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Exploring Challenges to Telehealth Communication by Specialists in Poison Information

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Abstract

The use of the telephone for providing health care is growing. A significant amount of social meaning is derived from visual information, and the absence of visual stimuli provides unique barriers to communication and increases the risks for misunderstandings and distractions. Understanding challenges to telephone communication can provide insight into training opportunities for overcoming these difficulties and improving patient care. The purpose of this research was to explore through focus groups the challenges of phone communication perceived by specialists in poison information. General types of challenges to effective phone communication included developing new communication skills to compensate for lack of visual information, difficulty assessing caller understanding, difficulty managing caller misunderstandings, maintaining distinctive assessments for routine calls, and managing the multifaceted aspects of job stress. The desire for training to enhance telehealth and cultural competency skills was also mentioned, and these findings might provide guidance for the development of training opportunities for telehealth professionals.

Keywords

communication; community and public health; emergency care; focus groups

Use of the telephone for providing health care is growing, because it improves access to health care information and reduces costs by preventing unnecessary visits to health care facilities (Pettinari & Jessopp, 2001; Rolland, Moore, Robinson, & McGuinness, 2006). For example, research has shown that telephone triage and care can potentially decrease already overburdened emergency department workloads (Bunn, Byrne, & Kendall, 2004). Nevertheless, little attention has been paid to the communication challenges associated with telehealth services (Holmström & Höglund, 2007; Purc-Stephenson & Thrasher, 2010). New communication skills are needed to effectively provide health care over the phone, and training opportunities would help address these concerns. Poison control centers are one

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type of emergency service that have used the phone extensively for decades and might provide insight into this understudied area. Focus groups were conducted with specialists in poison information (SPIs) to explore the challenges of phone communication within the context of emergency care.

Background

Poison Control Centers

More than 4 million poisoning episodes occur in the United States each year, with hospitalization occurring in 300,000 cases (Institute of Medicine [IOM], 2004). Poisoning is also the second leading cause of injury-related deaths in the United States, and the nation's 60 poison control centers (PCCs) handle the majority of all reported poisoning cases via telephone services (IOM, 2004). During a call, PCC specialists assess the likelihood of toxicity and adverse medical outcomes secondary to poisonings. The PCC specialist role is critical to achieving optimal health outcomes because the SPIs identify individuals who can be managed on site or refer them to emergency medical care. In addition to decreasing poison-related injuries, illness, and fatalities, PCCs are instrumental in national surveillance of multiple types of events that include poisonings because of marketed products, food, and illicit substances (Litovitz et al., 1994; Wolkin et al., 2006). Finally, each PCC serves as a regional poisoning information source for the lay public and health care providers.

PCC services depend on accurate, rapid, and efficient telephone communication provided by SPIs. To become an SPI, health professionals (typically pharmacists and nurses) receive extensive training and obtain certification based on knowledge of toxicology. No formalized communication training is conducted, despite widespread evidence in multiple health care contexts that effective provider communication improves patient outcomes (Brown, Stewart, & Ryan, 2003; Hall & Roter, 2002). Despite the considerable public health problem of poisoning and the potential for PCCs to help with public health crises, telephone health care service has received limited research attention that might provide evidence-based guidelines for training and caller care (Purc-Stephenson & Thrasher, 2010).

Communication and PCCs

An SPI's principal role is to perform triage for the health care system by guiding self-treatment if advisable, or referring callers to health care facilities if necessary. Callers who might have managed the incident at home but instead use health care facilities put an unnecessary strain on already stretched health care facilities and increase health care costs. Conversely, improper self-treatment or unwillingness to follow recommendations can put lives at risk. Telephone triage services and advice are urgently needed in emergency care. Reports by the Institute of Medicine highlight the growing concern over the continual increase in emergency room visits (IOM, 2006a, 2006b). Many emergency departments are already exceeding their capacity, and these problems are exacerbated by nursing shortages (Kellermann, 2006). These problems might be even more critical during threats of bioterrorism and emergency preparedness. Telehealth public health services (i.e., PCCs) might serve as one mechanism for preventing unnecessary emergency department visits by triaging patients to engage in self-care when appropriate (Woolf, 2004).

