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Title of Project: Videotaping communication between physicians and nurses: A methods study

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STRUCTURED ABSTRACT

Purpose: The purpose of this study was to determine if video-reflexive ethnography (VRE) could feasibly capture communication events between physicians and nurses and help define mutual understanding.

Scope: Despite more than 50 years of research on the topic, poor communication between physicians and nurses remains a pressing problem, compromising the care and safety of hospitalized patients across the U.S. Participants included physicians and nurses from several general care units in an academic medical center.

Methods: In VRE Phase One, we recruited physicians and followed them during their rounding process on a given day. We recruited nurses in person before a scheduled video recording session. In VRE Phase Two, we gave individual copies to each nurse/physician dyad who participated in a conversation spliced from overall rounds; each dyad member individually reviewed and added comments regarding instances when there was effective communication (defined as mutual understanding). In VRE Phase Three, each physician/nurse dyad jointly reviewed their comments with researchers. We transcribed videos, individual comments, and joint interviews verbatim, and we conducted content analysis to derive themes and fulfill study aims.

Results: Fourteen physicians participated and had conversations with 56 nurses. Conversations between a physician/nurse dyad ranged from 48 seconds to almost 5 minutes in length. During VRE Phase Two, nurses and physicians gained insight into their communication behaviors. The intervention potential of VRE and the capacity for building mutual understanding were demonstrated during Phase Three, as the dyads discussed their unique perspectives; at least one dyad appeared to come to a mutual understanding regarding a clinical situation. Each member of another physician/nurse dyad described how participating in the study would change their communication practices going forward.

Key Words: interdisciplinary communication, methods, patient safety

Purpose

The purpose of this study was to determine if a videotape-based method known as video-reflexive ethnography (VRE) could feasibly capture communication events and help us define mutual understanding. There were two specific aims: (1) to determine the feasibility of using videotaping as a method to fully capture communication events between physicians and nurses in an inpatient setting; and (2) to determine if videotape review by physicians and nurses can be used to define mutual understanding based on multiple perspectives.

Scope

<u>Background</u>

Breakdowns in communication between physicians and nurses continue to be a primary contributor to adverse events in hospital settings[1,2] and a major challenge to improving patient safety.[3] Current approaches to improve communication between physicians and nurses have primarily concentrated on strategies for developing and supporting interdisciplinary teams[4] and checklists.[5] The lack of progress in preventing communication-related adverse events, however, suggests that alternative approaches with more potential to identify and improve communication problems are needed.

Video-based methods have been used for over 50 years to capture interactions and promote better communication between physicians and patients in primary care settings.[6–9] A unique feature of VRE is that the participants can help interpret – and even learn from – the videos, thus making this methodology a potential intervention for improving communication. The potential for intervention may

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be the strongest argument for the use of video in health professional communication research.

Researchers using VRE methodology have successfully demonstrated the ability to improve

communication practices, such as end-of-shift handovers[10] and the handover process from ambulance

to emergency department.[11] However, the feasibility of VRE as an intervention to improve nurse-

physician communication in the inpatient setting has not been established.

Context

We had to determine what communication events between physicians and nurses would

provide the richest, most relevant data and whether these events could be feasibly captured easily and

unobtrusively. We focused on morning patient care rounds, when face-to-face communication between

physicians and nurses was most likely to occur, because communication tends to be episodic at other

times of day. As this was a feasibility study, we conducted the study in a single hospital – a major

academic medical center in the Midwest.

Setting

We focused on general care units, because so little is known about communication in these

settings. Very few research teams have addressed the challenges associated with communication

between physicians and nurses outside of specialty units, despite the adverse consequences for patients

when communication is poor. The general care units at our academic medical center house the majority

of hospitalized patients and include many of AHRQ's priority populations: women, the elderly, those

with chronic conditions, and low-income and minority groups. Through the development of

communication science in healthcare, studies such as ours have the potential to significantly influence

the well-being of those patients.

Participants

Participants were physicians and nurses who practice on general care units in a single academic

medical center. On general care units in this teaching hospital, each team of physicians has a "panel" of

12-15 patients, while nurses care for three to five patients at a time, some of whom – but not necessarily all of whom – may be the responsibility of the same group of physicians.

Incidence and Prevalence

Breakdowns in communication remain one of the most common causes of adverse events for hospitalized patients[1,12,13] and a major root cause of all sentinel events reported to The Joint Commission every year.[14] In previous studies, we found that physicians and nurses on general care units used a range of communication practices and that there were differences in their communication practices depending on who initiated the communication exchange.

Methods

Study Design

This study used a mixed-methods design. Qualitatively, using a constant-comparative technique, members of the research team independently reviewed videos and transcripts, looking for similarities as well as differences in themes between the phases. In regularly scheduled meetings, we discussed our individual findings and came to consensus; then, we shared mutual findings with our consultant for his input. Quantitatively, we tracked descriptive statistics (e.g., the length of each set of rounds, the number of conversations per video, the length of each conversation, etc.) and compared the amount of time that physicians and nurses devoted to providing comments.

