



**Bringing the Specialty
Back to Pediatrics**

Nemours[®]

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References

1. Children's Hospital Association. "Pediatric Shortages, Long Wait Times Reinforce Need for Improved Access to Health Care for Children." July 23, 2012. <http://www.childrenshospitals.net/AM/Template.cfm?Section=Surveys&ContentID=63331&template=/CM/ContentDisplay.cfm>
2. Children's Hospital Association. *Pediatric Specialists in Children's Hospitals - 2012*. Alexandria, VA: Children's Hospital Association, 2012.
3. Berwick DM, Nolan TW, Whittington J. The triple aim: Care, health, and cost. *Health Affairs*. 2008;27(3):759-769. <http://content.healthaffairs.org/content/27/3/759.abstract>.
4. Di Guglielmo MD, Plesnick J, Greenspan JS, Sharif I. A new model to decrease time-to-appointment wait for gastroenterology evaluation. *Pediatrics*. 2013;131(5):e1632-e1638.
5. Sharif I, Gartner JC, Plesnick J, Greenspan JS. Access to subspecialty care: Bringing back the specialty of general pediatrics. *J Pediatr*. 2012;161(4):577-578.



Summary

Providing high-quality, well-coordinated, cost-effective, patient- and family-centered care is a critical responsibility of the health care system. A major challenge within pediatrics is difficulty accessing subspecialty care in a timely manner, which is exacerbated by the overuse of unnecessary subspecialty care and national and regional shortages of pediatric subspecialists. These challenges underscore the need for innovative solutions.

To improve timely access to care, and to enable subspecialists and pediatricians to practice at the “top of their license,” Nemours/Alfred I. duPont Hospital for Children has developed and implemented an innovative, high-impact care delivery model centered on improving timely access to and providing the appropriate level of care. As part of this initiative, new pediatric patients with specific complaints or symptoms who sought an appointment with specific subspecialties were directed to a board-certified general pediatrician, embedded within the subspecialty, whom they saw sooner than if they waited to see a subspecialist. Early results have shown high levels of patient satisfaction, increased access to appointments in a shorter time frame, and lower health care charges for new patients in outpatient settings. Further analysis and replication of this approach could inform health care delivery models across the nation.

Introduction

Regions across the United States (U.S.) are experiencing shortages of pediatric subspecialists that affect the ability of health systems to deliver timely, appropriate care. A May 2012 survey by the Children’s Hospital Association (CHA) found that children can wait nearly 15 weeks for appointments in developmental pediatrics,¹ 9 weeks in neurology,¹ 11 weeks in genetics,¹ 8 weeks in rheumatology and dermatology,¹ 7.5 weeks in child and adolescent psychiatry,¹ 7 weeks in endocrinology,¹ and 5 weeks in GI.² As a result of shortages, children’s hospitals participating in the survey reported increased recruitment costs (67.2 percent), decreased staff morale (56.7 percent), and increased salaries (55.2 percent).¹ Access problems resulting from these shortages undermine providers’ ability to meet the Triple Aim³ – better quality, better health, and lower costs and may also place undue burdens on families awaiting care for their children.

Impact of Shortages on Nemours/Alfred I. duPont Hospital for Children

duPont Hospital for Children, the only children’s hospital in the state of Delaware, provides primary and specialty pediatric care for more than 100 pediatric specialties. The key service area includes the Delaware Valley (Delaware, Pennsylvania and New Jersey) and one county in northeast Maryland. Nemours employs salaried physicians.

At duPont Hospital for Children, patients seeking care from several subspecialty divisions within the Department of Pediatrics were experiencing long wait times for new appointments, resulting in negative feedback from patients, families and referring providers. In many cases, these patients had been referred to subspecialists; Nemours determined that some of these patients could be effectively managed by generalists.

duPont Hospital for Children developed an innovative solution to address the access issue within its system. Nemours' leadership issued a presidential directive in 2011, setting a goal of scheduling 80 percent of new patients within five business days of contacting a subspecialty practice. To meet this goal, pediatricians, administrators, family representatives, clinic staff, subspecialists and primary care providers developed a set of action steps to address patient access, including launching an "Access Pediatrician" Initiative.⁴ The 80 percent goal was achieved for 2011 and 2012 at the Delaware Valley Campus.