Findings from a handful of studies shed light on the communication skills beneficial to SPIs. A study was conducted on the quality of communication skills of telephone triagists at Dutch out-of-hours centers (Derkx et al., 2009). Approximately 357 calls were assessed using a communication categorization system, and the researchers found that telephone triagists lacked communication skills such as active listening and active advising. Results indicated that the triagists were extremely friendly and professional, but too problem oriented, resulting in callers thinking they were depersonalized (“The telephone consultation was not about me, it was about someone with fever”; Derkx et al., p. 177). Ellington et al. (2007) examined communication processes at a PCC using the Roter Interaction Analysis System to capture staff–caller dialogue. Results revealed that most of the communication was provider driven, but when SPIs utilized partnership statements (i.e., soliciting involvement and actively assessing for patient understanding throughout the conversation) there were significant associations with caller adherence to recommendations. It appears from the above-mentioned studies that telehealth encounters might demonstrate providers’ competence in medical knowledge and professionalism, but reveal weaknesses in communication skills.

Similar challenges to health care over the telephone have also been documented in telenursing. A metaethnographic study of nurses’ experiences with telephone triage and advice from 16 studies between 1980 and 2008 revealed several challenges to providing care over the telephone (Purc-Stephenson & Thrasher, 2010). Two of the most prominent themes that emerged were the importance of developing new communication skills to compensate for the lack of visual cues and the desire for training opportunities to develop and maintain these new skills. Some of the specific skills identified for facilitating telephone health care included more active advising and active listening to compensate for lack of visual cues, asking the same question in a different manner, and developing auditory nonverbal skills (i.e., tone, word choice, speed of speech, background and physical noises; Holmström & Höglund, 2007; Pettinari & Jessopp, 2001; Wahlberg, Cedersund, & Wredling, 2003). Other challenges identified included the repetitiveness of calls, increased importance of the initial assessment, increased stress and pressure, and difficulty with assessing caller credibility. The most notable conclusion from Purc-Stephenson and Thrasher’s work is that assessment skills used in face-to-face encounters did not directly transfer to the telephone. However, it is unknown if these challenges are similar to telephone emergency triage and assessment within PCCs. Identifying consistent challenges across numerous settings can serve as a starting point for improving communication skills within telehealth and developing training opportunities to better prepare health care professionals within this growing field.

Conceptual Framework

This research was part of a larger study that used a multidisciplinary and multimethod approach to identify and develop an inventory of communication challenges and training needs for North American poison centers (Planalp, Crouch, Ellington, & Rothwell, 2009). The information generated by our research will be used to help develop a Web-based collaborative communication training program. The theoretical framework guiding the larger study is social cognitive theory (SCT). According to SCT, human functioning is viewed as a product of reciprocal determinants in which personal factors (cognition, affect, and

biological events), behavior, and environment influence, inform, and alter subsequent behavior (Pajares, 2002). In SCT, efficacy beliefs (personal factors) are the foundation for human agency and provide guidance for interventions by increasing efficacy beliefs (Caprara, Regalia, Scabini, Barbaranelli, & Bandura, 2004). The development of a communication program that targets communication confidence and skills can increase a sense of efficacy and satisfaction with performance (Bandura, 1986, 1997). Identification of barriers through the use of focus groups was the first step to gain an in-depth understanding of challenges that could be targeted through training.

Methods

Three focus groups were conducted at the annual North American Congress of Clinical Toxicology (NACCT) in October, 2007. Institutional research board approval was received from the corresponding university. Participants were recruited prior to and during the conference using flyers and email list serves. Gift cards were provided to compensate participants for their time. Each discussion lasted approximately 90 minutes and was held in a private room in the conference hotel. Before the start of discussion, consent was obtained and each participant provided demographic information by completing a brief questionnaire. Only individuals who worked exclusively as an SPI were included in the focus groups, and participants were also excluded if they served in management roles in their respective PCC. There are approximately 1,150 SPIs in United States and Canadian Poison Control Centers, and approximately 181 attended the conference (L. J. Sandler, personal communication, October 4, 2010). This resulted in 16% of the targeted population available for recruitment, and of those who attended the conference, approximately 14% volunteered for this study.

