Medication Safety in Hospitals

Abstract

Medication error and adverse drug reactions occur frequently, leading to a high burden of patient harm in the hospital setting. Many Irish hospitals, including acute sector, maternity, and cancer hospitals, have established medication safety initiatives to address the risks associated with medication use, involving voluntary, non-punitive, confidential incident and near miss reporting, systematic analysis of reports and critical evaluation of the processes involved, and employing various measures to minimize the risk of recurrence and maximize patient safety. This paper aims to further promote this. Medication use in hospitals is an extremely complex process and it is estimated that there may be 30-40 steps involved in delivering a single dose of a medication to a patient, involving various healthcare professionals and patients, each of which has potential opportunities for errors. Medication use in hospitals, both in self-caring patients and in long-term care, sheltered accommodation etc, is a similarly complex process and just as prone to error, although the literature describing error in the community is much more limited. The risk of medication error is increased at the interfaces between care settings; the need to reconcile and monitor patients’ medication as they oscillate across boundaries, to and from hospital in-patient, patient and diagnostic services and other care facilities is well recognised. While the majority of errors do not cause patient harm, it is essential to recognise the potential for serious harm from incorrect or inappropriate management of medication. All healthcare organisations and all staff involved in the medication use process must therefore endeavour to reduce the error rate to ever lower levels by ensuring the safest possible systems of medication use, with monitoring for and learning from error to further guide risk reduction strategies.

Introduction

International studies have reported that adverse drug events (medication errors or adverse drug reactions resulting in patient harm) of 1-2% are preventable. A recent estimate is that on average, a hospital in-patient is subjected to at least one medication error per day. A study of medication error and adverse drug reaction reports in four Irish hospitals reported 510 incidents/near misses in a three month period in 2006. A study of medication error and adverse drug reaction reports in four Irish hospitals reported 510 incidents/near misses in a three month period in 2006.

Methods

All members of a medication safety special interest group, now formalised into the Irish Medication Safety Network, were asked for medication error and adverse drug reaction data from the time period 1st January 2006 to 30th June 2007. The data set was minimised to ensure confidentiality. The data in this report has been collected in individual hospitals via voluntary incident and near miss reporting systems, risk managers and/or pharmacists. Medication error and adverse drug reaction data was also reported by the participating hospitals to the Irish Medication Safety Network. The group’s principal aim is to improve patient safety with regard to the use of medication and to reduce the error rate. The data set has been pooled and analysed collectively in this paper.

Results

6179 medication safety incidents/near misses were reported from the eight participating hospitals or hospital networks. The severity of incidents and near misses reported is described in Figure 1, using the United States National Co-coordinating Council for Medication Error Reporting and Prevention (NCCMERP) categories. The majority (47%) were severe incidents/near misses. Eleven incidents may have contributed to or resulted in permanent or life-threatening harm or death.

Discussion

Patient safety and quality improvement are becoming increasingly important in Irish healthcare. Implementation of the recommendations of the Commission on Patient Safety and Quality Assurance is expected to further promote this. Medication use in hospitals is an extremely complex process and it is estimated that there may be 30-40 steps involved in delivering a single dose of a medication to a patient, involving various healthcare professionals and patients, each of which has potential opportunities for errors. Medication use in the community, both in self-caring patients and in long-term care, sheltered accommodation etc, is a similarly complex process and just as prone to error, although the literature describing error in the community is much more limited. The risk of medication error is increased at the interfaces between care settings; the need to reconcile and monitor patients’ medication as they oscillate across boundaries, to and from hospital in-patient, patient and diagnostic services and other care facilities is well recognised. While the majority of errors do not cause patient harm, it is essential to recognise the potential for serious harm from incorrect or inappropriate management of medication. All healthcare organisations and all staff involved in the medication use process must therefore endeavour to reduce the error rate to ever lower levels by ensuring the safest possible systems of medication use, with monitoring for and learning from error to further guide risk reduction strategies.

The medication safety initiatives established in many Irish hospitals attempt to address the risks associated with medication use, involving voluntary, non-punitive, confidential incident and near miss reporting, systematic analysis of reports and critical evaluation of the processes involved, and employing various measures to minimize the risk of recurrence and maximize patient safety. This paper aims to further promote this. Medication use in hospitals is an extremely complex process and it is estimated that there may be 30-40 steps involved in delivering a single dose of a medication to a patient, involving various healthcare professionals and patients, each of which has potential opportunities for errors. Medication use in the community, both in self-caring patients and in long-term care, sheltered accommodation etc, is a similarly complex process and just as prone to error, although the literature describing error in the community is much more limited. The risk of medication error is increased at the interfaces between care settings; the need to reconcile and monitor patients’ medication as they oscillate across boundaries, to and from hospital in-patient, patient and diagnostic services and other care facilities is well recognised. While the majority of errors do not cause patient harm, it is essential to recognise the potential for serious harm from incorrect or inappropriate management of medication. All healthcare organisations and all staff involved in the medication use process must therefore endeavour to reduce the error rate to ever lower levels by ensuring the safest possible systems of medication use, with monitoring for and learning from error to further guide risk reduction strategies.

The data described in this analysis is a snapshot of the types of medication errors and adverse drug reactions occurring in the Irish hospital system. Some limitations of this study include that not all Irish hospitals reported data for the time period 1st January 2006 to 30th June 2007. The data in this report has been collected in individual hospitals via voluntary incident and near miss reporting systems, risk managers and/or pharmacists. Medication error and adverse drug reaction data was also reported by the participating hospitals to the Irish Medication Safety Network. The group’s principal aim is to improve patient safety with regard to the use of medication and to reduce the error rate. The data set has been pooled and analysed collectively in this paper.

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A high medication error and adverse drug reaction reporting rate is a desirable first step in enabling hospitals to tackle medication safety risks to their patients. Other approaches such as risk assessment, use of trigger tools and observation studies are also valuable in piecing together the overall picture of medication safety risks. It is clear that medication error and adverse drug reactions occur in Ireland as elsewhere and in considerable numbers. It is hoped by the authors that sharing the learning from these incidents and near misses reporting can result in raised awareness of the importance of the issue and the need to take steps to improve medication use processes nationally to minimise future risk to patients.

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