COMMENTARY

Preparing Graduates for Telepharmacy and Telehealth: The Need for Tele-Education

Jeanne Frenzel, PharmD, PhD,a,b Andrea Porter, PharmDb,c

a North Dakota State University, School of Pharmacy, Fargo, North Dakota
b Editorial Board Member, American Journal of Pharmaceutical Education, Arlington, Virginia
c University of Wisconsin - Madison, School of Pharmacy, Madison, Wisconsin

Corresponding Author: Jeanne E. Frenzel, North Dakota State University, School of Pharmacy, Sudro Hall, 1401 Albrecht Boulevard, Fargo, ND 58102. Tel: 701-231-8546. Email: jeanne.frenzel@ndsu.edu

Submitted February 2, 2021; accepted February 10, 2021; ePublished February 2021

The global pandemic has dramatically impacted how pharmacists connect with patients. Telepharmacy and telehealth technologies are being used by pharmacists in a multitude of settings to positively influence the health and wellbeing of patients through these connections. Preparation of pharmacists to deliver services using telepharmacy and telehealth requires tele-education be included in pharmacy training. Tele-education topics may include introductions to telepharmacy and telehealth, audio and visual technologies, etiquette, law, reimbursement, and privacy and confidentiality. In many cases, the pandemic has required pharmacy programs to incorporate tele-education into curriculums quickly resulting in limited and under-developed experiences for students. Tele-education should be purposefully incorporated into curriculums through a combination of didactic, simulation, and experiential training. Programs should evaluate how tele-education is taught within their curriculum and share those experiences with the academy as it is likely pharmacy graduates will be providing patient care services using telepharmacy and telehealth.

Keywords: telepharmacy; telehealth; tele-education; patient care; audio-visual technologies; etiquette

The global pandemic has changed how pharmacists and other health care providers connect with patients.1 These changes to how we communicate and provide services to patients may not be temporary.1 Pharmacists must consider how to equip themselves to deliver services by quickly adopting telepharmacy and telehealth technologies to positively impact the health and wellbeing of their patients.1

Telepharmacy is defined by the Model State Pharmacy Act and Model Rules of the National Association of Boards of Pharmacy to be “the provision of pharmacist care by registered pharmacies and pharmacists located within the United States jurisdictions through the use of telecommunications or other technologies to patients or their agents at distances that are located within United States jurisdictions.”2 Telepharmacy services span from dispensing of medications and patient consultation to medication therapy management and disease state specific clinical consultation.2 Telepharmacy can benefit patient care in medically underserved rural and urban areas and in a variety of pharmacy settings, including community, ambulatory care, and inpatient pharmacy.2

Telehealth is broader than telepharmacy, is often multidisciplinary, and defined by the Health Resources and Services Administration of the United States Department of Health and Human Services as “the use of electronic information and telecommunication technologies to support and promote long-distance clinical health care, patient and professional health-related education, public health and health administration.”3 Through telehealth, pharmacists have been involved in diabetes, hypertension, lipid, anticoagulation, geriatric, human immunodeficiency virus, and hepatitis C management services.4,5 In the inpatient setting, critical care pharmacists have provided patient care remotely through antimicrobial stewardship programs and to multiple intensive care units in the same health system.9,10 Despite the advantages to telehealth including convenience, access, decreased costs, and reduced exposure to disease, health care providers have been slow to adopt telehealth services.11 This may be due to limited awareness of or training in telehealth.11

Ensuring pharmacists are telepharmacy and telehealth ready requires tele-education to be included in their pharmacy training, which would prepare graduates to provide these services in practice whether routine or emergent.11 It would also help graduates to recognize that telepharmacy and telehealth should be a standard of care; care that expands beyond the pharmacy walls to include new patient populations with different needs.4,11 An analysis of approximately 1,629,000 telehealth interactions from January 2020 to March 2020 as compared to the same time frame in 2019 found that telehealth visits increased by 50%.12 Most visits were for non-novel coronavirus (COVID-19) related issues with a significant increase in COVID-19 related visits during March.12 It is believed that this increase in the use of telehealth...
accompanied by regulatory changes will lead to long-term adoption of telehealth to increase access to care after the pandemic. Pharmacy graduates will need to be able to use telecommunication technologies, excel in patient-centered care and communication, learn acceptable telehealth professional conduct, and be able to develop a multidisciplinary provider network to be able to provide and be reimbursed for telehealth services.

Previously published articles documenting tele-education for pharmacy students are limited to simulations and focus on student perceptions of the effects of video on communication skills or their abilities to collaborate with different types of health profession student. These studies were not designed with student training in telehealth as the main focus. In 2016, the American Medical Association called for the development of core competencies in telemedicine to guide the tele-education and tele-precepting of medical students. Example tele-education programs often include a combination of didactic, simulation, and experiential training. Tele-education topics may include developing an understanding of telepharmacy and telehealth, uses and technologies, telepharmacy and telehealth etiquette, laws governing practices, reimbursement, and guidelines for privacy and confidentiality.