ABOUT NEMOURS

Nemours is an internationally recognized children's health system that owns and operates Nemours/Alfred I. duPont Hospital for Children in Wilmington, Del., and Nemours Children's Hospital in Orlando, Fla., along with major pediatric specialty clinics in Delaware, Florida, Pennsylvania and New Jersey. Established as The Nemours Foundation through the legacy and philanthropy of Alfred I. duPont, Nemours offers pediatric clinical care, research and education, advocacy, and prevention programs to families in the communities it serves.

Nemours' Access Pediatrician Initiative

The overarching goal for Nemours of providing patients with the care they want and need, when they want and need it, guided efforts to construct a model that would improve timely access to appointments. Nemours' subspecialists reached consensus that certain conditions for which patients commonly scheduled appointments with subspecialists (headache/migraine, constipation, reflux, abdominal pain, attention deficit-hyperactivity disorder and genetic testing) could be evaluated and managed by a general pediatrician or psychologist. Yet, lack of time, demand for referral, and lack of resources all served as barriers to primary care management of patients presenting with these symptoms.⁵

To address these challenges, Nemours initially placed an "Access Pediatrician" (AP) in the gastroenterology, neurology and genetics departments, along with a PhD psychologist to serve as the access provider in behavioral health. Nemours' APs are salaried, general pediatricians or psychologists who receive additional training in the subspecialty area in which they are embedded. They have easy access to subspecialists when necessary, and their patient schedules typically allow for longer appointment times than is the case with many general pediatricians who work in busy primary care practices. This access to experts and flexibility in schedule enables them to overcome key obstacles to primary care management of patients with certain low-to-medium complexity issues.⁵

How the Access Pediatrician Initiative Works – Gastroenterology Example⁴

Nemours recruited and embedded a board-certified general pediatrician within the gastroenterology (GI) division, which included eight other providers. This GI AP joined the division in September 2011, at which point he received additional informal training in GI. The training included observation and discussions with duPont Hospital for Children GI subspecialists to learn the appropriate use of procedures and specialized testing, as well as a review of the literature and conference attendance. Since the AP was embedded in the GI division, the AP had easy access to consultation with subspecialists as needed. For each patient seen, the AP developed a care plan.

Nemours hired a nurse navigator who helped develop protocols to guide schedulers and help ensure that they made appropriate referrals to the AP when families called for appointments. Nemours trained schedulers to encourage callers seeking a new-patient appointment for a specified list of GI complaints (abdominal pain, constipation, reflux, vomiting, diarrhea and failure to thrive) to a visit with the GI AP. They informed callers that they would be seeing a general pediatrician who works in the GI division and has specific expertise in their child's condition. The schedulers made appointments with the GI subspecialists for patients requesting evaluation only by the subspecialist, patients seeking a second opinion, or patients with previously diagnosed, ongoing complex disease. In other words, patients with specified complaints characterized as low- to moderate-complexity would be triaged to the AP, and all other cases would continue to be referred to the subspecialists. Patient participation in the AP program was completely voluntary.



Nemours has created two offshoots of the AP model within the GI division. A joint behavioral-health/GI clinic with the AP and a child psychologist sees referred patients four times per month for anxiety- and behavior-related GI disorders identified by the GI AP. A weekly follow-up liver clinic for patients with nonalcoholic fatty liver disease (the leading cause of liver disease after Hepatitis C in pediatric patients), which is run by the AP under supervision of the division hepatologist, allows for more recurrent counseling and discussion, as well as regular monitoring of weight and lifestyle changes. These programs have been in existence for approximately one year and six months, respectively.

Noah's Story

Four-month-old Noah Noll was seen by his primary care pediatrician after his parents became concerned about their son's lethargy, unenthusiastic feeding and lack of weight gain. The pediatrician, concerned about the baby's weight, spoke with a gastroenterology (GI) fellow at duPont Hospital for Children who gave the family two options: be seen in the GI Access Clinic that same day (a Friday) or schedule an appointment for the following week. The Access Clinic helped Noah's family gain quick access to pediatrician Matt Di Guglielmo, MD, PhD, who, while not fellowship-trained in pediatric gastroenterology, almost exclusively sees patients within the GI division as the AP and therefore has experience and informal training in GI issues.

Fortunately, the family chose the same-day appointment. Upon examination, Dr. Di Guglielmo felt that the baby was in distress. He sent Noah to the Emergency Department, and from there, he was admitted to the hospital. After serious GI conditions were ruled out, cardiology was consulted. An echocardiogram performed just hours later revealed a rare and severe congenital heart defect known as Cor Triatriatum, in which an extra membrane across the left atrium obstructs blood flow back to the lungs, potentially leading to heart failure.

