The systemic causes of medication problems for hospitalised children

Adam Sutherland[1 2 3], Suzanne Grant[4], Stephen Tomlin[5]; Denham L Phipps[1 2], & Darren M Ashcroft[1 2]

[1]NIHR Greater Manchester Patient Safety Translational Research Centre; [2]Division of Pharmacy & Optometry, Faculty of Biology Medicine & Health, University of Manchester; [3]Pharmacy Department, Royal Manchester Children's Hospital, Manchester University NHS Foundation Trust; [4]School of Medicine, University of Dundee; [5]Children's Medicines Research Centre, Great Ormond Street Hospital NHS Foundation Trust

SUMMARY

Medication processes are chaotic and complex, and assumed to be undertaken by specific professionals in isolation from other healthcare tasks. However tasks are delivered simultaneously and adaptively because of the complexity of healthcare provision. This study aimed to explore the systemic contributory factors to medication related problems in children's wards using multiple qualitative methods (230 hours participant observation and 19 semi-structured interviews). There is insufficient resource available to undertake all the processes to ensure safety; decisions about medicines were made with reference to immediate problems only; parents were relied on to administer medicines to children, and; there was widespread non-compliance with interventions to improve safety because they conflicted with day-to-day work.

KEYWORDS

Medicines Safety; Ethnography; Children and Young People

Introduction

Medication causes up to 25% of avoidable healthcare harm (Panagioti et al., 2019). Simple interventions have been shown to have limited impact.(Maaskant et al., 2015). Medication safety systems have been described as complex and chaotic.(Hawkins & Morse, 2022) A work domain analysis of medication systems in this setting described a complex interconnected system. (Sutherland et al., 2022.). This study set out to explore the contributory factors that emerge and interact in the system.

Method

A multicentre ethnographic study was conducted across three acute paediatric wards in the north of England. 230hrs of non-participant ethnographic observation and 19 semi-structured interviews with families, pharmacists, medical and nursing staff were carried out. Data was managed and coded using NVIVO v12 (QSR International) and analysed using an inductive thematic analytical approach. Coding and interpretation were undertaken by all members of the research team and agreed by consensus.

Results

Three systemic themes were identified that contributed to medication related problems – logistical issues, cognitive and decision-making processes, and situational and physical environment.

Logistical and resource limitations.

There were multiple processes to ensure safe medicines management, but there were insufficient people or time available to deliver them. Organisations attempted to expand the staff pool for some medication processes which worsened deficiencies in others. Families were relied on by staff to administer medicines to ensure medicines were administered on time but were not formally part of the system. Information technology equipment was often in short supply or inoperable. Prescribing decisions were made on ward rounds by medical teams, and nursing staff were the final arbiters of medication administration. Pharmacy services were reactive; focussing on verification of prescriptions for dispensing. Prescribing intentions were seldom documented leading to challenge and clarification by nursing and pharmacy staff.

Cognitive and Decision-making Processes

Medication processes were considered as separate tasks including prescribing, dispensing and administration. However, none of these tasks were carried out in isolation or independently. Interventions introduced to improve medicines safety (barcode medication administration systems, independent checking) did not integrate with other existing workflows or were inoperable within the circumstances of use. All staff had to make complex clinical decisions with every medication order administered and nursing staff perceived that they were accountable for all medication problems because they administered them.

Physical and situational environment

Medication work was perceived as task focussed with all staff grouping medicines tasks with other duties to make the best use of their time. Medication assessment by prescribers was only in the context of the immediate problem and other issues were picked up by parents, nursing or pharmacy staff. Parents also administered medicines without prescription if deemed in the best interests of their child. Medication spaces were often inadequate for needs – preparation rooms lacked computer access and many medicines were manipulated at nurse's stations. Interruptions were constant and interventions to reduce them unused. Economics drove organisational medicine choices with no consideration of their acceptability to children.

Discussion

This study supports the insights into clinical workload and turbulence in other healthcare settings. (Jennings et al., 2022). Organisations viewed medicines safety as an isolated concept, yet the work was intrinsically linked to the wider system and frontline care. Interventions are implemented within this isolated frame. Furthermore, medicines were viewed only in the context of the acute problem being treated, other potential medication related problems were uncovered by chance. There was also a noted absence of teamwork where medications were being prescribed and administered, resulting in healthcare staff interrupting their work to clarify choices and intent.

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