Data Collection

We recruited physicians both in person as well as via email. Of the 26 physicians contacted, only five declined to participate. A variety of clinicians were recruited, including hospitalists (i.e., physicians who manage the care of acutely ill, hospitalized patients) who round alone, medicine teams (generally consisting of an attending physician, residents, interns, medical students, and various allied health professionals), surgeons, nurse practitioners (NPs), and physician assistants (PAs). Recruitment was a

rolling process extending from February to June 2017 (i.e., we recruited three to four physicians in February, another three to four in March, etc.). We recruited nurses in person about 1 to 2 hours before a scheduled video recording session, although we notified nurses via email a few days ahead of time and gave them instructions on how to opt out of participating.

We divided the VRE process into three phases, so we had three different phases of data collection. Phase One consisted of video recording of rounds. After a physician agreed to participate, we set up a time to video record rounds when that physician was next on service. We followed that physician and his/her team from room to room, frequently across multiple units on multiple floors, video recording the rounding process and any interactions that physicians had with nurses. Each set of rounds was edited into separate clips (each clip containing one conversation between the physician and a nurse). Members of the research team reviewed each video as soon as possible after the recording to ensure that the phenomenon of interest (communication between physicians and nurses) was being captured. The research team voted on which clip in each set of rounds contained the most interesting communication exchange to take forward to Phase Two.

Phase Two of the VRE process consisted of participants independently reviewing a copy of the video-recorded conversation on a laptop that we took to them. Participants were asked to stop the video at any point and comment on their thoughts or feelings, recalling their cognitive activity at the time. Specific questions were asked during the interview to prompt recall (e.g., "What surprised you about the conversation, if anything?"). Comments from both nurse and physician participants of the same conversation were audio recorded and edited into the video at the exact location where the comment was made.

During Phase Three of the VRE process, study team members conducted semi-structured interviews with each physician/nurse dyad. This was the first opportunity for each dyad to view the video together with both sets of comments embedded in it. To generate reflexivity, we asked

participants to describe why they paused the video at a particular juncture, to understand the interaction from their perspectives.

Interventions and Measures

As this was a study to determine the feasibility of a method, there are no interventions or measures to report.

Limitations

This work demonstrates the feasibility of conducting VRE in a single academic medical center. The extent to which the process might work similarly in other contexts is unknown, although there is little reason to think that the general process and steps established as part of this study could not be applied in other, similar settings. After the third set of rounds, we stopped capturing rounds in one continuous video because of the amount of "dead" space generated by following physician teams from room to room, frequently across multiple units on multiple floors. However, the beginning and end of rounds represent engagement and disengagement periods, when interactions are likely to occur.[15,16] We did not capture these, because they involved interactions among physicians only. All interactions between physicians and nurses were captured on video, but we missed the opportunity to capture subtle or nonverbal cues leading up to these interactions (e.g., head nod acknowledging a nurse, waving a hand to flag down a physician). In reflecting on our process, we determined start and stop times rather than participants, creating an artificial boundary for rounds, which is inconsistent with the VRE process.[16,17]

One dyad commented that they were aware of being video recorded. The mere existence of the videographer may have contributed to their awareness, although we did not ask participants about their awareness of the camera. We will certainly do so in future work, because the video camera is a "presence in the research in its own right" instead of simply a recording device.[16,18] Although we had a process for scheduling clinicians for video recording, we underestimated the time needed to edit videos

and schedule meetings with clinicians to review a video. Additional efforts are needed to shorten the amount of time between video recording and independent and joint reviews, because minimizing the time delay between event and recall increases accuracy and trustworthiness of responses.[19] In the case of our first physician participant, 3 months elapsed between video-recorded rounds and VRE Phase Two review, and, although the physician stated that the video helped him remember the conversation with the nurse, he did not remember the details of the specific patient. Finally, although we video recorded conversations in patient rooms, we did not obtain informed consent from patients, because they were not the focus of this study. By not getting consent from patients, we missed the opportunity to have them confirm or reject what we were told and to learn more about the effect of communication on issues that were discussed.

Results

Principal Findings

To address Aim 1 (determine the feasibility of using videotaping as a method to fully capture communication events between physicians and nurses in an inpatient setting), we found that it is feasible to video record nurses and physicians during patient care rounds. The recruitment rate for physicians was 84% and for nurses was about 75%. Three surgeons and 11 physicians from different medical specialties were video recorded during the 12 patient care rounds. In total, the 12 sets of rounds generated 7 hours and 53 minutes of video; the video-recorded rounding periods ranged from slightly more than 11 minutes to over an hour in length. Two sets of rounds involved nurses minimally or not at all, and one physician declined to participate beyond the first VRE phase. In the nine remaining videos, physicians had conversations with 56 nurses; video conversations ranged from 48 seconds to almost 5 minutes in length (average 3 minutes).

