

RESULTS

Search results

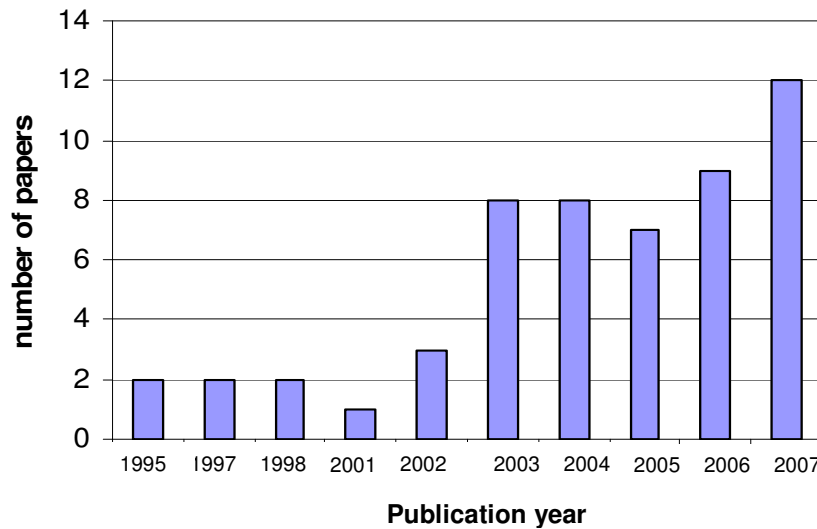
The Ovid Medline search returned 1057 titles and abstracts and the CINAHL and EMBASE searches returned 773 potentially relevant papers.

We reviewed the titles of all papers and if the title suggested eligibility we also reviewed the abstract. Titles and abstracts suggested the eligibility of 126 papers and we read the full text of these. Eliminating duplicates, discussion papers and letters, we found 49 articles reporting original research of direct relevance to the objectives of this paper, and 29 that were peripherally related. We

excluded the peripherally related papers because their data were derived hospitals only (8 papers), their subject matter was not directly related to patient safety (8 papers), or they were focused on individual types of safety incident or care process (13 papers).

The number of papers reporting patient safety research in primary care increased rapidly over the period of the review. Figure 1 shows the publication year of the 49 research reports included in this review and Table 2 shows the research methods used in each of the three general types of research approach.

Figure 1: Review-eligible papers by publication year



Methods used in primary care patient safety research

The 49 articles directly related to patient safety research in primary care were of three main types:

1. Retrospective studies, including literature reviews and studies using medical records and malpractice databases as their data sources.²⁶⁻³⁴ We included studies of significant event audits in the retrospective category because although the audits themselves were

reported in real-time, the research involving databases of audits was completed retrospectively.

2. Concurrent or prospective or single method studies using data analyzed either qualitatively or quantitatively.³⁵⁻⁶⁸ We included reporting systems studies in this category because, although reported incidents may have happened in the past (retrospectively), reports used in these studies

were made especially for the research, or in “real-time”.

3. Mixed methods studies reporting research that used two or more different methods.⁶⁹⁻⁷⁴

Within these three main research approaches, 10 different methods were used. Forty-eight studies used only one main method but the six remaining studies used two^{69-72, 74} and four⁷³ different methods. The most common method was analysis of reports of patient safety incidents made by primary care clinicians, practice staffs, or patients^{36, 37, 39-42, 45, 48-50, 53, 54, 57-61, 63-66, 68} and the research question most often addressed was: “what types of

patient safety incident happen in primary care?”^{29, 30, 32, 33, 36-39, 41, 42, 46, 48-54, 58-63, 65, 66, 68, 70, 71}

Reported research was grouped according to the following generic reasons for the study:

1. To establish the types (and sometimes frequency) of patient safety incidents happening in primary care.
2. To propose and/or test interventions to make primary care safer for patients.
3. To propose and/or test methods for patient safety research in primary care settings.

