Adv in Health Sci Educ (2016) 21:735–748
DOI 10.1007/s10459-015-9662-5

Interprofessional rhetoric and operational realities: an ethnographic study of rounds in four intensive care units

Elise Paradis[1,2,3] · **Myles Leslie**[4] · **Michael A. Gropper**[5]

Received: 1 September 2015 / Accepted: 13 December 2015 / Published online: 24 December 2015
© Springer Science+Business Media Dordrecht 2015

Abstract Morning interprofessional rounds (MIRs) are used in critical care medicine to improve team-based care and patient outcomes. Given existing evidence of conflict between and dissatisfaction among rounds participants, this study sought to better understand how the operational realities of care delivery in the intensive care unit (ICU) impact the success of MIRs. We conducted a year-long comparative ethnographic study of interprofessional collaboration and patient and family involvement in four ICUs in tertiary academic hospitals in two American cities. The study included 576 h of observation of team interactions, 47 shadowing sessions and 40 clinician interviews. In line with best practices in ethnographic research, data collection and analysis were done iteratively using the constant comparative method. Member check was conducted regularly throughout the project. MIRs were implemented on all units with the explicit goals of improving team-based and patient-centered care. Operational conditions on the units, despite interprofessional commitment and engagement, appeared to thwart ICU teams from achieving these goals. Specifically, time constraints, struggles over space, and conflicts between MIRs' educational and care-plan-development functions all prevented teams from achieving collaboration and patient-involvement. Moreover, physicians' de facto control of rounds

✉ Elise Paradis
elise.paradis@utoronto.ca

Myles Leslie
mleslie2@jhmi.edu

Michael A. Gropper
gropperm@anesthesia.ucsf.edu

1 Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada

2 Department of Anesthesia, Faculty of Medicine, University of Toronto, Toronto, ON, Canada

3 The Wilson Centre, 144 College St Room 702, Toronto, ON M5S 3M2, Canada

4 Armstrong Institute for Patient Safety and Quality, Johns Hopkins Medicine, 750 East Pratt Street, 15th Floor, Baltimore, MD 21202, USA

5 Department of Anesthesia and Perioperative Care, University of California San Francisco, 500 Parnassus Ave, MUE 410, San Francisco, CA 94143-0648, USA

often meant that they resembled medical rounds (their historical predecessors), and sidelined other providers' contributions. This study suggests that the MIRs model, as presently practiced, might not be well suited to the provision of team-based, patient-centered care. In the interest of interprofessional collaboration, of the optimization of clinicians' time, of high-quality medical education and of patient-centered care, further research on interprofessional rounds models is needed.

Keywords Ward rounds · Critical care · Interprofessional relations · Medical education-graduate · Patient centered care

Introduction

Interprofessionalism—the idea that patient care is best delivered through collaboration among the professions—has gained prominence over the past few decades (Paradis and Reeves 2013) as evidence of its positive impact on care outcomes has grown (Kohn et al. 1999; Kopp et al. 2007). In response to this, patient care or ward rounds have evolved in recent decades to include nursing, pharmacy, and other allied health professionals (Curley et al. 1998; Kim et al. 2010). Interprofessional rounds are now one of the most-often implemented strategies to improve collaboration in healthcare (O'Leary et al. 2012; Zwarenstein et al. 2009), a key feature of patient safety efforts (Weaver et al. 2013), and often serve as the main locus of interprofessional education in graduate medical education (O'Mahony et al. 2007). In the four intensive care units (ICUs) we studied, these rounds—which we call "morning interprofessional rounds" or "MIRs"—aimed to improve patient outcomes by inviting heterogeneous groups of clinical professionals to discuss care plans.

Early in our broader study of the factors that impact team collaboration in the ICU, we noticed that while MIRs were a key site of interprofessional co-location, they were peppered with conflict. Indeed, clinicians frequently voiced their dissatisfaction with them, despite the strong commitment from both the nursing and medical leadership to make MIRs succeed. We thus asked the following research question: What were the factors influencing the conduct of interprofessional rounds and their ability to enable collaborative, patient-centered care?

Background

Previous research in the ICU has documented the generally high prevalence of interprofessional and intraprofessional conflict (Danjoux Meth et al. 2009; Lingard et al. 2004), despite continued recognition of the importance of team care by leaders in the field (Brilli et al. 2001; Durbin 2006; Weil 1973). Quantitative, outcomes-based studies demonstrating the positive impact of interprofessional rounds on costs, length-of-stay, and adverse events in the ICU (Kim et al. 2010; Leape et al. 1999; Pronovost et al. 2003) have been published alongside critical, qualitative studies of their mixed impact on collaborative behavior. Studies from the late 1980s and early 1990s highlighted and decried the passivity of nurses during rounds (e.g. Busby and Gilchrist 1992; Whale 1993), while later studies described highly agentic nurses using a broad range of techniques—from disrupting the flow of

rounds (Manias and Street 2001) to falling strategically silent (Hill 2003)—to increase their visibility and capacity to advocate for their patients. Other recent studies of rounds in the ICU have highlighted the continued dominance of physicians in decision making (Coombs and Ersser 2004) and their perceived ownership of all medical knowledge related to patients (Lingard et al. 2004). Furthermore, comparative research suggests that the more acute the care, the greater the monopoly physicians exercise over "collaborative" processes (Nugus et al. 2010), suggesting that the patterns of alienation and disengagement during rounds noticed in the general internal medicine literature (Miller et al. 2008; Zwarenstein et al. 2013) might be amplified in the ICU context. Broadly, this research has stressed the difficulties associated with the enactment of what Long et al. (2006) have called "clinical democracy" in a system that gives physicians the final say (see Bourgeault and Mulvale 2006) and in which the contributions of non-physicians are often ignored (Coombs and Ersser 2004; Manias and Street 2001; Miller et al. 2008).