The goals and objectives of the focus groups were explained at the beginning of the each session. First author Erin Rothwell, who is experienced in focus group research, moderated two of the groups, and another experienced moderator was hired to conduct the third. Open-ended questions were presented that invited participants to identify and explain communication challenges (see below). The moderators used nondirective probes to seek additional detail and description from the participants (Frazier et al., 2010). Each discussion was audio-recorded and transcribed by a professional transcriber. A member of the research team verified all transcription work by listening to the recordings and reading the transcripts. ATLAS.ti computer software was used to help analyze, retrieve, and review all coded data (ATLAS.ti, 1999). The following questions were included in the semistructured interview guide:

- Can you tell me about general types of communication issues that you experience in answering calls?
- Are there different communication challenges for life-threatening vs. non-life-threatening phone calls?
- What skills and strategies have you developed to handle challenging calls as you become more experienced?
- Are there specific types of callers that are more difficult, or easier?

- What would help you communicate better?
- What do you think are the biggest barriers or challenges to developing telephone skills?
- How you do handle people who appear to not be happy with the outcome of the call?
- How do you handle it when you suspect you are not meeting the needs of the caller?
- What do you do to make the calls more satisfying to you?
- What kinds of calls leave you with a lingering dissatisfaction?

A qualitative content analysis was used to analyze the data. A distinguishing feature of content analytic approaches is the use of a consistent set of codes to designate data segments that contain similar material (Morgan, 1993). Consistent with ours and others' work (Kondracki & Wellman, 2002; Rothwell & Lamarque, 2010), the codes are generated from the data, and rather than using search algorithms, careful readings of the data are performed to generate the codes. Then the codes are systematically applied to the transcripts, with the ability to add codes that might have been missed with the initial development of the codebook (Morgan, 1993). After coding was completed, the codes were summarized to identify the most frequently reported challenges across and within each of the groups. We then returned to the transcripts and recontextualized the data for development of themes (Tesch, 1990). Reviewing and recontextualizing the data was the most significant and time-consuming aspect of the analysis (Morgan, 2010). This process also allowed us to assess data saturation. The frequency of codes was not used to assess data saturation but rather the content of the data (Morse, 1995). Repetitive data emerged, and no new codes were generated from the third focus group, indicating data saturation (Crabtree & Miller, 1992; Krueger & Casey, 2009; Miles & Huberman, 1994).

We addressed trustworthiness and rigor of the data to maintain data integrity during the analysis through methods of credibility and auditability (Lincoln & Guba, 1985; Morrison-Beedy, Cote-Arsenault, Feinstein, 2001; Polit & Beck, 2004; Sandelowski, 1986). Upon completion of the coding, all coded data were queried by the codes and reviewed by the research team. This allowed reviewing, verifying, and auditing the coding schema and associated data. We followed the qualitative research approach of reflexivity to minimize the influence of our own beliefs on the data analysis (Mason, 2002). Our personal beliefs, assumptions, and roles were continually discussed by the team during the analysis to prevent premature interpretations of the data and to recognize assumptions (Miles & Huberman, 1994).

Results

Twenty-five participants took part in three focus groups. Most participants were women (76%); 68% indicated that they were nurses, and 24% were pharmacists. PCCs throughout North America were represented, with over-representation from the central United States (40%), possibly because the conference was held in this geographical area. Years of

experience working as an SPI ranged from 2 to 32 (mean = 12.9). The average age of the participants was 46 years. Below we discuss themes that emerged from the group discussions related to challenges faced by SPIs in their telehealth communications.

Development of New Communication Skills

The most common challenge discussed by SPIs was communicating with no visual cues. SPIs indicated that phone communication requires more detailed questioning to ensure that all necessary information is collected. The following are examples of comments that support this theme: “You do have to ask a lot more questions than would otherwise be necessary... you don’t have a visual image.” “You just have to ask so many more questions than you would if the person was actually there in front of you.” “Being physically removed from the actual scene makes it very difficult.”

Participants also indicated that the more detailed questioning required increased control of the conversation. For example, SPIs also noted that they relied heavily on closed-ended questions to gather specific information when no visual cues were available. They often avoid asking open-ended questions because they were concerned that callers would provide lengthy answers and unnecessary information. SPIs have to prioritize gathering information quickly and accurately in case immediate action is needed. For example, one SPI said, “You can’t ask an open-ended question, [such as] ‘What happened?’ You’ll be on the phone for 20 or 30 minutes.” Encouraging callers to talk about their concerns in a general, open format was not viewed as conducive to efficient communication in this setting.