Table 2: Generic research questions addressed in studies using different designs/methods

| Research Aim | Research Design | | |
|--|--|---|--|
| | Retrospective | Concurrent or Prospective | Mixed methods |
| To establish the types (and/or frequency) of patient safety events happening in primary care | Systematic literature reviews ^{29, 33} Studies of malpractice claims and risk management databases ^{30, 34} | Interview studies ^{38, 51} Surveys ^{46, 52, 62} Reporting systems ^{36, 37, 39-42, 48-50, 53, 54, 57-61, 63-66, 68} | Survey + Interview study ⁷¹ Survey + Systematic literature review ⁷⁰ |
| To propose and/or test methods for patient safety research in primary care settings | Systematic literature reviews ²⁶ Studies of Significant Event Audit databases ³¹ Studies of malpractice claims and risk management databases ³² | Surveys ^{47, 56} Reporting systems ⁴⁵ | Systematic literature review + Focus group study ⁷² Study of Significant Event Audit database + Survey ⁷⁴ |
| To propose and/or test interventions to make primary care safer for patients | Studies of significant event audit databases ^{27, 28} | Interview studies ^{35, 44} Focus group ^{43, 55} Reporting systems ^{40, 44, 57, 58, 64, 67} | Delphi study + Interview study ⁶⁹ Systematic literature review + Interview study + Focus group study ⁷³ |

A. Strengths and weaknesses of retrospective research methods

Retrospective research methods are generally used to find out what has happened in the past in order to plan improvements for the future.

Systematic reviews of the literature have been published both as a stand-alone research method^{26, 29, 33} and in combination with other methods.^{70, 72, 73} The first literature review appeared in 2002²⁹ aimed at developing a way to describe primary

care patient incidents, followed by another in 2003³³ that aimed to both describe incidents and estimate their frequency. In 2006^{70, 72} and 2007^{26, 73} four more literature review papers were published. Where a literature review is reported in combination with other research methods, it was used in advance of other methods to develop a tentative definition,⁷⁰ proposal,⁷² or method⁷³ that was then tested by the other methods.

The strengths of literature reviews lie in their being able to summarize existing knowledge and identify knowledge gaps. Results of a literature review crucially depend on the literature being reviewed, the means by which it is identified, and how it is interpreted. Medline was accessed for all primary care patient safety literature reviews although one paper was silent on their search strategy.⁷⁰ Medline excludes many journals that publish primary care research so used alone it is unlikely to provide a complete picture. Most searches were limited to English language reports and this would also limit their comprehensiveness.

Most literature reviews used more than one citation database, and included searches of EMBASE,^{26, 29, 73} CINAHL,^{26, 73} the Cochrane Library,²⁹ E-PIC (Pharmacy information),⁷³ the Health Management Information Circular (HMIC)⁷³ and the websites or bibliography collections of WHO,⁷⁰ the Joint Commission for the Accreditation of Healthcare Organizations,⁷⁰ the National Patient Safety Foundation,^{29, 33} the Institute

for Healthcare Improvement,²⁹ the American Academy of Family Physicians,²⁹ the American College of Physicians-American Society of Internal Medicine,²⁹ the Institute of Medicine,²⁹ and the Medical Protection Society.³³

Measures of primary care patient safety incidents from literature reviews:

All literature reviews concentrated on qualitative analyses of prior research, producing definitions of “medical error”^{29, 70} and “preventable adverse events”,²⁹ identification of factors impeding or facilitating disclosure of “medical errors”,⁷² ways that mortality data are used in general practice,²⁶ and a measure of patient safety culture in primary care organizations.⁷³

One review found 25 different definitions of “medical error”.⁷⁰ Another derived quantitative measures of “medical errors” in primary care (5-80 per 100,000 consultations), “errors in diagnosis” (26-78% of all “errors”), and “treatment errors” (11-42% of all “errors”).³³ This study also estimated that 60-83% of all “errors” were preventable.