Rounds have similarly been investigated for their impact on the socialization of junior physicians into modalities of patient care. Key concerns include the declining art of bedside teaching and physical examination (Ramani et al. 2003; Verghese 2008; Wachter 2015), rarefied time spent at the bedside (Miller et al. 1992; Ward et al. 2014), and the use of "depersonalizing" language during case presentations (Anspach 1988; Fox 1993). These are all aspects of the well-known and much decried phenomenon of patient objectivation in medical education and care (Mizrahi 1985).

Informed by this literature, we investigated whether and how MIRs are shaped by such forces, and whether and how they answer these critiques or alleviate known issues with rounds.

Methods

Our data were collected in a year long comparative ethnographic study of team interactions in four ICUs at four academic hospitals in the US (see Paradis et al. 2014). Ethnography is the preferred methodology for studying the context within which healthcare practices are embedded (Leslie et al. 2014), and a key element in the successful design, implementation and evaluation of interventions in healthcare delivery (Bosk et al. 2009; Dixon-Woods and Bosk 2010; Leslie et al. 2014). Through direct, sustained and extensive observations and interviews with participants, ethnographers aim to tell complex, contextualized, and credible stories about the social worlds they investigate (O'Reilly 2012). With this study, we sought to describe the texture of interprofessional relations during MIRs in order to better understand the factors that encouraged and constrained the achievement of their goals. While the contents of this article describe our situated perspective on the events we observed, at the center of our approach is an imperative to let our participants speak about their own experiences, and to enable them to work with us to recognize and describe the social context within which their clinical work happens. Because ethnographers are generally outsiders to the contexts they study and co-construct their accounts with their study participants, ethnography as a method is well placed to cut through the complexity and dynamism of the workplace. It can help clinicians and policy makers to consider healthcare delivery practices from alternative perspectives, encouraging the development of novel, locally viable change (Iedema et al. 2013).

The four ICUs in this study were purposively recruited with the help of gatekeepers—as is common in qualitative healthcare research (Paradis 2015; Pope 2005)—to match on

medical specialty, number of beds, and staff rosters. All four deployed high intensity ICU physician staffing in which dedicated specialists called "intensivists" manage or co-manage ICU patients (Pronovost et al. 2002). During our research, which counted 576 h of participant observation, and 47 shadowing sessions between November 2012 and December 2013, we observed several hundreds of clinicians and formally interviewed 40 (see Table 1). Observations started unobtrusively and, as the ethnographers built rapport with participants, became more and more participatory. Informal interviews were conducted regularly to confirm observation and elicit clarifications on emerging questions and ideas. Fieldnotes were collected during every visit on an encrypted electronic tablet (EP) or a notepad (ML), jotted down while in the field and further elaborated as soon as possible after data collection, inspired by the process described by Emerson et al. (1995).

Interviewees were selected using theoretical and snowball sampling. Interviews lasted between 25 and 105 min, and averaged 1 h. Rounds were one of the topics discussed during these interviews, along with the use of information technology and relationships with patients and families. These topics are the object of other empirical papers coming out of this study. Recordings were transcribed professionally, de-identified and destroyed after transcription. In the analyses for this paper, all rounds-associated fieldnotes and interviews were extracted and coded iteratively by the first two authors, EP and ML, using a variant of the constant comparative method (Glaser and Strauss 2012 [1967]): after an early analysis of gathered data and an initial agreement among research team members as to the importance of rounds in the ICU, further data was collected and analyzed iteratively, to test emerging understandings. Findings were then systematically compared between and within units to provide a richer description of local realities. Interview and observational data were also systematically contrasted.

In the data extracts that follow, attribution is made to the profession of the participant interviewed (attending physician, resident physician, physician assistant, registered nurse, nurse manager, pharmacist, family member of a patient), to a sequential numerical identifier, and then to the participant's ICU (e.g. Physician Assistant 1, Unit 2). Observational data is referenced by unit and date (e.g. Unit 2, 03 March 2013).

Given the nature of this research, it is important to note the researchers' backgrounds. E.P. is a sociologist who trained in ethnography during her Ph.D. studies; she has been studying healthcare since 2011. M.L. is a criminologist who trained in ethnography during his Ph.D. studies; he has been studying healthcare since 2010. M.A.G. is a physician (an intensivist and anesthesiologist) with a Ph.D. in physiology; he has extensive ICU research experience and has held leadership roles in the ICU since 2001. The authors share an interest in understanding and improving healthcare delivery through research and its implementation in practice.

