Reporting of research data by GPs: a cautionary tale for primary care researchers

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**Background.** Given the importance of community-based research, there is a need to ensure the quality of data obtained from such studies. However, research has been considered a low priority for most GPs.

**Objectives.** To assess the quality of data reported by GPs in a large community-based study.

**Methods.** Men were recruited as part of a population-based study on prostate-specific antigen (PSA) testing. Those with elevated initial PSA levels in the mid-1990s and no investigation in the intervening period were invited for repeat PSA testing. The GP of each included man was contacted and asked to report basic clinical information. Trained data extractors independently reviewed each man’s GP medical notes and recorded data relating to prostate problems. Data provided by GPs were rematched with data extracted from medical notes.

**Results.** A total of 758 men with 379 GPs were included. In all, 366 (96.6%) GPs agreed to participate. Of 698 men suitable for follow-up, GP and note review data were available in 505 (72.3%) cases (287 GPs). Overall, 245 (85.4%) GPs provided completely accurate data. Male GPs, compared to female GPs, were found to have a higher level of inaccurate reporting ($P = 0.008$).

**Conclusions.** We found that when GPs were asked to record basic clinical information, for the purposes of a primary care-based study, there was a significant level of inaccurate reporting. The results from our study confirm the importance of quality control in primary care research, especially in studies that involve GPs’ reporting data.

**Keywords.** Family medicine, patient record, researchers.

**Introduction**

There has been mounting interest in community-based research and its potential to influence health care policy.\textsuperscript{1} Increasingly GPs are being asked to record data for research purposes. However, contributing to research has generally been a low priority for GPs.\textsuperscript{2} Progressively more attention has been paid to data quality in primary care research and the need to report examples of interventions used to improve data recording.\textsuperscript{3} This aim of this study was to examine the accuracy of data reported by GPs in a community-based study and assess GP characteristics that predicted precision in their reporting.

**Methods**

As part of a population-based study on prostate-specific antigen (PSA) testing, men with an elevated initial PSA level in the mid-1990s (above age-specific ranges and <10.0 ng/ml) were identified from a central PSA database maintained by the Northern Ireland Cancer Registry (NICR).\textsuperscript{4} The GP of each included man was contacted and asked to confirm essential clinical information from the GP medical notes (paper and/or electronic). Using a specifically designed proforma, data relating to four points necessary to place men in the appropriate arm of the study were requested, namely:
(i) the patients vital status;
(ii) the date and value of their first PSA test performed;
(iii) if they had a previous transurethral resection of prostate (TURP) or prostate biopsy; and
(iv) whether they had a prostate cancer diagnosis or not.

GPs were contacted initially by post and if there was no reply, they were sent a second letter, followed by unlimited telephone calls until a response was received.

Following GP and patient consent, trained data extractors from the NICR independently reviewed each man’s GP records (paper and/or electronic). The clinical information initially provided by GPs was then re-matched with the information obtained by the data extractors. If any data provided by the GP or data extractors differed, the GP was again contacted to confirm the true clinical information.

Each data point was given a score of zero if the data supplied by the GP matched that retrieved by the data extractors and a score of one for each piece of data that differed. Scores for each data point were aggregated to produce an inaccuracy score (possible range 0–4) for each case. Chi-square tests and logistic regression analysis techniques were used to investigate associations between inaccuracy scores and GPs’ demographic characteristics.

Results

A total of 758 men with 379 GPs from 201 individual practices were initially included. In all, 366 (96.6%) GPs agreed to participate. Of 698 men suitable for follow-up (60 cases excluded due to inaccurate initial PSA or demographic data), GP and note review data were available in 505 (72.3%) cases (287 GPs). In the remaining 193 (27.7%) cases, no consent was obtained for note review.

Vital status was answered correctly for all 505 men. In 58 (11.5%) cases, the initial PSA data confirmed by the GP was not the first PSA available in the patient’s GP medical records. In 195 men with a previous prostate biopsy/TURP, a data mismatch occurred in 69 (35.4%) cases; 59 were due to GP errors and 10 data extractor errors. A data mismatch occurred in 6 of 43 prostate cancer cases, with 4 due to inaccurate data provided by GPs. In total, 40 (7.9%) men were not excluded from the PSA study and 54 (10.7%) underwent inappropriate repeat PSA testing due to inaccurate data provided by GPs. Overall, 245 (85.4%) GPs provided completely accurate data.

Table 1 summarizes GP demographic characteristics by inaccuracy score for 505 cases. Scores ranged from 0 (most accurate) to 2 (least accurate). Of the GP characteristics assessed, male GPs were found to have a higher level of inaccurate reporting compared to their female colleagues ($P = 0.008$). This effect remained after adjustment for working hours.

Discussion

The results from our study confirm the importance of quality control in primary care research, especially in studies that involve GPs’ reporting data. This study did not aim to determine the accuracy of data within GP medical records, rather, when the data were available in the notes, how precisely could GPs extract it for research purposes. It is reassuring to note that in the majority of cases, data provided by GPs were accurate. However, in almost 15% of cases, the data extracted by GPs proved to be inaccurate, which were much higher than that obtained by trained data extractors (5%).

Why are there such levels of inaccuracy? Many factors have been attributed to GPs’ lack of interest in research including lack of time, funding and appropriate support staff. However, further research is required to explain why some GPs who participate in research provide inaccurate data. One explanation from our study relates to the high participation rate (100% response rate with 96.6% of GPs agreeing to participate). GPs were contacted repeatedly to participate, and some GPs who generally do not respond to research projects may have completed the required information simply to avoid further contact; these may not have completed the information as accurately as GPs interested in research. Nonetheless, safeguarding the high quality of research should be a priority for all GPs, as outlined by The Royal College of General Practitioners. It was interesting to note that gender was the only GP characteristic that was significantly associated with inaccurate reporting—with male GPs having a greater level of inaccurate reporting compared to female GPs. To date, there is limited research into such potential gender-related issues. However, we are aware that compared to female GPs, male GPs are more likely to be referred to the National Clinical Assessment Service for underperformance-related issues, including record keeping, organizational and communication skills. Such potential gender-related issues are of importance and require further research, particularly to answer if there is a variation in the level of diligence of data recording between male and female GPs.

Given the increased interest in primary care research and the development of primary care research networks, it is important that structures are set in place to ensure the quality of research, particularly in relation to data extraction. In the present study, we compared the level of accuracy of data reported by
GPs and data extractors. No matter how data is extracted, there may always be a degree of inaccuracy. Therefore, there needs to be processes in place that continuously monitors the quality of data extracted, for example: the use of two independent extractors to review patient’s medical notes and ongoing review of audit and feedback of identified mismatches of data extracted. Further, there may also be inaccuracy in diagnostic data recorded in primary care. In our study, we asked GPs to report, in our opinion, fundamental clinical information on their patients. Inaccurate reporting by GPs not only affects the validity and quality of community based studies but also may have a direct detrimental impact on patient care. Within our study, 54 men underwent inappropriate repeat PSA testing due to inaccurate data provided by GPs.

In order to improve the quality of research carried out in primary care, a strategy is required to shape the environment in which such research is carried out. In the UK, there are a number of established and developing primary care research networks, which aim to deliver high-quality research that will shape a better health care future. For such groups, research governance and quality assurance is of prime importance, if GPs and other health care workers are to truly believe the evidence they generate.

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References