Studies of significant event audits

are limited to the United Kingdom, where since 2004 the Quality and Outcomes Framework has rewarded general practices for carrying out analyses of significant occurrences (not necessarily involving negative patient outcomes) in an effort to improve care. One paper was published shortly before conducting such audits was associated with payment.³¹ Three studies used significant event audits alone^{27, 28, 31} and in one study a significant event audit was used in combination with a survey.⁷⁴ The former three studies aimed to describe the content of general practices' significant event audits while the latter study used the quality of significant event audits as an outcome measure for an intervention aiming to improve risk management in general practice.

These studies were descriptive, small, and not designed for epidemiological generalizability: the 2003 study reviewed only 56 significant event reports³¹ although 337²⁷ and 662²⁸ reports were included in the later studies. Significant events described in these

studies tended to be serious, with events that may threaten patient safety but not pose an immediate risk to life regarded as not significant enough to warrant inclusion. A limitation of significant event audit as a method for researching patient safety in primary care is that so far it has been reported only in the UK. We could find no evidence of its having been used for research in other countries. However, in the UK it is now a compulsory activity for general practices and in the future, outcome measures for patient safety research may possibly be derived from significant event reports. Furthermore, if other countries adopt the same technique, it may provide a means of making international comparisons.

Measures of primary care patient safety incidents from significant event audits: The main measures produced by three studies were descriptions of the significant events reported in general practice.^{27, 28, 31} These descriptions grouped events according to classifications derived from reporting system studies.^{39, 53,}
⁶⁰ Other measures used in significant

event audit research were reasons for significant event reports being “unsatisfactory”^{27, 28} and severity of patient safety event outcomes. Serious or life-threatening events were 6.5% of reports in one study²⁸ and 22% of reports in another.³¹

Studies of malpractice claims and risk management databases are currently not a mainstream approach in primary care patient safety research. We identified three relevant studies.^{30, 32, 34} One was a study of incidents reported to a risk management database at one US academic medical centre,³⁰ one was a case series (N = 94) of criminal cases in Hungary that involved health care providers,³⁴ and the third analyzed 49,345 US primary care malpractice claims.³² This method was not used in any mixed-method studies.

The study by Fischer et al³⁰ is the earliest quantitative study of patient safety incidents in primary care we found. Quantitative analyses make an important contribution to the field of patient safety because they highlight common problems that can

then be used to prioritize interventions. The main weakness of studies involving malpractice claims or risk management databases is that they provide a limited view of patients’ experiences with patient safety incidents. Most incidents do not prompt a malpractice claim and many claims do not arise from preventable incidents.⁷⁵ However, they do give access to data about incidents that patients have found unsatisfactory and, as in two of the studies we identified, data can be found for entire countries.^{32, 34} Another strength, demonstrated in the study by Phillips et al,³² is that by linking malpractice and other databases, additional information can be derived about the characteristics of these incidents.

Measures of primary care patient safety incidents from malpractice databases: The main measures were the prevalence of incidents that resulted in an injury, potential injury, or financial liability (5.4 per 100,000 clinic visits³⁰) and the distributions of incidents of different types. Patient safety incidents described in these malpractice and risk management

databases were due to treatment (31%³⁰) or medication errors (8%³²), diagnostic mishaps (26%,³⁰ 29%³⁴ and 34%³²), failure to supervise or monitor (16%³²), improper performance (15%³²), failure or delay in referral (4%³²), 'other' errors (26%³⁰) or no error, such as known complications (17%³⁰).

Severity of outcome was measured as death (3.4%³⁰ and 37%³² of "errors"), severe or permanent disability (13.8%³⁰ and 19%³² of "errors"), moderate or temporary disability (34.5%³⁰ and 26%³² of "errors"), and low severity or emotional outcome only (48.3%³⁰ and 18%³² of "errors").

B. Strengths and weaknesses of concurrent and prospective research

Concurrent and prospective primary care patient safety research methods are generally used to find out what is currently happening and the qualitative methods often used in concurrent and prospective primary care patient safety research are particularly important for providing in-

depth analyses of why patient safety incidents happen.

