Author’s response to reviews

Title: Quality of medication use in primary care: mapping the problem, working to a solution - a systematic review of the literature.

Authors:

  Sara Garfield (saragarfield@yahoo.co.uk)
  Nick Barber (n.barber@pharmacy.ac.uk)
  Paul Walley (paul.walley@wbc.ac.uk)
  Alan Wilson (alan.willson@nliah.wales.nhs.uk)
  Lina Eliasson (lina.eliasson@pharmacy.ac.uk)

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Author’s response to reviews: see over
Dear Robin,

Thank you for your email of 3rd July. We thank the reviewers for their comments. We are pleased they recognised the novelty of the approach taken and we believe this is what will make the article of interest to readers of BMC medicines. Safety is still a strong policy stream, and this work has been seen as innovative when presented to the NPSA, the Medical Director of the NHS, Harvard Medical School (B&W Hospital) and key members of the Institute of Healthcare Improvement in Boston, USA. Indeed, the work goes beyond safety and can also be adapted to improving quality and to creating economic efficiency. We think it of interest to a general audience in that all doctors, nurses and pharmacists are involved in using medicines, and this paper can lead to them having a wider conception of the challenges they face every day in practice in providing high quality care to the patient.

A description of the changes made in accordance with the reviewers’ comments is attached.

Yours sincerely,

Professor Nick Barber, The School of Pharmacy, University of London, Visiting Professor in Patient Safety, Harvard Medical School

Dr Sara Garfield, Postdoctoral Research Fellow, The School of Pharmacy, University of London
1) We have altered the title of the manuscript to ‘Quality of medication use in primary care: mapping the problem, working to a solution - a systematic review of the literature’.

2) In the abstract and on page 8 we have added the wording ‘the available evidence suggested that ...’

3) The phrase ‘error free health outcomes’ has been changed to ‘optimum benefit from their medication.’

4) We have added further information and examples of medicines reconciliation as suggested.

5) We searched for articles from an arbitrary 10 year period from the start of funding. We believe that searching too far earlier would have resulted in identifying studies conducted when health policy was very different and electronic prescribing was not widespread. Virtually all prescribing in primary care was electronic 10 years ago.

6) There are no gold standard definitions of error, so we have altered the wording on page 6 to indicate that all definitions of medication error were included. These are also now included in the table of studies (see point 10 below).

7) Information has been added to indicate that a second reviewer has independently extracted data from a random 50% sample of articles and that agreement levels were 94%.

8) Non adherence is one way in which the system fails and we have previously shown how accident causation models also apply to nonadherence. (see Barber, Qual. Saf. Health Care 2002;11;81-84). However we have altered the wording on page 7 to make it clear that non adherence rates and lack of efficacy rates were included in the mapping process.

9) We have added information on the potential weaknesses of the review at the beginning of the discussion.

10) We have added information on medication error definitions and error rates to the table of included studies.

Rodney Hicks

Major revisions:

1-3) We have strengthened the ‘creating improvement’ section by describing the next stages necessary in order to identify the further techniques to use. We cannot be definitive about what these would be at this stage due to the limitations in the current evidence base that are described in the paper. However we have added some examples of management techniques which have been applied to healthcare as suggested.

We thank the reviewer for pointing out our error in describing root cause analysis and have altered the wording to correct this.

4) We have altered the term ‘systematic approach’ to ‘system wide approach’.

Camilla Haw
Minor essential revisions:

1) An English teacher had proofread the article prior to submission. The difficulties could be due to differences between American and British English. We have now changed to the active voice where possible. We have also altered some of the present tense to past tense. However, in the first 2 sentences of the second paragraph we feel it is correct to move from the past to the present tense as the techniques have been designed in the past and are being used in the present.

2) We have altered the opening paragraph so that all sentences share the past tense. We are aware of David Bates’ work (one of us is a visiting professor in his Department), however in our view his work, while excellent in meeting its goals, is still constrained in its view of the medication system. We have moved the line beginning ‘However, there is little evidence’ as suggested.

3) We have changed ‘eighty percent’ to figures and have altered the sentence to make it clear that 80% of prescriptions are written in primary care.

4) Pronouns have been removed, with the exception of ‘we’.

5) We have altered the first sentence on page 7 as suggested.

6) We believe it is appropriate to move from the past to present tense as the first sentence is describing what we did and the second is giving an explanation of what a quality filter map is for readers who may be unfamiliar with this.

7) We have adjusted the tense as suggested.

8) We have kept this as ‘country’s healthcare system’ to reflect the fact that this is the first the time the process described has been used in any country. We have changed ‘the country’ to ‘a country’ to make this clearer.

9) We have added numbering as suggested.

10) We have added ‘primarily related to prescribing’ to the sentence ‘there is a dearth of evidence relating to some parts of the system’.

11) We have removed the phrase ‘in other areas of the system’ to reflect the fact that there have been methodological problems in studies reporting prescribing errors.

12) We have removed the line beginning ‘Conversely, some prescribing errors...’ as suggested.

13) We have changed ‘Medication taking history’ to ‘medication history taking’ to remove ambiguity.

14) We have rephrased the sentence as suggested.

15) We have removed the full stop.

16) We have rephrased the sentence as suggested.

17) The referencing style used reflects the editorial style for BMC Medicines. This style differs from whole books to journal articles, which is why some citations have bold font and others do not. The editorial style is to use index medicus abbreviations. Where journals are not indexed we have used the full title to avoid confusion e.g. ‘pharm’ could refer to ‘pharmacology’, ‘pharmaceutics’, ‘pharmaceutical’ etc. ‘See’ has been changed to ‘see’
As you requested we have moved the competing interest statement between the Conclusions and Authors' contributions and have ensured that the revised manuscript conforms to the journal style.