Standardizing Quality of Virtual Urgent Care: Using Standardized Patients in a Unique Experiential Onboarding Program

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Abstract

Introduction: Virtual urgent care (VUC) provides real-time evaluation, triage, and treatment of low-acuity medical problems; however, VUC physicians have varying levels of telemedicine training. We created a workplace-based experiential onboarding program that deployed standardized patients (SPs) into a VUC clinic to evaluate and deliver feedback to independently practicing physicians, providing quality assurance and identifying areas for improvement. Methods: We simulated evaluation of an adult with upper respiratory symptoms. To replicate a real-life encounter, we developed a mock electronic medical entry with demographic and medical information and scheduled SPs into the clinic’s actual patient queue. SPs provided seamless, realistic training within the real-world virtual clinic environment. Using an adapted assessment tool anchored to not done, partly done, or well done, SPs evaluated communication, disease-specific, and telemedicine skills by observing behaviors. We surveyed participants to evaluate the program. Results: Twenty-one physicians participated. All performed well in core communication and disease management domains. Ninety-three percent of behaviors (SD = 11%) were rated well done within the information gathering domain, 90% (SD = 8%) within relationship development, and 95% (SD = 5%) within disease management. Physicians struggled with telemedicine-specific skills—55% (SD = 38%) well done—and education and counseling—32% (SD = 34%) well done—highlighting specific behaviors most ripe for improvement. All queried participants indicated that this simulation improved communication and telemedicine skills. Discussion: This workplace-based experiential onboarding program uncovered knowledge gaps within telemedicine skills and patient education domains. Identification of these gaps can help drive new virtual care curricula.

Keywords
Workplace-Based Assessment, Experiential Onboarding, Emergency Medicine, Primary Care, Simulation, Standardized Patient, Telehealth, Editor’s Choice

Educational Objectives

By the end of this activity, learners will be able to:

1. Identify gaps in performance of key communication, patient education, and telemedicine-specific skills.
2. Manage a patient presenting with persistent upper respiratory tract symptoms in a virtual care environment according to best practices.
3. Leverage the audio/video interface to augment information gathering and physical examination.
4. Identify individual strengths and weaknesses with utilizing technology in a virtual urgent care visit.

Introduction

Virtual urgent care (VUC) has become a common means of providing real-time remote evaluation and treatment of low-acuity medical problems. VUC, which leverages audio/video technology to provide care at a distance, can lower barriers to accessibility, promotes appropriate management for common conditions, and is well liked by patients. Although virtual care was growing prior to the emergence of COVID-19, the pandemic has solidified the importance of this modality in the care of the chronically and acutely ill, and VUC programs, including our program at NYU Langone Health, have expanded rapidly.

However, despite the widespread growth in VUC utilization, there has not been similar expansion in the ways in which VUC providers are trained. VUC programs, ours included,
are composed of physicians with heterogeneous clinical backgrounds, most having no formal telemedicine training or experience. Providing virtual care requires unique technical and communication skills distinct from in-person care, including performing virtual physical examinations, querying wearable devices and onsite caregivers, optimizing sound and video, and maintaining appropriate computer etiquette or “webside manner.”

Those without prior training in this modality have significant learning gaps. Some have advocated for adoption of new virtual care core competencies in an effort to standardize expectations of providers; however, currently few such competencies govern virtual practice.

Therefore, there is the potential for significant variability in the quality of virtual care across providers and across care platforms. Some groups have captured this variability by conducting covert audits of virtual care platforms using secret standardized patients (SPs). Studies such as these have been critical in unmasking imperfections within the field, with the hope of elevating all VUC physicians to a higher standard of care. However, there still exists an unmet need to provide just-in-time experiential training not only to detect variable quality of virtual care but also to develop and standardize these crucial virtual clinical skills.