Table 1 Data collected and characteristics of nursing involvement for each sample unit

Unit	Observations (h)	Clinicians observed	Clinicians interviewed	Clinicians shadowed	Nursing involvement
Bridgepoint	189	109	9	15	Scripted
Buena Vista	65	216	9	0	Not scripted
Claremont	180	178	9	15	Scripted
Uptown	142	268	13	17	Not scripted
Total	576	771	40	47	–

Ethics approval was obtained at all four sites following local protocols.

Limitations

Ethnographers aim to situate their findings into their specific context through rich descriptions of the customs, roles, activities and beliefs of the people they observe, embedding them within their broader environment and history (O'Reilly 2012). To fully accomplish this across four hospitals and two cities, with data collected over 13 months by two individuals with similar training but widely different perspectives, the authors would have needed a book-length manuscript. The article we present here should thus be seen as a portrait that condenses the similarities and differences across study sites and aims to answer a specific question: What are the factors that influence the conduct of interprofessional rounds and their ability to enable collaborative, patient-centered care? Future research can focus on different aspects of collaborative care delivery or on other strategies to promote interprofessional collaboration.

While ethnographic findings can be dismissed as too anchored in their specific contexts to be generalizable to other sites, the dynamics we observed following the scientific precepts of the method were more similar than different across our four study ICUs and were confirmed by two different ethnographers. This, combined with the abundance of similar effects in the general internal medicine literature (Miller et al. 2008; Zwarenstein et al. 2013), suggests that our findings may well extend beyond the ICUs in our study and may thus be highly transferable.

Context

The term "rounds" in the literature is used to refer to a broad range of practices. In this paper the MIRs we observed were characterized as follows: They counted between ten and fifteen people, including an attending physician (also called staff or consultant in other countries) and medical residents as well as nurses, pharmacists, and any other interested and available ICU professionals (including respiratory therapists, physical therapists, speech therapists, etc.); they were led by attending physicians or, sometimes, by ICU fellows; they were held in the morning, at the threshold of patients' rooms. They were thus very different from the conference room interprofessional rounds or case conferences (Australia) described elsewhere in the literature (Nugus et al. 2010; Zwarenstein et al. 2013). In our study units, MIRs typically followed these steps:

1. Choosing the next "stop" (i.e. patient) in the MIRs tour. This choice was made using a combination of patient acuity, physical proximity, and junior physician scheduling constraints.
2. Assembling in the hallway outside the patient's room.
3. Presenting and discussing the case. The presentation was generally given by a junior physician, and, on some units, the nurse responsible for the patient.
4. Teaching by a senior physician.
5. Outlining, finalizing and repeating for verification the care plan for the day.

The MIRs we observed were consistent with the existing literature in that physical examinations and direct interactions with patients were rare (Miller et al. 1992; Ward et al.

2014), and their nature and frequency varied greatly based on the preferences of the leading attending physician (Ward et al. 2014).

The rhetoric and the operational realities of MIRs

Interviewees shared that MIRs had been implemented by the medical and nursing leadership of the four units we observed with the express purpose of improving team-based care and patient outcomes. Medical and nursing leaders believed strongly that when brought together, the unique knowledge and perspectives of the different healthcare professionals constituting the ICU team would result in higher-quality care plans and increased communication and knowledge diffusion among team members. One attending physician summed up these aspirations: "I think [MIRs are] in part an assessment and plan … where you really have a cohesive team approach … to say here's what *we're* going to do today" (Attending Physician 1, emphasis added, Buena Vista). In this way, the rhetoric of MIRs defined them as a fully collaborative effort that aimed to improve the interprofessional integration and quality of patient care. In practice, however, operational conditions on the ICUs limited the ability of MIRs to deliver these intended benefits. These operational conditions included: time constraints; struggles over space; and the primacy of medical education over collaborative care plan development.

Time constraints

The practice of MIRs was significantly constrained by the amount of time that could be dedicated to them. Particular constraints here were duty hour limitations, and the patient census on the unit. In addition, as participants were added to medical rounds and the team size increased, the time available for each of them to contribute while accomplishing the many tasks diminished. Two main responses to time management in an interprofessional context emerged. First, staff, particularly nurses, created ad hoc models for gaining a portion of the scare time available. Second, rounding teams de-prioritized personal and physical interactions with patients during MIRs.

Scripted and unscripted models for nursing involvement

While, strictly speaking, interprofessional collaboration is defined as occurring "when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, carers and communities to deliver the highest quality of care across settings" (World Health Organization 2010, p. 13), nurses and doctors were the de facto key players in MIRs. Many nurses felt that the time commitment required by attendance to MIRs interfered with their care duties. One nurse believed that he was able to voice his concerns "only part of the time … because you're on hold with other patients, so you just say what you can [and get back to work]" (Registered Nurse 2, Uptown). Another nurse said: "The way the world works is that you're taking care of patients, and [rounds are] going to pull you away from this [for a] half an hour discussion [about a] patient. … [S]ometimes you don't have time to listen" (Nurse Manager 1, Uptown).

