

The New Reality Is Virtual

William Carroll¹

¹New York University School of Medicine

April 25, 2022

The New Reality is Virtual

William L. Carroll, MD*

Perlmutter Cancer Center, NYU-Langone Medical Center, New York, New York

*Correspondence to: William L. Carroll, MD Division of Pediatric Hematology-Oncology, Departments of Pediatrics and Pathology, Perlmutter Cancer Center, NYU-Langone Medical Center, 560 East First Avenue, Smilow Room 1211, New York, NY, 10016

E-mail: William.carroll@nyulangone.org

The COVID-19 pandemic led to a precipitous and severe disruption to healthcare delivery and consumption worldwide. Ongoing analyses (and debate) about the effectiveness of early response measures will continue, but there is no doubt the pandemic brought about dramatic changes to health care, some of which are likely to last.

The health care industry is built on a model of in-person visits between patients and providers, which is reinforced by economic incentives. However, tremendous pressure was put on health care systems to pivot quickly from in-person visits given the explosive spread of COVID-19. Non-essential in-person visits and elective procedures were reduced, or paused, allowing hospitals to marshal capacity for a surge in COVID-19 cases and to mitigate risk of infection to patients and staff. Patients deferred care, in many cases with negative results¹. Outpatient in-person volume plummeted over 40%².

In any crisis, opportunities emerge and telehealth visits surged providing a safe alternative to in-person visits³. Telehealth or virtual visits are not novel and has been in place since the mid 1990's especially for rural care but regulation and reimbursement limited its application⁴. With changes in payer reimbursement, telehealth visits increased dramatically. Early in the pandemic up to a third of office visits were through virtual care. This trend was most pronounced in primary care and mental health/psychiatry but whether it can be applied safely to patients with complex conditions requiring therapy with medications associated with a narrow therapeutic index like cancer is less certain.

In this issue of *Pediatric Blood and Cancer* Rabinowicz et al, raise the question of how essential are in-person visits during maintenance therapy for B acute lymphoblastic leukemia (ALL), the most common childhood cancer⁵. The authors conducted a retrospective study to determine if an in-person visit was essential to detect an abnormal finding on physical examination especially if it resulted in a change in medical management. They excluded patients during the first three months of maintenance when more frequent laboratory evaluations are needed to titrate medication dosages, when children required intrathecal or intravenous therapy, or when other specialists saw patients. All others could be considered candidates for virtual care delivery. Seventy-five children with 240 routine visits were analyzed. Fourteen were associated with a new abnormal finding and in only six cases was a direct physical examination deemed required for

diagnosis. Only three such visits resulted in a change in medical management. Based on these results, the authors argue, justifiably, that there is a large potential for virtual visits during maintenance treatment.

The results of this study are not surprising especially as most patients, including the fourteen with new findings on exam in this report, will have symptoms (not analyzed in the study) alerting parents and providers to new medical conditions warranting in-person visits. Most ALL treatment protocols mandate physical examination with routine laboratory monitoring on a monthly basis and it is hard to justify more frequent intervals in the absence of follow up medication adjustments or specific problems. There might a subset of families with particular hardships related to travel where the in-person interval can be extended further. COG protocols now use every 12 week vincristine/decadron pulses with intrathecal methotrexate administration. Home phlebotomy services have been piloted to obtain laboratory blood draws and perform port flushes⁶. Virtual visits can be used to ascertain any side effects, adjust medications, and emphasize compliance. Another positive aspect of the pandemic is the widespread adaption of at home viral testing and there is no doubt that COVID-19 has changed the future of in-home medical diagnostics.

The authors provided a thoughtful, balanced analyses and discussion of the pros, including decreasing the burden of care (e.g. school absences, time off work for parents, and transportation costs) and cons of virtual visits. Two important considerations are warranted when deciding on frequency of virtual vs. in-person visits. First, a “digital divide” is well described where limited access to high-speed internet services, lower socioeconomic status and limited English proficiency are barriers to access. Second, medical monitoring is only one part of a broader strategy in pediatric cancer care to decrease the physical, neuropsychological, educational and financial burden of cancer on children and their families. Thus, children and their families may routinely interact with physicians, nurses, social workers, physical therapists, child life therapists, teachers and psychologists as part of a personalized care model during clinic visits. Such multidisciplinary services may be difficult to replicate through virtual care delivery.

It is also time to consider other aspects of digital technology that can enhance the health of our patients and their families⁷. Mobile health is especially attractive as the overwhelming majority of adults and adolescents have access to a smartphone⁸. Applications such as MyChart (EPIC) allows patients and parents to view their electronic record in real time and interact with providers. Multiple studies have shown that customized, interactive apps can also be used to augment education about disease and management, manage side effects such as nausea and vomiting, and promote medication adherence^{9,10}. It is time to accelerate the implementation of these tools in every day practice.

The article by Rabinowicz and colleagues should motivate us to consider implementing and expanding adaptive strategies developed in response to the COVID-19 pandemic to improve patient care for children and their families with cancer. Virtual visits can never completely replace in-person visits where emotional bonds and trust between providers and patients are required to promote optimal outcomes. However after such relationships are cemented early in treatment virtual visits can reduce the burden of therapy without sacrificing quality.

1. Quarello P, Ferrari A, Mascarini M, et al. Diagnostic Delay in Adolescents with Cancer During COVID-19 Pandemic: A New Price for Our Patients to Pay. *J Adolesc Young Adult Oncol*. 2021.
2. Dupraz J, Le Pogam MA, Peytremann-Bridevaux I. Early impact of the COVID-19 pandemic on in-person outpatient care utilisation: a rapid review. *BMJ Open*. 2022;12(3):e056086.
3. Uscher-Pines L, McCullough C, Dworsky MS, et al. Use of Telehealth Across Pediatric Subspecialties Before and During the COVID-19 Pandemic. *JAMA Netw Open*. 2022;5(3):e224759.
4. Werner RM, Glied SA. Covid-Induced Changes in Health Care Delivery - Can They Last? *N Engl J Med*. 2021;385(10):868-870.
5. Rabinowicz R, Maguire B, Hitzler J, Punnett A. How Essential are In-Person Clinic Visits During Maintenance Treatment of Children with Acute Lymphoblastic Leukemia? *Pediatric Blood & Cancer*. 2022.

6. Sisler I, Cohen D, Skinner LA, Aiken C, Laver J. Feasibility of a Pilot Home Phlebotomy Program for Pediatric Hematology/Oncology Patients During the COVID-19 Pandemic. *J Pediatr Hematol Oncol.* 2022;44(1):e185-e187.
7. Keesara S, Jonas A, Schulman K. Covid-19 and Health Care's Digital Revolution. *N Engl J Med.* 2020;382(23):e82.
8. Nieves Soriano BJ, Uribe-Toril J, Ruiz-Real JL, Parron-Carreno T. Pediatric apps: what are they for? A scoping review. *Eur J Pediatr.* 2022;181(4):1321-1327.
9. Heneghan MB, Hussain T, Barrera L, et al. Access to Technology and Preferences for an mHealth Intervention to Promote Medication Adherence in Pediatric Acute Lymphoblastic Leukemia: Approach Leveraging Behavior Change Techniques. *J Med Internet Res.* 2021;23(2):e24893.
10. Semerci R, Akgun Kostak M, Taskin C. The effect of using an interactive mobile application for the management of chemotherapy-induced nausea and vomiting in children: Randomized controlled study. *Eur J Oncol Nurs.* 2022;58:102121.