We used nine sets of patient care rounds for VRE Phase Two. Participants' independent reviews ranged from 10:10 to 23:50 minutes for physicians (average 15:08 minutes) and from 7:18 to 17:50 minutes for nurses (average 11:30 minutes). The video footage was also transcribed, and the number of conversations per set of rounds ranged from 3 to 15 (mean 7.3). For Phase Three of the VRE process, we conducted joint review with seven of the nine physician/nurse dyads who participated in VRE Phase Two. One nurse and one physician from separate dyads declined to participate further in the study, and their data were not included in analysis. VRE Phase Three reviews lasted, on average, 29:05 minutes (range 17:46 – 41:06 minutes).

Outcomes

Aim 2 of the study focused on whether videotape review by physicians and nurses might be used to define (or perhaps more broadly help develop) mutual understanding based on multiple perspectives. During VRE Phase Two, nurses and physicians gained insight into their communication behaviors. In several cases, nurses noticed how they alluded to their needs when talking with physicians instead of asking directly for specific orders and commented that their indirect communication may have made them less effective as patient advocates. One physician noticed how she had asked for the nurse's input but then interrupted the nurse before she was finished, saying during the review, "I should have given the nurse a little bit more time to… go through her concerns." These behaviors can potentially lead to miscommunication or ineffective communication and thus preclude the development of mutual understanding. As such, self-recognition of one's own communication behaviors could be a powerful tool by developing heightened awareness and self-correction in future encounters. Through the VRE Phase Three process, participants learned about similarities and differences in their viewpoints and discovered how inferences and assumptions underlying those viewpoints affected communication. The intervention potential of VRE and the capacity for improving communication and building mutual understanding were also demonstrated during VRE Phase Three, with at least one dyad appearing to

reach mutual understanding about a clinical situation. Each member of another physician/nurse dyad described how participating in the study would change their communication practices going forward.

Discussion

Our study demonstrated that it is feasible to capture communication between nurses and physicians in an inpatient setting using VRE, which is a specific video recording methodology. Moreover, both groups (nurses and physicians) developed insights into their own communication practices and developed a better understanding of the other's communication through the use of VRE. Thus, VRE has the potential to serve as an intervention, because participants learn from the video that they participated in, which in turn stimulates behavior change.[11,20]

The value of this methodology for improving healthcare quality and patient safety lies in two mechanisms, so VRE may have utility in clinical contexts beyond that of communication. First, this method allows researchers to engage with the complexity of the "sites and process the research sets out to describe"[21] and to assess clinicians' behavior and better understand the influence of context on quality and safety. As a result, answers to questions of how and why specific events occur align more closely with the reality of everyday practice, promoting better understanding of the phenomenon under investigation so that interventions can be more effective.

Second, VRE is an intervention that can change behavior because of the learning and behavior change that occur through reflexivity.[22] Engendering reflexivity in clinicians has been described,[23] but it is worth reiterating that clinicians' incentive to change behavior is strengthened by the control given to them to direct clinical change as part of the reflexivity process. Using VRE methodology, researchers have explored improving end-of-life care[20] and demonstrated the ability to improve end-of-shift handovers,[10] the handover process from ambulance to emergency department,[11] and infection control practices.[24]

Conclusions

The results of our study demonstrate not only that it is feasible to video record communication between physicians and nurses but also that the VRE methodology has the potential to serve as an intervention to improve communication. Our method was generally acceptable to most clinicians, as the majority of those whom we asked consented to participate in the review process. The VRE process generated reflexivity, an important precursor to the behavior change that is necessary to improve communication, in both nurse and physician participants. Moreover, VRE has utility in assessing communication and, based on the review comments by our participants, can serve as an intervention with positive potential for improving patient safety.

Significance and Implications

By establishing the feasibility of using the VRE methodology for this significant problem, we can now focus on testing the efficacy of a VRE intervention to improve communication. Current approaches to improve communication between physicians and nurses have primarily concentrated on strategies for developing and supporting interdisciplinary teams[4] and checklists.[5] The lack of progress in preventing communication-related adverse events, however, suggests that alternative approaches with more potential to identify and improve communication problems, such as VRE, are needed.

List of Publications and Products

1. **Manojlovich, M.**, Harrod, M., Hofer, T.P., Heshmati, A., Umberfield, E., Frankel, R., and Krein, S. (in review). Videotaping communication between physicians and nurses: A feasibility study.

Note: This publication received a "revise and resubmit" decision from *BMJ Quality & Safety* and has been resubmitted.

2. **Manojlovich, M.**, Hofer, T., Krein, S. (in review). A conceptual framework to advance patient safety: Focus on communication.

3. A new R01 was submitted to AHRQ (2/05/2018): An Efficacy Trial using Video-Reflexive Ethnography to Improve Communication between Physicians and Nurses [1R01 HS026499-01].

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