



A multi-disciplinary approach to medication safety and the implication for nursing education and practice

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ARTICLE INFO

Article history:

Received 28 January 2013

Received in revised form 5 October 2013

Accepted 21 October 2013

Keywords:

Medication management

Patient safety

Medication safety

Medication reconciliation

SUMMARY

Background: Medication management is a complex multi-stage and multi-disciplinary process, involving doctors, pharmacists, nurses and patients. Errors can occur at any stage from prescribing, dispensing and administering, to recording and reporting. There are a number of safety mechanisms built into the medication management system and it is recognised that nurses are the final stage of defence. However, medication error still remains a major challenge to patient safety globally.

Objectives: This paper aims to illustrate two main aspects of medication safety practices that have been elicited from an action research study in a Scottish Health Board and three local Higher Education Institutions: firstly current medication safety practices in two clinical settings; and secondly pre and post-registration nursing education and teaching on medication safety.

Method: This paper is based on Phase One and Two of an Action Research project. An ethnography-style observational method, influenced by an Appreciative Inquiry (AI) approach was adapted to study the everyday medication management systems and practices of two hospital wards. This was supplemented by seven in-depth interviews with nursing staff, numerous informal discussions with healthcare professionals, two focus-groups, one peer-interview and two in-depth individual interviews with final year nursing students from three Higher Education Institutions in Scotland.

Result: This paper highlights the current positive practical efforts in medication safety practices in the chosen clinical areas. Nursing staff do employ the traditional 'five right' principles – right patient, right medication, right dose, right route and right time – for safe administration. Nursing students are taught these principles in their pre-registration nursing education. However, there are some other challenges remaining: these include the establishment of a complete medication history (reconciliation) when patients come to hospital, the provision of an in-depth training in pharmacological knowledge to junior nursing staff and pre-registration nursing students.

Conclusion: This paper argues that the 'five rights' principle during medication administration is not enough for holistic medication safety and explains two reasons why there is a need for strengthened multi-disciplinary team-work to achieve greater patient safety. To accomplish this, nurses need to have sufficient knowledge of pharmacology and medication safety issues. These findings have important educational implications and point to the requirement for the incorporation of medication management and pharmacology in to the teaching curriculum for nursing students. There is also a call for continuing professional development opportunities for nurses working in clinical settings.

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Background

Medication management is a key aspect of patient safety in 21st century global healthcare systems. Unintended and adverse clinical incidents including medication errors can cost human lives, prolong

hospital stays and may also have serious financial implications for health services. Fast moving and pressurised healthcare working environments are one of the major challenges related to patient safety (WHO, 2011; IOM, 2004).

There have been phenomenal advancements in medical science and consequent changes in the global healthcare system. Knowledge and the technology to diagnose illnesses and manage complex health conditions are expanding. Improvements in making diagnosis, treating illness and recovery processes have transformed human morbidity and mortality. As a result, people with chronic and co-morbid conditions live longer in their own homes or in healthcare institutions and are increasingly dependent on complex therapeutic regimes.

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The Director-General of the World Health Organization (WHO), Chan summarises the challenges we face in the contemporary healthcare working environment (WHO, 2011). She states:

“One of the greatest challenges today is not about keeping up with the latest clinical procedures or the latest high-tech equipment. Instead, it is about delivering safer care in complex, pressurized and fast-moving environments. In such environments, things can often go wrong. Adverse events occur. Unintentional, but serious harm comes to patients during routine clinical practice, or as a result of a clinical decision.”

In relation to medication safety, Guwande, a US hospital based surgeon and global patient safety expert suggests that there are over six thousand drugs that are licensed to be prescribed in the global healthcare market today (Guwande, 2012).⁴ Not only has the sheer number of available medications increased but also the amount of medicine consumed by individuals in their lifetime. Martin (2007) suggests that on average, a British person consumes 14,000 pills in his/her lifetime. More medication means higher associated risks and higher chances of adverse incidents. To further add to this complexity, not only are trained medical doctors licensed to prescribe medication but an increasing number of nurses and allied health professionals are trained and licensed to prescribe (Sulosaari et al., 2010; Lymn et al., 2008). In addition to this, an increasing number of medications are available to buy over-the-counter (and increasingly online) in the UK and most other parts of the world. All these initiatives have implications on medication management and patient safety (Bradley and Blenkinsopp, 1996).

