

Tele-Allergy: Here Today and Rapidly Advancing



Jay M. Portnoy, MD^a, and Tania Elliott, MD^b *Kansas City, Mo; and New York, NY*

Telemedicine is a growing trend that combines the use of computers with 2-way video conferencing to see patients. It can be used to provide allergy services to patients when the provider and patient are separated either by distance or by time. Temporal separation is commonly referred to as asynchronous meaning that the patient and provider are not necessarily connected to the communication system at the same time. Such services can include remote monitoring of inhaler use, asthma symptoms using tools such as the Asthma Control Test, and even peak flows or forced expiratory volume in 1 second if the patient has access to the appropriate equipment.¹ Asynchronous communication via patient portals and secure messaging is receiving increasing acceptance over synchronous modes such as telephone calls because it avoids the inconvenience of “phone tag,” and because it can leave a record of the conversation in an electronic medical record.

Synchronous visits are considered to be a replacement for in-person encounters when the separation is geographic. Synchronous telemedicine visits are often referred to as virtual visits. These can be either direct-to-consumer (DTC) or facilitated visits. DTC visits are useful when the patient wants to be seen using his or her own device and at a time and location of his or her choice. A key distinguishing feature of a DTC visit is that it is initiated by the patient as opposed to the provider. It can be on-demand or scheduled in advance. The advantage of DTC is the flexibility of venues for encounters. The disadvantage is that the physical examination is limited without the use of peripheral devices such as a stethoscope or otoscope, although these are currently commercially available for purchase by consumers. Documentation of a physical examination is required for billing purposes. Most DTC telemedicine companies will bill health plans as a level 2 encounter and are subject to health plan audits. There are also direct contracts with employers and direct pay options. A physical examination via video without the use of peripheral devices should include, but is not limited to, general observation and whether the patient is in distress,

presence of diaphoresis or pallor, respiratory rate, use of accessory respiratory muscles for breathing, observation of the oropharynx, and palpation of the sinuses (with the help of the patient and his or her pain response). Most patients have a thermometer at home, so the additional vital sign of temperature can be taken. Patients who own wearable devices can also report their heart rate.

Facilitated visits require a patient to travel to a clinic (usually that is closer than where the provider is located) where a facilitator (usually a nurse or respiratory therapist) enables the provider to do a physical examination using digital equipment. This type of visit serves as a replacement for an in-person visit and consequently can be billed using Current Procedural Terminology (CPT) codes.² Depending on state regulations, such visits are covered by health plans the same as in-person visits and in many cases the reimbursement is the same.

Facilitated visits have been shown to deliver outcomes that are at least as good as in-person visits for asthma care.^{3,4} In addition, inpatient consultation to diagnose and treat drug allergy has been described using facilitated visits.⁵ Patients who are seen by telemedicine report satisfaction that is at least as high if not higher than those who are seen in-person.² Given these encouraging reports, it is inevitable that facilitated visits for allergy services will receive increased use over time. Remote monitoring device use for asthma is quickly gaining traction⁶ and the new CPT code 99091 reimburses for remote monitoring.⁷ Specifically, the code can be billed for “time spent on collection and interpretation of health data that is generated by a patient remotely.”⁸

This rapidly growing space will shift the way providers approach an asthmatic patient. Care will likely consist of a hybrid of in-person or facilitated visits, along with remote monitoring and management. The burden of frequent in-person visits both on the patient and the provider, particularly in the setting rising overhead costs, will continue to lessen over time.

In the current issue of *JACI In Practice*, Waibel et al updated their earlier experience with telemedicine (TM)⁹ by describing the characteristics of 423 facilitated telemedicine visits between 2016 and 2017 with providers located at a military hospital-based allergy clinic and patients located at numerous locations across Europe.¹⁰ Of these, 65% were new consultations dispelling the myth that only follow-up patients can be seen effectively by telemedicine. The ages ranged from pediatric (28%) to adults (72%). In addition, 35% had rhinitis, 24% had asthma, and 10% had food allergy that is typical for an allergy practice. Not surprisingly, new patients were more likely to have tests ordered and medication prescribed than follow-ups. During the 2 years of the study, less than 25% of new and 10% of follow-up patients requested an in-person visit. In addition, 98% of patients who filled out a survey were highly satisfied with their telemedicine visit. Telemedicine patients saved an average of

^aDivision of Medical Informatics and Telemedicine, Children's Mercy Hospital, Kansas City, Mo

^bDivision of Infectious Diseases and Immunology, NYU Langone Health, New York, NY

No funding was received for this work.

Conflicts of interest: J. M. Portnoy declares no relevant conflicts of interest. T. Elliott holds stock in Doctor on Demand, Inc.

Received for publication November 4, 2018; accepted for publication November 5, 2018.

Corresponding author: Jay M. Portnoy, MD, Children's Mercy Hospital, 2401 Gillham Road, Kansas City, MO 64108. E-mail: jportnoy@cmh.edu.

J Allergy Clin Immunol Pract 2019;7:1022-3.
2213-2198

© 2018 American Academy of Allergy, Asthma & Immunology
<https://doi.org/10.1016/j.jaip.2018.11.004>

\$485 in travel expenses, 438 miles of driving, and 2.3 days of work or school per visit.

