

A Patient-Centric Approach to Designing a Pediatric Virtual Care Program

How Nemours Children's Health System is reimagining pediatric care through hybrid care strategies

Nemours Children's Health System is one of the nation's largest integrated pediatric health systems and is internationally recognized for its expert care services. Nemours operates 90 clinical brick-and-mortar locations in Florida, Georgia, Delaware, Pennsylvania, and New Jersey, including two freestanding children's hospitals in Wilmington, Del., and Orlando, Fla. A strategic Amwell partner for nearly six years, Nemours has long been a pioneer in virtual care, finding new and innovative ways to create a seamless, integrated experience for patients and families.

In 2015, Nemours partnered with Amwell to launch Nemours CareConnect, a direct-to-consumer urgent care telehealth program. The launch of CareConnect marked the start of an ongoing journey to incorporate telehealth solutions across the full continuum of care and to streamline and expand digital access for patients and families. The health system has since expanded CareConnect into primary and specialty care and has integrated CareConnect into a mobile app that combines the health system's digital tools, technologies, and assets into one family-friendly experience. As Nemours looks to the future, the health system continues to expand its ability to provide care to families wherever they are and is developing innovative hybrid models that combine telehealth with in-person care.

An Integrated, Patient-Centric Approach to Digital Platforms

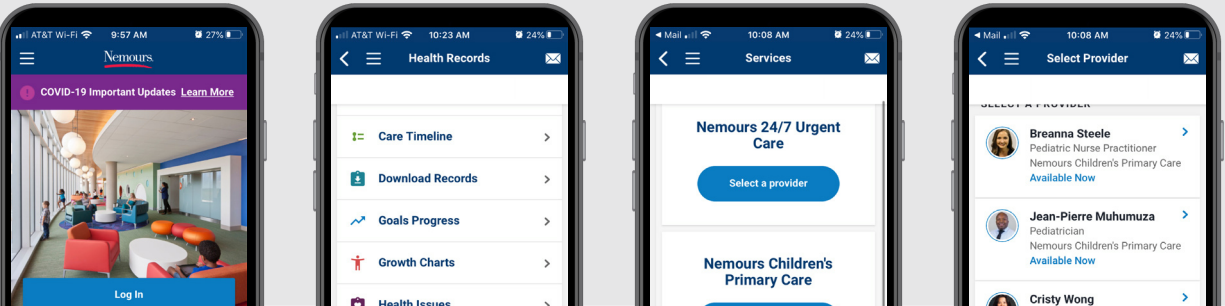
To build a unified experience for patients and families, Nemours combined its telehealth app with its other digital platforms using Amwell's software development kit.

Nemours CareConnect launched in 2015 as a white-label application. Powered by Amwell, the app allowed Nemours to direct its patients and families to a single app to have a video visit. Over time, Nemours saw the need to combine all its digital assets into a single, unified experience. The health system sought to create a digital experience that would engage and motivate families, make care more accessible, and streamline consumer transactions. To achieve these objectives, Nemours mobilized a group of clinicians, educators, editors, designers, programmers, and researchers in 2019 to collaborate on a solution that addressed every aspect of healthcare delivery. In order to build a truly comprehensive solution, the team needed to rethink the entire care infrastructure and place patients at the heart of it.

The first step in their process was to understand the patient experience from start to finish. The team compiled consumer insights and spoke with clinicians

about specific clinical pathways. Then, they began to plan out how they could build a digital tool encapsulating all these thoughts and processes. This plan resulted in the development of the Nemours app, which combines Nemours' patient portal, telehealth program, patient education content, and other features in one solution. Nemours used Amwell's software development kit (SDK) to integrate CareConnect into the Nemours app, removing the need for a separate download.

By listening to the Nemours clinicians and patients, the technology team was able to design a fully integrated solution built for ease of use. The Nemours app has received very positive reviews, with an average 4.9-star rating in the app store. It successfully brings together Nemours' urgent care, specialty and primary care telehealth programs, and all other healthcare services into one convenient, easy-to-use location for patients.



The image shows four smartphone screens displaying the Nemours app interface. The first screen shows the 'Patient Portal' with a 'COVID-19 Important Updates' banner and a 'Log In' button. The second screen shows 'Health Records' with options for 'Care Timeline', 'Download Records', 'Goals Progress', and 'Growth Charts'. The third screen shows 'Services' with a 'Nemours 24/7 Urgent Care' section and a 'Select a provider' button. The fourth screen shows 'Select Provider' with a list of providers including Breanna Steele, Jean-Pierre Muhumuza, and Cristy Wong.