Communicating over the phone without visual cues requires not only more questioning and closed-ended questions, but SPIs also noted that they could not ask the same type of closed-ended questions as they could in person. One participant stated, “You have to also approach from different ways, ask the same question different ways.” Four participants (P) in one of the focus groups shared a common challenge faced when asking a typical closed-ended question:

P1: How many have asked, “Is this a normal, healthy child?” and the mother answers, “Yes.” “Does your child take any medicines on a day to day basis?”

[Laughter]

P2: And they’ll go, “Let’s see, phenobarbital, Tegretol [carbamazepine], Dilantin [phenytoin] ...”

P1: Exactly.

P2: And you’ll go, “And what’s all this for?” “Well, he’s got ...”

P3: Or Seroquel [quetiapine], or

P4: spina bifida.

P1: But he’s healthy.

Difficulty Assessing Caller Understanding

SPIs mentioned that it was often difficult to discern the level of caller understanding and education. One participant stated that it was a challenge to “get a sense for the other person on the other end, and what level you need to keep your language at, and the questions you ask.” Developing a rapport to help with this barrier was not always perceived as possible because of the need to assess the situation as efficiently as possible to determine if immediate emergency care is needed. It was also difficult at times to adapt quickly to the wide range of caller education and capacity for understanding. SPIs not only answer calls from the public; they are also a resource for health care professionals. A few examples of participant comments about this include: “If they’re calling with very poor education, speak to them on a 4th-grade level, and the next call, bam, I’m speaking to a physician on his or her terms.” “I really don’t know if they got it [understanding of the recommendations].” There were also several comments about how callers’ “words are not the same as what our words are,” and “different words [are used] for different things.”

Difficulty Managing Misunderstandings of Callers

When asked to identify communication barriers, participants responded that many of the challenges to communicating effectively over the phone result from caller misunderstanding of the situation and the role of the SPI. Callers might misconstrue what is life threatening, believing that a substance is life threatening when it is not, or vice versa. Example comments about this include: “There are times they don’t understand the gravity of the situation.” “They call you and their level of anxiety is way up there because they’re scared to death [even when the situation is not life threatening].” It was also mentioned that callers are sometimes misinformed based on information they read on the Internet. One participant stated, “And they’ve just read that it’s horrible, and you’re trying to tell them that it’s not quite so horrible as they’ve read.” Callers are reportedly sometimes unaware of what information to provide, and do not understand that SPIs must ask specific questions because of time constraints and the lack of visual cues. SPIs mentioned some of the questions they get from callers, such as “Why do you need that [information]?” and “Why are you asking me so many questions?”

Staying Vigilant With Routine Calls

Participants reported that another barrier to communicating effectively was falling into a routine assessment with more common calls, which could prevent effective specific assessments. One participant said, “It’s easy to fall into the spiel.... I know every time there’s a plant ingestion I can almost mimic them and know exactly what they’re going to say. They do it every time.” Despite acknowledging that it was easy to jump to conclusions, focus group participants stressed it was still necessary to follow procedures and thoroughly assess the situation to make sure there were not additional factors that could alter the assessment. SPIs also mentioned that although they found this type of call routine, each situation might be novel and frightening to the caller, and treating it in a routine fashion might result in poorer customer service and satisfaction. An SPI commented, “To that person that might be the first time they’ve called in ever, and they’re anxious, and I’ve taken lots and lots of calls [like this], but I have to go back to the initial, what the caller needs.”

Stress

SPIs shared that the stress associated with their work impacted their ability to communicate effectively. Their stress stemmed from several sources related to telehealth: concern that they were not getting full and accurate information from the caller, never knowing what each call would be like, pressure to respond accurately and quickly, additional demands to be friendly and courteous, and perceived work overload. With regard to the accuracy of the information collected over the phone, one participant mentioned it was what health care providers face in any situation with a patient, and stated, “You have to take it at face value. I guess it’s like anything else with patients—people lie all the time.” Another participant said, “You are relying on them to tell you the right information.” Still, without visual cues, SPIs have to rely more on the caller correctly understanding the questions and providing accurate answers to those questions.