Nemours' cardiothoracic surgeon Ryan Davies, MD, repaired Noah's defect on Monday, after which Noah spent two weeks in the hospital. According to his cardiologist, Sam Gidding, MD, Noah has made a full recovery, has no restrictions and needs only to be seen on an annual basis for follow-up. Developmentally, he is right on track.

The immediate availability of the Access Clinic was critical. Had Noah not been seen on Friday and operated on the following Monday, the outcome could have been decidedly less favorable. "I am convinced that the timing of the first appointment was key," stated Noah's mother, Jennifer Noll of Elkton, Maryland. "If we had waited the weekend, I doubt Noah would still be with us. Today, he is happy, healthy, a joy." Jennifer credits the entire Nemours' team of doctors and nurses but has a special place in her heart for Dr. Di Guglielmo. "He not only set us on the right course and helped save our son's life, he stopped in to check on us several times during our stay. I work in health care. I know that kind of attention and compassion is rare."

Other Patient Experiences

The Access GI Clinic has enabled pediatric patients to have improved access to care. Following are a few examples of patients whose GI issues were ultimately diagnosed and treated more quickly because they were able to get an appointment with the GI AP within a week of initial referral.

- A 16-year-old male presented to the GI Access Clinic with concerns of ongoing diarrhea, 20-pound weight loss in a year, and recent fatigue and fevers. His family had been unable to get an appointment with a subspecialist close to home, and the AP appointment was the soonest available at Nemours (within four business days). Laboratory testing of blood and stool ordered by the GI AP prompted an esophagoguodenoscopy (EGD)/colonoscopy, which occurred within five additional calendar days. At that point, the GI AP diagnosed the patient with inflammatory bowel disease. The patient transitioned to subspecialist care within Nemours' GI division, and at his follow-up visit six months later (after treatment initiation and continuation), he had gained over 25 pounds and was doing very well. At a two-year checkup, the patient was in remission.
- A 13-year-old female, referred to the GI Access Clinic for ongoing abdominal pain, was scheduled for a visit within one week of PCP referral. While awaiting that visit, she developed diffuse jaundice and was treated in the Emergency Department (ED). After her ED visit, the AP saw the patient, evaluated her jaundice and liver function, reviewed her laboratory results and imaging, and consulted with a Nemours' hepatologist. Based on his analysis, the AP referred her to the hepatologist, and she was seen within three calendar days. The hepatologist ultimately diagnosed the patient with nonspecific viral hepatitis, and her follow-up care has included visits with the GI AP and her PCP for ongoing abdominal pain. According to Katryn Furuya, MD, the GI division hepatologist who treated the patient, "This is just one example of how the AP helps us to provide better care for our patients. Dr. Di Guglielmo lessens the load on subspecialists by seeing lower complexity patients and treating and referring patients like this one who require subspecialty care. Dr. Di Guglielmo's visit with this patient while she was symptomatic allowed for more rapid evaluation and understanding of her illness."
- A 13-year-old male, seen by his PCP for ongoing belly pain and weight loss, was seen by the GI AP within four calendar days of referral. Upon evaluation, the GI AP noted that the patient had a concerning history and physical findings suggestive of inflammatory bowel disease. The GI AP scheduled him for elective, EGD/colonoscopy, as the patient was noted to be well-appearing in the office. The GI AP educated the family about what symptoms to look for, in case immediate care became necessary. He also provided the GI division's contact information, in case of emergency. Within 24 hours of being seen, the patient's clinical situation worsened. Following Dr. Di Guglielmo's instructions, the family was able to reach the GI fellow directly, who admitted the patient. Ultimately, the patient was in the hospital for two weeks due to significant complications due to inflammatory bowel disease; he continues to undergo treatment to stabilize his condition. According to Vikas Uppal, MD, the on-call GI fellow, "This patient's ability to see Dr. Di Guglielmo so quickly and receive instruction about how to reach the GI team after hours and under what circumstances a call would be necessary, was critical." The family does not live near a pediatric tertiary care institution, and the patient may not have sought or received care as quickly without the initial visit to the GI AP.





Early Findings for the Access Clinic

Access to Appointments

Nemours hired an external consultant to make “mystery shopper” calls twice monthly to each participating subspecialty, drawing from a list of common issues for which patients seek appointments, in order to evaluate whether the AP initiative was effective in decreasing wait times before appointments. Insurance verifications were provided so that the mystery shoppers could not be identified. Mystery shoppers tracked the number of business days until the first appointment that was offered to them.