Patient Portal	Telehealth	KidsHealth Education	Monitoring Tools
Nemours uses Epic for its electronic health record, and they integrated key components of the MyChart patient portal into the Nemours app so patients can schedule appointments, message clinicians, view test results, request refills, and fill out check-in questionnaires.	Nemours used Amwell's software development kit (SDK) to integrate CareConnect into the Nemours app, removing the need for a separate download. Families can access both on-demand and scheduled telehealth visits and view after-visit summaries — all from the health system's core application.	For over 25 years, Nemours has published health content for patients and families on KidsHealth.org. This content is integrated into the app. Based on a diagnosis found within a patient's electronic health record, the app populates tailored content, such as instructional videos or medical advice.	Among other custom features, a monitoring tool embedded in the app helps families and clinicians track chronic conditions like asthma between visits. The data collected by this tool informs clinicians about the pain points and challenges the patient faces in managing the condition, providing an additional layer of context for the clinician.

An Evolving On-Demand Urgent Care Pediatric Program

When Nemours launched CareConnect in 2015, it was a tool primarily for on-demand urgent care visits accessible through the white-label application. In the years since launch, Nemours has identified new workflows across the health system where on-demand virtual care could be integrated to enhance a patient's care delivery journey.

Nemours leveraged Amwell's urgent care module to enable CareConnect's six pediatricians to see patients for on-demand urgent care needs. Since launch, the number of pediatricians on CareConnect has grown to nine, with additional coverage during high-demand time periods. The CareConnect team is licensed in seven states, which allows Nemours to serve patients across state lines. With this dedicated on-demand telehealth team in place, Nemours can provide virtual care 24/7, originally through the white-label app, and now through the Nemours app.

Since launch, Nemours has found new ways to weave telehealth into workflows across the health system. For example, Nemours integrated CareConnect into its follow-up care after emergency room (ER) visits and hospital stays. "We know when patients and parents are discharged from hospitals and ERs, they're stressed and they're not always hearing exactly what the physician is saying," says Dr. Joanne Murren-Boezem, medical director for the Nemours CareConnect 24/7 on-demand urgent care program. "For the first 48 hours after discharge, they can see the on-demand team as an extension of their ER care. It is an opportunity to get questions answered, talk about labs or medications, and for the remote physician to provide reassurance." Similarly, Nemours CareConnect providers are available before a patient comes in for a postoperative visit, providing more access and additional reassurance for patients and families.

CareConnect is also integrated with Nemours' on-call nurse triage lines. The Nemours team performed a review of nurse triage referrals and was able to identify

opportunities to guide patients to a virtual visit, leading to the integration of telehealth as a disposition choice. The nursing staff has been trained on chief complaints suitable to be addressed via telehealth, how to instruct parents to use the telehealth platform, and how to conduct a warm handoff to a virtual pediatrician. The nurses also document in the electronic health record (EHR) and note any parent concerns, so when the telehealth clinician sees the patient virtually, they can quickly review all relevant information via the EHR to enhance the visit. CareConnect's growing role across the Nemours ecosystem has made clinical quality even more critical. The Nemours CareConnect team has always been focused on ensuring clinical quality during virtual visits through the use of:

Telehealth Clinical Guidelines: Nemours created guidelines for the most common urgent care complaints and ensured they were consistent with evidence-based pediatric standards of care. Nemours has processes in place to regularly reevaluate guidelines and update them based on new evidence.

Telehealth Smart Sets: Nemours created telehealth Smart Sets within its Epic EHR to ensure physicians are making the correct diagnosis, treating conditions that are appropriate for telehealth, and prescribing medications approved for use in telehealth visits. The Smart Sets include information such as chief complaints, diagnoses, treatment plans, and medication orders, and they are used in conjunction with the telehealth clinical guidelines to ensure better care and continuity.

Telehealth Documentation Templates: Documentation templates ensure that the Nemours team asks the right questions. “Since we are not in the same location with the parents and the patients, these clinical questions and documentation templates help support our medical decision-making,” says Dr. Murren-Boezem.

Antibiotic Stewardship, Allergies, and Medication Reconciliation: Antibiotic stewardship, allergy prescription rates, and medication reconciliation are

integrated into Nemours’ overarching quality program. Integrating these quality measures across the enterprise — including within CareConnect — allows Nemours to compare prescription rates across different delivery models, holding everyone to the same standard of care.

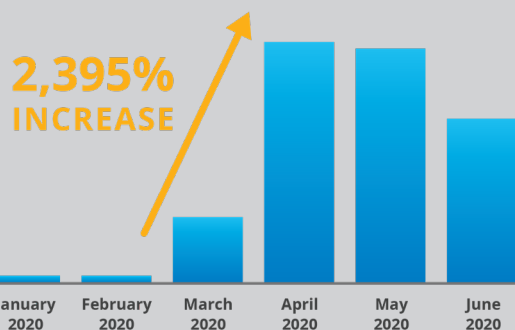
These quality measures help Nemours increase the reliability and consistency of care delivered through telehealth. “With quality measures come accountability and oversight,” says Dr. Murren-Boezem.