Methods

Simulation

We scripted a VUC evaluation of a 36-year-old man with persistent upper respiratory tract symptoms without response to over-the-counter medications (Appendix A). The case encompassed a common presenting concern and potential management dilemma for VUC providers, as virtual visits have been suggested to come with higher rates of antibiotic prescription than in-person encounters. The case was scripted to challenge the VUC physician to prescribe antibiotics despite symptoms that were inconsistent with a bacterial infection. The case, which simulated a synchronous virtual encounter, was designed to specifically assess virtual care skills. It contained opportunities for physicians to conduct a thorough virtual medicine reconciliation and incorporated prop over-the-counter pill bottles and a prescribed inhaler. The script additionally encouraged a patient-guided virtual physical exam including assessment of vital signs with thermometer, self-check of pulse manually or with wearable device, and visual inspection of the posterior pharynx via phone camera. We hired experienced SPs who, after reviewing a scripted case, underwent 3 hours of dedicated training consisting of rehearsals with authors Daniel J. Sartori and Sondra R. Zabar to familiarize them with the case, props, and anticipated physical exam maneuvers. These authors reviewed each assessment item with the SPs and modeled a range of anticipated behaviors.

In order to faithfully replicate a real-life encounter though this workplace-based assessment, we partnered with our medical center information technology group to create a mock entry in the electronic medical record, which contained the SP’s scripted demographic, medical, pharmacy, and allergy information. Each mock entry was associated with a unique username.
Learner Assessment

We had previously developed a behaviorally anchored assessment tool to evaluate core communication skills and telemedicine-specific skills. Items in this tool were developed from a series of focus groups with experienced telemedicine clinicians, as well as from direct observations of telemedicine encounters. The assessment tool included similar skills described by others, including Cantone and colleagues, reflecting relevant categories: not done, partly done, and well done (Appendix C). Table details assessment items as well as behavioral descriptors of well-done items. While the encounters were announced, VUC physicians were not primed with the assessment items in advance. SPs offered postencounter verbal feedback to VUC physicians and provided an electronic report of their individual performance as assessed by the checklist described above (Appendix C) within 48 hours of the encounter. VUC program leadership was given a summary of aggregated data of physicians’ performance at the project’s end. Additionally, all VUC physicians were offered the opportunity to complete a postencounter survey (Appendix D) to provide structured feedback regarding the case. The assessment checklist and survey were entered into the REDCap tool hosted at NYU Langone Health. REDCap, a secure, web-based software platform designed to support data capture for research studies, provided (1) an intuitive interface for validated data capture, (2) audit trails for tracking data manipulation and export procedures, (3) automated export procedures for seamless data downloads to common statistical packages, and (4) procedures for data integration and interoperability with external sources.

Results

Twenty-one VUC physicians participated in this announced encounter. The physicians performed very well in core communication and disease management domains. Aggregate analysis of SP evaluations demonstrated that 93% of behaviors (SD = 11%) were well done within the information gathering domain; 90% (SD = 8%) were well done within the relationship development domain (Table). All (100%, n = 21) provided appropriate management plans, none of which included antibiotic prescription.

In contrast, education and counseling skills were highly variable and overall less strong, with a mean 32% of behaviors (SD = 34%) evaluated as well done. Within this domain, few (14% of physicians, n = 3) received well done ratings for checking SPs’ understanding, and very few (10%, n = 2) provided clear explanations by offering bite-sized pieces of information and summarizing and demonstrating teach-back. Most (71%, n = 15) collaborated with the SP to discuss next steps (Table).

Mean telemedicine-specific skills were likewise less strong, with only 55% of behaviors (SD = 38%) evaluated as well done. Specific telemedicine skills were used infrequently: Only 19% (n = 4) performed an appropriate remote physical exam; 24% (n = 5) utilized the audio/video interface to augment information gathering, an item which included virtual medicine reconciliation; and 14% (n = 3) optimized technical aspects of the encounter by evaluating sound and/or video or ensuring a backup plan in case the audio/video platform failed (Table).

Satisfaction with the virtual encounter was high. SPs rated 94% of items (SD = 3%) as well done within the global satisfaction domain, which included behaviors such as answering SP questions, not rushing the encounter, and empowering health awareness. Twenty out of 21 physicians were rated mostly or completely professional, and the SPs indicated they would recommend or highly recommend based on the physicians’ communication skills.

All VUC physicians were given the opportunity to provide structured feedback regarding the case, and a subset of VUC
physicians \( n = 9 \) did so. All somewhat or strongly agreed that the simulated encounter improved their confidence communicating with patients using the audio/video interface and improved telemedicine skills.

