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Reflecting upon my career in pediatric cardiology, its *dawn* was filled with excitement, learning a new language and gaining skills. We spent a great amount of time in the cardiac pathology lab learning lesions and correlating them with angiograms. Left heart catheterization and open heart surgery were fairly new concepts. All evaluations available to us were a careful history, physical examination, electrocardiogram (sometimes vectorcardiogram—they existed; look it up) and thoracic roentgenogram. Any “blue baby” emergently underwent cardiac catheterization. There was no echo, prostaglandin E1, ECMO, real intensive care or interventional cath beyond balloon atrial septostomy. Pacemakers were just on the horizon. The term “house officer” had a real meaning.

During the *daytime* of my career, new discoveries such as echo, MRI, CT, interventional cath, refined operative techniques/care/anes-thesia, lipidology, prevention of rheumatic fever and adult coronary artery disease, insights into pulmonary hypertension and cardiomyopathies and refinements in electrophysiology opened possibilities previously considered impossible. Cardiac pathology continued to be clarified as it was necessary to present the surgeon with accurate diagnoses, including subtleties of cardiac conduction tissue passage in various lesions. Along with the good came the electronic medical record which has slowed me down a measurable 1/3. Fortunately, the younger generation is much more facile with it. It certainly has potential advantages, but has a long way to go to reach them. Note Dr. Redington's comments regarding its present state.¹

I am at my career's *eventide* and shadows and colors in the setting sun allow a colorful and richer view of things. We are on the exciting crest of applying genetic discoveries beyond diagnosis to possible treatment. We can now offer therapy to fetuses. Newer technologies offer amazing insights into imaging, analysis of function and greater understanding of cell biology. Such have brought amazing never before considered hope to, for example, boys with Duchenne muscular dystrophy.² We are discovering new morbidities in an emerging young (and not so young) adult population that has treated, mistreated and non-treated congenital heart disease. All of the above stated improvements are being refined.

We should consider who will be our future. Today's fellows come from the millennial generation that is very different from that of my time. They are smarter and are better scientists. They face terrible financial pressures from student loans, board examination fees, and MOC fees. They have greater issues balancing work and home life than we did. They have partners who are professionals with their own expectations and time demands. They face incredible scheduling issues

related to co-parenting and job location. They are facile with and dependent upon social media.

Cardiology fellows are facing increasing difficulty getting the ideal postfellowship appointment, as discussed in the latest workforce assessment³ as well as proven by my own experiences in helping them gain employment. The most difficult areas for our fellows to find a job seem to follow those noted in the workforce assessment; catheterization, general cardiology, imaging and electrophysiology. Positions that seem to readily fill (for now) include cardiac ICU, myopathy/heart failure, and young adult cardiology. Nobody seems to mention cardiac pathology, a still badly needed discipline that has already lost Drs. Edwards and Lev, and Drs. VanPraagh and Anderson are senior. Sadly, RVUs are few in this area.

I offer a few truisms for today's fellows.

Whatever facts you are learning today will be outdated tomorrow.

Do an extra year in a subspecialty. Prepare yourselves by fulfilling the fire in your belly. Your perfect job may not be available tomorrow, but when it does come up, you will be ready.

If you work in an academic institution, it is less likely that you will fall behind.

Spend time in the continuity clinic. If your program does not have such, demand it or move. When all is said and done, every cardiologist works in the clinic. It is the core of your experience and is where you really learn to be a cardiologist.

Do not accept “in my opinion” or “we do it this way here.” Be driven by data. If none exist, pursue the question until there are data.

As surgery goes, so goes your program. Many fellows who train in excellent programs discover a different level of quality when they move to a new, often smaller program. The frustrations and ethical considerations that this disparity creates cannot be underestimated.

Solid buildings are built one brick at a time. Don't be in such a hurry. It will happen. Your reputation will not be made in one day (but it can be lost in one). Don't expect sudden notoriety, national reputation, or a gush of referrals on your first day.

Every patient and family has their own story. The patient is not “a case,” but is a person. Respect each patient encounter as a learning, teaching, and research experience. Go back and read Dr. Penny’s editorial about patients and families needing to understand what is wrong with the child and what will happen to him/her.⁴ Be as thorough as possible, treat each patient as if he or she were your own child, and listen.

Keep your humanity and humility. Dr. Lock’s editorial where he bared his soul to all of us offers a prime example of this needed behavior.⁵

The direction of our discipline, as stated above, will include greater emphases on molecular biology, genetic diagnosis, and gene or molecular therapies. Learn these areas and be ready to incorporate them. Fetal diagnosis and treatment will take more of our attention as improvements take place.

We have over 3000 pediatric cardiologists who have passed the board examination but only 350 cardiologists are certified to provide care of adults with congenital heart disease. Congenital heart disease populations number less than 1,000,000 under 21 years of age and over 1,000,000 who are 21 years of age or older. Besides the overwhelming and growing numbers, this young adult population is faced with unanticipated new morbidities, comorbidities, and social issues. Seems a fruitful area into which to cast your net.

So, what is our *future*? I think it is bright, based upon experiences with today’s fellows. It will be different. A generation from now will

look back at our clumsiness in managing congenital heart disease and be bewildered at what we do and the messes we have created—hopefully they will not be smirking at us. Patients will still be the core of all that we do. New subdisciplines will emerge that will demand imagination and preparation.

I wish I could be part of it.

Goodnight.

Hugh D. Allen, MD

REFERENCES

- [1] Redington AN. Consolidate or constipate: What are we going to do with all our registries? *Congenital Heart Disease*. 2017;12:559–560.
- [2] Mendell JR, Rodino-Klapac LR, Sahenk Z, et al., and the Eteplirsen Study Group. Eteplirsen for the Treatment of Duchenne Muscular Dystrophy. *Annals of Neurology*. 2013;74:637–647.
- [3] Ross RD, Srivastava S, Cabrera AG, et al. The United States pediatric cardiology 2015 workforce assessment: A survey of current training and employment patterns. A report of the American College of Cardiology, American Heart Association, American Academy of Pediatrics Section on Cardiology and Cardiac Surgery and Society for Pediatric Cardiology Training Program Directors. *J Am Coll Cardiol*. 2016 Nov 28 [Epub ahead of print].
- [4] Penny DJ. Speaking to children and their families about congenital heart disease: Ushering in a new era of healthcare literacy. *Congenital Heart Disease*. 2017;12:241.
- [5] Lock JE. Are the spin doctors winning? *Congenital Heart Disease*. 2017;12:697–698.