Two models were designed to solve the inextricable problems of time management and poor nursing attendance to rounds. The first model—adopted by Bridgepoint and

Claremont—was scripted and thus formulaic: nurses used a template to describe their patient. The templates—which were iterated and changed by team members during interprofessional meetings at least twice a year—were deployed to guarantee that nurses presented critical components of their patients' cases, while avoiding material that would be covered by resident physicians. Although physician representatives participated in the meetings when the template was tweaked, many physicians remained frustrated by information duplications when nurses or residents went off script, thereby appropriating something that had been formally allotted to the other profession (see also Lingard et al. 2004). Physicians also felt that valuable rounds time was ineffectively used to ensure that nurses gave their presentations (Claremont, 26 March 2013).

Nevertheless, nurses on the scripted units felt "lucky to be able to be part of [MIRs]," and saw the template as "a formal invitation" to participate. These nurses perceived MIRs as "[a] moment to give an update and raise any issues" (Bridgepoint, 03 September 2013), although most were also aware that the opportunity to present from their templates depended heavily on the preferences, mood, and time constraints of the individual attending physicians who ultimately controlled the tempo and inclusivity of rounds. Some resented the exercise of this discretion to curtail or preempt their presentations, complaining that, regardless of the script, physicians kept "doing their own thing" (Registered Nurse 2, Claremont). Indeed, the consensus among nurses on the scripted units was that physicians listened to their presentations approximately half of the time: "Sometimes you sit there [during rounds] and you say your stuff, and then they'll be like, 'Oh, yeah. And what is this?' And then you have to say it again because clearly no one was listening to you" (Registered Nurse 3, Claremont).

The second model for nursing involvement in MIRs was ad hoc or free-form: nurses engaged as they saw fit depending on the needs of their patients and their relationship to the attending physician in charge. On the unscripted units, Buena Vista and Uptown, some nurses expressed that they did not "feel like it [was] valuable to be involved in rounds" (Registered Nurse 1, Buena Vista). Others described MIRs as "time for a break, to relax a little bit" (Registered Nurse 1, Uptown). A nurse manager on the Buena Vista unit had made the participation of nurses during MIRs a personal mission, but felt discouraged after two unsuccessful attempts. She noted that physicians who systematically involved nurses in MIRs were not only in the minority, but that they were celebrated by the nursing staff as exceptional (Nurse Manager 1, Buena Vista). Previous attempts to script and so guarantee a place for nursing presentations on that unit had failed, in her view, after both attending physicians and nurses complained about repetitions. While physicians cared about inefficiencies, nurses had resisted the initiative on the grounds that repeating information made them look foolish: "Would you want to sit there and look like an idiot and say: 'These are the things I want to talk about, even though we've already talked about them'?" (Nurse Manager 1, Buena Vista).

In summary, while the study units varied in whether or not bedside nurses' involvement in rounds was scripted, neither model of MIRs appeared to foster harmonious interprofessional care interactions, suggesting that the problem of time scarcity during MIRs remained unsolved.

No time for patients

According to many attending physicians, rounds "should involve examining the patients regularly [and] seeing what has changed" (Attending Physician 1, Claremont), but contemporary estimates show that clinicians spend less than 19 % of their time at the bedside

during rounds (Peters and ten Cate 2014), and less than a third of attending physicians visited and/or examined patients in the course of the MIRs we observed. Some attending physicians in our units blamed new work hour regulations (see Accreditation Council for Graduate Medical Education 2011) for their inability to see patients. "It's horrible," one said. "We used to have time to see patients, but now only the interns see the patients" (Attending Physician 3, Uptown).

The MIRs teams we observed spent almost all of their time at the threshold of, rather than inside, patients' rooms. Although the door or curtain was open and the space available for entry, MIRs teams often treated the threshold as if it were a physical block. Clinicians behaved as if there was an unstated rule that involving patients would inevitably and uselessly prolong rounds, a fact that sometimes lead to absurdities, as in the following case where an awake patient was party to, but uninvolved in the team's conversation:

> During rounds Leanne (RN) says the patient "tried 5 different [oxygen] masks and was uncomfortable on all of them." A junior physician interjects: "She said she was comfortable enough to me, this morning." The back and forth continues with the nurse saying that the patient is uncomfortable and the physician saying that she is not (Bridgepoint, 04 April 2013).

Mostly, however, patient interactions seem to be listed among low-priority items on the MIRs' team to-do list. Patient interactions and examinations were so rare that the family member of a long-term patient spoke about one attending physician who was an exception: "Dr. F. was the only attending who, when he made rounds, actually stepped inside and examined the patient—which I thought was nice to see, because in my opinion medicine these days is getting far too inhumane. … They look at the numbers and ignore the patient" (Family Member 1, Bridgepoint).

Struggles over space and the (re)creation of care hierarchies

The space required to conduct MIRs and accommodate the participants was significant; depending on the day and patient census, a MIRs team would comprise between 10 and 15 people: physicians, pharmacists, bedside nurses, charge nurses, respiratory therapists, and/or physical therapists. "[The MIR team is] always in the way," summarized a nurse (Nurse Manager 1, Uptown). Compounding this, physicians in two of the units used five workstations on wheels, adding screens and keyboards to the mix and demanding even more space in the units' hallways. Staff consequently described the physical presence of the MIRs team as a cluster, a barricade, a forest, and a logjam. It is no surprise, then, that space-related conflicts emerged as a major source of frustration.