**Discussion**

Here, we have described a unique VUC workplace-based assessment utilizing standardized announced encounters to both evaluate and develop the communication and technical skills necessary for virtual care. Given the widespread expansion of virtual care in the wake of the COVID-19 pandemic and the heterogeneity among virtual providers, the need to standardize expectations for virtual care delivery has never been greater. The onboarding program described here provides a realistic and reproducible strategy not only to assess VUC physicians but also to identify specific behaviors in need of improvement.

| Domain and Checklist Items | Frequency of Each Item: % (No.) | Percent Well Done: M (SD) | Behavioral Descriptor of Being Well Done |
|----------------------------|---------------------------------|--------------------------|----------------------------------------|
| **Information gathering**  |                                  |                          |                                        |
| Elicited your responses using appropriate questions | 0 (0) 5 (1) 95 (20) | 93 (11) | Asked questions one at a time without leading you in your response |
| Managed the narrative flow of your story | 0 (0) 0 (0) 100 (21) | 9 (17) | Elicited full narrative by asking questions that facilitated natural flow of story |
| Clarified information by repeating to ensure understanding | 14 (3) 10 (2) 76 (16) | 100 (21) | Repeated information and directly invited you to indicate whether accurate |
| Allowed you to talk without interrupting | 0 (0) 0 (0) 100 (21) | 90 (8) | Did not interrupt and allowed time to express thoughts fully |
| **Relationship development** |                                  |                          |                                        |
| Displayed concern and intent to help | 5 (1) 14 (3) 81 (17) | 90 (20) | Words and body language conveyed intention to help |
| Used nonverbal communication to enrich communication | 0 (0) 5 (1) 95 (20) | 90 (8) | Made eye contact via the camera, exhibited professional body language on camera, and was attentive |
| Acknowledged emotions appropriately | 5 (1) 9 (2) 86 (18) | 90 (20) | Acknowledged and responded in ways that made you feel better |
| Was accepting and nonjudgmental | 0 (0) 0 (0) 100 (21) | 90 (8) | Made comments and expressions that demonstrated respect |
| **Education and counseling** |                                  |                          |                                        |
| Asked questions to check your understanding | 19 (4) 67 (14) 14 (3) | 32 (34) | Assessed understanding by checking in throughout the encounter |
| Provided clear explanations and information | 0 (0) 90 (19) 10 (2) | 90 (8) | Provided small bits of information at a time and summarized to ensure understanding |
| Collaborated with you in identifying next steps | 0 (0) 29 (6) 71 (15) | 90 (8) | Discussed options THEN mutually developed plan |
| **Telemedicine skills** |                                  |                          |                                        |
| Confirmed patient identifiers | 14 (3) 43 (9) 43 (9) | 55 (38) | Asked patient to confirm name/date of birth, call-back number, and location |
| Used nonverbal communication to enrich communication on camera | 0 (0) 5 (1) 95 (19) | 90 (20) | Maintained eye contact with webcam throughout encounter, sat squarely in front of camera, and at appropriate distance |
| Actively optimized technical aspects of the virtual encounter | 62 (13) 24 (5) 14 (3) | 90 (20) | Assessed sound quality, video quality, and backup plan if audio/video failed |
| Exhibited comfort and confidence using video interface | 0 (0) 5 (1) 95 (20) | 90 (20) | Confident on camera, acknowledged and moved forward from technical glitches, and did not let video interface detract from natural conversation |
| Utilized live video to augment information gathering | 57 (12) 19 (4) 24 (5) | 90 (20) | Attempted to do two or more: visually reconcile meds, witness reproducible symptoms, talk with onsite collateral, assess the home |
| Partnered with patient to perform physical exam | 67 (14) 14 (3) 19 (4) | 90 (20) | Asked patient to perform maneuvers or access peripheral monitoring device (home blood-pressure cuff, FitBit/Apple watch, glucometer) [we didn’t specify these in checklist], followed by verbal confirmation of findings |
| Maintained appropriate computer etiquette during encounter | 0 (0) 5 (1) 95 (20) | 90 (20) | Paused video or provided clear explanation while documenting, searching another website, or having another screen open for the purpose of patient care |
| **Disease management skills** |                                  |                          |                                        |
| Elicited a comprehensive description of symptoms | 5 (1) 0 (0) 95 (20) | 95 (5) | Asked about three or more of the following: travel history, fevers, phlegm production, sore throat, flu shot |
| Made appropriate medication plan | 0 (0) 0 (0) 100 (21) | 90 (19) | Did not prescribe antibiotics and thoroughly described supportive measures (such as hydration, decongestant, expectorant) |
| Made appropriate plan for next visit | 5 (1) 5 (1) 90 (19) | 90 (19) | Collaborated to make follow-up plan including either televist or in-person appointment if no improvement after 1 week |
| **Satisfaction** |                                  |                          |                                        |
| Answered or addressed all your questions/concerns | 0 (0) 5 (1) 95 (20) | 94 (3) | Answered/addressed all of your questions/concerns |
| Empowered you in monitoring your symptoms and understanding your disease | 0 (0) 10 (2) 90 (19) | 90 (19) | Took an active interest in my understanding of my illness, promoted health awareness, and empowered me |
| Made you feel like you had enough time (not rushed) | 0 (0) 5 (1) 95 (20) | 90 (19) | Felt no real time pressures, covered all my issues and questions without rushing me |
and address them with real-time feedback from highly trained SPs. While prior studies employed SPs to assess virtual care quality, few integrated real-time structured feedback into a workplace-based simulation program. To our knowledge, this is the first description of such a program.

