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Tele-health: Lessons and strategies from specialists in poison information

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Abstract

Objective—The use of the telephone for providing healthcare is growing. The aim of this exploratory study was to describe tele-health lessons and strategies as discussed by specialists who provide information and recommendations on poison control hotlines.

Methods—Three focus groups of 25 participants who work as specialists in poison information in poison control centers were conducted. Group discussions were analyzed using qualitative content analysis.

Results—Themes that emerged from the data on strategies for telephone communication include: taking control of the call, developing a therapeutic relationship, tailoring communication to fit each caller, preventing information overload, confirming caller understanding, and hands-on training for the development of telephone communication skills.

Conclusion—Specialists in poison information identified challenges specific to communicating with patients over the telephone and reported several types of strategies they used to manage them.

Practice implications—Telephone communication training may be needed to assist health care providers in improving their communication skills.

Keywords

Tele-health communication; Focus groups; Poison control centers; Patient adherence

1. Introduction

Poison control centers provide poison information and clinical toxicology consultation over the telephone, and they can serve as a model for understanding tele-health strategies that may promote adherence to healthcare recommendations. In the U.S. and Canada, the majority of callers to poison control centers are laypersons who have concerns about a poisoning or toxic exposure. Poison control centers are staffed by specialists in poison information who are trained pharmacists and nurses with previous clinical experience. Staff

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members have to efficiently assess the situation over the phone to decide whether the caller needs to immediately seek in-person medical care or if the incident can be managed over the phone. This tipping point of emergency versus self-care is the driving force for assessing the situation as efficiently as possible, while also developing a therapeutic relationship to promote caller adherence to risk recommendations. In addition, in the absence of visual cues additional strategies must be applied to gather the essential information [1].

There has been little research examining communication strategies in poison control centers or other tele-health services in general. Therefore, the purpose of this article is to describe strategies used by specialists in poison information that may lead to better patient adherence as identified through focus group discussions.

1.1. Adherence to healthcare recommendations

Nonadherence across numerous health care contexts causes preventable morbidity and mortality and places unnecessary financial and resource burdens that are estimated to cost our health care system 100 billion dollars annually [2]. Most research on adherence has been studied within the context of an ongoing face-to-face patient-provider relationship. With the growing use of brief, single-encounter tele-health interventions, research is needed to address nonadherence to recommendations that are made over the telephone [3,4]. Preliminary tele-health research indicates that there are unique strategies for phone communication that promote caller adherence [1], but it remains clear that additional research is needed to further understand this growing area of healthcare [1,5,6].

Communicating risk in ways that promote adherence is a teachable skill that is receiving increased attention in public health and clinical care [7–9]. Effective communication of risk has been noted as essential for vaccinations [10], emergency department physicians [11], clinical pharmacy services [12], telenursing [1] and poison control centers [13].

Communicating risk and health information over the telephone poses challenges beyond those of face-to-face interactions because it occurs without visual and tactical cues, de-contextualizes the clinical encounter, and cannot rely on an ongoing relationship between provider and patient. For most tele-health services, an essential component of the clinical encounter is to determine the degree of urgency of the clinical problem and whether the individual needs to be referred to healthcare facilities [5]. This is a time-sensitive clinical encounter and requires the healthcare worker to focus on the clinical problem and to conduct a rapid and accurate risk assessment.

It appears that telephone-only healthcare may be heavily relied upon by the aging population and by those living in more rural/frontier areas [14]. For example, new technologies and enhanced symptom management for chemotherapy are focusing on telephone-linked care to alert providers to deliver immediate clinical care over the telephone for unrelieved symptoms that persist for more than 24 h among older cancer patients [15]. Understanding how to improve telephone communication will be essential to use of these new technologies effectively and efficiently.

1.2. Poison control centers

Poison control centers are ideal settings to assess and understand strategies for effective tele-health encounters that aim to promote adherence. The second leading cause of injury related death in the United States is poisoning [16], and U.S. Poison control centers receive more than 4 million calls about poisoning episodes each year [17]. These services provide treatment recommendations to the lay public and clinical toxicology consultation to health care professionals. Poor adherence to treatment recommendations can put people at risk for serious injury or death, especially those who refuse recommendations to seek treatment in a health care facility. [2]. In addition, poor adherence may lead to unnecessary utilization of health care services, which increases costs [18].

