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GUEST EDITORIAL



Teamwork on the rocks: Rethinking interprofessional practice as networking

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Introduction

Optimising interprofessional practice has been identified as one of the key methods for improving health outcomes across the globe (Institute of Medicine, 2001). Predominantly, in the United States, better interprofessional practice has been conceptualised as creating high-functioning teams that communicate and collaborate efficiently and effectively to meet the Triple Aim of improved health outcomes, lower cost, and enhanced patient experience (Earnest & Brandt, 2014). Yet, despite nearly two decades of work in the arenas of interprofessional practice and education, progress towards defining impactful, reproducible interventions that improve teamwork and lead to better health outcomes has been slow (Institute of Medicine, 2015; Reeves et al., 2016; Zwarenstein, Goldman, & Reeves, 2009).

Recently, we identified some reasons why optimising interprofessional practice might be so challenging. Using data from the electronic health record (EHR), we identified the healthcare professionals involved in the care of a hundred patients with colorectal cancer. Based on data of when and how healthcare professionals access, enter, and review information related to each patient from the date of diagnosis in our university's cancer registry through 60 days after this date, we created networks of electronic collaboration among the healthcare professionals caring for each patient. The size and complexity of these networks provided some startling insights into the barriers to interprofessional practice which we briefly discuss in this editorial.

Insights from the networks of interprofessional practice in cancer care

First, networks are generally massive. Across the networks, the median number of individual healthcare professionals was 117. Because of the sheer size of these networks, efforts to include all of (or even a core group of) the healthcare professionals in face-to-face collaboration would be unrealistic. Similarly, engaging these individuals collectively in training would be challenging. The size of the networks also makes serendipitous or chance interactions of healthcare professionals unlikely.

Second, networks were heterogeneous. They varied in size from 8 to 440 healthcare professionals. In some networks, healthcare professionals were densely interwoven while in

other networks the relationships were more diffuse. Many networks demonstrated both patterns in the same network, indicating that care depended on subsets of healthcare professionals who collaborated closely with each other but shared overall responsibility for the patient with other subgroups in the network. The structure of collaboration for each patient was unique.

Finally, networks evolved over time. The structural characteristics of the networks and the healthcare professionals involved in each network changed as patients' needs changed. This evolution made predicting the network surrounding a patient at any given moment difficult.

Implications of these insights

How do we place these insights into the current conceptualisation of interprofessional practice? Principles of teamwork from research outside of healthcare (Salas, DiazGranados, Weaver, & King, 2008) have provided the theoretical underpinnings that have driven much of the interventions designed to improve interprofessional practice over the past decade. These principles can be summarised as follows: define the work of teams in current practice, design interventions to improve team performance, train the team via simulation or other methods during which members can collaborate and receive feedback, and use evaluation data both to enhance future training and to shape ongoing practice. Team training structured in this way has been shown to improve performance and help patients in some arenas (Weaver, Dy, & Rosen, 2014).

However, our findings identify theoretical limitations to this approach. In non-healthcare arena, work teams are often small, discrete, and fixed; in contrast, our findings suggest that, at least in cancer care, healthcare "teams" are typically large, heterogeneous, and dynamic. Instead of being described as teamwork, this arrangement of care is better described as networking (Reeves, Lewin, Espin, & Zwarenstein, 2010). These networks are too unwieldy to be trained as discrete teams using simulation or some other modality. In addition, the healthcare professionals involved in a specific patient's network change frequently and unpredictably, such that whom to include in training might change between planning and implementation. Lastly, the size of the networks and the loose association between most healthcare professionals suggests that indirect collaboration rather than

face-to-face interaction between healthcare professionals may be an essential concept for interprofessional competence.

How should these findings be applied to the field to support optimal interprofessional practice? Our observations suggest several possible directions for future work.

Generalised network competency for all healthcare professionals

While teamwork competency has been an area of focus for educators and researchers, network competency may be similarly important in practice (Reeves, 2012). Healthcare professionals need to understand the size and complexity of healthcare networks. In addition, they need to recognise the pathways through which information flows and by which care is shaped, especially as the evolving needs of patients restructure their networks and the individual healthcare professional's role in care. Competency in collaboration within the EHR seems especially important. The capacity to engage with these virtual pathways to best meet patient needs seems to be a key skill for modern healthcare professionals. In addition to a competency domain of "teams and teamwork" (Interprofessional Education Collaborative, 2016), authors of competencies should consider adding a competency domain of "networking".

Enhanced network competency for the most central healthcare practitioners

Certain individuals tended to be more central to the healthcare networks of each patient. These individuals have increased responsibility for integrating information from across the network in order to best meet the needs of patients. While, in our analyses, these healthcare professionals were often individuals involved in direct patient care such as nurses and physicians, network data can help define these individuals and the networks in which they work. For example, therapists may be most central in rehabilitative settings. Training these individuals to leverage the network more effectively may make care more efficient, safe, patient-centred, and effective.

Optimal networks through system redesign

Most promisingly, network data may be useful to guide quality improvement initiatives around interprofessional practice. While the two suggestions above focus on training, our findings and additional research could shape process interventions such as the design of the EHR, creation of team huddles, or shared approaches to documentation. The aspirations for EHRs have yet to be realised (Kellermann & Jones, 2013)(Kellermann & Jones, 2013), but using data from the EHR may help drive the development of better processes for care and enhance information exchange across settings. Subsequent network data could then be used to measure the

impact of interventions on network structure, the processes of interprofessional practice, and health outcomes.

Concluding comments

While teamwork has been the dominant conceptualisation for interprofessional practice over the past two decades, we suggest that networking is an additional important conceptualisation for interprofessional practice. Rather than working in discrete teams, healthcare professionals often work in large, heterogeneous, and dynamic groups as well as networks. Interprofessional interventions and evaluations should incorporate these principles of networking into their theoretical underpinnings (Reeves et al., 2010). Doing so may advance the field and help us realise the broader benefits of optimising interprofessional practice for our patients.

Declaration of interest

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

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