Interview studies have been used as a method for studying patient safety in primary care for more than a decade. They have been used as both a stand-alone method^{35, 38, 44, 51} and in mixed-methods studies.^{69, 71, 73}

They have been used to describe patient safety incidents in primary care^{38, 51, 71} and to develop ways to make primary care safer.^{35, 44, 69}

They have involved primary care clinicians^{35, 44, 69, 71, 73} and trainees,³⁸ academics,³⁵ managers,^{69, 73} support personnel,^{35, 69} policy-makers,^{35, 69} hospital staff⁶⁹ and patients.^{35, 51, 69}

Methods used to enroll study participants included "snowballing",³⁵ purposive sampling of physicians, patients, practices, or organizations,^{38, 69, 71, 73} and random sampling from physician⁴⁴ and general⁵¹ populations. These studies used interviews lasting between 25 minutes⁴⁴ and 2 hours.³⁵ Most interviews were conducted according to an interview guide and recorded,^{35, 51, 69, 71, 73} and the verbatim transcripts were analyzed together with field notes.^{35, 73}

Interview studies and other qualitative research techniques are especially valuable for their ability to derive new information that have not been anticipated by researchers.⁷⁶ Data from individual interviews provides information on non-factual data that is difficult to obtain by other means. One study highlighted difficulties with classifying errors, assessing severity of harm, and estimating incidence that are not assessable from other studies producing these measures. The privacy of the interview allows exploration of topics such as anxiety and guilt about incidents. Interview studies can be economical because participants are ideally purposively sampled, ensuring that every interview makes a meaningful contribution to the study's goals. Random sampling, used in two of the identified studies,^{44, 51} is often considered wasteful in qualitative research because it may cause some unnecessary interviews to be conducted at the cost of potentially useful interviews not being carried out.

Conversely, interview studies (and other qualitative research approaches) are sometimes considered uneconomical, because they are labour-intensive and time-consuming. They are difficult to integrate into regular routines for patient safety research, although some reporting systems include capacity for interviews in their confidential reporting processes.⁷⁷ Some participants may also be reluctant to fully disclose some issues as there is no anonymity of participants from investigators. Recall bias also plays an important part in colouring the discussions held during interviews. Interview studies tend to be less familiar to healthcare planners and providers than quantitative or epidemiological research and may sometimes be less valued because of the inevitably small numbers of study participants (relative to the large numbers of participants possible in some study designs – especially database studies), the usual lack of random sampling and the contextual specificity of study groups.

Measures of primary care patient safety incidents from interview studies: Measures produced by interview studies included the type of safety incident primary care physicians notice while seeing patients in their offices (office administration errors (17%), physician-related errors (8%), patient communication errors (5%), and preventable adverse events (4%))⁷¹ or encountered by trainee doctors (shortfalls in interpersonal skills, diagnostic skills, and management skills).³⁸ Prevalence of observed “errors” was 24% of consultations in primary care office practice (3% to 60% of encounters per physician).⁷¹ Two studies identified the type of safety incident patients are concerned about.^{51, 69} These were access restriction (29% of “problem incidents”), communication breakdown, relationship failure (37%), technical error and inefficiency (24%)⁵¹ and issues relating to the interface between primary and hospital care.⁶⁹ Consequences of observed “errors” in office practice included “harm” (24% of consultations) and “potential

harm” (70% of consultations).⁷¹ Patients spoke of anger, frustration, belittlement, and loss of relationship with and trust in their physician as consequences of safety events.⁵¹ Consequences of patient safety events that were memorable to family physicians included patient death (47% of memorable events), no adverse outcome (26%) and malpractice suits (4 of 53 “errors”).⁴⁴ One study identified deficiencies in computer systems, focusing on drug alerts, and proposed ways to rectify these deficiencies³⁵ and another used interviews to test theories about patient safety culture in the process of developing an instrument to measure safety culture in general practices.⁷³

Focus group studies were reported in two studies as a stand-alone method^{43, 55} and in another two alongside other methods.^{72, 73} The studies reported on three⁴³ to fourteen⁷³ focus groups involving 21⁴³ to 38⁵⁵ participants. In both mixed methods studies the focus group component was the final part, carried out to determine whether the tool developed by other methods

would be useful. All studies analyzed recorded discussions and field notes.

