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EDITORIAL

Pediatric Cardiology Centers: Cooperation Versus Competition

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After completing my fellowship training in the early 1990s, I joined a tertiary care center in Chicago. I was surprised to see a plethora of pediatric cardiology programs, all in one city. The pediatric cardiology center where I trained was in a small town in the southeastern region of the USA. This center provided care to pediatric cardiology patients for the majority of the state inhabitants with minimum competition from other academic centers. I was not prepared for the very different reality of pediatric cardiology in Chicago.

Chicago featured numerous pediatric cardiology programs throughout the city. All were independent and provided general pediatric cardiology, electrophysiology, cardiac catheterization and interventional as well as surgical services. In a half-mile square of the city's center, where the medical center I joined was located, there were two other medical centers, each with an independent pediatric cardiology program. It all seemed excessive and arguably a waste of resources where duplication of efforts and waste of time spent on competition did not offer patients in our area better or more accessible services.

Twenty-five years later, pediatric cardiology services in Chicago evolved to a much different state, yet still inefficient and redundant. Gone are the days of numerous programs, each trying to boast the ability to provide complete and independent services; however, there still are too many programs in close proximity to each other with significant duplication of efforts.

Comprehending the nature and mechanics of the various programs in Chicago is not an easy task. Rapidly shifting sands caused by constant changing of alliances, names of programs and players creates an environment shrouded in mystery, even to those of us who spent a lifetime practicing pediatric cardiology in this city.

Currently, there are three centers in the Chicago area featuring pediatric cardiology, pediatric cardiovascular (CV) surgery and fellowship training programs. Two of these programs share the same surgical team, even though they are separate and independent programs. In addition, one of the three programs provides surgery at two hospital campuses, approximately 15 miles apart. A fourth program, at a major university, has its own smaller pediatric cardiology and cardiovascular surgery team, but with no fellowship training program. Other programs in the city have 1–3 pediatric cardiology team members at each center with no surgical teams. If this is not complex enough, there are also private, noninvasive, pediatric cardiology groups with varying member numbers and affiliations. To know who is affiliated with which center, or what two centers share resources requires a talent and know-how only few can attain.

The state of disarray of pediatric cardiology and cardiovascular surgery in Chicago is not unique to our city. A varying degree of nonsensical arrangements can be found in many areas within the USA.

The driving force for the excessive number of pediatric cardiology programs in a single geographical area, such as Chicago, is most probably caused by the large number of medical schools in that region. There are six medical schools in Chicago. Five of the six schools are affiliated with major tertiary medical centers housing large departments of pediatrics and large level III neonatal intensive care units (NICU). These NICUs require in-house pediatric cardiology programs to serve patients and satisfy accreditation for high acuity care. This factor alone is perhaps the

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most potent driving force for the abundance of pediatric cardiology and CV surgery programs in Chicago. This is further amplified by additional medium- or large-sized medical centers in the Chicago area that are not academic centers, yet have large NICUs, in need of their own pediatric cardiology and CV services.

It is highly unlikely that organization of medical services distribution in the USA will be driven through a national organization with a unified national view. Governmental control of medical services, such as those in Canada and Europe, is, at least for the time being, unacceptable to most in the USA. Free market and the competition it precipitates are what drives excellence in medical care delivery in the USA. This has served well the advancement of medicine in this country, though with a price to pay. The system is costly and fraught with redundancy, as seen with pediatric cardiology and CV services in Chicago.

The news is not all doom and gloom from the Windy City. Efforts of cooperation are abundant. Some were even fruitful and reasonably well sustained. In the mid-1980s, Dr. Rene Arcilla and many pediatric cardiology and CV surgery colleagues left their respective medical centers in Chicago in favor of establishing the largest pediatric cardiology/CV surgery this city has ever had. Most other programs in Chicago were significantly reduced in size and impact, while the south side program led by Drs. Arcilla and Michel Ilbawi thrived. This did not last long, as the shrunken programs gradually regained their strength and once again competition was afoot. Despite the newly ignited competition, a legacy of cooperation was born and remains alive. The surgical program created in the 1980s by the efforts led by Dr. Ilbawi continues to provide pediatric CV surgery at four major medical centers and interacting effectively with separate and independent pediatric cardiology and ICU programs.

A handicap to cooperation has always been short sightedness. Medical centers allowing cooperation consistently and without fail tend to focus on "What's in it for us?" Focusing on short-term goals of increasing referrals through affiliations or cooperation has killed many such efforts, as bleeding one center from patients and revenues in favor of another medical center does not allow a sustainable cooperative effort. Invariably the cooperation is broken, with all the bitterness known to accompany a divorce. Players retreat to their respective corners, and more money is spent to rebuild programs creating duplication of services and dilution of experience.