CareConnect during COVID-19

Prior to COVID-19, Nemours saw around 1,000 telehealth visits a month. In April 2020, the health system conducted more than 28,000 telehealth visits. Thankfully, Nemours had begun its telehealth journey in 2015, and while the telehealth team had to ramp up quickly, the infrastructure was tested and in place before the pandemic hit. “We were in a nice position given the infrastructure that we had already put in place, and we quickly onboarded hundreds of providers to the system,” says Carey Officer, vice president of service delivery innovation at Nemours Children’s Health System.



On-Demand CareConnect Visit Growth during COVID-19



Nemours pivoted quickly and converted as many appointments as possible into telehealth visits, partnering with local community pediatricians to enable them to use telehealth to order labs and facilitate drive-by testing. The team also focused on spreading awareness about CareConnect via social media, email, Nemours.org, and KidsHealth.org.

“As an organization, we were familiar with telehealth. But for our patients and their families, this was new to them,” says Officer. “We put a lot of time and effort into not only educating our patients and families about COVID-19, but also about telehealth and its ability to continue to connect them with their clinician.”

Primary and Specialty Care

Expanding Access, Convenience, and Efficiency Across the Care Continuum

Through CareConnect, Nemours provides specialty and primary care to the patient whether they are located at home, in partner health systems, at a primary care office or outpatient clinic, or at school.

In addition to on-demand urgent care, the Nemours CareConnect program also includes primary and specialty care. To provide specialty and primary care virtually, Nemours uses Amwell's Scheduled Visits module (in addition to other virtual care software for scheduled clinic-to-clinic visits), as well as its School Health module and telemedicine carts for school-based care. The Nemours network is comprised of more than 90 brick-and-mortar locations, and to provide patients with the same level of care for all specialties, the Nemours team partnered with local offices to extend specialty care through virtual visits.

In addition to its network locations, Nemours went outside its network, partnering with non-Nemours primary care offices and specialty care outpatient clinics to help keep children in their own communities. Offering access to Nemours specialists outside of its network required a thoughtful approach — including developing new workflows, creating new contracts, and establishing expectations — since each location operated differently and had unique needs. “The key to managing these relationships was ensuring each specialty received what it needed to provide its high level of care,” says Dr. Patrick Barth, medical director of telehealth specialty care at Nemours. This could involve a nurse or medical assistant at a local office assisting the remote specialist in conducting a physical exam, or the use of a peripheral device to help the remote specialist better evaluate the patient.

In the end, meeting these needs has led to more convenience and efficiency for Nemours and increased patient access to high levels of care. Children can stay in their local institutions and still receive high-level tertiary care. If needed, patients can also be transferred in

a seamless handoff. For example, high-risk mothers who have received a disconcerting diagnosis can connect immediately to a Nemours specialist from their maternal fetal medicine offices through CareConnect. Almost immediately, the Nemours specialist can begin providing care, whether that is reviewing an ultrasound or arranging for appropriate consults that can either be performed right at that moment or scheduled for a later time.

To better deliver this remote specialty care, Nemours has deployed more than 40 Amwell telemedicine carts, and as of July 2020 has more than 700 specialty and urgent care providers and more than 175 primary care providers active on their telehealth program.



CareConnect in schools

Nemours uses Amwell's telemedicine carts and School Health module to provide real-time consults during the school day.

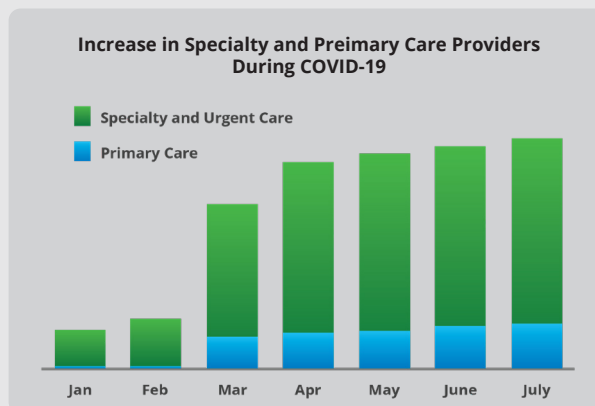
Nemours is leveraging telehealth in over 50 pediatric specialties, including cardiology, neurosurgery and surgery, pulmonology, rheumatology, and developmental medicine.