Pharmacy programs teach students many practice skills including how to verify a prescription or medication order, provide patient consultation and education, conduct interprofessional interactions, and use electronic health records. These skills are needed to provide effective patient care in all in-person practice settings and, now more than ever, using telepharmacy and telehealth to facilitate remote patient and provider interactions. Foundational skills must be adapted to these new ways of practice.

For example, students are often first taught how to counsel patients in a community pharmacy setting. After time and practice, the skill is adapted for the inpatient setting with the addition of discharge counseling, often including more medications and more complex patients. These same community and inpatient skills when taught with a telehealth focus may also include using technology and asking the student to speak with family members or providers during the same encounter. Students should be taught how to adapt these skills to be provided via telecommunication technologies if they cannot be performed face-to-face. Patient and provider encounters using telecommunication technologies require the student to heavily focus on communication skills and nonverbal cues to ensure, for example, those being counseled understand how to use medications and instructions for follow-up.

There are different considerations when the provider and patient are in the same room compared to using telecommunication technologies. Although the advantages of telepharmacy and telehealth services are many including patient accessibility, reduced patient travel time, and cost savings, there are also disadvantages that students and pharmacists must be equipped to navigate. For example, telepharmacy and telehealth technology is costly and may provide operational challenges that pharmacy graduates must be prepared to troubleshoot. There may also be a subset of patients who prefer in-person services, may be hesitant to use technology to access pharmacy services, or simply cannot understand how to use these new services. Thus, students must be provided with experience to grow their skills sets to address the nuances of remote pharmacy services.

As an example, Haney and colleagues outline four steps leading to a successful telehealth encounter, which can easily be adapted to pharmacy student training. In the first phase, the provider should prepare for the encounter by checking and practicing with equipment, procuring a quiet place for the encounter to occur, and choosing a wardrobe appropriate for videoconferencing, avoiding prints, bright colors, ill-fitting clothing, and distracting jewelry. During the second phase, termed beginning, the provider should make sure the encounter space for themselves and the patient is free from distraction, private, and comfortable. The provider should ask permission to conduct the encounter and introduce all those involved in the experience. During the third phase, termed conducting, the provider ensures that all participants can be seen and heard. It is important for the provider to act as if they would during a face-to-face encounter. Eye contact is important and looking at notes or away for the camera can be perceived as lack of interest in or engagement with the patient. In the fourth and final phase, the provider should summarize the telehealth encounter verbally and through written documentation and a plan for follow-up, if needed, should be determined.

With the pandemic, many pharmacy programs have implemented telepharmacy and telehealth simulations out of necessity rather than through normal curriculum change processes, which undergo thoughtful curriculum design. Training in telepharmacy and telehealth should be purposefully incorporated throughout the curriculum and should include didactic, skills-based laboratory simulation, and experiential opportunities for students to learn how to improve patient outcomes through virtual interactions. These opportunities are likely to be spread across multiple courses and years of a curriculum. For example, many components of tele-education fit nicely into the didactic social and administrative pharmacy and pharmacy practice curriculum, especially related to reimbursement, policies, and communication. However, in order for students to feel comfortable with telepharmacy and telehealth, hands-on practice through simulation is needed. Lastly, it is important for students to experience telepharmacy and telehealth in pharmacy practice through experiential learning, whether it be in the introductory or advanced pharmacy practice experiences. Intentional
coordination with an institution’s curriculum committee or a taskforce should be undertaken to ensure these knowledge and skills are taught in a purposeful, longitudinal, and progressive manner.

There is a paucity of evidence about how best to incorporate tele-education into a curriculum. The pandemic has forced pharmacy programs to incorporate tele-education into curriculums rapidly. Tele-education should be purposefully and thoroughly incorporated into curriculums through didactic, simulation, and experiential training. Topics may include use of telecommunication technologies, patient and provider communication, reimbursement for services, policies, and preparation of both the patient and the pharmacists for remote encounters. It is now time for programs to evaluate what tele-education focused knowledge and skills they are teaching and where those skills are located throughout the curriculum. Programs should find and fill any gaps with robust and well-designed student experiences. In addition, programs should share their development and assessment of these experiences to determine best practices across the academy. After the pandemic is over, it is very likely that pharmacists will be providing patient care services through telepharmacy and telehealth and our pharmacy graduates need to be prepared to practice in these settings.

