To what extent is the World Health Organization's medication safety challenge being addressed in English Hospital organisations? A descriptive study.

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Abstract

Objectives: Our study aimed to explore to what extent the priority areas and domains of the World Health Organization (WHO)'s third Global Patient Safety Challenge were being addressed in a sample of hospital organisations.

Methods: A qualitative approach was taken using a combination of focus groups, semi-structured interviews and documentary analysis in four UK teaching hospital organisations. A purposive sampling strategy was adopted with the aim of recruiting healthcare professionals who would be likely to have knowledge of medication safety interventions that were being carried out at the hospital organisations. Medication safety group meeting notes from 2017 to 2019 were reviewed at the hospital organisations to identify interventions recently implemented, those currently being implemented and plans for the future. A content analysis was undertaken, using the WHO's third Global Patient Safety Challenge priority areas and domains as deductive themes.

Results: All the domains and priority areas of the WHO Medication Safety Challenge were being addressed at all four sites. However, a greater number of interventions focused on 'healthcare professionals' and 'systems and practices of medicines management' than on 'patients and the public'. In terms of the priority areas, the main focus was on 'high risk situations', particularly high-risk medicines, with fewer interventions in the areas of 'transitions of care' and 'polypharmacy'.

Conclusions: More work may be needed to address patient and public involvement in medication safety and the priority areas of 'transitions of care' and 'polypharmacy'. Comparative global studies would help build an international picture and allow shared learning.

Introduction

There has been increasing recognition of the harm caused by medical errors and the importance of enhancing patient safety. Twenty years ago, "To Err is Human: Building a Safer Health System" [1] was launched, with the aim of reducing medical errors by 50% within 5 years in the United States [2]. This report raised awareness on the importance of improving patient safety as well as emphasising patient safety as an international priority [3-4].

The World Health Organization (WHO) developed a global patient safety programme in 2004. This highlighted the importance of patient safety as an international issue, aiming to

facilitate and disseminate improvements in patient safety by launching a series of initiatives associated with safe health care. The WHO launched their first two Global Patient Safety Challenges: Clean Care is Safer Care [5] and Safe Surgery Saves Lives [6] in 2005 and 2008. The purpose of these was to raise global awareness of safer health care and to contribute to reducing health care-related infections and risk associated with surgery, respectively [7]

In 2017, the WHO launched their third Global Patient Safety Challenge: Medication Without Harm.[8] Medication errors can lead to adverse drug events, reduced efficacy, preventable drug-related hospitalisations and mortality.[9] A meta-analysis of 15 studies had previously suggested the median prevalence of avoidable drug-related hospitalisations to be 4.3.[10] Medication-related errors are thought to cost an estimated 42 billion USD every year, globally [11]. In England, medication errors have been estimated to cost £98.5 million, take up 181,626 bed-days and contribute to 1,708 deaths during admission every year.[12] Medication Without Harm aims to reduce the global burden of iatrogenic medication-harm by 50% between 2017 and 2022.[8] It focuses on four medication safety domains: 'patients and the public', 'medicines', 'healthcare professionals', 'systems and practices of medication management', and three priority areas: 'polypharmacy', 'high risk situations' and 'transitions of care'. In response to this challenge, the English Department of Health and Social Care commissioned a review on medication errors [13] A Short Life Working Group identified key priorities for addressing the challenge. These included shared decision making, supporting patients and their families in raising concerns about their medicines, reporting and learning from errors, look-alike sound-alike drugs, hospital electronic prescribing and medicines administration, and deployment and optimization and a pharmacist-led information technology intervention in primary care [13] The review also recommended development of a repository of good practice to share learning.

However, there has been little work evaluating the extent to which the global medication safety challenge has been incorporated into healthcare practice. Our study aimed to explore to what extent the priority areas and domains of the WHO's third Global Patient Safety Challenge were being addressed in a sample of English hospital organisations.

Methods

Study design

A qualitative approach was taken using a combination of focus groups, semi-structured interviews and documentary analysis.

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Setting

The study was carried out at a convenience sample of four large London teaching hospital organisations. The number of inpatient beds ranged from 840-1,500 per organisation. All four organisations included paediatric services in addition to adult services; all served urban populations in a large capital city and took tertiary referrals for various clinical specialties. The main relevant difference among the hospital organisations was that hospital organisation 1 had an academic research centre conducting research related to medication safety.

Interviews/focus groups

Sampling and recruitment

Within each organisation, a purposive sampling strategy was adopted with the aim of recruiting healthcare professionals who would be likely to have knowledge of medication safety interventions that were being carried out at the hospital organisations. This included a snowball sampling element with each organisation's medication safety officer interviewed initially and then invited to suggest other potential participants. Participants were invited to take part either face to face or by email.

