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## Using Your VOICE(S): Adding telephonic communication to pharmacy education

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### ABSTRACT

Pharmacists utilize a myriad of communication methods to deliver patient care. One of the most prevalent communication methods is the telephone. The University of Pittsburgh School of Pharmacy created a novel instructional and assessment technique to enhance student pharmacist training experiences in telephonic communication within the PharmD curriculum.

**Keywords:** pharmacy education, technology, communication, telephone

### DESCRIPTION OF PROBLEM

One of the most important roles a pharmacist performs is that of communicator. As such, a pharmacist must be proficient at communicating to a variety of individuals in diverse practice environments. "Standards 2016" from the Accreditation Council for Pharmacy Education (ACPE) lists communication as a key element of "Approach to Practice and Care," which is one of the four educational outcomes deemed essential to the contemporary practice of pharmacy.<sup>1</sup> A review of the pharmacy education literature published in 2013 evaluated methods employed in teaching communication skills to students in pharmacy programs across the world. In the reviewed programs, written and in-person communication skills were widely taught; however, only one instructional method emphasized telephonic communication.<sup>2</sup> This single example described teams of students who developed case scenarios and discussed how to best communicate with other health care practitioners via telephone. The exercise did not employ the use of a physical telephone.<sup>3</sup> Furthermore, none of the articles reviewed by Wallman et al. provided students an opportunity to communicate with patients over the telephone.<sup>2</sup> Such gaps are alarming, considering the potential for patient harm resulting from communication errors. Coupling the paucity of literature in telephonic communication education with a contemporary emphasis by ACPE for teaching communication, educators have great opportunity to strengthen telephonic communication within the PharmD curriculum.

### THE INNOVATION

VOICES (Voice-Oriented Interprofessional Communication Evaluation System), a pedagogical process for incorporating telephonic communication into the didactic and experiential learning curriculum, was created by faculty at the University of Pittsburgh School of Pharmacy. It provides students with a means to practice, and faculty with a means to assess,

telephonic communication. The system utilizes the [Google Voice](#) (Google, Mountain View, CA) telephony service to provide a telephone number and other features, including call forwarding, voicemail, text messaging, and automated voice transcription. These tools were introduced to interested faculty members (L.A.B and K.S.P), who worked with the designers (L.B.G. and Ravi Patel, PharmD) and educational support staff to create active learning experiences. Faculty conceptualized telephonic communication assignments, which matched their need and stated learning objectives for the course. Staff were trained on how to utilize Google Voice to deploy the assignments "behind the scenes". The purpose of this paper is to describe the pilot uses of VOICES and to comment on the preliminary evaluation of the VOICES system.

Several VOICES-enhanced assignments were trialed in the 2015-2016 academic year. An introductory assignment was deployed to first professional year students (N = 114). Using VOICES, students practiced telephonic communication within a simulated community pharmacy dispensing activity. Initially, students were asked to transcribe two verbal prescriptions from a voice message prerecorded on the dedicated VOICES telephone number. Following transcription, students assessed each prescription for drug therapy problems before calling a different VOICES number to leave a message for the fictitious prescriber to resolve the identified drug therapy problems. The VOICES-trained staff member monitored the calls and recordings.

A second assignment was deployed to this same group of students following a standardized patient (SP) classroom activity. During the SP experience, students were provided the telephone numbers of the SP and their primary care physician, when collecting background information for a comprehensive medication review (CMR). Students were then given guidance for leaving HIPAA-compliant telephonic messages for patients at their homes. Students then used VOICES to record a voicemail reminding their SP of a scheduled follow-up visit in the classroom one month later. Following the second visit, students used VOICES again to leave a message to their SP's primary care physician as notification that a CMR was completed and a summary letter would be faxed for

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consideration. These numbers were monitored by the VOICES-trained staff person and evaluated by faculty (L.A.B.) for completion and HIPAA compliance.

An assignment with increased complexity was deployed in the fall term to second professional year students (N =114) within the Nonprescription Therapies and Self-care Practices course. These students worked to triage, assess, and communicate via telephone appropriate self-care recommendations to a virtual patient (VP). Students worked through a VP case that culminated with the VP's phone number and a request that the student pharmacist call with a self-care recommendation. Students developed an appropriate course of action and then called the VOICES number to relay their recommendation. The students' recommendations were assessed for correctness and safety, as well as professional communication skills, via a rubric by course faculty (K.S.P.).

Finally, VOICES was utilized to supplement community Introductory Pharmacy Practice Experiences (IPPE) for the second professional year students. Throughout the spring semester, students implemented class-wide patient care initiatives at their individual community IPPE sites. Projects paralleled national patient care initiatives related to medication adherence, immunizations, and antibiotic resistance. Once during each patient care initiative, students received a text message alerting them to complete an assignment using VOICES. Each of the three assignments were designed to deepen the students' learning and understanding of the current patient care initiative and to enhance the students' clinical decision making. Students first called the VOICES telephone number to listen to a simulated, prerecorded patient case. Thereafter, each student had an opportunity to review the case with their pharmacist preceptor prior to communicating a response back to the patient using the VOICES telephone number. Consultation with the pharmacist preceptor required students to engage with their preceptor and to explore site-specific services and policies supporting advanced patient care. All responses were saved and collated by educational support staff and assessed by course faculty (L.A.B.).

### CRITICAL ANALYSIS

To assess the use of VOICES in this course, a 3-item survey was administered electronically (Qualtrics, Provo, UT) pre- and post-completion of 80 hours of VOICES-enhanced community IPPE. Surveys were created for students to self-assess confidence in telephonic communication with patients. These surveys also gathered information about frequency of telephone use, when communicating with patients and providers in IPPE practice settings. This study was approved by the University of Pittsburgh Institutional Review Board.