REFERENCES
1. Crilley P, Kayali R. A systematic review of randomized controlled trials of telehealth and digital technology use by community pharmacists to improve public health. Pharmacy. 2020 8(3):137. doi:10.3390/pharmacy8030137
2. Alexander E, Butler C, Darr A, et al. ASHP statement on telepharmacy. Am J Health-Syst Pharm. 2017 74(9):e236-e241. doi:10.2146/ajhp170039
3. Telemedicine and Telehealth | HealthIT.gov. https://www.healthit.gov/topic/health-it-health-care-settings/telemedicine-and-telehealth. Published September 24, 2020. Accessed January 28, 2021.
4. Omboni S, Tenti M, Coronetti C. Physician–pharmacist collaborative practice and telehealth may transform hypertension management. J Hum Hypertens. 2019 33(3):177-187. doi:10.1038/s41371-018-0147-x
5. Badowski ME, Walker S, Bacchus S, et al. Providing comprehensive medication management in telehealth. Pharmacotherapy. 2018 38(2):e7-e16. doi:https://doi.org/10.1002/pha.2071
6. Bellfi L, Young J, Pratt L, Patel A, Mei D, Chan J. Sustained virologic response with peginterferon plus ribavirin in the Illinois prison population infected with hepatitis C virus through telemedicine: a retrospective chart review: 29. Pharmacotherapy. 2016 36(12).
7. Shane-McWhorter L, Lenert L, Petersen M, et al. The Utah remote monitoring project: Improving health care one patient at a time. Diabetes Technol Ther. 2014 16(10):653-660. doi:10.1089/dia.2014.0045
8. McFarland M, Davis K, Wallace J, et al. Use of home telehealth monitoring with active medication therapy management by clinical pharmacists in veterans with poorly controlled type 2 diabetes mellitus. Pharmacotherapy. 2012 32(5):420-426. doi:https://doi.org/10.1002/j.1875-9114.2011.01038.x
9. Shafiee Hanjani L, Caffery L, Freeman C, Peeters G, Peel N. A scoping review of the use and impact of telehealth mediation reviews. Res Social Adm Pharm. 2020 16(8):1140-1153. doi:10.1016/j.sapharm.2019.12.014
10. Kosmisky D, Everhart S, Griffiths C. Implementation, evolution and impact of ICU telepharmacy services across a health care system. Hosp Pharm. 2019 54(4):223-240. doi:10.1177/0018578719851720
11. Smith A, Thomas E, Snoswell C, et al. Telehealth for global emergencies: Implications for coronavirus disease 2019 (COVID-19). J Telemed Telecare. 2020 26(5):309-313. doi:10.1177/1357633X20916567
12. Koonin LM, Hoots B, Tsang CA, et al. Trends in the use of telehealth during the emergence of the COVID-19 pandemic — United States, January–March 2020. MMWR Morb Mortal Wkly Rep. 2020 69(43):1595-1599. doi:10.15585/mmwr.mm6943a3
13. Skoy E, Eukel H, Frenzel J, Schmitz T. Performance and perceptions: Evaluation of pharmacy students’ consultation via telepharmacy. J Pharm Tech. 2015 31(4):155-160. doi:10.1177/8755122514568123
14. Beal J, Weber Z, Isacs A, Illingworth Plake K, Zillich A, Woodyard J. Pharmacy student preferences and perceptions of in-person versus video evaluations in pharmacy skills-based laboratory courses. AJPE. Published online August 19, 2020;ajpe7976. doi:10.5688/ajpe7976
15. Begley K, O’Brien K, Packard K, et al. Impact of interprofessional telehealth case activities on students’ perceptions of their collaborative care abilities. AJPE. 2019 83(4):6880. Article 6880. doi:10.5688/ajpe6880
16. Rutledge C, Kott K, Schweickert P, Poston R, Fowler C, Haney T. Telehealth and ehealth in nurse practitioner training: Current perspectives. Adv Med Educ Pract. 2017 8:399-409. doi:10.2147/AMEP.S116071
17. Proceedings of the 2016 annual meeting of the American Medical Association house of delegates. https://www.ama-assn.org/sites/ama-assn.org/files/corp/media-browser/public/about-ama/councils/Council%20Reports/council-on-medical-education/a16-cme-reports-v2.pdf Published 2016. Accessed January 28, 2021.
18. Poudel A, Nissen L. Telepharmacy: A pharmacist’s perspective on the clinical benefits and challenges. Integr Pharm Res Pract. 2016 5:75-82. doi:10.2147/IPRP.S101685
19. Chwistek M. “Are you wearing your white coat?”: Telemedicine in the time of pandemic. JAMA. 2020 324(2):149. doi:10.1001/jama.2020.10619

20. Haney T, Kott K, Fowler C. Telehealth etiquette in home healthcare: The key to a successful visit. Home Healthcare Now. 2015 33(5):254-259. doi:10.1097/NHH.0000000000000228