During 2011, all Nemours pediatric divisions implemented access initiatives, some utilizing an AP. Mystery shopper results (internal data) demonstrated improvement in all divisions for offering new-patient appointments within five days. AP clinics were initiated in four divisions between July and September of 2011; in July, approximately 55 percent of divisions achieved five-day access; by December, this increased to over 80 percent.

Within the GI division specifically, mystery shopper results showed that access to new-patient appointments improved from a mean of 24.5 business days until appointment for January 2011-August 2011 (the period immediately prior to the AP’s arrival) to a mean of 0.94 days until appointment for September 2011 – April 2012, a 24-fold difference ($p < 0.001$).⁴

Access to New Patient Appointments in GI Division

	Average Business Days to New Appointment
Before AP (Jan 2011 – Aug 2011)	24.50 days
After AP (Sep 2011-Apr 2012)	0.94 days

The mean has remained at 1 +/- 0.5 business day from inception through October 2013 (unpublished data).

Nemours also surveyed a subset of new patients seen by either the GI AP or the subspecialists. Those who saw the subspecialist responded that they were offered a new appointment in less than one day only 8 percent of the time, while those who saw the GI AP responded that they were offered a new appointment in less than one day 37 percent of the time, a four-fold improvement.⁴ Additionally, only 9 percent of the GI AP mystery shoppers responded that they were offered an appointment in more than five days,⁴ while previously 54 percent of those who saw the subspecialist responded that they were offered an appointment in “more than five days,”⁴ a six-fold difference reflecting longer wait times for new patient appointments with the subspecialists.



Patient Satisfaction

Patients completed Nemours Institutional Review Board-approved satisfaction surveys for 80 percent of the visits to the AP. Overall, 95 percent of patients reported being “completely satisfied.” Open-ended comments showed that patients and families appreciated the thorough evaluations, rapid access to care and competence of clinicians. Referring physicians were also satisfied, including appreciating the return of their patients with a care plan.⁴

Within the GI Division generally, other patient surveys also showed high levels of satisfaction for the AP. Over 96 percent of surveyed patients/families evaluated by the AP were “very satisfied” as compared to 83.6 percent who had seen subspecialists. Open-ended comments also offered positive feedback, reflecting general satisfaction, short wait times, thoroughness of the evaluation, knowledge of the doctor and constructive advice.⁴

Procedures Ordered

For GI specifically, initial analyses indicate that the addition of the AP resulted in fewer elective procedures (endoscopies) ordered for new patients, thereby reducing unnecessary care. Comparing the 11-month period prior to the arrival of the AP with the 22 months after the AP’s arrival, the overall number of elective endoscopies for all patients seen did not change. However, the procedure rate per patient for new patients, decreased from 52.3 percent to 42.4 percent ($p < 0.001$). This reflects the increased number of new outpatients, seen mostly by the AP, who have not required procedures.

When focusing on rate of ordering elective endoscopies between the AP and the GI subspecialists, over the 22 months since the AP’s arrival, the AP rate is lower. Specifically, the AP outpatient procedure rate for new and follow-up patients combined was 6.1 percent, as compared to the GI procedure rate of 18.4 percent ($p < 0.001$), again reflecting fewer procedures ordered by the AP and less complex patients seen.

