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GUEST EDITORIAL

Revisiting evidence-based checklists: interprofessionalism, safety culture and collective competence

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Introduction

In an earlier editorial in this journal on the intended and unintended consequences of checklists for interprofessional care (Kitto, 2010), an attempt was made to raise awareness and encourage interrogation of the problematic relationship between checklists and interprofessional care. The editorial outlined how checklists are driven by the evidence-based medicine (EBM) philosophy of the application of rigorously generated evidence to the building of programmatic clinical sequential steps that can produce optimal outcomes for patients and improve the working lives of healthcare professionals. A proposition was put forward that checklists in and of themselves are insufficient technical fixes to socio-cultural adaptive problems relating to team or interprofessional behavior. The overall purpose of this editorial was to encourage an interprofessional education research agenda focused on developing a greater understanding of how checklists in healthcare might act both as a problem and as a solution to the quality of interprofessional teamwork and collaboration (Kitto, 2010). In response to the seminal surgical safety checklist (SSC) study by Haynes et al. (2009), Canadian researchers have now conducted a study that problematizes the claims of the technical fix capacity of checklists to team-based patient safety problems in the operating room (OR) (Urbach, Govindarajan, Saskin, Wilton & Baxter, 2014).

In this editorial, we would like to revisit checklists in light of this new study and other recent work on SSCs. In doing so, we hope to further encourage interprofessional scholars to treat this new ''scientific controversy'' (Latour, 1987), as a window of opportunity to demonstrate how the field of interprofessional knowledge and practice can contribute to the improvement of the design and implementation of safety science interventions in healthcare.

Revisiting the checklist

Urbach and colleagues (2014) recent study examined surgical outcomes before and after implementing the SSC at all hospitals in Ontario, Canada, providing surgical services. Their study found that implementation of the SSC, ''was not associated with significant reductions in operative mortality or complications'' (p. 1029). The authors suggest the divergence in findings from published evidence may be due to a lack of generalizability, or the Hawthorne effect when staff members know their use of the SSC is under observation. Furthermore, the authors note that studies offering substantial favorable findings are often combined with in-depth team training or an expanded checklist. The findings of this study and the authors' conclusions support the core arguments raised in 2010 that the solution to teamwork in operating rooms and elsewhere requires more than evidence-based protocol implementation (i.e. intense team training and expanded checklists) and that resistance and/or ''work-arounds'' can occur during their implementation. In the case of the SSC, the latter may even affect the saliency of positive evaluations by quality improvement audit regimes in hospital settings.

Further support to these findings that tend to refute the technical fix capacity of checklists protocols comes from a recent Swedish study examining individual checklist item compliance, which found that the SSC time-out was not always conducted as intended (Rydenfält, Johansson, Odenrick, Åkerman, & Larsson, 2013). The authors suggest this could be due to variation in healthcare professionals' perception of the intention of the SSC, the importance of individual checklist items, and/or the necessity of exchanging information. Rydenfält, Ek, and Larsson (2014) suggest that the SSC can introduce a ''false sense of safety'' when other safety checks become obsolete because they are thought to be encompassed by the SSC. They suggest that future SSC research should focus on work dynamics, compliance with and perception of importance of individual checklist items, and the design and implementation of a SSC that is considered to be meaningful by the users. In other words, an understanding of localized *safety culture* in the workplace is brought back to the forefront as the key to safe surgical and medical practice. Safety culture is repositioned as an essential, rather than the dominant ''objective'', ''evidence-based'' approach to the design, implementation, and measurement of compliance to such checklists (e.g. Pickering, Robertson, Griffin, Hadi, & Morgan, 2013; Treadwell, Lucas, & Tsou, 2014). We are deploying the term *safety culture* in a meaningful way here, containing two distinct but interrelated units of analysis: the *value systems* of a community of practitioners and *patterns* of clinical behavior. Seeing safety specifically and deliberately through this conceptual lens is still largely absent within interprofessional literature on checklists, but work is emerging.