Thus, poison control centers can serve as a rich and valuable resource for understanding effective tele-health strategies and challenges to tele-health that are essential for identifying effective phone communication skills that promotes adherence to health-care recommendations. To understand the strategies used by specialists in poison information for communication of risk information, focus groups were conducted among specialists in poison information.

2. Methods

2.1. Approach

Due to the limited understanding of this important health topic, a qualitative approach to generate data was adopted [19]. Qualitative descriptive designs allow the researcher to sample a broad range of cases to gather in-depth details as described in the participants' own words [19,20].

2.2. Participant selection

Three focus groups were conducted with a national sample of specialists in poison information at the annual North American Congress of Clinical Toxicology (NACCT) meeting in October 2007 in New Orleans, LA. Institutional Research Board approval was received from the researchers' university. Participants were recruited prior to and during the conference through flyers and national email listserves. The recruitment materials asked for help from specialists in poison information to identify communication barriers, strategies and training needs.

The NACCT conference coordinator was contacted to obtain information on SPI attendance. There are approximately 1150 SPIs in the 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. Factors that might have influenced attendance could be the proximity of the conference, available funding to pay for attendance, or personal interest. See Table 1 for participants' characteristics.

2.3. Conducting the focus group

Each discussion lasted approximately 90 min and was held in a private room in the conference hotel. Before the start of the discussion, consent was obtained, and each participant provided demographic information by completing a brief questionnaire. The focus group format followed recommendations by Krueger and Casey regarding preparation, engaging participants, and moderating the discussion [21].

The goals and objectives of the focus groups were explained at the beginning of the sessions. Open-ended questions were presented that invited participants to identify communication challenges and specifically how they dealt with those challenges. The questions used during the focus groups: (1) were crafted to evoke conversation, (2) used words the participants would use when talking about this issues, (3) were concise and open ended, and (4) followed a logical questioning route [21]. For example: “Can you tell me about general types of communication issues that you experience in answering calls?” “What skills and strategies have you developed to handle challenging calls?” “What types of skills and strategies do you use in routine clinical calls?” and “What do you do to help them understand what they need to do next?” (A complete list is included in the appendix.)

Each of the discussions was audio-recorded and transcribed by a professional transcriptionist. A member of the research team verified all transcription work by listening to the recordings and reading the transcripts.

2.4. Analysis

A qualitative content analysis was used to analyze the data. Instead of a priori coding schema, the researcher read and re-read the transcripts to develop the initial coding scheme using the participants’ own words. Then the codes were systematically applied to one of the transcripts with the possibility of adding additional codes (open coding) that may have been missed with the development of the codebook [22]. All coded data were retrieved, reviewed and verified by the research team through an iterative process. This allowed the research team to make any changes to the codebook through a consensus decision making process and changes were then made to the coding strategy. Finally, the codes were applied to all of the transcripts, summarized and recontextualized within the data to identify patterns. The coded categories serve as a method of summarizing what was said, and examination of the associated text confirmed the analyses to build an interpretation of why [23]. Further examination of the data, to explain why these patterns occur in this manner, is a significant component of data analysis because it allows a contextual and interpretative understanding of the findings [23,24]. Atlas.ti was used to help analyze the data and maintain an audit trail.

3. Results

The analysis focused on communication issues of specialists in poison information related to promoting caller adherence to recommendations. More commonly occurring codes were used to generate the categories and less frequently-occurring codes were collapsed into these categories. Strategies that emerged from the data to promote caller adherence are listed in Table 2.

3.1. Taking control of the call

Most participants indicated that the first critical step to achieve caller adherence was to collect accurate data from the caller. Thus, one of the most pervasive themes that emerged from the data was the importance of "taking control of the call." Most participants noted that due to limited time, they cannot engage in extensive discussions about treatment options because it may impede prompt medical care or cause delays for the next caller. Participants indicated that they need to direct the questions and guide the caller to the most critical information first. The lack of visual cues also places more pressure on the specialists in poison information to maintain control of the call because they have to rely solely on verbal reports of symptoms. Quotes that illustrate this strategy included:

> You have to hit your five top most important things that you need to do right now.
>
> If you ask the questions, you're going to get the information you need for that call.
>
> You can't let them start rambling on.

To collect caller information efficiently and effectively, many participants indicated they typically guide the caller to the most crucial information through the focus of their questions. They prioritize questions that focus on the patient's condition to emphasize to the caller that the chief concern for all parties is the patient's safety.

