


Subspecialty referrals and consultation: it's time to partner with primary care paediatricians

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Commentaries

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Referrals and consultation from primary care paediatricians to subspecialists including cardiology are an important part of everyday paediatricians' tasks.¹ On average paediatricians refer 1/40 consecutive visits and since the average clinic volume for a paediatrician is ~ 22 patients/day, this suggests that paediatricians refer at least one patient every other day.² For some patients, the drivers for referrals are not related to patients' clinical factors.^{1,2} Thus, the American Board of Pediatrics identified subspecialty referral and consultation as an entrustable professional activity that all residents will need to be competent by the time they graduate.^{1,3} Cardiology is a unique specialty as it receives a fair number of anxiety provoking but low yield referrals.^{4,5}

In this edition of *Cardiology in the Young*, Warren P et al. described a single centre experience in cardiology referrals. The authors assessed patient and system variables that impeded a successful complete visit including social determinants of health factors. Among 10,610 new referrals, 3,656 (34%) did not complete a new cardiology clinic visit. Black race (OR 1.41; 95% CI 1.22-1.63), public insurance (OR 1.29; 95% CI 1.14-1.46), and a higher neighbourhood socioeconomic deprivation index which represents higher levels of deprivation, (OR 1.32; 95% CI 1.08-1.61) were associated with higher odds of incomplete visit. The authors also found that the shorter the time between the initial referral and the appointment date, the lower the odds are for an incomplete visit (OR 0.62; 95% CI 0.52-0.74).⁶

The authors ought to be complimented for their work. That being said, in order to assess generalizability of this work one needs to know how many providers work at the centre and what are their effective clinical full time equivalent, i.e. non-research or administrative protected time. At my centre, we noted a reduction in the percentage of new visits scheduled within 2 weeks of referral in 2022 compared with previous fiscal years. (Fig 1) This could be explained by the fact that some of our busiest clinical ambulatory cardiologists either retired or reduced their clinical time recently and many of the mid-level cardiologists are grant funded and have limited clinical time. Another important factor is the geographical variation in access to care. Many quaternary centres cover a significantly large geographical area and access to care may vary depending on location and frequency of clinic coverage. In figure 2, we display the Children's National Hospital cardiology clinics. While the current third available appointment at the main campus is 19 days, for patients who wish to receive care in a specific regional outpatient centre may wait much longer (i.e. in the Prince George's County location the third available appointment is 41 days). We participate in the American College of Cardiology's Quality Network™ (ACC-Qnet) Kawasaki disease maintenance of certificate (MOC) project. One of the metrics that we track is related to how often we see patients with Kawasaki disease within 3 weeks of hospital discharge.⁷ It was not uncommon for us to have patients seen outside the expected time frame, and when questioned, the family mentioned that their first cardiology visit was scheduled at the main campus which is more than 50 miles away from their home. Due to lack of transportation, they switched their appointment to the closest site to their home at a time that was outside the recommended time frame. The variation based on clinic location might exacerbate the gap to access between high and low deprivation index families. This is of importance as the authors concluded that a shorter time interval between referral initiation and scheduling was associated with better referral completion which is consistent with other work. As a matter of fact, it is now a benchmark criterion to see patients within 2 weeks of referral initiation as it was shown that the sooner the appointment is made the higher the likelihood of completing the subspecialty visit.⁸

One of the solutions the authors suggest is telemedicine. While I agree that for certain patients (i.e. preventive cardiology), telemedicine is a perfect option, it's not practical for most complaints requiring testing (electrocardiogram (ECG) or echocardiogram). I take pride in having helped establish our ambulatory cardiology telemedicine programme 4 years before the COVID-19 pandemic^{9,10}; but I worry about expanding telemedicine for new patients to other complaints. On the other hand, telemedicine might be a perfect solution to already established cardiology patients like those with simple syncope, postural orthostatic tachycardia, or infants with unoperated ventricular septal defect whose visit's goal is to assess work of breathing. Doing so will hopefully open up in-person clinic slots for new encounters and improve access.