Care conversations during MIRs were held in the circle created by physicians' bodies (see Fig. 1). These white-coat clad bodies created a barrier that defined MIRs as a *medical* rather than *interprofessional* enterprise. Indeed, non-physicians typically stood or sat behind the circle of physicians, and used strongly figurative language—such as "elbow[ing] in" (Uptown, 19 March 2012) or "fighting to get in" (Registered Nurse 3, Uptown)—to describe efforts to join the inner circle. Some saw it as their duty to be involved: "As a nurse, as a person at the bedside, I will walk through the whole thing [MIRs]. I'll say, 'Excuse me,' and I'll kind of go in there, and I want to hear" (Registered Nurse 3, Uptown). However a large majority of non-physicians appeared to have given up on fighting such fights; one nurse, for instance, shared that he would settle for "whatever [he] can do easily" (Uptown, 19 March 2012). Another participant underscored the patient care implications of this capitulation: "Sometimes I feel like [non-physicians] give up

[advocating for patients] when they shouldn't … Remember who are we servicing? Ultimately we're here for the patient, and the physicians are the conduit… at the end of the day, [the patient is] who we're having to work for" (Pharmacist 1, Bridgepoint). Exclusionary practices, amplified by spatial scarcity, limited clinicians' ability to collaborate and communicate across professional boundaries and advocate for the patient during rounds.

Medical education versus interprofessional collaboration

All attending physicians in the units we studied saw the education of junior physicians as a primary function of MIRs. Attending physicians hoped to teach interns and residents "how to present the patient in such a way that the important issues are brought out. And then get them to think about what those issues are and how they want to address them" (Attending Physician 1, Uptown). One attending physician called teaching on rounds "controlled chaos. I think it's one of the most viable places to learn" (Attending Physician 1, Buena Vista). For many attendings, MIRs were also a moment to test their charge's understanding:

> [I like to] ask questions so that I understand what they know and what they understand and how they're thinking. … [I]f they don't understand the thought process and the physiology behind the decisions that they're making, then I feel personally like I haven't done my job, because they haven't learned ICU medicine (Attending Physician 2, Uptown).

Teaching sometimes included patient visits and device-specific instruction (e.g. ventilator, balloon pump) at the bedside, although these practices were once again highly dependent on the preferences of each attending physician, a phenomenon noted elsewhere (Ward et al. 2014).

Fig. 1 Care conversations during MIRs: the circle of white coats and the iPatient

Many attending physicians saw MIRs as a space for the discussion of exclusively *medical* issues. They described MIRs as 'sacred time' that needed to be protected from distractions and intrusions that might come from outside of medicine (Attending Physician 1, Uptown). Similarly, an attending physician felt that the inclusion of nursing case presentations in rounds could reduce trainee physicians' opportunities to learn the case presentation skills at the core of medical expertise (Attending Physician 2, Claremont). A bedside nurse explained that one attending physician on her unit had long resisted nursing participation in rounds on the grounds that it detracted from the education of junior physicians (Registered Nurse 1, Bridgepoint). An attending physician on another unit complained that "nurses know the answers to the questions that I'm asking, even though the interns are struggling. And some nurses will answer the question. … [On the inside I am thinking:] 'I'm trying to teach. I know *you* know!'" (Attending Physician 2, Uptown, original emphasis). As such, teaching was targeted at physicians specifically rather than at the entire MIRs group, and non-physicians came to rounds under the expectation that they were to remain quiet (Claremont, 02 April 2013). While nurses acknowledged that MIRs served a key educational role for junior physicians, they emphasized the socialization and modeling that were taking place as doctors carved their own sacred time and space out of rounds: "[Junior doctors] are learning how to interact with [nurses] and with policies as much as they're learning about the medical issues" (Registered Nurse 1, Claremont). In this way, MIRs were seen as enforcing and reproducing hierarchical interprofessional relationships.

Discussion

Several factors compromised MIRs as a way of supporting interprofessional collaboration and improving patient-centered care. First, the MIRs model we observed required clinicians to accomplish *more* tasks with *more* players in *less* time and in the *same* physical space. Time constraints, exacerbated by duty hour reforms, put pressure on attending physicians to expedite rounds and prioritize medical education over the inclusion of their non-physician colleagues. Similarly, the organization of MIRs attendees and equipment in the ICU hallway—in concentric circles that located physicians in the center, and non-physicians on the periphery—limited participants' ability to collaborate by creating a physical barrier to communication (Morrison et al. 2008). This barrier of white coats seemed to promote a combative relationship between provider groups by making professional identity more visible and more salient, thereby creating barriers to collaborative working during MIRs (Burford 2012).