Virtual specialty care during COVID-19

According to Dr. Patrick Barth, COVID-19 was a “bioreactor” for telehealth: “COVID-19 provided an opportunity for growth and testing as it simultaneously put a strain on our telehealth program.” Fortunately, Nemours already had a telehealth infrastructure in place, and since the telehealth program was integrated with its EHR, the workflow mirrored the workflows providers were accustomed to already. Telehealth appointments followed clinic schedules, which meant providers didn’t need to significantly adjust their workflows. This made it easy to engage specialty and primary care providers in telehealth during the pandemic, and Nemours saw a large increase in providers using CareConnect.

Nemours also conducted extensive training for specialty and primary care providers and clarified its documentation standards, which proved especially important in combating misinformation about COVID-19. While the CareConnect urgent care team was licensed in seven states, specialty providers were not. Emergency exceptions to state licensure requirements helped Nemours extend specialty care to its entire patient population virtually, and ultimately allowed the health system to continue providing care while protecting its own providers and conserving personal protective equipment.

Even amid a pandemic, Nemours focused on its family-centered model of care. By implementing virtual rounding, Nemours hospitals could access clinical data and leverage in-room cameras for video conferencing.



Primary care services topped the list of Nemours’ top 15 specialty care visit volumes; however, prior to 2020, little to no primary care providers were enrolled in telehealth because they believed the face-to-face connection was vital to providing care. When primary care offices shut their doors due to COVID-19, primary care physicians (PCPs) had to pivot to meet care needs in this new paradigm.

Nemours’ primary care physicians developed a hybrid model, called Tele-Well, in which families could virtually connect with their PCP via CareConnect and then physically receive their immunizations at a pop-up tent to complete the exam. This hybrid model addressed the concern over falling immunization rates during the pandemic.

Even though Nemours saw a 36% decrease in in-person Well Child visits in 2020 compared to 2019, it only saw an 18% reduction in immunizations. Of the 5,852 patients who had both a CareConnect visit and an immunization visit between April and June 2020, 87% of the visits occurred within 14 days of each other, and 14% of the visits occurred on the same day. While Nemours originally structured this hybrid model so that a patient would have a telehealth visit prior to immunizations, they found that patients having the immunization visit first led to a more streamlined Tele-Well experience. “It was a huge success,” tells Dr. Barth. “This is a perfect example of primary care physicians realizing the importance of telehealth.”

Telehealth Specialties by Visit Volume (2020)

Specialty Care	YTD Visits
1. Primary Care	27,526
2. Psychology	14,878
3. Urgent Care (24/7 Virtual)	7,039
4. Gastroenterology	5,650
5. Communicative Disorders	4,470
6. Neurology	4,043
7. Endocrinology	3,993
8. Allergy	3,537
9. Pulmonology	3,059
10. Orthopedics	2,858
11. Psychiatry	2,703
12. Otolaryngology	2,450
13. Weight Management	2,061
14. Urology	1,936
15. Nutrition	1,557

The Future of Virtual Care at Nemours

Making Pediatric Healthcare Simpler through Thoughtful Virtual Care

As COVID-19 rolls on, Nemours focuses on expanding virtual care and training.

Six years ago, Nemours Children's Health System embarked on a strategic journey to make healthcare simpler for patients, their families, and providers. The result was a resounding success in transforming care delivery, improving access, and creating a family-friendly digital experience. Now, Nemours' providers and clinicians can reach patients wherever they are, regardless of conditions.

COVID-19 may have accelerated Nemours' usage of telehealth, but having the infrastructure and teams in place prior to the pandemic contributed to its success in quickly and thoughtfully responding. As

Dr. Murren-Boezem says, "It is our responsibility and it is our duty to pass our learnings on to the next generation of healthcare providers, which is why we've been including telehealth in our medical student and residency curriculum and will continue to do that."

Nemours Children's is excited about the future of telemedicine, and the technology team is hard at work refining, optimizing, and building on its telehealth foundation. By continuously leveraging the app, Nemours hopes to evolve its ability to provide care to families wherever they are.



Products & Services Mentioned



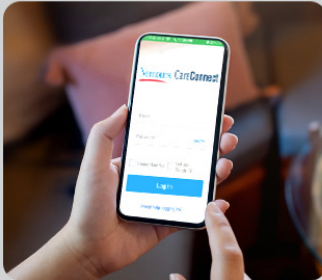
Urgent Care Module



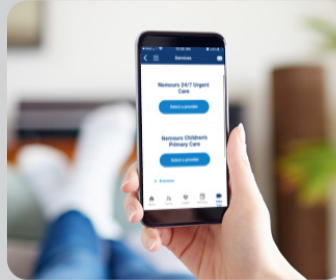
School Health Module



Scheduled Visit Module



White-Labeled App



SDK



Telemedicine Carts

If you'd like to learn more about these products and services, please visit amwell.com/contact-us