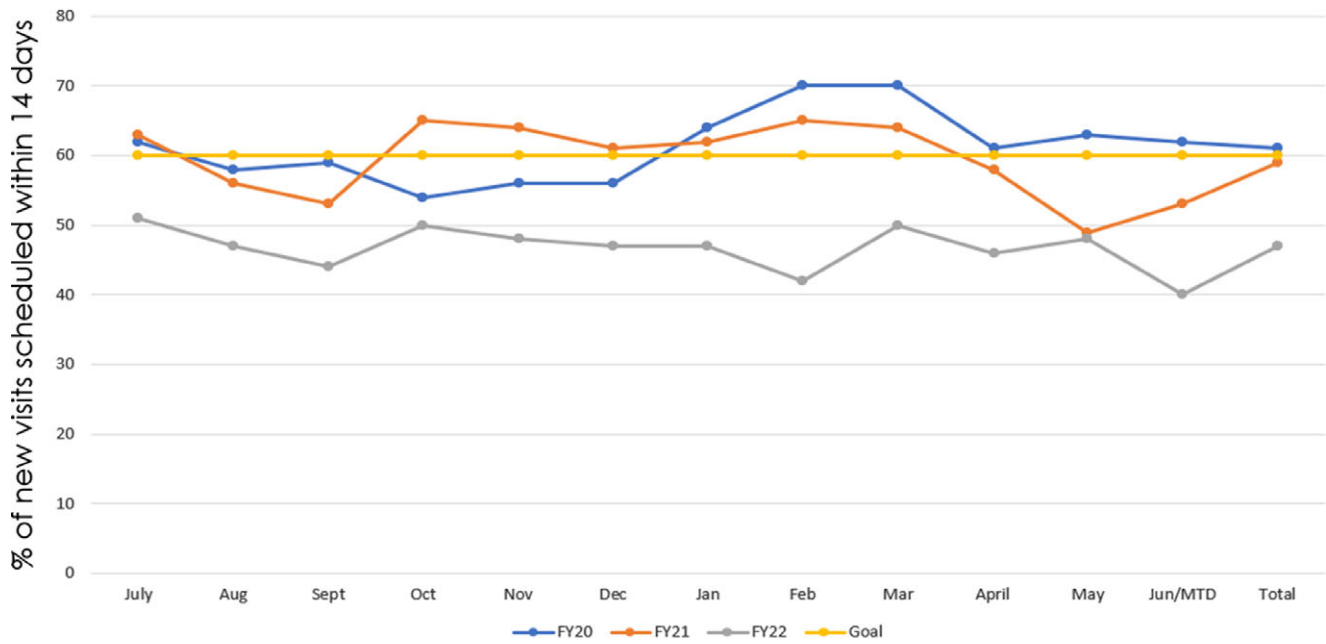


Figure 1. Access Metric - Percentage of new visits scheduled within 14 days at Children’s National Hospital cardiology practice. FY: Fiscal year. Courtesy of John Schultz, MSSA and Annette K. Ansong, MD, FACC.