Chicago is a major metropolis. It takes more than an hour driving in good traffic conditions, which is rare, to travel a 10-mile distance. The need of multiple centers is essential to satisfy the needs of its inhabitants. Furthermore, medical schools and large medical centers are numerous in Chicago and will continue to be so for the foreseeable future. Therefore, Chicago cannot and will not have one mega pediatric cardiology/CV program performing the approximately 1000 surgical currently performed at the different medical centers in this area. The reality that multiple programs must exist is undeniable and inescapable. On the other hand, unified methods of practice and shared resources are doable and can benefit all programs.

Failure of cooperative efforts is almost always due to financial inequity. If cooperation precipitates transfer of patients from one center to another, it will most assuredly lead to loss of revenues due to shrinking patient population. Therefore, any arrangement leading to patient transfer is a doomed arrangement. The exception to this is when the two medical centers are owned by a single entity. This tends to be a rare exception. Therefore, patient transfer must be avoided at all costs. Instead, a system of cooperation to share cost of resources and duplication of services at each medical center participating in a cooperation is the better alternative.

To accomplish this, it is essential to agree on basic principles:

- Each medical center interested in retaining pediatric cardiology and CV surgery programs may and should do so.
- Each program will retain all patients it attracts through its referral pattern, unless the program does not have a particular service, such as cardiac transplantation, and instead refers these patients to other centers.
- Patients referred to another center for care not available at the original location should be returned for follow-up at the referring center.

These principles may seem to embolden the status quo by allowing programs to possess independent services without the need for cooperation. In reality, these principles are essential basic elements to secure a cooperative effort not hounded by mistrust or accusations of draining patient population of one center in favor of another. Successful cooperative efforts should include the following facets:

Shared personnel The salaries of pediatric cardiologists and CV surgeons contribute significantly to the cost incurred by medical center. Sharing this cost by more than one medical center can significantly impact the cost/revenue ratio. This is particularly helpful when the patient load at smaller centers cannot generate enough revenue to compensate for salaries. In addition, this allows the cooperating centers to employ a larger number of specialists, such as surgeons or interventional cardiologists, through this shared cost approach and subsequently reduce the frequency of each individual specialist being on-call.

Shared structures and protocols Logic dictates that sharing experts at various institutions will produce equal results at the various centers. Unfortunately, this is typically not the case. Results are perhaps influenced by the varying methodologies and resources at the various centers more than the effect of shared experts. This is typically seen when CV surgeons operate at various institutions. The surgical team may be the same, but the outcome is greatly influenced by the ICU team, anesthesiologists, pediatric cardiologists, electrophysiology and interventional cardiologists who help with the postoperative care. In addition, protocols for delivering care do vary considerably between centers and, as a result, varied results should be expected unless these factors are controlled through establishing shared philosophy and protocols of medical care delivered by all physicians and support staff at all medical centers involved in the cooperative effort.

Shared efforts in education and quality improvement Key experts who develop, revise and teach medical care delivery should be shared by cooperating centers. Once protocols of care are established or revised, clinicians experienced in this process should be involved in the cooperative efforts to educate and monitor care at participating sites. A gauge of success in the unified approach to care delivery is quality improvement monitoring where outcome can be weighed against adopted protocols. This should lead to constant refinement of methodologies of care delivery to optimize outcome, not only at a specific center, but also to carry the learned experience to the other participating center(s).

Shared educational efforts Much of the first line of patient care is entrusted to nursing staff, residents and fellows. Therefore, unifying depth of education and clinical training is vital to ensure equity in medical care delivery at the different medical centers. Periodically repeating courses to educate support staff is necessary to capture newcomers and refresh knowledge of more seasoned staff. Unified teams who conduct this education across participating centers are essential to allow for similarity in application of care and pooling of experience from participating centers.

Shared research endeavors Research positively impacts medical care as it exposes medical professionals to the most up-to-date methods of care and allows them to adopt newer techniques in patient management. Cooperative efforts create larger populations of patients, thus allowing for the undertaking of robust research with higher impact and significance.

These efforts will not create a single large program where all are employed by one medical center which reaps the revenues of all patients served. Instead, each center will remain financially independent with a reduced cost of operation while benefiting from being part of a large patient delivery cooperative effort. Physicians, surgeons and trainees of these cooperating programs will enjoy all the advantages of working at mega programs while still being employed by centers that can only afford to have small- or medium-sized pediatric cardiology and CV surgery programs.

I spent a considerable part of my career dreaming, planning and forging such cooperative efforts. Some were long lasting, but most were vanquished by ignored realities. Knowing what does not work is a valuable experience one can put toward building what would work. One's assessment of any matter always remains but a single person's perspective. The real picture can only be formed by views from other angles.

Editor-in-Chief