Beyond barriers and facilitators: the central role of practical knowledge and informal networks in implementing infection prevention interventions

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An enduring challenge for the improvement of healthcare quality is variation in the success of quality improvement (QI) interventions when implemented across settings. This is particularly true in the field of healthcare-associated infection (HAI) prevention. Some of the brightest success stories in QI have emerged from large-scale efforts to reduce HAIs such as central venous catheter-related bloodstream infections (CRBSIs) or catheter-associated urinary tract infections. The light dims, however, when efforts to export these interventions to other settings fail to meaningfully improve outcomes.

To make sense of this phenomenon, attention must be paid to the social, organizational, economic, and cultural factors that may shape the observed associations between interventions and their outcomes. These factors are components of context, which is a key modifier of the impact of QI interventions. Understanding how context influences interventions is of critical importance to advancing the science of QI. Yet studying context is challenging. The definition of context in QI has evolved in recent years, but remains broad: ‘the physical and sociocultural make-up of the local environment (eg, external environmental factors, organisational dynamics, collaboration, resources, leadership and the like), and the interpretation of these factors (“sense-making”) by the healthcare delivery professionals, patients and caregivers that can affect the effectiveness and generalisability of intervention(s).’ Context is a ‘slippery thing’ that can be difficult to apprehend due to its dynamism, multiple interacting levels and blurred boundaries.

The study of context in HAI prevention may be especially difficult since the threat to be managed is invisible, it is not always possible to determine exactly why an HAI occurred, prevention involves both human and non-human interactants and nearly every person in a hospital—from the janitor to the executive—plays a role in prevention. With some notable exceptions, the majority of studies in the HAI prevention literature that report on contextual factors in implementation do so through the framework of identifying ‘barriers and facilitators’. These studies typically use interviews, focus groups, or surveys conducted at one point in time to identify discrete factors that influence the implementation of an HAI prevention initiative or adherence with an evidence-based infection prevention practice. This approach runs the risk of generating ‘thin’ descriptions and incomplete characterisations of context.

In BMJ Quality & Safety, Clack and colleagues provide a compelling counter example. Their findings highlight the value of methodological approaches that are more flexible than the ‘barriers and facilitators’ trope. The study, termed InDepth, was a component of the Prevention of Hospital Infections by Intervention and Training (PROHIBIT) project. PROHIBIT evaluated the effectiveness of two evidence-based CRBSI reduction strategies in intensive care units (ICUs) across 14 hospitals in 11 European countries. The trial demonstrated that these...
interventions could improve process indicators and reduce CRBSI incidence densities.\textsuperscript{28} InDepth used a longitudinal qualitative case study design, gathering data from 6 of the 14 hospitals in the trial. Clack et al conducted site visits prior to and at 1 year into PROHIBIT, interviewing a variety of staff (ICU clinicians, administrators, infection prevention personnel) and performing observations of practice.

While the scope of data collection was ambitious, the cross-case analysis the investigators used was particularly innovative, demonstrating a high level of sophistication in matching nuanced qualitative data with measures of implementation success, process indicators, and CRBSI rates. Rather than distinct barriers and facilitators, we see patterns influencing implementation that reflect the diverse physical, economic, and sociocultural makeup of each hospital. By gathering different types of data from a variety of stakeholders at two points in time, Clack et al were able to capture information about dynamics that frequently fall outside formal accounts of barriers and facilitators to implementation, yet are crucial to the messy social reality of change: practical knowledge and informal networks.\textsuperscript{19}

The three meta-themes related to implementation success identified through Clack et al’s analysis—implementation agendas, resources and boundary spanners—highlight the key role that practical knowledge and informal networks play in impacting how interventions are ‘metabolised’ by hospitals.\textsuperscript{9} Practical knowledge involves skills and intelligence that people acquire based on their ‘insider’ or local experience. This knowledge can be deployed to improvise in the face of a dynamic and uncertain environment.\textsuperscript{28} Clack et al describe how each hospital established a unique ‘implementation agenda’ that did not always align with the goals of PROHIBIT. Implementation agendas were shaped by the institution’s history, priorities and perceptions of what was needed by local stakeholders. In hospitals with divergent implementation agendas, PROHIBIT resources were used for activities other than those specified by the protocol. In one setting, the trial did not change process measures or the CRBSI rate but stakeholders still considered it a success.

Clack et al also report on the impact of resources, which is a frequently cited barrier or facilitator in success.\textsuperscript{20} 21 30 Yet, their study went which is a frequently cited barrier or facilitator in success.

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To advance the study of context in the implementation of HAI interventions, we need to ensure our methodological approaches leave open — rather than reduce — the space of discovery for the unexpected, the unusual, the informal and the adaptive. By thinking about context in terms of ‘barriers and facilitators’, we run the risk of generating accounts that are static, predetermined, and driven by theoretical frameworks that are not grounded in the reality of life in complex healthcare organisations. Clack et al’s paper is a strong example of a methodological approach that captures and communicates the impact of context without limiting the discovery of unanticipated phenomena.

The challenge for the field is how this approach can be replicated in the face of scholarly production pressures, limited extramural funding and lack of support for interdisciplinary teams.

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