



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

EDITORIAL

Virtual Dr Amy Goes to Clinic



I saw my last patient in person in my multidisciplinary spina bifida clinic on March 9, 2020. Knowing that I would need to be protected from exposure to the severe acute respiratory syndrome coronavirus 2 virus due to my high risk of mortality if I were to get coronavirus disease 2019, in early March I worked with our telehealth team to create a virtual version of me that could go to clinic. I was incredibly lucky to get everything set up for virtual Dr Amy before it became abundantly clear that telehealth was going to boom in a big way for everyone.¹ At the time, there were not yet any cases identified locally, so we had some time to plan. The telehealth team provided a wheeled cart with an iPad^a on it (fig 1). As long as a trainee staffed the patients with me, I could be virtual while the children were in clinic.

When children come to our multidisciplinary clinic, they stay in 1 examination room while providers rotate between the rooms. Each child can be scheduled to see multiple physicians and other team members in a single afternoon. This was the case for 9-year-old Andy (name changed), who I had seen with the resident about 20 minutes before he was seeing our occupational therapist, Wendy. While Wendy was in the examination room with Andy, a loud metallic clanking noise was heard nearby. Andy said, “Oh no, I think Dr Amy fell over, we should go help her.” Andy, a kind and loving child who makes friends with everyone, had extended his empathic nature to the wheeled cart. He anthropomorphized virtual Dr Amy and was worried about my actual well-being. For him, it was easy to extend his reality to see me as myself, a doctor he had known nearly his whole life, on the iPad.

Some children were excited, and a few were even enthralled, that their doctor was on the video. Yes, some told me a robot would be cooler, and it would be! Some children were taken with the image of themselves in the corner of the screen. Some children really wanted to move the cart themselves so they could be in charge. And a handful of children extended their realities to incorporate virtual Dr Amy as actual Dr Amy. One such child, aged 3, offered me part of her peanut butter and jelly sandwich after I told her how much I love peanut butter and jelly. She very sweetly slid off the examination table and walked it over to the cart and held up her sandwich to the virtual version of me. In that moment, I learned about her social development, her disposition, her motor skills, and her safety awareness, all of which are important parts of my evaluation. Another child, 16 months old with a speech delay, lifted up her arms and opened and closed her fists in the universal sign for pick me up. “Oh Sweetie,” I said, “I

can’t pick you up right now, but Mommy can.” She was more than content with that option and when we waved bye-bye as virtual Dr Amy was being wheeled out of the room, she gave a wave, as little ones often do, to herself, palm facing toward her instead of outwards toward others.

In addition to virtual Dr Amy attending clinic, I conduct typical telehealth appointments during which the patients and families are in their homes. All of the children I care for have disabilities, so it is incredibly valuable for me to be able to see them perform activities in their own environments.² I can actually see the barriers that might be present or how a simple adaptation to their kitchen table setup might make things easier for the child. And, of course, it is entirely fun to meet the children’s pets. I have met dogs and cats, obviously, but also turtles and fish sloshed around in their bowls—a child with a bilateral Trendelenburg gait carrying a fishbowl is a recipe for potential fish disaster. Siblings often love to join and sometimes spill the beans about how there is a big mess in the other room, much to their mothers’ chagrin.

I am honored that families trust me enough to having me come into their homes on video, especially the ones who do not have a lot of resources. Occasionally I see the chaos of a large number of people living in a small space. Sometimes it becomes apparent to me that the family is food insecure and that I could help by connecting them with resources or prescribing nutritional supplementation for their child with a history of dysphagia from their Chiari malformation. Seeing children in their homes provides me a window into their lives.³ The children tend to be more comfortable than at the clinic so are more participatory, especially the little ones. The examination I do fully by observation is not the same as the one I would do if we were conducting the visit in person.⁴ However, it is better in some ways, providing me with different information. As a physician who focuses on functioning, being able to evaluate functioning in a child’s home, even if only by video, is amazing.

Although most of the children are perfectly fine having me come by to see them as virtual Dr Amy or via telehealth, and their parents are understanding of the necessity of the setup, I miss holding my youngest patients in my arms, playing and giggling with the little ones, having the older children measure their height against mine, (it is a spectacular joy for many of my patients when they are finally taller than I am, an easy feat since I am not tall) and providing the hands-on care myself. I miss the high-fives, the fist pumps, and the snuggles. I miss cheering on my patients in person as they demonstrate new skills. I miss being able to hand the mom a tissue or give her a shoulder squeeze or hug when discussing sensitive topics. I miss tired children laying their heads

Disclosures: none.



Figure 1 Virtual Dr. Amy in clinic at UPMC Children's Hospital of Pittsburgh.

in my lap. I miss the cutie-patooties who just need to play with my hair, although I must say I could do without their sticky fingers. I miss all of it.

I did not become a pediatric rehabilitation medicine physician to provide care by video, but the coronavirus disease 2019 pandemic made it necessary to do so. I am grateful that I was trained to listen and to be a keen observer of movement and compensatory strategies. I am grateful that virtual Dr Amy, with the help of our clinical team, can continue to provide care for children with disabilities. I am grateful that we now have

telehealth capabilities to reach families for whom traveling to clinic is burdensome. I am grateful we have this option to improve access. Most of all, I am grateful for the vaccine that will eventually make it possible for me to return to clinic, to my patients, and to my passion.

Supplier

a. iPad; Apple, Inc.

Keywords

COVID-19; Pandemics; Rehabilitation; Telemedicine.

Amy Houtrow, MD, PhD, MPH

Department of Physical Medicine and Rehabilitation, University of Pittsburgh School of Medicine, Pittsburgh, PA

Department of Pediatrics, University of Pittsburgh School of Medicine, Pittsburgh, PA

Corresponding author: Amy Houtrow, MD, PhD, MPH, Department of Physical Medicine & Rehabilitation, University of Pittsburgh School of Medicine, 4401 Penn Ave, Pittsburgh, PA 15224. *E-mail address:* houtrow@upmc.edu.

References

1. Dietzen A, Ide W, Pavone L. Telehealth in pediatric rehabilitation medicine: a survey of clinician reported utilization and experience. *J Pediatr Rehabil Med* 2020;13:281-8.
2. Rabatin AE, Lynch ME, Severson MC, Brandenburg JE, Driscoll SW. Pediatric telerehabilitation medicine: making your virtual visits efficient, effective and fun. *J Pediatr Rehabil Med* 2020;13:355-70.
3. Rosenbaum PL, Silva M, Camden C. Let's not go back to 'normal'! lessons from COVID-19 for professionals working in childhood disability. *Disabil Rehabil* 2020 Dec 23 [Epub ahead of print].
4. Laskowski ER, Johnson SE, Shelerud RA, et al. The telemedicine musculoskeletal examination. *Mayo Clin Proc* 2020;95:1715-31.