Of students who completed the pretest survey (n= 72) 89% of respondents agreed or strongly agreed that they were confident in their ability to communicate an OTC

recommendation (the most frequent type of clinical decision made during the IPPE) over the phone to a patient. In the posttest survey (n = 54), 92% agreed or strongly agreed that they were confident in their ability to communicate an OTC recommendation to patients. This difference was found to be significant (p=0.0269).

A test of variance was performed on the data generated and subsequent single-sided t-tests were performed to determine any significance in the difference between pre-assignment and post-assignment surveys. All values and statistics can be found in Table 1.

As described by Bandura, an increase in a student's perceived self-efficacy, as reported here, translates to an increase in academic motivation and accomplishment,<sup>4</sup> indicating another possible variable (i.e. motivation) for examination in future studies. An obvious confounder to attributing an increase in student self-reported confidence to the VOICES-enhancement alone is that many incidental activities during an IPPE include clinical decision making resulting in patient communication, which may also enhance a student's confidence. Future assessments of VOICES should control for confounders to better isolate the effect of VOICES on student confidence in telephonic communication.

Questions 2 and 3 (Table 1) were not found to be significantly different between pre and post surveys. Non-significant differences in the students' categorization of telephone utilization may mean that participating students were consistent in estimating the importance of telephonic communication employed in community pharmacy settings. Additionally, responses skewed towards agreement supports the necessity of reinforcing telephonic communication skills due to its prevalence in community practice.

### KEY FINDINGS

Since the addition of VOICES to the University of Pittsburgh's educational toolbox, student pharmacists have had increased opportunities to practice telephonic communication inside and outside of the classroom. The incorporation of VOICES into dispensing workflow simulations and self-care assignments has allowed educators to simulate critical communication skills employed by community pharmacists in contemporary practice. Furthermore, adding VOICES to the standardized patient experiences has allowed educators an easy method to thread together multiple assignments, in order to create a longitudinal narrative. In addition to increasing the use of VOICES in classrooms wherein it has already been deployed, more assignments are currently being developed to make VOICES a part of other pharmacotherapy courses. An extension of this increase in usage will be a corresponding increase in assessment of the system. With this pilot study suggesting positive improvement in student confidence, the authors would

expect future evaluations to establish a more robust connection between experience and skill enhancement.

We have identified several challenges and limitations to the technology employed for VOICES. First, Google Voice has little in the way of native support for when problems arise with the software, requiring the staff and instructors to solve any issues that arise. This challenge is mitigated by the ease of use of the software, and we have encountered very few problems during our recent deployment. Second, there is a low number of mass text messages that can be sent from a single Google Voice account in a 24 hour period. This countermeasure exists to prevent spam accounts' abuse of the free service and there is no way to remove this from an account. The strategy we employed to mitigate this limitation was to simply set up multiple accounts and limit the number of students that receive text messages on a given day. A final limitation was that the voice-to-text automated transcription was not completely accurate. This automated transcription could be used by an educator to briefly review a student response, but listening to the recorded response alleviates any limitations of an inaccurate transcription. Since each of these limitations are easily mitigated, VOICES appears to have strong potential as an addition to the educational toolbox. Given that the technology utilized is free to access and the relative time involved in creating a VOICES-enhanced assignment is virtually the same as creating a more traditional assignment, the system would be easily replicated and deployed by any school of pharmacy.

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**DISCLOSURES:** None

#### REFERENCES

1. Accreditation Council for Pharmacy Education. Accreditation Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree ("Standards 2016"). <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf>. Accessed June 21, 2017.
2. Wallman A, Vaudan C, Sporrang SK. Communications training in pharmacy education, 1995-2010. *Am J Pharm Educ.* 2013;77(2):Article 36.
3. Hasan S. A tool to teach communication skills to pharmacy students. *Am J Pharm Educ.* 2008;72(3):Article 67.
4. Bandura A. Perceived self-efficacy in cognitive development and functioning. *Educ Psychol.* 1993;28(2):117-148.

**Table 1.** Survey Question Before and After VOICES-enhanced IPPE.

<b>Before VOICES-Enhanced IPPE †</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Not Applicable</b>
Q1. I am confident in my ability to communicate an over-the-counter recommendation to a patient by phone.	4 (5.5%)	4 (5.5%)	53 (74%)	11 (15%)	-
Q2. At my pharmacy, I use the phone as a means of communication with patients.	18 (25%)	3 (4%)	7 (10%)	41 (57%)	2 (3%)
Q3. At my pharmacy, I use the phone as a means of communication with other health care providers.	8 (11%)	11 (15%)	18 (25%)	32 (44%)	2 (3%)
<b>After VOICES-Enhanced IPPE</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Not Applicable</b>
Q1. I am confident in my ability to communicate an over-the-counter recommendation to a patient by phone.	2 (3.5%)	2 (3.5%)	32 (59%)	18 (33%)	-
Q2. At my pharmacy, I use the phone as a means of communication with patients.	8 (14.5%)	5 (9%)	2 (3.5%)	34 (62%)	5 (11%)
Q3. At my pharmacy internship, I use the phone as a means of communication with other health care providers.	2 (3.5%)	5 (9%)	25 (46%)	19 (35%)	3 (5.5%)
<b>Statistical analysis</b>			<b>Pre-Survey Mean</b>	<b>Post-Survey Mean</b>	<b>P-Value</b>
I am confident in my ability to communicate an over-the-counter recommendation to a patient over the phone.			2.986	3.22	0.0269*

IPPE=Introductory Pharmacy Practice Experience

†Likert scale=Strongly Disagree = 1, Disagree = 2, Agree = 3, Strongly Agree = 4

\*Statistically significant