Understandably, there has been increased awareness of medication safety in the healthcare system and this has been considered by patient safety experts as one of the high risk areas on a par in broad safety terms with the aviation, nuclear power plant and high risk construction industries (Caldwell, 2012; Guwande, 2012; Bates, 2000; DH, 2000). It is estimated that the cost incurred due to medication errors in NHS hospitals in the UK is between £200 and 400 million per year, however the costs to primary care services are not known (Smith, 2004). Medication safety experts suggest that many of these adverse effects such as patient morbidity, emotional costs to patients, family and healthcare professionals, and financial costs to health services are preventable and if errors are minimised many lives can be saved (Guwande, 2012; IOM, 2004; Bates, 2000; Bradley and Blenkinsopp, 1996).

In 2011, the WHO launched a patient safety programme which calls for all higher education institutions providing professional training to develop patient safety modules and incorporate these into their programmes (WHO, 2011). There have been a number of patient safety initiatives across the world and in the UK. The Scottish Government has adopted the Scottish Patient Safety Programme (SPSP) and medication safety is incorporated into the National Health Service (NHS). There are international, national and local medication safety guidelines in place (NMC, 2010; NHS Lothian, 2010; Smith, 2004).

Medication safety is a multi-disciplinary and multi-stage process, and nurses play a key role. While, the modern health services are becoming increasingly complex and nurses' roles are expanding. A number of medication safety experts have raised concerns about the lack of pharmacology education in pre-registration nursing education in the UK and also in Australia. This is perceived as being due to the shift away from the biological science model to the social science model of nurse education in the recent years. It is important for all

health professionals, including nurses to have sufficient knowledge on pharmacology and sufficient clinical practice opportunities to manage patients' medications competently (Slater et al., 2012; Lymn et al., 2008; King, 2003; Bullock and Menias, 2002; Morrison-Griffiths et al., 2002).

This paper is based on an on-going action research project which examines the current medication management system and practice of two hospital wards and the pre-registration nursing education of medication management. Influenced by the Appreciative Inquiry (AI) approach in the health service research, it firstly identifies a range of excellent medication management practices in participating hospital wards. While highlighting areas that work well and that can be shared with other health services, it also explores areas that can be improved to ensure greater medication safety. Secondly, it highlights that whilst the traditional 'five rights' principles – right patient, right medication, at right time, via right route and right dose – are widely taught as the 'mantra' for medication administration safety during pre-registration nursing education and are adhered to by nurses during the administration stage, they do not provide holistic medication safety for all patients. The paper suggests, therefore, that a multi-disciplinary team work approach is required, which should look beyond 'five rights' and include nurses' involvement in medication reconciliation. Finally, for this to be achieved there is a need to incorporate holistic medication safety teaching, including dedicated hours of pharmacology sessions into the pre-registration nursing education curriculum and initiate continuing professional development (CPD) opportunities for qualified nurses working in hospital wards.

Research Method

Recognising the sensitive nature of the study topic this research adopts the Appreciative Inquiry (AI) approach in healthcare settings. AI was considered as an appropriate approach as it focuses on what works well, explores ways to bring positive changes and helps to build on positive ideas and images that emerge from healthcare professionals themselves (Richer et al., 2010). Within this framework, an ethnographic style observational study (Brewer, 2000), including qualitative interviews and group discussions, was chosen for this research. The diversity of healthcare professionals and nursing students' experiences provides in-depth rich data which enables the ethnographic researcher to capture the participants experience, cultures, environment, voices and insights. The major strength of the study was in it being a service led initiative in response to issues of medication safety, in partnership with three local Higher Education Institutions (HEIs). The field work was carried out between July and October 2012.

Fieldwork Setting and Research Participants

Primary research data was collected from two hospital wards in two different hospitals and three HEIs in Scotland. The two hospital wards were considered as discrete study units to understand the medication management system and everyday practices. These wards were chosen by an existing medication safety team within the NHS Board.

Data were collected by the participant observation (shadowing) technique, in which healthcare professionals – covering routine drug rounds from 8 am till 8 pm, including the weekend shifts – were shadowed to capture a wider picture of the medication management system and practices in hospital wards. Night shifts were also considered but not used as the medicine rounds predominantly occurred during the day shift. In both wards the researcher spent sixty three hours in total shadowing healthcare professionals, discussing ideas, and conducting formal and informal interviews. Clinical observation included shadowing nurses ($n = 20$), pharmacists ($n = 3$), pharmacy technicians ($n = 3$) and doctors ($n = 8$) in two participating wards. The researcher spent approximately an hour shadowing each nurse, pharmacist and pharmacy technician. This was followed by an informal

⁴ In the TED (Ideas, Entertainment and Design - a set of global conferences) in Edinburgh, Scotland in 2012, TED is a global set of conferences owned by the private non-profit Sapling Foundation, formed to disseminate "ideas worth sharing." Information available at: http://www.ted.com/talks/atul_gawande_how_do_we_heal_medicine.html accessed on 14/8/2012.

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