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Cover Page

Pediatric subspecialty workforce: Undersupply or Over-demand?

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Body Text

Supply and demand: A critical approach to the pediatric subspecialist workforce from the other (demand) side

Much has been made of a potential pediatric subspecialty shortage as increasing demand for care of children with chronic conditions is believed to outpace the number of pediatricians entering subspecialties(1, 2). On the supply side, attention has focused on factors affecting the number of pediatricians entering subspecialties including increasing debt, lack of income parity, extended training, and lifestyle, which are variable by subspecialty(3). Yet, practice data demonstrate the number of pediatricians overall entering subspecialty training has been increasing annually(4), but is quite variable by subspecialty. Thus, tackling workforce issues requires a balanced approach including careful evaluation of demand. To examine demand responsibly, we must explore patient-induced and provider-induced components.

Factors affecting demand for subspecialty care

Outpatient visit wait times and vacant positions are imperfect proxies in estimating a potential shortage. Importantly, demand for subspecialty care is multifactorial. Specialization and innovation have led to lower mortality in serious conditions like congenital heart disease. As life expectancy increases, so does demand for physicians trained to care for those patients. Increased screening and identification, social determinants of health, and environmental triggers/exposure have resulted in dramatic increases in common conditions like asthma, and obesity. Increasing prevalence increases demand for both pediatric subspecialty and primary care.

Utilizing subspecialists for subspecialty care

One significant factor affecting demand deserving of further study is the *proportion of subspecialty visits that do not actually warrant subspecialty care*. Subspecialty clinical volume is influenced by new patient visits, as well as continuation of care. Research has shown that some initial visits for subspecialty care do not contribute substantively to the management of common conditions. At one extreme, a study examining endocrinology referrals for adolescent gynecomastia found that in 99.4% of cases, subspecialty investigations did not result in new information or different management(5). However, in most situations, determining the "appropriateness" of a new referral is difficult as most studies rely on the subspecialist perspective which is often at odds with referring physician and patient viewpoints. For example, while 65% of pediatric neurologists reported increased referrals, 24.5% believed that the complexity of referrals they received was less than what should warrant a referral(6).

Return appointments comprise the majority (71.6%) of subspecialist visits and may present a prime opportunity for reform. A study using the National Ambulatory Care Survey found that 41.3% of subspecialist visits were routine/preventive care for returning patients(7). How much of this care truly requires subspecialty follow-up is unknown. Follow-up in subspecialty care is to be expected for some patients; continued subspecialty care is essential in children with conditions such as cancer. Less complex issues, such as constipation, may benefit from a one-time consultation and subsequent primary care management. Primary care follow-up for many issues would by definition increase available subspecialty appointments. Compared to substantially increasing subspecialty supply, improved utilization of their capacity might be a more rational initial strategy.

Factors contributing to new consultations and continued subspecialty care are important issues that merit serious, objective investigation. The parent, referring physician, and subspecialist are

key to understanding this nuanced issue. Interestingly, only 1/3 of pediatric subspecialty visits in the US were initiated by physician referral with the remainder patient/parent initiated(7). As almost half of all non-referred subspecialist visits are for routine/preventive follow-up of established patients (7), patient education, and subspecialist awareness and buy-in will be integral in decreasing unnecessary demand.

Parent induced demand

In addition to non-referred care, parents also play a key role in new referrals made by a physician. A survey of pediatricians found that 43.3% sometimes or often made an unnecessary subspecialist referral based on parental request(8). One possible solution to satisfy parents desire for subspecialist involvement is the use of an electronic consult system which allows subspecialists to respond with advice or expedited appointments. When tested within pediatric gastroenterology and neurology, such a system resulted in decreased wait times but did not affect referral volume(9). Similar programs for adult patients result in improved specialty care access but at the cost of increased burden of work for PCPs(10). Another potential avenue is the creation of primarily consultative access clinics staffed by general pediatricians. One such clinic decreased time to initial comprehensive evaluation, and decreased specialist referrals by 50%. Further study is required to evaluate patient outcomes and financial feasibility of these models(11).

Once referred, the subspecialist may take a different approach with a referral resulting from parental pressures rather than referring physician concern, but often this information is not communicated. Time constraints may prevent this communication and may also lead to unnecessary referrals as referrals have been shown to increase with increasing primary care

workloads(12). The impact of time pressure on both subspecialty and primary care is likely to rise as the number of pediatric patients with chronic conditions increases.

Follow-up in subspecialty clinic should ideally be based on referral goals and findings from the initial visit. Unfortunately, communication is often poor with half of all referrals lacking communication from the referring physician. Subspecialist communication to the referring physician was more frequent, occurring in 96% of cases(13). However, despite co-management being the preferred outcome of both PCPs and subspecialists, less than 1/3 of communications included co-management plans. Co-management, ranging from alternating visits to discharge with specific instructions of when to re-refer, could decrease subspecialty demand s but requires reliable communication and specified roles in co-management(14).

Discharging patients from subspecialty care: better US pediatric data needed

Reluctance to appropriately discharge from subspecialty care results in provision of services within the referring physicians scope. Only 20% of pediatric patients in Australia were advised by their specialist to follow-up in primary care, despite no clinical rationale to continue specialty care. This reluctance is also influenced by parental desires as 68% preferred specialist follow-up (15). The most common reason for reluctance of specialists to refer patients back to primary care was concern that required care would not be provided even though it was within the primary care skill set[7]. A form of paternalism by some subspecialists may create difficulty in feeling comfortable "letting go" and sharing the management of a child despite the development of a clear care plan. Some subspecialists may also continue care to avoid conflict with parents who desire continuation. Consensus standards for appropriate discharge lead to increased numbers of discharged patients, decreasing wait times, and increased new to follow-up appointment ratios,

improving utilization of subspecialty appointment supply(16). Similar studies are needed in the US to better understand whether subspecialty appointments are being used efficiently.

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Periodicity of return appointments in subspecialty care

Periodicity of return appointments also influences the available supply of subspecialty care. Simply put, seeing patients every three months uses up twice as many appointments as seeing them every six months. Such decisions may be evidence-based, arbitrary or based on tradition. For situations without evidence-based guidelines, how often patients follow up can be highly subjective and studies have found that parental pressure influenced time between subspecialist appointments in 67% of cases[7]. In adult studies, variability is associated with greater payments with limited benefits in health status or patient satisfaction(17). Future studies should attempt to determine the range of this periodicity for specific conditions with a goal of establishing appropriate times between appointments to serve as a guide for providers.

Systems Issues

Administrative and systems issues also contribute to the increasing demand for pediatric subspecialty care. Increasing focus on relative value units (RVUs) produces inappropriate incentives, sacrificing value in the pursuit of volume. Although RVU targets increase physician work, they may result in increased tests/procedures and referrals, (18). As primary care physicians see more patients in less time, they are less able to provide care to complex patients, whose care is inadequately captured in an RVU model(19). Subspecialists who face the same incentives are less likely to provide "curbside" consultations and more likely to continue following patients whose active issues have resolved[13], compounding the issue.

A way forward

In the debate surrounding the pediatric subspecialty workforce, it is imperative to consider factors beyond supply. The answer to increasing wait times is not always, or only, to increase supply. The literature cited above suggests that between 30-50% of subspecialists visits may be utilized more effectively. Improving utilization would have the same effect as expanding the subspecialty workforce by these same percentages. Before embarking on policy level changes to increase the number of pediatric subspecialists, it is crucial to further evaluate our current resource utilization and our workforce needs. Further study will provide a clearer picture of the need and potential magnitude of an increase in the workforce and guide any future efforts to rebalance the equation.

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