The strengths and weaknesses of focus group studies are similar to those of interview studies. Personally sensitive data are less likely to be divulged in focus groups than in personal interviews, but focus groups take advantage of group dynamics to spark new ideas that may be less likely to arise from individual interviews. They are therefore an ideal method for exploring factors contributing to patient safety incidents because they promote discussion among group members, who are usually chosen because they share common experiences.

Measures of primary care patient safety incidents from focus group studies: Patients identified issues in primary care that were classified as relating to both quality (access to care, coordination of care, system resources, and ability to pay) and safety (“errors”).⁴³ “Errors” were classified as medication errors, errors of inattention, or technical errors. One multi-method study produced a tool describing factors facilitating physician disclosure of

patient safety incidents (responsibilities to patients, the profession, self, and to the community) and barriers to disclosure (attitudinal barriers, helplessness, uncertainty, and fears and anxieties).⁷² No new measures came from the other two focus group investigations although the overall product of one study was the Manchester Patient Safety Assessment Framework,⁷⁸ a framework for exploring ways of improving patient safety culture in primary care teams.

A Delphi study was reported in one paper as part of a mixed-method study aimed at testing a method to research patient safety events occurring at the hospital-primary care interface.⁶⁹ The Delphi component followed an interview study phase that identified quality of care and patient safety issues associated with the total healthcare of patients with Chronic Obstructive Pulmonary Disease (COPD). A two-stage process was used to identify specific patient safety risks to patients with COPD. A Failure Modes and Effects Analysis (FMEA)⁷⁹ was tested.

Measures of primary care patient safety incidents from the Delphi study: Patient safety risks ranked most important were “routine difficulties with access to patient records post-discharge leads to decisions being made without adequate background information” and “information about discharged patients sometimes does not reach relevant primary care staff”.⁶⁹

Surveys were used as the only research method in six papers^{46, 47, 52, 56, 62, 67} and as a complementary method in a further three papers.^{70, 71, 74} Participants in these studies included random⁴⁷ and non-random^{56, 62, 70, 71} samples of primary care clinicians^{46, 47, 52, 56, 62} and staff,^{46, 52, 62} and complementary care providers.⁵³ Response rates were reported in five papers and ranged from 29%⁷⁰ to 76%.⁵⁶ Only one⁵⁶ had a response rate greater than 50%. Surveys were used to describe patient safety events in primary care,^{46, 52, 62, 70, 71} and they contributed to the development of both interventions to improve safety,⁶⁷ and research tools.^{47, 56, 74}

Surveys are a strong research design for estimating prevalence (for example, prevalence of safety events in primary care) but to be effective in this function survey participants must be a randomly selected sample of sufficient size to produce results that are generalizable to the population from which the sample was drawn. Only one of the studies in this group used a random sample,⁴⁷ although this design strategy appears to have been possible for at least two others.^{52, 56} Response rates were also very low (compromising generalizability of results) and only one study reported efforts to improve response rates by follow-up of initial non-responders.⁵⁶

One of these surveys was used to develop an FMEA.⁶² Although this is a relatively common approach to use on safety data collected in hospitals, it has rarely been used in primary care settings because it is a labour-intensive process that provides information specific to the institution in which it is conducted. Primary care practices are in general too small to support the infrastructure needed to conduct FMEAs. The technique

involves studying one task in detail, identifying steps where failure might occur and designing interventions to avoid failure at these points.