> We start with the patient symptom first so when the mom calls we always say, 'How's Johnny doing? How's he doing now? What are you seeing?' so she knows we're focusing on her baby instead of collecting demographics."

Prioritizing questions means that you ask the most important questions first but you are also persistent in questioning to obtain the information needed to make an informed medical decision. Quotes that supported these strategies included:

> Wait. Wait. Wait. Let's stop. [re-directing]
>
> How many was in it when it was new? How many are in it now? [asking the questions again].

Sometimes callers do not understand the role of poison control services and are unaware of their medical expertise. To address this problem, some participants noted they establish their credibility by briefly explaining their clinical training and certification (i.e. pharmacist, nurse) and then continue with the most critical questions.

3.2. Developing a therapeutic relationship

Participants also indicated that there is a balance between taking control of a call, eliciting the caller's agenda, and attending to caller emotions. Some participants voiced awareness that callers need to communicate what they feel is most important, and if that is not heard, callers may fail to follow recommendations. Participants indicated it was challenging to maintain a therapeutic relationship.

> It's like you direct everything [emphasized by participant] that they say, and you try and make them feel like you're very interested in what they're saying, but this is what I need to take care of your son right now.

Part of a therapeutic relationship is also trying to address the emotional state of the caller so that they can provide information and follow recommendations. During emergency situations or emotional or controversial topics, callers may be emotionally distraught (i.e. panicked, worried, afraid), and some participants indicated that callers may need to calm down first. Some quotes that supported this strategy included:

> Are you calm, are you cool, are we all right here?
>
> Mom, listen. That kid's fine, it's you that I'm worried about. Just relax.
>
> But there are the occasions where you need to show that little bit of warmth because their anxiety is here and I know if I support them emotionally in the beginning and then I kind of hear them calm down and then I can start asking those more pointed questions because now they feel there's a connection.

In addition, keeping callers calm may also require reassuring them about the situation.

> I use a lot of reassurance. I reassure them when I answer the phone, I reassure them in the middle and at the end and checking in to see if they're okay.

However, it was pointed out that reassurance should not impede gathering essential health information.

> You have to be able to reassure the person and cut them off at the same time.

3.3. Tailoring communication to fit each caller

Several participants mentioned the importance of multiple approaches to both gather information and provide recommendations. Each caller is unique, and some participants mentioned that they need to try different approaches. One participant summarized this challenge as:

> I think the big thing for me is trying to identify which communication method is going to be most effective. Are they going to be able to listen to me if I give them a list? Are they going to be able to listen to me better if I give them a little example story-type of cartoon-explanation of a mechanism?

Education level was also mentioned as an important factor in communication, but in general participants felt that all information should be communicated in the simplest way to save time. Examples of tailoring communication are listed below:

> You think you know what track they're on, and that may go down an entirely different route. But that "a little while ago" means a lot of different things to people.
>
> But I don't leave it with 'this child aspirates this stuff,' I'll say, "if he's throwing up and coughing afterwards, we have a problem on our hands." I won't say, "is the kid acting stridorous or is he wheezing?" I might, "do you hear funny sounds coming out of his.?

Tailoring communication to the individual caller also included having to try different approaches to gather needed information. Examples include:

> Yeah, you have to change your wording a lot.
>
> Okay, go back and re-ask the questions in a different way.
>
> How many are you positive that you took? How many times have you gotten into that bottle and taken two?

If the caller is hysterical, some participants indicated they may need to be more direct with recommendations and questions, or they may need to repeat statements.

> I felt I had to be very direct. And that was unusual.
>
> I think that I have that ability to adapt my calls, 'cause I can get just as salty, or I'll hold your hand.'

3.4. Preventing information overload

Another strategy that emerged from the data was the importance of limiting the amount of information given to a caller. Callers are often performing other tasks while talking on the phone (i.e. providing observational data about the patient, reading a pill bottle label), and engaging in more than one activity divides their attention and can inhibit remembering information. It can be also stressful for callers to provide health observation data if they have not done so before, and focusing callers on providing the most essential information can help them take the immediate next steps.

> You don't want to give too much information.
>
> You just say, 'Here's the symptoms you're looking for, here's the recommendations.
>
> And then, also, when you get a caller on the phone you're not going to explain to them why [Name of the Medicine] affects the liver or what the toxic dose is, all they want to know is, is my child going to be okay, and you're able to differentiate.