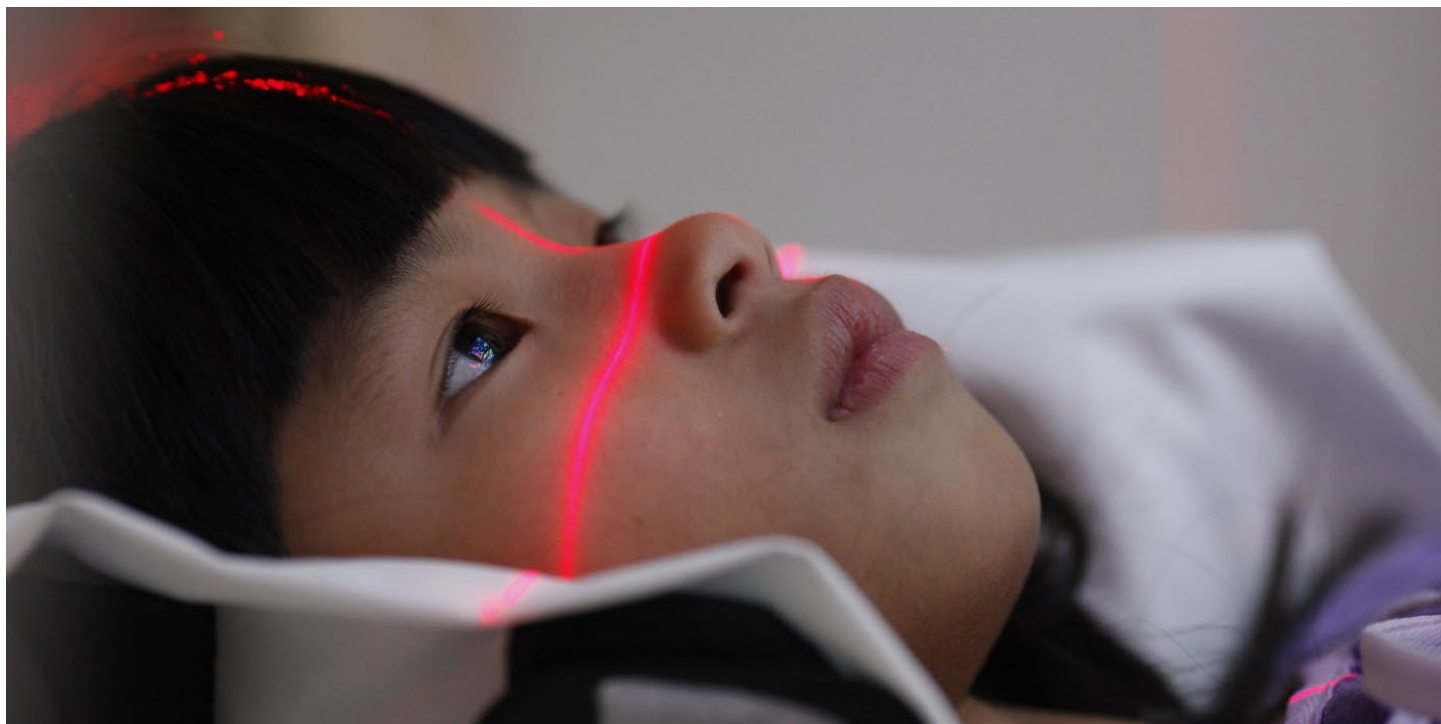
Access to New Patients Appointments After Introduction of GI AP

	% of Patients with New Appointment in	
	< 1 Day	> 5 Days
Patients Seeing Subspecialist	8%	54%
Patients Seeing Access Pediatrician	37%	9%
	4x improvement	6x difference

Results based on a survey of a subset of new patients.

Follow-Up Care for Patients Evaluated by Access Pediatrician

Overall, most patients who saw the GI AP did not require a referral to a GI subspecialist, meaning the goal of practicing at the top of their license was achieved. From September 2011 – April 2012, the AP referred 8.5 percent of all patients to the subspecialist after an initial visit and less than 1 percent after follow-up visits.⁴ Only 3 percent of patients returned to the GI subspecialist for care after one visit with the AP without referral from the AP.⁴



Financial Analysis

Using the electronic health record, Nemours analyzed health care charges comparing new patients seen by the AP for uncomplicated constipation/encopresis, abdominal pain or gastroesophageal reflux disease (GERD) to patients with the same diagnosis seen by the GI subspecialists. The analysis focused on GI providers at all sites within the Nemours Enterprise, including Wilmington, Del.; Newtown Square, Pa.; Philadelphia, Pa.; Egg Harbor Township, N.J.; Pensacola, Fla.; Orlando, Fla.; and Jacksonville, Fla. Nemours isolated patient charges for these diagnoses by unique medical record number (MRN), and limited to outpatient point-of-service. The time period for this analysis was the 24-month period post-initiation of the GI Access Clinic. For each diagnosis, differences in health care charges were calculated by comparing total charges per unique MRN seen by GI subspecialists to total charges per unique MRN seen by the AP.

For constipation/encopresis, the AP saw 674 new patients in 24 months (one provider, one site, FTE 0.9). All other GI subspecialists in the Enterprise saw 6,369 new patients (23 providers, seven sites, FTE 17.42). For abdominal pain the ratio was 218 to 1,530, and for GERD the ratio was 401 to 4,251. For each diagnosis, charges per patient were less for the AP compared to the GI subspecialists as a whole, as well as when compared to individual sites. Overall charges per MRN for patients seen by the AP were 23.2 percent less for constipation ($p < 0.0001$), 24.3 percent less for reflux ($p < 0.0001$), and 18.6 percent less for abdominal pain ($p < 0.0001$) as compared to the GI subspecialists.