Measures of primary care patient safety incidents from survey studies: Despite the above design concerns, the surveys reviewed produced measures of factors contributing to deaths among primary care patients (patient behaviors (40% of deaths), general practice teams (5%), hospitals (6%), and the environment (3%)),^{46, 52, 62} the type and frequency of adverse events encountered by patients of acupuncturists,⁵³ factors influencing clinical educators' responses to "medical errors" (trainees' prior history, clinical knowledge levels, receptivity to feedback, training level, emotional reaction, and whether they apologized or offered an excuse),^{55, 67} and attitudes to reporting significant patient safety events (18% favored mandatory reporting,^{47, 56} 6%⁷⁰-41%^{47, 56} had difficulty defining a significant patient safety event). Other surveys did not aim to produce any outcome measures other than a

contribution to a larger research study.^{47, 56 46, 52, 62}

Patient Safety Incident Reporting System studies dominate the

research on patient safety in primary care settings. We defined surveys as restricted pieces of research, in contrast to reporting systems studies, where the method of data collection was intended to generate research data to address a number of different questions. Sometimes more than one included study was produced by a single patient safety event reporting system. Reporting systems have also been used to study individual processes used in primary care, but we excluded these studies from the current review.

Participants in reporting system studies included primary care doctors,^{36, 37, 39, 41, 42, 45, 48-50, 53, 54, 57-61, 63-66, 68} practice staff^{57, 58, 60, 61, 63, 65, 66} and patients.⁵⁸ Reporting systems have been designed for anonymity (where reporters can never be identified),^{39, 53, 58} and confidentiality (where reporters can be identified for as long as it takes to correctly record the event)^{45, 50, 65} and have used

(alone or in combination) paper,^{36, 37, 39, 58, 60} electronic,^{39, 58, 59, 65, 68} and telephone reporting.⁶⁶ They have involved regional,^{54, 57, 60, 65, 66} national,^{39, 58, 61} and international^{53, 59, 64, 68} participants.

The earliest patient safety event reporting study was the Australian study of Incident Monitoring in General Practice, involving data collected between 1993 and 1995.^{36,}

³⁷ In 2004 the UK government-sponsored National Patient Safety Agency opened an anonymous on-line web-based reporting route for any healthcare staff. This system can be viewed at:

<http://www.npsa.nhs.uk/health/reporting/reportanincident>. Shaw et al⁶² reported an analysis of 28,998 safety incidents reported to this system from 18 NHS Trusts (including one primary care Trust). One study was designed as a randomized controlled trial that aimed to compare paper and computer reporting of patient safety events but has only ever been published as a reporting system study.⁴⁰ Along with many other reporting system studies^{36, 37, 54, 58, 60,}

^{61, 63} it aimed to develop a way to describe the patient safety events encountered in primary care. There was one international study that involved participation from primary care doctors in Australia, Canada, Germany, the Netherlands, New Zealand, the United Kingdom and the United States. Only the English-language papers from this reporting system study are included in this review^{48, 53, 59, 64, 68} but an additional paper has been published in German.⁸⁰

The main strengths of reporting systems studies are that they give a robust indication of the types of patient safety incidents observed by healthcare providers and they are a well-established method in the patient safety literature, as reporting systems are embedded in the institutional processes of many hospital systems. The problem with patient safety incident reporting systems for primary care research is that many primary care providers work outside the organized systems with established incident reporting. In many hospitals reporting systems are part of continuous quality

improvement processes and data are routinely collected that can later be used to address specific research questions. Primary care practices are usually much smaller institutions and unable to support either the routine collection of patient safety data or the infrastructure to use these data for research. Therefore, most of the studies we found related to reporting systems set up in universities, specifically for research. Report providers contributed their data on the understanding that they were participating in a time-limited research project, rather than engaging in an ongoing quality improvement programme. This means that most studies were relatively small and the reporting systems had no long-term life expectancy. The exception is the UK's national reporting system, which is available to all healthcare providers, including those working in primary care. To date, contributions to the system from primary care have been very small relative to the contribution from hospitals but this may change now that the patient

safety agenda is moving to incorporate primary care.