Data collection

A topic guide (appendix) was developed that focused on identifying current and future projects related to medicine safety being carried out at the hospital organisations and those that had been carried out in the previous two years. The domains and priority areas of the WHO Medication Without Harm challenge were used as prompts. A combination of individual interviews and focus groups were conducted, according to pragmatic considerations and participant preference. Interviews and focus groups were conducted between November 2018 and June 2019 by pharmacy students trained in conducting qualitative interviews. Participants were invited to give informed consent. Interviews were audio-recorded with participants' consent and transcribed verbatim.

Documentary analysis of medication safety meeting notes

Each organisation's medication safety group meeting notes from 2017 to 2019 were requested and reviewed to identify interventions recently implemented, those currently being implemented and plans for the future.

Data analysis

A content analysis was undertaken, using the WHO Medication Without Harm challenge priority areas and domains as deductive themes. The researchers read and re-read the interview transcripts and meeting notes. Using the priority areas and domains as a thematic framework, the researchers coded substantial amount of information into more manageable and retrievable datasets and themes. As this analytic process was repeated, the framework and coding were refined accordingly. Recurrent ideas were grouped, summarised and organised.

Data analysis was conducted by four researchers. Each researcher independently checked a sample of the analysis carried out by others to ensure reliability of coding. Minor discrepancies were resolved through discussion. For validation purposes, the data were also re-examined to identify minority views.

This study was registered as a service evaluation at each of the participating organisations.

Results

Twenty-seven interviews (mean duration 27 minutes) and five focus groups (mean duration 52 minutes) were conducted. Participants comprised 36 pharmacy staff, 5 nurses, 2 doctors and 2 health services researchers (table 1). At all four organisations, the medication safety officers were pharmacists.

Participants represented a range of specialties across the hospital organisations such as surgery, medicine, critical care, care of the elderly and paediatrics. They also represented a range of years of experience (from under 2 years to over 20 years) and grades, although there were more senior than junior healthcare professionals interviewed (table 1). Medication safety group meeting notes were provided for three of the four organisations; these were unavailable for organisation 2.

All the domains and priority areas of the WHO Medication Safety Challenge were addressed at all four sites. However, a greater number of interventions focused on 'healthcare professionals' and 'systems and practices of medicines management' than on 'patients and the public' and 'medicines' (table 2). In terms of the priority areas, the main focus was on 'high risk situations', particularly high-risk medicines, with fewer interventions in the areas of 'transitions of care' and 'polypharmacy' (table 3).

Tables 2 and 3 outline the main focuses of interventions across the four organisations. In addition, there were some additional areas each being addressed in only one of the four

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hospital organisations. While in organisations 2-4, interventions addressing patient and public were mostly limited to patient counselling, patient information leaflets and education, in organisation 1 interventions in this domain were broader, focusing on more active patient involvement in medication safety, self-administration of medication in the inpatient setting and patient-held medication records. In organisation 1 there was also a programme of work focusing on giving feedback to healthcare professionals about their prescribing, whereas this was not identified in the other hospital organisations. Organisation 1 also had a specific focus on paediatric dosing errors that was not identified elsewhere. In organisation 2, there was a focus on reducing use of multi-compartment compliance aids. In this organisation, there was also a programme of interventions targeting transitions of care within the organisation, whereas in the other three hospital organisations, only the interventions targeting the primary-secondary care interface were identified. Participants in organisation 2 were of the view that transitions of care was an area that still needed presented a huge challenge. In organisation 3, there was a specific programme of work focusing on Parkinson's disease. As part of the integrated care work, this organisation also supported pharmacists based in GP surgeries in carrying out the PINCER intervention [14] and provided training. In addition, it had a medicines optimisation team which followed up patients post discharge.

More interventions were identified from the focus groups and interview data than from the medication safety minutes. In addition, interview and focus group participants discussed practices that were part of usual care as well as specific interventions that were being implemented; these were not identified from the meeting notes. However, documentary analysis allowed the identification of a small number of interventions that were outside of the specialties or remit of those interviewed.

Discussion

While all domains and priority areas were addressed in each of the hospital organisations, some domains and priority areas appeared to be given greater focus than others. The majority of interventions focused on the area of 'high-risk situations' and in the domains of 'healthcare professionals' and 'systems and management'.