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A need to consider surgical culture

From Australia, Gillespie, Gwinner, Chaboyer, and Fairweather (2013) recently published on the importance of understanding how a safety culture is established between surgical teams. Within operating rooms, surgical culture is demonstrated through how ''individuals share physical space, artifacts, communication, and teamwork processes'' (Gillespie et al., 2013, p. 391). These authors suggest that the use of checklists can aid in building a safety culture through building rapport amongst the healthcare professionals. However, the authors noted that surgical culture might be resistant to forsaking professional stratification and hierarchy, which in turn may limit the input of those with less power. This specific issue relating to surgical culture have been raised before (Kitto, Gruen, & Smith, 2009) and more generally, in terms of the making of improvements in interprofessional practice requiring a deep understanding of the cultural, historical, and structural circumstances of health- and socialcare providers, as well as an understanding of how these factors shape interprofessional interactions (Kitto, Chesters, Thistlethwaite, & Reeves, 2010). This is in stark contrast to the predominantly methodologically individualist approaches within implementation science that place the site of the problem and solution within the individual and by extension, reinforce a quality improvement focus on the compliance to the checklist as the metric of success or failure of the patient safety culture in operating rooms (Kitto, Sargeant, Reeves, & Silver, 2011). In this patient safety conceptual and practice framework, the concept of culture is overly reductionist and misses much of the nuance and interplay among the culture, structure, and history of such environments and practices.

A new way forward: safety culture and collective competence

We argue that there is need for the intervention sciences literature to shift toward conceptualizing *safety culture* in a more meaningful way that is complemented by the recruitment of the notion of *collective competence* from the educational theory. This concept posits a mutually constitutive relationship between collective and individual competences ''. . .[where]. . .the latter must be defined in terms of culture and process'' (Boreham, 2004, p. 15). Collective competence is composed of three elements: making collective sense of events in the workplace; developing and using a collective knowledge base; and developing a sense of interdependency.

So if we turn to using a conceptual framework buttressed by the twin pillars of safety culture and collective competence, what are the implications for future interprofessional scholarly work in this area? To begin with, an adoption of the concepts of safety culture and collective competence involves studying the creation and reproduction of meaning, value systems, and the performance of patterns of interdependent individual behavior. We would argue that in adopting this framework, it becomes hard to consider checklists as anything other than a technical component of safety practices, which may or may not mediate broader socio-cultural factors in healthcare; they are a mechanism and not the site of the problem or solution to interprofessional care. For example, the focus on SSCs in OR research (and checklists more generally) needs to be de-centered and instead what is needed is a re-focus on the safety culture(s) in which they are deployed, and how safety culture shapes the possibility and role of checklists in affecting patient safety outcomes (rather than the current overemphasis on behavioral compliance to checklists). This line of thinking mirrors the approach of a realist evaluation, where the relationship among context, mechanism, and outcome is the primary focus of analysis (Wong, Greenhalgh, Westhorp, & Pawson, 2012) and not simply just the mechanism, an approach that dominates the mainstream SSC literature.

We propose an interprofessional research agenda guided by safety culture and collective competence as pivotal concepts in the study of checklists. This approach would place the scholarly field of continuing interprofessional education research at the forefront of an intervention research agenda that has until now been dominated by patient safety and quality improvement thinking and practice. These latter two intervention regimes oscillate between system and individualist foci (Kitto et al., 2013) that implicitly conceptualize teams in terms of structural form and workflow processes within healthcare institutions. This approach is almost diametrically opposed to the interprofessional literature that conceptualizes teams as being fundamentally rooted in, and at the whim of, asymmetrical power relations between the professions that are culturally reproduced (e.g. Hall, 2005). The end result is the complete elision of interprofessionalism as a cultural concept and practice requiring serious scholarly and practical attention within the checklist research literature.

To quote a famous private sector business aphorism, ''culture eats strategy for breakfast'' or as we would argue in the case of current implementation research thinking around checklists, ''culture eats structure for breakfast, lunch and dinner''. By this we mean that the creation of teams through the *coordinating* of people situated in designated institutional positions/roles and tasks does not automatically result in *collaboration;* the latter refers to respectful, meaningful, and effective team behavior (Reeves, Lewin, Espin, & Zwarenstein, 2010).

Concluding comments

We would again like to invite interprofessional scholars to engage in a new direction of interprofessional studies that utilize notions of safety cultures and collective competence as its guiding framework. We believe that this new direction can assist in developing a deeper understanding of the localized nature of interprofessional relations in the production of checklists, which in turn can aid in the design, form, and process of their dissemination.

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Declaration of interest

The authors report no declaration of interest. The authors alone are responsible for the content and writing of this paper.

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