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Interdisciplinary Communication in the ICU

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Abstract

Interdisciplinary communication in the Intensive Care Unit (ICU) is complicated by the dynamic workflow of clinicians, instability of patients, and highly technological therapies, equipment and information systems. Many countries have examined methods to improve clinician communication and to understand common patient care goals. Using focus group and interview transcripts of ICU nurse practitioners, medical residents, medical fellows and attending physicians about antibiotic prescribing, we performed a secondary analysis of themes related to interdisciplinary communication with registered nurses (RNs). This qualitative descriptive user analysis utilized Baggs and Schmitt's Interdisciplinary Collaboration Model as a coding framework. We found that the clinicians studied value the availability of time sensitive information when it impacts their decisions and workflow and trust RNs' judgment of clinical information and situations. Future work should include analyses of RN perceptions of interdisciplinary communication in the ICU.

Keywords

interdisciplinary communication; critical care; collaboration

1. Introduction

Efforts to change and improve the effectiveness of clinician communication are evident on an international scale [1–4]. Increased length of stay, increased patient harm and increased resource utilization has been associated with ineffective communication [5–8]. Advanced technologies, therapeutic interventions and increasing acuity of patients in the Intensive Care Unit (ICU) require minute to minute assessments, planning, interventions and evaluations [9]. The complexity, expense and dynamic nature of patient care in the ICU heightens the clinical significance of the role of interdisciplinary communication and the understanding of common goals of patient care in such a critical patient care environment [9].

2. Background

To better understand communication practices, user analyses can characterize divisions of labor, overlap of knowledge and skills, patterns of interaction and are an essential building block for understanding the interactive functioning of the environment as a whole [10]. A user analysis performed by Baggs and Schmitt in a study of ICU nurses and physicians described interdisciplinary collaboration as contingent upon the antecedent conditions of *Being Available* and *Being Receptive* and their sub-categories (*Place, Time, Knowledge,*

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Interest, Discussion, Trust and *Respect*). These antecedents facilitate the core process of *Working Together*, defined as the *Sharing* of information in a *Patient Focused, Team* environment to achieve the outcomes of *Improved Patient Care*, *Feeling Better on the Job*, and *Controlling Costs* [11].

3. Objectives

Using Baggs' ICU Interdisciplinary Collaboration Model described above as the coding framework [11] we aimed to identify the components necessary to characterize interdisciplinary communication practices and information needs between physicians and nurse practitioners (NPs) that use Computerized Provider Order Entry (CPOE) systems and registered nurses (RNs) via analysis of focus group and interview data.

4. Materials and Methods

Focus group and interview data were collected to identify antibiotic prescribing information needs of NICU NPs, residents, fellows, and attendings of a large metropolitan hospital in New York City. Preliminary review verified the adequacy of these data for a secondary analysis because a large part of the data was focused on interdisciplinary communication. Institutional Review Board approval was obtained from Columbia University for this project.

Each focus group and in-depth interview was transcribed verbatim and verified by the research team. Open coding, was performed on all of the transcripts to capture all ideas, themes and issues related to communication in the ICU. These codes were terms or phrases from the transcripts identified by a line-by-line analysis of each transcript. Next, we characterized all of our codes into the categories within Baggs' model [11]. When Baggs' categories were not sufficient to capture the data, more explicit categories were identified. Additionally, the literature was searched for other work that had already established relevant categories.

To ensure scientific adequacy of the data, and the data analysis, member checks were performed throughout the data collection to verify and clarify the intended meaning of the participants' words. In addition, the researcher coding the data met with the other members of the research team to discuss the coding and data interpretation and bracketing of her own biases regarding interdisciplinary communication in the ICU. Finally, transcripts from the different categories of clinicians (NPs, residents, fellows, attendings) were grouped to achieve maximum variation and look for commonalities in the data across the four different categories of clinicians.

5. Results

The data analyzed included two NP focus groups, two NP interviews, two resident focus groups, one fellow focus group, one fellow interview and three attending interviews. Each focus group included 3 to 6 participants. A total of 33 clinicians participated in this study. Each interview and focus group lasted 1 hour.

All of Bagg's categories were identified except for one, C*ontrolling Costs*. Three definitions (*Place, Time* and *Trust*) were extended to more explicitly characterize the data and one additional category, *Coordination*, was identified (see Table 1). *Place* and *Time's* extended definitions explicitly capture instances when clinicians were not in proximity and did not have time to interact. Baggs' *Trust* category was extended to include the components of *Experience* and *Knowledge. Trust* of the RN's opinion due to his or her *Experience and Knowledge* was strongly emphasized by the attendings and to a lesser extent the NP. The

fellow and resident did not remark explicitly about *Experience* as a factor in trusting nursing judgment but did relate it to *Knowledge*. One attending remarked: "I trained here, so nurses many times have taught me things… I trust those nurses implicitly… sometimes they just jump over everybody and call the attending directly and say, I believe this baby is septic, we need to do X, Y, Z. I trust their judgment, I don't question it. I go ahead and do it" and that "a novice nurse and novice resident are a bad combination… the residents have got to be able to say 'does that make sense'… experienced nurses will look at something and they'll be like that's not right… it's a safety net." *Coordination* was identified as a new category to capture the communication needed to plan patient care tasks based on needed information or another's workflow (see Table 1).

