



Original Research

Exploring safety systems for dispensing in community pharmacies: Focusing on how staff relate to organizational components[☆]

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Abstract

Background: Identifying risk is an important facet of a safety practice in an organization. To identify risk, all components within a system of operation should be considered. In clinical safety practice, a team of people, technologies, procedures and protocols, management structure and environment have been identified as key components in a system of operation.

Objectives: To explore risks in relation to prescription dispensing in community pharmacies by taking into account relationships between key components that relate to the dispensing process.

Methods: Fifteen community pharmacies in England with varied characteristics were identified, and data were collected using non-participant observations, shadowing and interviews. Approximately 360 hours of observations and 38 interviews were conducted by the team. Observation field notes from each pharmacy were written into case studies. Overall, 52,500 words from 15 case studies and interview transcripts were analyzed using thematic and line-by-line analyses. Validation techniques included multiple data collectors co-authoring each case study for consensus, review of case studies by members of the wider team including academic and practicing community pharmacists, and patient safety experts and two presentations (internally and externally) to review and discuss findings.

Results: Risks identified were related to relationships between people and other key components in dispensing. This included how different levels of staff communicated internally and externally, followed procedures, interacted with technical systems, worked with management, and engaged with the environment. In a dispensing journey, the following categories were identified which show how risks are inextricably linked through relationships between human components and other key components: 1) dispensing with divided attention; 2) dispensing under pressure; 3) dispensing in a restricted space or environment; and, 4) managing external influences.

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Conclusions: To identify and evaluate risks effectively, an approach that includes understanding relationships between key components in dispensing is required. Since teams of people in community pharmacies are a key dispensing component, and therefore part of the operational process, it is important to note how they relate to other components in the environment within which they operate. Pharmacies can take the opportunity to reflect on the organization of their systems and review in particular how they can improve on the four key categories identified.

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Keywords: Community pharmacy; Human factors; Patient safety; Clinical safety management

Introduction

Previous studies^{1,2} have depicted the community pharmacy as an organization where networks of people, technical and other components in the environment come together to achieve a shared objective: dispense safely to patients. To achieve safe dispensing, pharmacy managers engage in safety practices that are part of a safety system. A safety system reflects the organization's commitment to safety and is a key ingredient in employees' perceptions about the importance of safety.^{3,4} In a community pharmacy, a safety system may include a set of values about safety,⁵ employees' safety behavior,^{6–8} protocols and operational rules,^{1,9} preventative planning such as identifying and evaluating risk,^{3,4,10,11} and root cause incident analysis for organizational learning.^{12,13} In this article, 'risk' is used to depict 'acts or conditions' that influence how safety is practice and achieved.

Therefore, the networks of people and their attitudes, organizational factors affecting them and environments within which they operate are all components that should be considered when identifying and evaluating risk as part of a safety system.^{11,14,15} According to Reason's Swiss Cheese model,¹⁶ these components can be organized into five "layers":

1. *Decision-makers:* the strategic decision-making that determines what staff will do and how;
2. *Line management:* the implementation of strategic decisions by directing work activities;
3. *Preconditions:* the prerequisites for successful work activity activities to be successful (for example equipment, training and procedures);
4. *Work activities:* the behaviors that are carried out;
5. *Defenses:* the safeguards put in place to protect people and equipment from hazards associated with the work activities.

Reason proposed that any or all of these layers could in practice have weaknesses of some kind. In

general terms, "latent conditions" are weaknesses that affect the first three layers (for example, flawed decisions by managers) and "active failures" are those affecting work activities (for example, unsafe acts by workers). Defenses, meanwhile, can be affected by either type of weakness. The effect of latent conditions and active failures is to render the work system vulnerable to hazards; the more hazards are allowed into the system, and the further they are allowed to promulgate through it, the more likely that an accident will ultimately occur. Hence, organizational safety can be seen as a matter of ensuring that the components that are present within the organization (and, more specifically, those that are implicated in particular tasks) are made as robust as possible. The aim of this study was to examine the activities that take place in community pharmacy dispensing, and to identify the ways in which organizational components either contribute to or reduce safety.

Methods

Methodological framework

Quantitative studies tend to focus on objective abstractions such as metrics and scores that do not always capture the nuances embedded in daily practices.¹⁷ While such studies provide generalized information than can be translated into protocols, they sometimes overlook shifting or dynamic human factors that are needed to understand subtle processes in daily practices. To understand how different components interact in dispensing and identify risk issues implicated in them, this study adopted the qualitative approach of socio-technical or 'socio-material' paradigms. Socio-material paradigms are used to study networks of people and their relationships with other components in an environment.^{18–21} A common theme in these paradigms is their focus on studying both tangible (e.g. materials) and intangible (e.g. relationship) components of systems; such as

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