Second, the organizational, teaching, professional and legal responsibilities of physicians allowed them to be the final arbiters of the form and content of MIRs, thereby reducing interprofessional collaboration. Faced with a duty to lead, educate, treat, and with the ultimate legal responsibility for patient outcomes, attending physicians tended to frame the contributions of non-physicians as detrimental to the learning experiences of junior physicians and to expeditious patients rounds. This situation resulted in:

1. A systematic lack of nursing involvement in MIRs in all units, regardless of the presence of a script for such involvement. On units where scripts were intended to regularize participation and standardize contribution, nursing involvement often appeared tokenistic;

2. A failure to develop such scripts for other healthcare providers (including nutritionists, pharmacists, physical therapists, respiratory therapists and speech pathologists); and
3. MIRs being in most cases indistinguishable from their historical predecessors, medical rounds, where the dominance of physicians is well documented (Busby and Gilchrist 1992; Coombs and Ersser 2004).

In summary, despite having been designed to encourage interprofessional collaboration, MIRs rarely enabled it.

Third, MIRs did not appear to encourage patient involvement during rounds, and rarely included physical exams or care conversations with awake and alert patients. This finding is not surprising given the literature that decries the decline of bedside teaching and associated loss in physical examination skills among junior physicians (Miller et al. 1992; Ramani et al. 2003; Verghese 2008; Wachter 2015; Ward et al. 2014). Nevertheless, patient involvement still requires consideration. What message is sent to junior physicians about medical and interprofessional care when MIRs focus on charts rather than on flesh and blood patients? Despite being several decades old, the patient-centered care movement has yet to revolutionize care delivery (Hodgkin and Taylor 2013), including interprofessional rounds. Integrating the central tenets of patient centrism should be a priority in the design and implementation of future models of interprofessional rounds.

As is the case with all ethnographic studies, our findings should be seen as context dependent and situated in specific sets of local practices. The fact that the dynamics we observed were more similar than different across our four study ICUs suggests, however, that the time and space constraints as well as the conflicting goals of MIRs may be experienced in other contexts as well. Our research should be reproduced in other healthcare delivery settings, especially in community hospitals that are not affiliated with academic centers. Divergent findings might be found in contexts where the teaching function of interprofessional rounds will not compete with their other care goals. Finally, our research mostly focused on the perspectives and experiences of physicians and nurses. Future research should pay closer attention to the way pharmacists and other healthcare professionals are included in and navigate interprofessional rounds, especially since their own participation has not yet been the object of scripting efforts.

Conclusion

Our study of morning interprofessional rounds adds to previous evidence of interprofessional conflict during rounds (Busby and Gilchrist 1992; Coombs and Ersser 2004; Hill 2003; Lingard et al. 2004; Manias and Street 2001; Whale 1993), and suggests that the MIRs model we have described isn't well suited to the provision of team-based and patient-centered care. The MIRs we observed were often indistinguishable from medical rounds: adding providers from the other professions had not transformed medical rounds into spaces that foster team-based, patient-centered care. New and empirically-tested models for rounds are urgently needed if we are to deliver on the promise of interprofessionalism while also optimizing clinicians' time, the quality of medical education, and the care delivered to patients.

Importantly, the MIRs we observed differed from the types of rounds that have been shown to lower length of stay and adverse events (Kim et al. 2010; Leape et al. 1999) and improve residents' perception of learning (Felten et al. 1996; O'Mahony et al. 2007) on many dimensions, including their location in the hallway rather than in conference rooms.

This insight raises a critical question: Are all interprofessional models of rounds equally valuable? We need better data on the operational and educational effects of different rounding models, including the sitting rounds (case conferences) studied by Nugus et al. (2010) and others, MIRs such as those we observed, and the many other variations on the model currently found in healthcare settings (Manias and Street 2001; Whale 1993). Are there models where conflict is lower and participation from all professionals greater? Models where trainees learn more and have time to focus on flesh and blood patients? Models where patient outcomes improve dramatically? Investigating the impact of different models of rounds on these and other related outcomes will help us identify the features that ensure that interprofessional rounds enable and enhance team-based, patient-centered care, and thus help turn the interprofessional rhetoric into a reality.

In conclusion, we believe that to translate the principles of interprofessionalism into practice, we need to consider how healthcare providers actually enact it. The clinicians involved in this study all seemed to agree that collaborative, patient-centered care is the future of healthcare delivery. Indeed and crucially, the constraints and concerns identified in this manuscript appeared *not* to stem mostly from the failure of uncooperative attending physicians, but rather from the very structure of MIRs, which impeded, rather than enabled, collaborative, patient-centered care to happen. There was simply too little time, too little space, too much to do and too many players involved for MIRs to deliver on their promises. Future design of interprofessional processes need to take these factors into consideration, especially as they enable the continued cultural and structural dominance of medicine, a major obstacle to collaborative care (Bourgeault and Mulvale 2006; Coombs and Ersser 2004; Long et al. 2006).

Acknowledgments This research was funded by the Gordon and Betty Moore Foundation. The authors wish to acknowledge the contributions of Niall Byrne, Ph.D., Simon Kitto, Ph.D., Mandy Pipher, and Scott Reeves, Ph.D.

Compliance with ethical standards

Conflict of interest None.

References

Accreditation Council for Graduate Medical Education. (2011). Duty hours: Common program requirements. http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramResources/Common_Program_Requirements_07012011%5B1%5D.pdf. Accessed 24 April 2014.

Anspach, R. R. (1988). Notes on the sociology of medical discourse: The language of case presentation. *Journal of Health and Social Behavior, 29*, 357–375.