Initial analysis indicates that an AP working within a subspecialty GI clinic can see low-complexity new patients with common GI diagnoses and generate decreased charges compared to subspecialists seeing the same type of patient. Further analysis of all health care charges associated with the aforementioned patients would provide a more complete picture of the impact of the AP on health care costs.



Limitations of the Model

The AP model of care may not be needed in all settings, especially in areas where shortages of subspecialists do not exist, though if it were adopted, specialists would have a greater ability to operate at the “top of their license” and the potential for cost savings would exist. Where access is improved simply through better pediatrician screening and referral protocols, an access clinic may be redundant. Referral patterns can also impact the ability of an access clinic model to succeed if primary care providers (PCPs) do not feel comfortable referring to an AP instead of a subspecialist or do not see the value of the model. Additionally, if PCPs typically only refer to one specialty group, adding an AP to a different group than the one to which they refer may not address shortages.

The analysis presented in this paper also has limitations. At this point, an analysis of patient outcomes over time has not yet been completed. The financial analysis is limited to the outpatient setting and does not reflect potential costs to other parts of the health care system. Patient satisfaction has not been tracked longitudinally. These topics should be explored with future analyses.

Policy and Practice Recommendations

Research Recommendations

1. Given the promising initial findings and the potential cost savings, the federal government should fund research to to:
 - a. Fully analyze the impacts, costs and benefits, net cost savings, and the Return on Investment (ROI) of the Access model of care at duPont Hospital for Children, including:
 - i. Patient outcomes;
 - ii. Health care costs, such as Emergency Department costs, procedures, lab and diagnostic tests, and pharmaceutical costs, after taking into account the inputs and program costs;
 - iii. Patient satisfaction over a longer time horizon (e.g., six months post visit to the AP);
 - iv. All of the above factors, in other subspecialty areas; and
 - v. All of the above factors, specific to the pilot program that entails joint visits with the GI AP and the GI behavioral health specialist.
 - b. Test the Access model in other health care delivery settings, including other children’s hospitals and other providers that care for adults, as well as other specialty and subspecialty areas, to determine if the findings with regard to costs, patient satisfaction and patient outcomes are replicable.
 - c. Test the Access model with other providers, such as Advanced Practice Nurses (APN) or Physician Assistants (PA).
 - d. This research should be funded by the Agency for Healthcare Research & Quality (AHRQ), the Patient Centered Outcomes Research Institute (PCORI), the Center for Medicare and Medicaid Innovation (specifically the impact on Medicaid costs) or the National Institutes of Health/National Institute of Child Health and Human Development (NIH/NICHD).
2. Professional organizations or academic researchers should survey and interview physicians and parents/families to better understand the underlying causes of the high demand for referral to subspecialists. In some cases, the demand results in overutilization of health care for some and decreased access for others. Findings from these surveys could help inform other policy and practice-based interventions in the future.



Payment Recommendations

3. Public and private payers, including Medicaid, should provide higher reimbursement for APs participating in this model of care to incentivize more providers to adopt it and reflect the relative value of the work and time better spent.
4. Public and private payers, including Medicaid, should provide reimbursement for nurse navigators participating in this model of care for patient triage and complex scheduling.
5. In areas with shortages of subspecialists, pediatric practices should consider training one of their general pediatricians to be the local “expert” in a subspecialty, enabling them to devote a specific part of their caseload to visits within that subspecialty. The general pediatrician would essentially serve as a part-time AP, and children would be served in their medical home. Public and private payers should increase reimbursement for any “AP” visits that the provider conducts.
6. If findings hold consistent for care of adults, Medicare reimbursement rates should increase for APs treating Medicare enrollees.
7. Public and private payers should enter into shared savings arrangements with providers employing the AP model.

Conclusion

Early findings indicate that Nemours’ AP initiative is an effective model of care that enables patients to receive the care they need in a timely fashion from the appropriate level of provider. Patients seeing the AP have improved access to appointments and high levels of satisfaction. Subspecialists and pediatricians are able to operate at the “top of their license,” and initial analysis indicates that cost savings can be achieved through reductions in procedures and a lower cost model.

Supporting expansion of efficient models of care like this one will require funding to facilitate further research, analysis and evaluation into associated costs and health outcomes. Additionally, forging partnerships among health systems and public and private payers in pursuit of the Triple Aim will be necessary to sustain innovative approaches to care delivery that better serve patients’ needs and avoid unnecessary health care utilization while lowering costs.

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