Another contributor to stress voiced by participants was uncertainty about what the call might entail. For example, one SPI said, “You have no idea of what’s on the other end of the phone, and it is scary.” SPI worries were, in part, influenced by working without visual cues, but also by never knowing what to expect when answering the phone, and the reluctance of some callers to give all the needed information. Also, the possibility of facing an emergency call that they had not dealt with before increased their perceived stress. One participant expressed it as, “Omigod, I haven’t had one of these yet! Nobody’s told me anything about this!” According to the SPIs, the stress associated with a new type of toxic exposure also stems from pressure to respond correctly. A few comments that support this view include: “I don’t want to screw up.” “You could really screw up your reputation by having an ineffective phone call, one that gets misunderstood.”

An additional stressor mentioned by SPIs was the difficulty in striking an optimal balance between the need to be friendly and the need to be direct. They made statements like the following: “I think we’re wearing different hats all the time.” “There’s times, though, that you have to really redirect the person on the line, because it’s an emergency line, and you have to, and they want to talk about other things, or they want to be your friend.” “You have to be able to reassure the person and cut them off at the same time.” Individuals from each of the focus groups noted that this was especially challenging for new SPIs. Another challenge to communicating effectively was stress caused by work overload: a high number of calls, and pressure to complete a call in an effective and efficient manner. Comments supporting this included: “Unfortunately, how busy you are, too, makes a difference.” “Again, so many calls.”

Support for Training Opportunities

Participants in the focus groups mentioned several times that providing health care over the telephone is different from anything else they have done within the clinical setting, and it requires a new set of skills that could be developed or sustained through training opportunities. Although they indicated they get training in toxicology, there appears to be no formal training in developing the additional auditory and verbal interpersonal skills needed for telephone encounters. Some comments that exemplified this included: “I’d love to have something that we could incorporate, whether it’s either online or tapes that we could use in

PCCs as part of the orientation.” “I think it’s [training] definitely got to be incorporated.” “We needed to learn how to communicate without the visual cues of communication.”

Participants also mentioned the need for improved cultural competency. The most common barrier mentioned by SPIs was their inability to speak the language of the caller and having to rely on an interpreter. They mentioned that the number of callers whose native language was not English was increasing. With increased awareness of the PCC hotline, especially among diverse cultural groups, SPIs expressed a desire to learn more about the cultural backgrounds and health care practices of callers in their geographical jurisdiction. One participant summarized this growing need by stating that in the geographical area of the SPI’s PCC they had a

very large population from Asia, and so the products in their home and what they eat and things like that are totally different. For example, culturally they forage for a lot of mushrooms. We had a lot of problems with poisonous mushrooms.

Discussion

PCCs are an essential part of the public health infrastructure and disaster response, and are a challenging work environment. First, SPIs provide information on poisoning to both lay persons and health care providers. Second, SPIs provide emergency services by determining caller toxicity, triaging individuals who can be managed at home, and referring those who might need emergency medical care. Third, SPIs document calls to build valuable sources of data about public health issues. Not only are SPIs expected to be knowledgeable in toxicology; they are also expected to be effective communicators under pressure. It is clear that SPIs need a rich array of communication skills to do their jobs effectively, but little is known about the communication challenges they face.

To our knowledge, this is one of the first studies to document barriers to communication over the telephone specific to emergency telehealth, and to provide preliminary data on barriers that might be addressed through communication training opportunities. Challenges identified from this study are similar to those found for telenursing (Purc-Stephenson & Thrasher, 2010), and these similarities might be consistent with barriers to telehealth communication in general. However, additional research is needed to validate these findings.

One of the most prominent themes in the literature about challenges to telehealth is the importance of developing new communication skills to make up for the lack of visual cues. Without visual information it is more difficult to interpret callers’ meaning, convey social presence, and develop a supportive and collaborative relationship to reach common goals (Turner et al., 2003; Turner, Thomas, & Reinsch, 2004; Wilson & Williams, 2000). Consistent with findings in the telehealth literature, SPI participants voiced their concerns about not having visual cues to respond to caller concerns. Strategies SPIs used to confront the barrier of no visual information were mainly verbal in nature (e.g., use of closed-ended questions, repeating and rephrasing questions and information). No mention was made of nonverbal strategies. Auditory, nonverbal skills are essential in conducting an assessment. Numerous articles in the literature indicate the importance of tone, breathing rate, volume, background noises, word choice, and speed of speech for making complete and accurate

assessments (Holmström & Höglund, 2007; Pettinari & Jessopp, 2001; Wahlberg et al., 2003). Without visual information, these factors were not only necessary for conducting a patient assessment but also for communicating concern and friendliness (Wahlberg et al.).