A well-recognised, important, and inevitable limitation of reporting systems is under-reporting.^{81, 82} Runciman et al have estimated that as few as 5% of incidents are notified to reporting systems.⁸³ They cannot, in general, be treated as databases suited for calculating epidemiological statistics (such as incident prevalence). As well, data from reporting systems are difficult to generalize because contributors are seldom statistically representative. We identified only one study where representativeness was a concern and a random selection of doctors contributed to the study.⁵⁵ A further limitation of reporting systems is that over time they accumulate massive amounts of complex data that can be very difficult to extract meaningful information from. So far this has not been a problem for primary care reporting systems because they have been specifically designed for research. As incident reporting becomes a routine activity for primary care providers this issue is

likely to become increasingly relevant.

Measures of primary care patient safety incidents from reporting system studies: Most reporting system studies developed a way to describe the patient safety incidents reported, often in an hierarchical taxonomy and according to categories such as: office administration (between 15%⁶³ and 31%³⁹ of reports) including appointments (2%⁶³ to 14%⁵⁸ of reports), investigations (6%⁵⁸ to 33%⁶⁷ of reports), treatments (including medication (8%⁶¹ to 52%³⁶,³⁷ of reports), communication (4%⁵⁸ to 80%⁶⁸ of reports), payment mistakes, clinical mistakes (3%⁶⁰ to 10%⁶³ of reports), wrong diagnosis (4%³⁹ to 34%³⁶ of reports), wrong treatment decisions, and equipment (5%^{36, 37} to 16%⁶¹ of reports). Causes or contributing factors (work organization, excessive task demands, and fragmentation), prevention strategies and consequences (harm (17%⁵⁰ to 43%⁶⁸ of reports) and potential for serious harm (27%³⁶ to 76%⁵⁰ of reports)) and other consequences

and contributing factors³⁷ are sometimes also classified. Some of these descriptions have been published electronically: www.errorsinmedicine.net/taxonomy/aafp and www.cudfm.org/carenet/asips/taxonomy. Other ways of classifying reported events were: adverse events (21%⁵¹ of reports) and near misses (64%⁵¹). One paper reported remedial strategies.⁶⁴

The “error” report rate was calculated at 75.6 per 1000 appointments⁶⁰ and 2 per 1000 patients seen per year.⁵⁵

Strengths and weaknesses of mixed-methods research

Mixed-methods studies are where a single main research aim is addressed progressively using different research methods to either develop the tools to answer the research question definitively, or to build different perspectives to a research issue by approaching it in different ways. This latter approach is sometimes called “triangulation”. We identified six mixed-methods studies in this review. They methods they used included combinations of

surveys,^{70, 71, 74} interview studies,^{69,71,73} systematic literature reviews,^{70,72,73} focus group studies,^{72,73} significant event audits,⁷⁴ and a Delphi study.⁶⁹ Four studies took the approach of successive tool development^{69,70,72,73} and the other two adopted a triangulation approach.^{71,74}

Each mixed-method study incorporates the strengths and weaknesses of their individual methods (as above). Additionally, however, they develop the science of patient safety research by creating new multi-faceted processes, such as “care process mapping”.⁶⁹ Care process mapping identified key care decisions on the care pathway (from primary care to hospital and back to primary care), aiming to identify and remedy processes and problems that adversely affected patient safety. This analytic method was applied to data collected from interviews and a Delphi process⁶⁹ and concentrated on in-depth analyses that produced outcomes with practical application. Measures of primary care patient safety incidents derived from mixed-

method studies are reported above, as part of the review of their individual methods.

Overview

Table 3 in the Appendix summarizes the retrospective, concurrent or prospective, and mixed-method primary care patient safety studies included in this review. Their aims, methods, measures, and high-level conclusions are shown with a note of the design limitations of the study.