Bosk, C. L., Dixon-Woods, M., Goeschel, C. A., & Pronovost, P. J. (2009). Reality check for checklists. *The Lancet, 374*(9688), 444–445.

Bourgeault, I. L., & Mulvale, G. (2006). Collaborative health care teams in Canada and the US: Confronting the structural embeddedness of medical dominance. *Health Sociology Review, 15*(5), 481–495.

Brilli, R. J., Spevetz, A., Branson, R. D., Campbell, G. M., Cohen, H., Dasta, J. F., et al. (2001). Critical care delivery in the intensive care unit: Defining clinical roles and the best practice model. *Critical Care Medicine, 29*(10), 2007–2019.

Burford, B. (2012). Group processes in medical education: Learning from social identity theory. *Medical Education, 46*(2), 143–152.

Busby, A., & Gilchrist, B. (1992). The role of the nurse in the medical ward round. *Journal of Advanced Nursing, 17*(3), 339–346.

Coombs, M., & Ersser, S. J. (2004). Medical hegemony in decision making—A barrier to interdisciplinary working in intensive care? *Journal of Advanced Nursing, 46*(3), 245–252. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2648.2004.02984.x/abstract.

Curley, C., McEachern, J. E., & Speroff, T. (1998). A firm trial of interdisciplinary rounds on the inpatient medical wards: An intervention designed using continuous quality improvement. *Medical Care, 36*(8), AS4–AS12.

Danjoux Meth, N., Lawless, B., & Hawryluck, L. (2009). Conflicts in the ICU: Perspectives of administrators and clinicians. *Intensive Care Medicine, 35*(12), 2068–2077.

Dixon-Woods, M., & Bosk, C. (2010). Learning through observation: The role of ethnography in improving critical care. *Current Opinion in Critical Care, 16*(6), 639.

Durbin, C. G, Jr. (2006). Team model: Advocating for the optimal method of care delivery in the intensive care unit. *Critical Care Medicine, 34*(3), S12–S17.

Emerson, R. M., Fretz, R. I., & Shaw, L. L. (1995). *Writing ethnographic fieldnotes*. Chicago, IL: University of Chicago Press.

Felten, S., Cady, N., Metzler, M., & Burton, S. (1996). Implementation of collaborative practice through interdisciplinary rounds on a general surgery service. *Nursing Case Management Managing the Process of Patient Care, 2*(3), 122–126.

Fox, N. J. (1993). Discourse, organisation and the surgical ward round. *Sociology of Health and Illness, 15*(1), 16–20. doi:10.1111/1467-9566.ep11343783.

Glaser, B. G., & Strauss, A. L. (2012 [1967]). *The discovery of grounded theory: Strategies for qualitative research*. New Brunswick: Aldine Transaction.

Hill, K. (2003). The sound of silence—nurses' non-verbal interaction within the ward round. *Nursing in Critical Care, 8*(6), 231–239.

Hodgkin, P., & Taylor, J. (2013). Power to the people: What will bring about the patient centred revolution? *BMJ, 347*, f6701. doi:10.1136/bmj.f6701.

Iedema, R., Mesman, J., & Carroll, K. (2013). *Visualising health CARE practice improvement: Innovation from within*. London: Radcliffe.

Kim, M. M., Barnato, A. E., Angus, D. C., Fleisher, L. F., & Kahn, J. M. (2010). The effect of multidisciplinary care teams on intensive care unit mortality. *Archives of Internal Medicine, 170*(4), 369.

Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (1999). *To err is human: Building a safer health system*. Washington, DC: National Academy Press.

Kopp, B. J., Mrsan, M., Erstad, B. L., & Duby, J. J. (2007). Cost implications of and potential adverse events prevented by interventions of a critical care pharmacist. *American Journal of Health-System Pharmacy, 64*(23), 2483–2487. doi:10.2146/ajhp060674.

Leape, L. L., Cullen, D. J., Clapp, M. D., Burdick, E., Demonaco, H. J., Erickson, J. I., et al. (1999). Pharmacist participation on physician rounds and adverse drug events in the intensive care unit. *JAMA, 282*(3), 267–270. Retrieved from http://jama.jamanetwork.com/article.aspx?articleid=190687.

Leslie, M., Paradis, E., Gropper, M. A., Reeves, S., & Kitto, S. (2014). Applying ethnography to the study of context in healthcare quality and safety. *BMJ Quality and Safety, 23*(1), 99–105. doi:10.1136/bmjqs-2013-002335.

Lingard, L., Espin, S., Evans, C., & Hawryluck, L. (2004). The rules of the game: Interprofessional collaboration on the intensive care unit team. *Critical Care, 8*(6), R403–R408.

Long, D., Forsyth, R., Iedema, R., & Carroll, K. (2006). The (im)possibilities of clinical democracy. *Health Sociology Review, 15*(5), 506–519.

Manias, E., & Street, A. (2001). Nurse–doctor interactions during critical care ward rounds. *Journal of Clinical Nursing, 10*(4), 442–450.

Miller, M., Johnson, B., Greene, H. L., Baier, M., & Nowlin, S. (1992). An observational study of attending rounds. *Journal of General Internal Medicine, 7*(6), 646–648.