Of all the challenges identified by the participants, the impact of work stress was the most detailed. Clinician stress and burnout has been found to negatively impact patient care (Shanafelt et al., 2005). Little research has been devoted to the effects of stress and burnout on interpersonal health communication (Epstein & Street, 2007). The perception of high stress is well documented within the literature for similar telehealth encounters (Car & Sheikh, 2003; Purc-Stephenson & Thrasher, 2010), and addressing challenges to telehealth through training opportunities can help alleviate some of the concerns (Planalp et al., 2009).

Some findings suggest that clinicians are generally dissatisfied with their performance in encounters with patients over the phone (Car & Sheikh, 2003). In other research, dissatisfaction by clinicians with telephone-based care was related to the absence of visual cues, potential risk to miss a serious condition, and inability to confirm diagnosis with an examination (Car & Sheikh; Foster, Jessopp, & Dale, 1999). Opportunities for telehealth providers to practice and learn new communication skills promise not only to improve the efficacy of services, but can also improve job satisfaction (Car & Sheikh; Ellington et al., 2007; Newes-Adeyi, Helitzer, Roter, & Caulfield, 2004). For example, an evaluation of a communication training program found increases in satisfaction with job performance that paralleled increases in communication competency (Newes-Adeyi et al.). Providing training that enhances competency and confidence for telephone-based care might address some of the barriers found in this study and other concerns associated with telehealth (Car & Sheikh; Derkx et al., 2009; Planalp et al., 2009).

Trainings that provide opportunities to practice and have successful experiences with skill development are a powerful source for increasing efficacy beliefs. In the context of this study, self-efficacy refers to the confidence that an individual has in her or his ability to communicate effectively over the telephone. Unless a person believes that she or he can accomplish a desired task, then that person has little motivation or incentive to act (Bandura, 1977, 1986, 1997). Increasing efficacy beliefs is also associated with reduced stress and increased satisfaction with one's performance (Bandura, 1986, 1997). Identifying challenges to communication over the telephone and providing training opportunities to develop the skills to overcome these challenges is an effective behavioral intervention for increasing efficacy beliefs and improving targeted behaviors (Bandura, 1986, 1997; Pajares, 2002).

Findings from this study also suggest that SPIs are likely to be receptive to the idea of improving their skills; they made numerous comments that support the need for a communication training program. This is consistent with studies in which other telehealth providers were open to and supportive of communication training opportunities (Derkx et al., 2009; Ellington et al., 2009; Purc-Stephenson & Thrasher, 2010). It appears that a communication training would be most helpful before actually engaging in telehealth services, to be supplemented by periodic trainings to help strengthen and sustain telephone communication skills (Purc-Stephenson & Thrasher). For example, it might be necessary to develop general training opportunities prior to beginning telehealth encounters, so providers

can practice communicating without visual cues. However, more research is needed to identify strategies to help overcome telehealth challenges and to identify formats of acceptable training opportunities to practice these skills. In addition, finding additional strategies for enhancing telephone cultural competency will be essential as health care increasingly uses advanced telecommunications (Wakefield et al., 2008)

Limitations of this study include that only three focus groups were conducted, which is the minimum number of groups recommended by Krueger and Casey (2009). In addition, the groups were comprised only of SPIs who self-selected to participate, and only those who attended the conference. Conducting additional focus groups from a larger sample of available SPIs would help to strengthen these results, as would the use of other methods, which could include observing telephone calls or interviews.

In summary, in a world that relies increasingly on telecommunication, it will be essential to match technologies to patient needs and assess the skills of health care providers to effectively communicate with patients (Wakefield et al., 2008). Given that evidence on telephone health care is in its early stages, it is likely that extensive training and institutional support is not yet available to guide health care providers. Providing communication training unique to communicating over the phone might help overcome some of the barriers unique to this emerging field of health care.

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