3.5. Confirming caller understanding

A prominent theme that emerged from the data was the use of communication strategies at the end of a call to promote adherence. With tele-health, it may not be feasible to always conduct a follow-up call (i.e. to call back at the hospital or at home). Therefore it is imperative to end the call by making certain that callers know what they need to do and are capable of carrying out a plan. A common strategy mentioned by the participants was ending the call by asking if callers have any questions:

> At the end of the call I ask them do they have any other questions, do they have any concerns, have I addressed everything?

Although some callers may not have any questions, or the situation may be so urgent that callers must act immediately, it is helpful to have them repeat back what they are going to do next. Quotes that supported this strategy included:

> But, make sure they don't have any questions, and they understood what you say.
>
> They repeat back to you what you said to them.

It may also require giving smaller segments of information at one time to enhance understanding.

> I'll at least break it up. It's like, after you explain what's happening, I'll usually say, "does this make sense to you?" And then I go through the instructions, and it's like "do you understand? And you do have any more questions?

Asking callers to verbally restate the poison specialists' recommendations also helps specialists confirm that they have communicated the recommendation effectively. Tele-health communication is more challenging due to the lack of visual cues and it can be difficult to assess patient understanding.

> Making an assessment of their understanding right before you close the call.
>
> 'repeat what I said' Like you do when you teach patients how to do their dressing change.
>
> Tell me what you're going to do now.

3.6. Developing tele-health skills through experience

A final theme was that specialists in poison information believed that they had developed communication skills to improve caller adherence through trial and error on the job. First, it was mentioned that experience on the job allowed specialists in poison information to develop a sense about the call and what to expect.

> You get a sense after a couple of years your technique to kind of distill things and kind of boil it down.

It was also mentioned by several participants that through supervision and mentoring, they developed their telephone communication skills further, and increased their awareness of their own communication styles.

> You learned how to do that by listening to calls; and There I was answering calls with my boss right next to me listening to the same call, putting them on hold, talking about it, and going right back [into the call].

Due to the lack of visual cues, many participants learn to communicate in a different context, and understanding their communication style and how this may affect others is necessary for better job performance.

> We needed to learn how to communicate without the visual cues of communication.
>
> And even when I'm not trying, my voice is loud, so a lot of people think I'm yelling at them, when I'm not. [laughs] So I have to always think "talk quiet."

Participants also spoke of developing their own communication style.

> I think everybody has their phone style. I think about my work, there's [John Doe], he's like Mr. Take-Charge-Man, which is great for us nervous ones. But I know for other people, they can't stand that. So everybody has their little style.

4. Discussion and conclusion

4.1. Discussion

Specialists in poison information are an ideal and underutilized resource for identifying effective tele-health communication strategies that can serve as a model for a variety of health care contexts. They are highly educated and skilled clinicians, and many have prior experience in both in-person and over-the-phone patient care settings. Specialists in poison information work without visual cues and develop creative verbal strategies to gather essential information and communicate recommendations. With the current emphasis on reducing unnecessary healthcare costs while improving health quality, specialists in poison information may be models for future tele-health services.

The results of this study raise two significant concerns for identifying strategies that may promote patient adherence over the telephone. First, developing a therapeutic relationship with the caller was viewed by the participants in this study as a difficult challenge but also an important factor in promoting caller adherence, which has also been found in other health contexts such as tele-nursing. Communicating caring over the phone while addressing the callers' clinical problems was noted as a consistent struggle by tele-nurses [1]. Some of the strategies used by tele-nurses to convey a sense of caring were similar to the ones in this study, including: calm the caller, listen to the circumstances surrounding the problem, address upsetting issues, adapt to different communication tactics, and prepare the caller for future actions [1].

The challenge of obtaining essential information and maintaining a therapeutic relationship was also studied in a Dutch Out of Hours Centers. A research team of 14 individuals were trained to mimic seven clinical scenarios over the telephone to 17 randomly selected centers [25]. Approximately 285 different telephone triagists were assessed from 357 calls. General conclusions indicated that although the triagists were professional and friendly, they were too problem-oriented. Training to help triagists develop a more therapeutic relationship and to help structure the call was recommended [25].

Second, there appears to be a skill set for tele-health clinicians that goes beyond the skills needed in face-to-face interactions, specifically inferring emotions and understanding without visual cues. On numerous occasions during the focus groups it was mentioned how communicating over the phone is significantly different from communicating in person. The participants believed they had developed techniques through experience that allowed them to effectively interact with callers. Learning to rely on auditory nonverbal cues such as the caller's speech, degree of breath control, or general conversational tone can help improve tele-health interactions [1,25,26]. Over time, one is able to incorporate these nonverbal auditory cues into a quicker, more accurate assessment.