The finding that 'patients and the public' was the domain least addressed in London's teaching hospital organisations is perhaps disappointing but is aligned with the picture of England as a whole. In line with the recommendation from the Department of Health and Social Care Short Life Working Group in England, the National Health Service Medicines Safety Programme has developed a repository of good practice in relation to the WHO

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medication safety challenge. Examples of good practice are being stored for shared learning and are categorised according to the domains of the challenge they address [15]. Twenty-four examples have been classified in the domain of 'systems and practice in medication' and 24 in the area of 'medicines'. Eighteen have been classified in the domain of 'healthcare professionals' but only nine in the domain of 'patients and the public', making this domain the one least focused on. Although it might also appear from these findings that interventions regarding 'medicines' are focused on in fewer London teaching hospitals than the UK as a whole, a review of the good practice examples suggests this may be to do with differences in the way the interventions were categorised rather than a true difference between the two data sets. For example, an intervention that was captured as part of both the repository and our study was mapped onto the medicines domain and the 'patient and public' domain in the repository, but was only mapped onto the 'patient and public' domain in our study.

The focus of some interventions matches the priorities set out by the English Short Life Working Group. Examples of improvements are: shared care in education, reporting and learning from errors, drug differentiation, and roll-out and optimisation of hospital electronic prescribing and medicines administration systems. Only one hospital organisation, was addressing the recommendation to implement the PINCER intervention [14], but that may be because it is an intervention primarily aimed at primary care.

However, the recommendations in the 'patient and public' domain were being implemented to a lesser extent than the other domains. In the main, recommendations in this domain were limited to providing counselling, patient education and leaflets. In three of the four hospital organisations there were no interventions identified focusing on shared decision making, improving access to inpatient medication information or supporting patients and their families in raising concerns about their medicines. Studies have shown that patients who feel in control, empowered and confident have better outcomes [16] and it is therefore important to fill this gap.

Strengths and limitations

To our knowledge this is the first study evaluating the extent to which the WHO global medication safety challenge has been incorporated into healthcare practice. While the study took place in teaching hospitals in one large urban city in one country and may therefore lack global generalisability, it provides a useful baseline basis of for comparison for other countries. Comparison of the data with that of the English good practice repository also provides cumulative validity for some of the findings. Hospital organisation 1, with its patient

safety research centre may be considered atypical. However, we have noted the differences in results between this hospital organisation and the other three.

A potential limitation was that the snowballing element of the sampling strategy might have led the researcher to a less diverse group of healthcare professionals. All four medication safety officers were pharmacists and participants may have recommended other participants with whom they were more familiar; perhaps as a result, the majority of participants were pharmacists. However, some doctors and nurses also took part and a range of specialties and grades were represented. In addition, the interview/focus group data were triangulated with documentary analysis of medication safety group minutes at three of the four sites. Lack of availability of the medication safety meeting notes at the fourth site was a potential limitation. However, the fact that few additional interventions were identified from the documentary analysis at the three sites where this took place, means that the lack of availability of the notes at the fourth site was unlikely to have much impact on the findings.

A combination of focus groups and interviews was used for the convenience of the hospital organisations and participants. This may have introduced some differences or bias in the data obtained.

Consistency in mapping of interventions was also a potential limitation. Data analysis was complex as many interventions could potentially be classified under multiple priority areas and domains. The reliability check carried out mitigated this within the study but may make comparisons with other studies more challenging.

Implications for practice and policy

Our findings suggest that hospital organisations may need to develop more interventions to address patient and public involvement in medication safety and more interventions to address' polypharmacy' and 'transitions of care'. It is possible that hospital organisations are not implementing interventions in these priority areas/domain as they feel they are already doing them well. However, the participants identified usual care practices as well as specific interventions being implemented during the interviews and focus groups, suggesting that it is unlikely that these areas are already being addressed further within usual care. In addition, comments from some participants suggested that transitions of care was perceived as a major risk. A recent patient safety incident report recommended that shared decision making and improved patient access to medication information across all sectors of care were needed to ensure a patient-centred approach to safe and effective medicines use. 17] The focus on 'high risk situations' identified in our study may reflect the reality that it might be

easier to address this priority area in the hospital setting itself, whereas addressing 'transitions of care' and 'polypharmacy' may require working across settings and specialties.

Implications for research

Further studies could map interventions to the priority areas and domains across primary, secondary and tertiary care settings across the United Kingdom to gain a comprehensive overview. Comparative global studies would help build an international picture and allow shared learning. Further research is also needed to identify the best ways of facilitating interventions in the areas of 'transitions of care' and 'polypharmacy' and the domain of 'patients and the public'. A methodology for identifying areas of need within healthcare organisations could also be developed to facilitate further implementation of this medication safety challenge. Evaluation of the impact, and sustainability of interventions would also be beneficial.

Conclusion

Medication safety interventions being implemented in UK teaching hospitals appear to focus on 'healthcare professionals' and 'systems and practices of medication management' in 'high risk situations'. More work is needed to address patient and public involvement in medication safety and the priority areas of 'transitions of care' and 'polypharmacy'. Comparative global studies would help build an international picture and allow shared learning.

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