6. Discussion

Baggs' ICU Interdisciplinary Collaboration Model was comprehensive enough to capture most of this study's data focused on ICU Interdisciplinary Communication. Of note, the only category that was not identified, *Controlling Costs*, was from a nurse administrator perspective in Baggs' study and no data from nurse administrators were analyzed in this study[11]. The extended *Place*, *Time* and *Trust* definitions are now more explicit, but their original concepts remain consistent with Baggs' definitions.

Reliance on the S*hared* exchange of information is strongly related to the central role of the ICU *Team* in care *Coordination.* This reliance on the knowledge of other domains within the ICU team, and the *Team* having a *Patient Focus*, is reflected in many of the clinicians' quotations (see Table 1) and the statements from a medical resident that "everyone on the unit knows when a baby is sick", "the nurse will call us", "the nurses know", and "so many people help give you information." Moreover, the model of *Working Together* to achieve positive outcomes appears to enable clinicians' perceptions of *Feeling Better on the Job* ("communication is not an issue"; "we always remember") despite their own citations of communication system breakdown.

In a dynamic environment, such as the ICU, verbal communication may be a great source of building *Trust* amongst clinicians by strengthening working relationships and awareness of each other's expertise that may lead to increased collaboration surrounding patient care decisions. The clinicians emphasized information needs related to care *Coordination*. However, when the physician or NP did not need the information for an immediate task, was not aware of a patient status change, or was not as familiar with the patient as the RN was, they *Trusted* the RNs' *Knowledge* and *Experience*. These data suggest that distributed responsibilities allow the ICU team to process massive amounts of patient information while reducing individual cognitive loads [10]. A comparative analysis of RNs' perceptions of ICU communication may verify these themes and identify new ones.

This study is limited by its sample size and the antibiotic prescribing information needs objective of the focus groups and interviews. No data from the perspective of RNs is included in this project. All of the communication information discussed by the participants was related at least in part to antibiotic prescribing; therefore, it is possible that there are other categories or themes of interdisciplinary communication in the ICU that are not related to antibiotic prescribing.

7. Conclusion

We performed a secondary analysis of focus group and interview transcripts about antibiotic prescribing. This user analysis of interdisciplinary communication with RNs in the ICU from the perspective of NPs, residents, fellows, and attendings used Baggs' ICU

Interdisciplinary Collaboration model as a coding framework. One additional category was identified and three definitions were extended to capture specific communication components. Physicians and NPs value the availability of time sensitive information when it impacts their decisions and workflow and trust RNs' judgment of clinical information and situations. Future work should perform a user analysis of RNs perceptions of interdisciplinary communication within the ICU for antibiotic prescribing and other common patient care activities.

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Table 1

Interdisciplinary Communication Categories from Baggs' Interdisciplinary Collaboration Model[11]

Category	Definition	Quotation
	Antecedents	
Being Available:		
Place	*Positive:* Clinicians located in proximity	*We use walkie talkies, call, knock, no pagers*
	Negative: Clinicians not in proximity*	*We leave every night, so residents are covering patients that they might not really know*
Time	*Positive:* Time for clinician interaction	*I'm hoping you find out things as they're happening, not five hours later*
	Negative: No time for clinician interaction*	*Getting information to the person caring for the baby sometimes can't be done at that moment*
Knowledge	Competency' in work; knowing each others' roles	*A good nursing assessment is essential, nurses have been at baby's bedside, I only see one point in time*
Being Receptive:		
Interest	Interest in collaborating for patient care	*I'd rather know than not [about any nurses' concern about a patient change in condition]*
Discussion	Active listening; openness; questioning	*We listen to nurse assessment; It is strongly suggested to also discuss [a CPOE order with the nurse]*
Trust	Acting on advice without first-hand verification	*Nurses always look it up… nurse is the fourth check that it is the right dose…nurses know where the system breaks down*
	Based on other's experience and knowledge*	*I value the judgment of very experienced nurses*
Respect	Politeness; being diplomatic; recognition	*Out of courtesy we verbally check with the nurse to clarify*
	Core Process	
Working Together:		
Team	Work with others in a group	*Everyone on unit knows when a baby is sick*
Patient focus	Common goal to maximize patient condition	*It might be good for them[nurses] to know what the [medical] regimen is*
Sharing	Communicating; listening; responding; helping out	*Order rationale about why it is STAT*
Coordination**	Planning of patient care tasks contingent upon information or another's workflow	*You don't know when the nurse is actually going to give the medicine so I will hold off ordering until I can find out [ask nurse]*
	Outcomes	
Improving patient care	Acting rapidly; maximizing information; planning care collaboratively	*You bring that [assessment] to the table and say I really feel strongly and the baby dramatically improved… your experience and your gestalt…comes into play*
Feeling Better on the Job:	Job satisfaction; worthwhile work; pleasant atmosphere	*Impossible for a wrong dose to sneak through the system*
Learning	Intellectually challenging	*The residents have to integrate so many different things… residents learn on the job*

Category	Definition	Quotation
Controlling Costs	Efficiency; nurse retention	*$*

* Extended definition;

** Category added;

$ Nurse administrator perspective[11], administrators not included in this study