Given the large geographic area that needs to be served by a small number of allergists in the military, the need to provide TM services is clear. That need may be just as great in the United States where maldistribution of specialists often creates a shortage in underserved areas. Patients who live in rural communities or in urban cores often have difficulty seeing an allergy specialist. This is a situation in which TM is most useful. Not only does the use of TM save time and expense for patients, it also increases the availability of patients for allergists who live in overserved areas where competition is intense. By connecting allergists in overserved areas with patients in underserved ones, the maldistribution problem can be solved, and patients can receive the high-quality allergy care that they deserve.

Currently, the greatest barrier to the widespread use of TM is lack of experience among practicing allergists.¹¹ It is always difficult to do something new regardless of its potential benefits. For that reason, it is important that allergy specialty societies provide education to members about how to set up and use TM in practice. To that end, the American College of Allergy, Asthma & Immunology (ACAAI) recently published a position paper on the use of TM and more are in development.¹²

To get started, it helps to work with established platforms such as American Well and Teledoc rather than trying to create a *de novo* TM system.¹³ These services offer startup solutions that can be accessed by allergists to try out the new technology with a minimum of effort and investment.

The widespread adoption of TM will require new allergists to be trained in its use. For that reason, the allergy/immunology residency review committee (RRC) of the Accreditation Council for Graduate Medical Education (ACGME) should consider including use of this technology in its program requirements. Allergy training programs would then need to include faculty that see patients using TM. The American Board of Allergy & Immunology (ABAI) might also consider including a few questions related to the use of TM on its board certification examination. This is of particular importance as more remote monitoring devices and platforms reach the market. Allergists will need to understand how to incorporate new data sets and communication platforms into their workflow.

With proper training, understanding of state TM regulations, and advocacy on the part of specialty societies, the field

of allergy/immunology could lead the way toward providing high-quality allergy care to patients across the globe. The study by Weibel has demonstrated how, in a real-world setting, telemedicine can overcome the barriers of distance by connecting allergy specialists with patients electronically. The technology has matured, and regulations are in place. It is now time for the rest of us to use that experience to connect with our patients.

REFERENCES

1. Chongmelaxme B, Lee S, Dhippayom T, Saokaew S, Chaikunapruk N, Dilokthornsakul P. The effects of telemedicine on asthma control and patients' quality of life in adults: a systematic review and meta-analysis. *J Allergy Clin Immunol Pract* 2019;7:199-216.e11.
2. Taylor L, Capling H, Portnoy JM. Administering a telemedicine program. *Curr Allergy Asthma Rep* 2018;18:57.
3. Zhao J, Zhai YK, Zhu WJ, Sun DX. Effectiveness of telemedicine for controlling asthma symptoms: a systematic review and meta-analysis. *Telemed J E Health* 2015;21:484-92.
4. Portnoy JM, Waller M, De Lurgio S, Dinakar C. Telemedicine is as effective as in-person visits for patients with asthma. *Ann Allergy Asthma Immunol* 2016; 117:241-5.
5. Staicu ML, Holly AM, Conn KM, Ramsey A. The use of telemedicine for penicillin allergy skin testing. *J Allergy Clin Immunol Pract* 2018;6: 2033-40.
6. Pilcher J, Shirlcliffe P, Patel M, McKinstry S, Cripps T, Weatherall M, et al. Three-month validation of a turbuhaler electronic monitoring device: implications for asthma clinical trial use. *BMJ Open Respir Res* 2015;2:e000097.
7. MLN Matters. Summary of Policies in the Calendar Year (CY) 2018 Medicare Physician Fee Schedule (MPFS) Final Rule, Telehealth Originating Site Facility Fee Payment Amount and Telehealth Services List, and CT Modifier Reduction List. 2018. Available from: <https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/MM10393.pdf>. Accessed November 26, 2018.
8. Baker A. 2013 Policy Year MLR Rebates Exceed \$330 million: Cromwell & Moring; 2014. Available from: <https://www.cmhealthlaw.com/2017/11/new-reimbursement-for-remote-patient-monitoring-and-telemedicine/>. Accessed November 2, 2018.
9. Waibel KH. Synchronous telehealth for outpatient allergy consultations: a 2-year regional experience. *Ann Allergy Asthma Immunol* 2016;116: 571-575.e1.
10. Waibel KH, Bickel RA, Brown T. Outcomes from a regional synchronous teleallergy service. *J Allergy Clin Immunol Pract* 2019;7:1017-21.
11. Shih J, Portnoy J. Tips for seeing patients via telemedicine. *Curr Allergy Asthma Rep* 2018;18:50.
12. Elliott T, Shih J, Dinakar C, Portnoy J, Fineman S. American College of Allergy, Asthma & Immunology position paper on the use of telemedicine for allergists. *Ann Allergy Asthma Immunol* 2017;119:512-7.
13. Baker J, Stanley A. Telemedicine technology: a review of services, equipment, and other aspects. *Curr Allergy Asthma Rep* 2018;18:60.