VUC physicians excelled in core communication and management domains, including uniformly judicious use of antibiotic regimens, consistent with others’ observations of the evolving role of virtual providers as stewards of antibiotic use. However, we uncovered several areas for improvement, particularly within the domains of telemedicine-specific skills and patient education. Specific telemedicine skills with poorest ratings included using the audio/video interface to augment information gathering and partnering with patients to perform virtual physical examination. Surprisingly, VUC physicians in this project, all hired to provide VUC in a dedicated VUC clinic, struggled with the very skills required to leverage the virtual environment to enhance patient care. Of the many virtues of virtual care, opportunities to visually reconcile medications, assess the home environment, involve other participants, and partner with patients to perform a patient-centered physical examination were often lacking. Our findings suggest that other virtual providers, particularly those more novice in this modality, may demonstrate similar learning gaps.

Education and counseling, which constitute a core component of most physician-patient encounters, were notably executed poorly among most VUC physicians. The assessment items in this domain, which require clear, bite-sized delivery of information and frequent check-back, may represent specific obstacles in the virtual environment and warrant further specific emphasis and training.

This onboarding program was successful given our institution’s experience with both implementing SP programs and leveraging the electronic health record to realistically portray virtual SPs in the workplace. Specific early challenges included timing of scheduled SP encounters—scheduling encounters for a visit slot toward the middle or end of each VUC physician’s queue made timing unpredictable for SPs due to clinic frequently running behind schedule. Scheduling SPs for the first encounter of each clinic session ameliorated this substantially. Additionally, this project took place when VUC clinic volumes were relatively low, which allowed our group to block off clinic slots without preventing appointments from being scheduled by real patients. Busy VUC clinics looking to replicate a similar workplace-based assessment will need to consider this aspect prior to implementing.

While this project assessed only physicians, several other providers, including nurse practitioners, nurses, and medical assistants, offer virtual care, and future studies can be expanded to include these groups. Two SPs were utilized in this project, but we did not measure interrater reliability, potentially introducing variability in how VUC physicians were assessed. Future studies requiring more SPs to assess larger groups of learners will require attention to standardizing assessments across SPs. As we did not introduce an in-person comparator simulation, we cannot directly assess whether education and counseling or other core communication domain performance measured here is specific to the virtual environment. Lastly, each virtual encounter here was announced to each physician, which potentially could have altered the behaviors being assessed. Future studies using unannounced virtual patients will be needed to faithfully assess physicians’ real practice.

Even after the accelerated application of telemedicine levels out in the wake of the pandemic, virtual care will continue to be a necessary and accepted method of providing care. New methods of educating and orienting health care professionals are crucial. This program is generalizable, portable, and scalable and forms a scaffolding on which others can build to test and train other specific skills, onboard new VUC providers, and assure quality control within VUC platforms.

### Appendices

- A. Virtual Urgent Care Visit SP Case.docx
- B. Personnel Responsibilities.docx
- C. SP Checklist.docx
- D. Program Evaluation.docx

All appendices are peer reviewed as integral parts of the Original Publication.

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Ethical Approval
Reported as not applicable.

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