Years in current post
- 1.6. Number of practices employed at
- 1.7. Hours of clinic sessions per week, per practice (full time/part time)
- 1.8. Other work commitments (clinical and non-clinical)
- 1.9. Practice list size (main practice if more than one practice)
- 1.10. Number of GPs at (main) practice (full time/part time)

For non-GP interviewees

- 1.11. Date and place of consultation
- 1.12. Job title

- 1.13. Part time/full time
- 1.14. Years in current post
- 1.15. Years working in general practice

2. Patient safety issues

- 2.1. What do you think are the main patient safety issues in your practice catchment area? (top 5 if more than 5 issues listed)
- 2.2. Do you think these issues accurately reflect the national patient safety picture in general practice?
 - 2.2.1. If no, then why not?
 - 2.2.2. *What areas of general practice care do you think most urgently require patient safety improvements in your practice catchment area // nationally? OPTIONAL*
- 2.3. How do you think that these patient safety issues could be resolved?

3. Measurement

- 3.1. Can you tell me what methods of picking up medical errors and patient harm do you use in your practice, if any? (SEA, meetings, computer alerts)
 - 3.1.1. Can you provide an example of the processes involved in using this/these method(s)?
- 3.2. What other medical error and adverse event measurement and monitoring methods are you aware of?

4. Uses of administrative data

- 4.1. What administrative (non-clinical) data do you have access to?
 - 4.1.1. How do you use these data?
 - 4.1.2. Are these administrative data used for safety monitoring?
 - 4.1.3. How are these data collected?
 - 4.1.4. Are these data stored centrally or at individual practices?
 - 4.1.5. Who is responsible for these data?
 - 4.1.6. How long have you been using these data?
 - 4.1.7. What challenges do you have in using these data?
- 4.2. What (other) types of data do you use to monitor quality and safety of care?
 - 4.2.1. How often do you access and use these data?
 - 4.2.2. Who collects these data?

What improvements would you like to see to ...

- 4.3. Administrative data collection
- 4.4. Administrative data access
- 4.5. Administrative data usage

5. Impact of administrative data on safety improvements

- 5.1. Can you tell me of any mechanisms in your PCT to review and improve data use in quality improvements?
- 5.2. How effective do you think these mechanisms are?
 - 5.2.1. How do you think these mechanisms could be improved?
- 5.3. What role(s) do you think that administrative data have in patient safety improvements in general practice?

What do you think might be the ...

- 5.4. Benefits of using administrative data for monitoring patient harm?
- 5.5. Disadvantages of using this type of data for monitoring patient harm?

6. Experiences of safety improvement

- 6.1. What are your experiences of patient safety improvement initiatives? (e.g. roles adopted, what initiatives were)

- 6.2. What challenges have you experienced in implementing safety initiatives/measures? (e.g. lack of staff, training; awareness, funding)
- 6.3. What role do you think GPs have in contributing to patient safety improvements/monitoring of patient harm in general practice/healthcare?

7. Assessment of candidate patient safety indicators

I will now present to you a list of candidate patient safety measures for your assessment. These indicators have been identified from the medical literature as potential administrative data-based screens for adverse events in primary care. Patient safety indicators may detect possible patient injuries or incidents that are unexpected, unwanted and that should not reoccur.

For each indicator, I would like you to read the description and then rate the indicator using the criteria provided. Further instructions are on the rating sheet.

8. Other questions

- 8.1. Would you like to make any further comments?
- 8.2. Can you recommend any colleagues who might be interested in talking to me about patient safety in general practice?

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