Developing training models that are specific to the environment of telephone communication can be helpful for better preparing specialists in poison information and healthcare providers to more effective utilize tele-health. Most importantly, participants in this study indicated how important it is to listen to a range of calls and their own calls in particular. Car and Sheikh [3] suggest that training for telephone-based care should focus on picking up cues

such as pace, pauses, and changes in voice intonation, along with other active listening skills, frequent clarifying and paraphrasing, and ensuring questions are answered.

Another issue that may need to be addressed within tele-health is how attentive the caller is to the tele-health provider. Even if the provider tries to maintain a therapeutic relationship and uses telephone communication skills effectively, if the caller is not attentive to this information, care can be hindered or impaired. It is easy to become distracted when talking over the telephone, and individuals are more likely to multi-task on the phone or even be distracted from visual stimulation not related to the call [27,28]. Research is needed to investigate how much callers understand and retain from tele-health encounters, especially compared to face-to-face encounters, and how to address this presumed additional barrier.

4.2. Conclusion

The findings from this study provide a starting point for generating more efficient strategies for tele-health communication and patient adherence. However, there are several limitations. This study was conducted with focus groups, and other methods such as listening to exceptional and/or poor phone encounters may provide a complementary method of research. Second, the strategies identified in this study were provided by poison control specialists and should be validated and assessed in other types of tele-health encounters. Third, the results of this study are descriptive, and future research should identify which strategies are most effective at promoting adherence and positive medical outcomes.

4.3. Practice implications

Although communication by telephone is an everyday activity, the use of the telephone for healthcare encounters is significantly different, and specific skills and strategies are needed to efficiently utilize tele-health. Research on conversation has demonstrated talk is organized into sequences of turns at talk [29]. For in-person interactions, visual nonverbal cues are essential and help facilitate conversation and information exchange. Their absence in tele-health encounters requires the conversation to be modified to compensate for missing visual information. It appears that additional interpersonal communication competencies are needed to maximize advances in technology for telephone-based health care. Telephone communication trainings may be needed to assist clinicians in improving vocal communication skills.

I confirm all patient/personal identifiers have been removed or disguised so the persons described are not identifiable and cannot be identified through the details of the story.

Appendix A. Semi-structured 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 versus non-life threatening phone calls?
What type of skills and strategies do you use in routine clinical calls?
What skills and strategies have you developed to handle challenging calls?
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?

Can you tell me about general types of communication issues that you experience in answering calls?
What do you do to help them understand what they need to do next?
How do you handle it when you suspect you are not meeting the needs of the call? What do you do?
What do you do to make the calls more satisfying to you?
What kinds of calls leave you with a lingering dissatisfaction?

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Table 1

Participant characteristics (n = 25).

Age	Mean = 45.96 years (range 30–60 years of age)
Sex	76% Female
Ethnicity	92.0% Caucasian
Years as a SPI	12.9 years (range 2–32 years)
Location of work	West 16%, central 40%, southeast 24%, northeast 20%
Prior clinical experience	Nurse 68%, pharmacist 24%, other 8%
Education	AA 32%, BS 40%, masters 8%, Ph.D. or PharmD 20%

Table 2

Tele-health strategies for promoting adherence.

Major strategies identified	Examples of sub-strategies
Taking control of the call	Ask the questions instead of letting the caller ask most questions Re-direct the caller to needed health information Prioritize questions based on context Persist in questions to get needed information
Developing a therapeutic relationship with the caller	Respect callers' needs and let them also communicate personally important information Keep the callers calm Repeat questions or recommendations for emotional callers Reassure callers as needed to demonstrate warmth and compassion
Tailoring communication to fit each caller	Develop a repertoire of multiple approaches for gathering information and making recommendations Communicate recommendations in simplest terms Be willing to try multiple approaches Adapt to the emotional state of the caller
Preventing information overload	Recognize callers' attention is divided while on the phone Do not give too much information or too little information for the recommendations
Confirming caller understanding	Ask the caller if they have any questions Have the caller repeat recommendations or action steps Have the caller summarize the call
Developing telephone communication skills	Spend time listening to calls Experience managing tele-health encounters