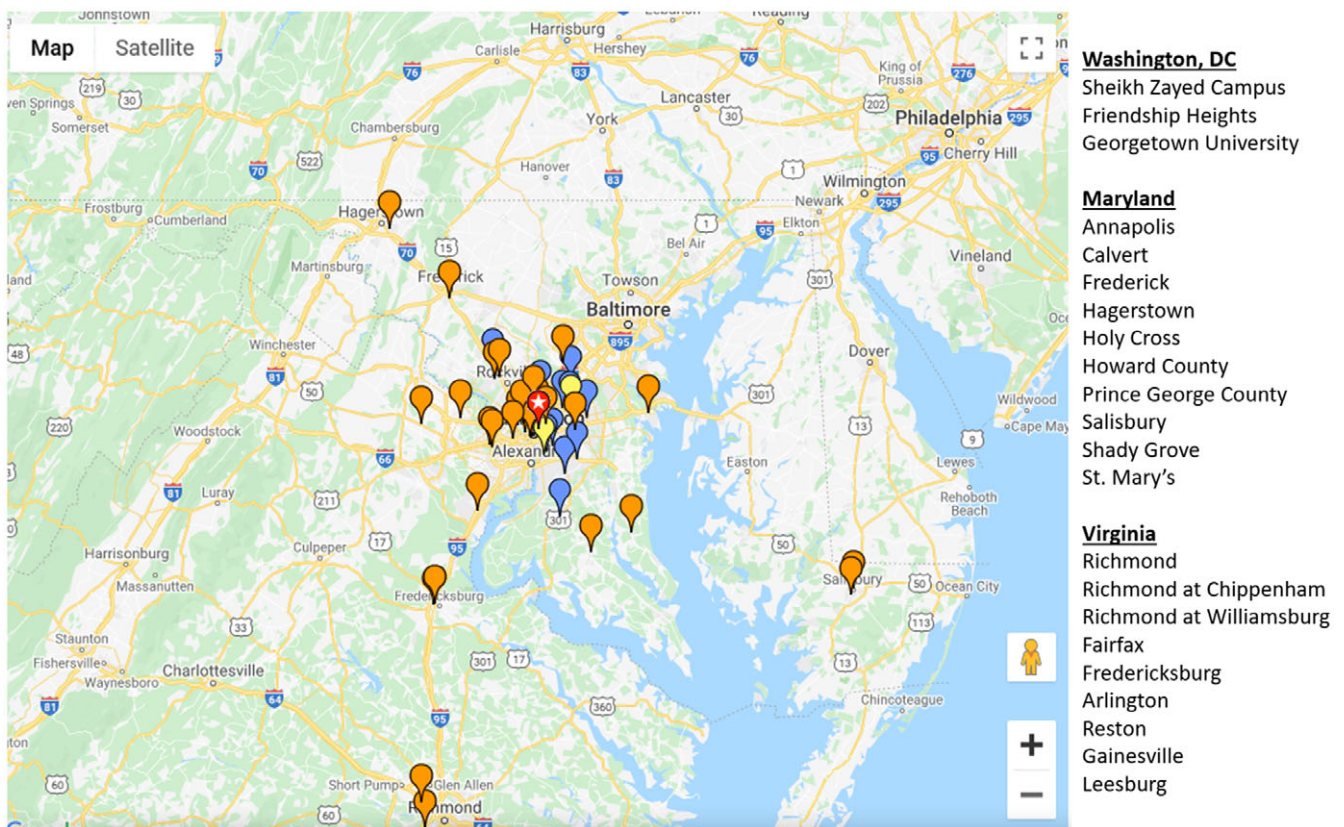


Figure 2. Map displaying cardiology clinic sites across Washington, DC, Maryland, and Virginia.

In the case of unoperated ventricular septal defect, telemedicine can also help reduce the chances of the child catching infection which might delay the surgery.⁹

In their discussion of solutions to access to care in the cardiology practice, the authors mentioned the importance of prioritising

which patients to refer to cardiology. This is of importance as reducing low-probability referrals will lead to more openings for those in need for a cardiology visit. As the authors alluded to, common paediatric cardiac complaints are often not caused by cardiac disease.^{4,11–14} The issue of subspecialty referral is

complicated as for some the reason for referral might not be related to their illness elements. In other words, the drive for referral or testing is not related to patient factors like history or examination but rather to parents'/providers' anxiety and fear of litigation.^{1,2,4} This calls for educational programmes and quality improvement initiative to help reduce low-probability referrals. Such programmes might help paediatricians keep those who can be managed safely within their medical home and improve access to those who are in need for subspecialty care referral. This is why the Children's National Hospital Syncope Education Project was established with a goal to improve paediatric residents' medical knowledge and communication skills surrounding cardiology subspecialty referral. In this pre/post standardised parent simulated programme, our residents' improved their syncope triaging knowledge (mean \pm SD) from 63% \pm 18 to 73% \pm 17.8%, $p < 0.01$, their retrospective pre/post self-efficacy score (mean across 22 items; $\alpha=0.853$) from 69.5% \pm 8.8% to 86.2% \pm 6.2%, $p < 0.001$ and their simulated behaviour as assessed by the standardised parent ratings (mean across 22 items; $\alpha = 0.829$) from 61.1% \pm 7.9% to 76.9% \pm 5.6% $p < 0.001$ (Kirkpatrick level 2C, knowledge, specifically skills acquisition). Finally, the percentage of residents confident about the decision to refer or not refer patients with syncope to cardiology increased from 27 to 96%.¹⁵ The programme was then expanded to all subspecialty electives.¹⁶ We have also partnered with local paediatric practice groups to reduce low-probability referrals for children presenting with chest pain. From our previously validated red-flag criteria for referral of children presenting with chest pain, we created a decision support tool.^{4,12} Our healthcare quality improvement initiative utilised the decision support tool that was embedded within the electronic health care at primary care paediatrician offices. After multiple interventions, the utilisation of the decision support tool increased from 16 to 68% with simultaneous reduction in low probability referrals from 17 to 5%.¹²

Finally, the authors make a point that a lack of cardiologists of colour at their institution could influence referral completion rate. For some families if they are given a choice, they might pick a name that they feel will be a better match for them. As the authors noted "there has been some evidence that [provider-family] concordance improves patient experience and outcomes".¹⁷⁻²¹

What remains to be answered:

1. What happens after the first cardiology visit is completed? What are the variables associated with incomplete cardiology workup and follow up?
2. From the families' point of view, what are the factors that interfered with scheduling the appointment? For those with a scheduled appointment, what factors contributed to not showing up for their appointment? This can be answered in a future focus group facilitated research project.
3. In the current Warren P, et al. paper, most of the referred patients self- or caregiver-identified as White (76%).⁶ Further study is needed to assess referral success in areas with higher minority representation.

Availability of data and material. Not applicable.

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Conflicts of interest. None.

Ethics standards. Not applicable.

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