Miller, K. L., Reeves, S., Zwarenstein, M., Beales, J. D., Kenaszchuk, C., & Conn, L. G. (2008). Nursing emotion work and interprofessional collaboration in general internal medicine wards: A qualitative study. *Journal of Advanced Nursing, 64*(4), 332–343.

Mizrahi, T. (1985). Getting rid of patients: Contradictions in the socialisation of internists to the doctor–patient relationship. *Sociology of Health and Illness, 7*(2), 214–235.

Morrison, C., Jones, M., Blackwell, A., & Vuylsteke, A. (2008). Electronic patient record use during ward rounds: A qualitative study of interaction between medical staff. *Critical Care, 12*, R148.

Nugus, P., Greenfield, D., Travaglia, J., Westbrook, J., & Braithwaite, J. (2010). How and where clinicians exercise power: Interprofessional relations in health care. *Social Science and Medicine, 71*(5), 898–909.

O'Mahony, S., Mazur, E., Charney, P., & Fine, J. (2007). Use of multidisciplinary rounds to simultaneously improve quality outcomes, enhance resident education, and shorten length of stay. *Journal of General Internal Medicine, 22*(8), 1073–1079.

O'Leary, K. J., Sehgal, N. L., Terrell, G., & Williams, M. V. (2012). Interdisciplinary teamwork in hospitals: A review and practical recommendations for improvement. *Journal of Hospital Medicine, 7*(1), 48–54.

O'Reilly, K. (2012). *Ethnographic methods*. New York, NY: Routledge.

Paradis, E. (2015). Unanswered questions on access from the margins. *Medical Education, 49*(2), 145–146. doi:10.1111/medu.12652.

Paradis, E., & Reeves, S. (2013). Key trends in interprofessional research: A macrosociological analysis from 1970 to 2010. *Journal of Interprofessional Care, 27*(2), 113–122. doi:10.3109/13561820.2012.719943.

Paradis, E., Reeves, S., Leslie, M., Aboumatar, H., Chesluk, B., Clark, P., et al. (2014). Exploring the nature of interprofessional collaboration and family member involvement in an intensive care context. *Journal of Interprofessional Care, 28*(1), 74–75. doi:10.3109/13561820.2013.781141.

Peters, M., & ten Cate, O. (2014). Bedside teaching in medical education: A literature review. *Perspectives on Medical Education, 3*, 76–88. doi:10.1007/s40037-013-0083-y.

Pope, C. (2005). Conducting ethnography in medical settings. *Medical Education, 39*(12), 1180–1187.

Pronovost, P. J., Angus, D. C., Dorman, T., Robinson, K. A., Dremsizov, T. T., & Young, T. L. (2002). Physician staffing patterns and clinical outcomes in critically ill patients: A systematic review. *JAMA, 288*(17), 2151–2162. doi:10.1001/jama.288.17.2151.

Pronovost, P. J., Berenholtz, S., Dorman, T., Lipsett, P. A., Simmonds, T., & Haraden, C. (2003). Improving communication in the ICU using daily goals. *Journal of Critical Care, 18*(2), 71–75.

Ramani, S., Orlander, J. D., Strunin, L., & Barber, T. W. (2003). Whither bedside teaching? A focus-group study of clinical teachers. *Academic Medicine, 78*(4), 384–390.

Verghese, A. (2008). Culture shock—Patient as icon, icon as patient. *New England Journal of Medicine, 359*(26), 2748–2751. doi:10.1056/NEJMp0807461.

Wachter, R. M. (2015). Chapter 5: Strangers at the bedside. In R. M. Wachter (Ed.), *The digital doctor: Hope, hype, and harm at the dawn of medicine's computer age* (pp. 35–46). New York, NY: McGraw Hill.

Ward, D. R., Ghali, W. A., Graham, A., & Lemaire, J. B. (2014). A real-time locating system observes physician time-motion patterns during walk-rounds: A pilot study. *BMC Medical Education, 14*(1), 37.

Weaver, S. J., Lubomksi, L. H., Wilson, R. F., Pfoh, E. R., Martinez, K. A., & Dy, S. M. (2013). Promoting a culture of safety as a patient safety strategy: A systematic review. *Annals of Internal Medicine, 158*, 369–374.

Weil, M. H. (1973). The society of critical care medicine, its history and its destiny. *Critical Care Medicine, 1*(1), 1–4.

Whale, Z. (1993). The participation of hospital nurses in the multidisciplinary ward round on a cancer-therapy ward. *Journal of Clinical Nursing, 2*(3), 155–163.

World Health Organization. (2010). *Framework for action on interprofessional education and collaborative practice* Geneva. Retrieved from: http://www.who.int/hrh/resources/framework_action/en/.

Zwarenstein, M., Goldman, J., & Reeves, S. (2009). Interprofessional collaboration: Effects of practice-based interventions on professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews, 3*, CD000072. doi:10.1002/14651858.CD000072.pub2.

Zwarenstein, M., Rice, K., Gotlib-Conn, L., Kenaszchuk, C., & Reeves, S. (2013). Disengaged: A qualitative study of communication and collaboration between physicians and other professions on general internal medicine wards. *BMC Health Services Research, 13*, 494.