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The COVID-19 pandemic has affected virtually every segment of society and every aspect of daily life. In addition to dealing with the threat of serious infection, it has brought an absolute halt to many of the normal activities of daily life. However, the impact that these interruptions have had upon individual groups has differed markedly. For some it has meant the loss of discretionary activities such as movies and restaurants. For others it meant loss of job and income. Among the factors responsible for the degree of impact from these disruptions, one of particular importance is the ease with which their effects can be reversed.

In a newspaper article, a retired couple described living in a large house in a secluded neighborhood where they could take long walks while rarely encountering other individuals, much less crowds. They subscribe to almost every home television service such as Netflix, and already routinely had groceries and other household needs delivered. The disruption of their lives by COVID was minimal, and there is relatively little recovery necessary. Conversely, a musician friend whose job was terminated due to COVID was forced to go on unemployment and drastically reduce spending. Although this clearly was painful, she is sustained by the fact that, when COVID is controlled and live performances restart, she will rapidly resume her prior life. Finally, another acquaintance lost his manager’s job when the restaurant that employed him closed permanently. The interruption to his life is not only immediate, but he will start from scratch with an uncertain future when COVID abates. Clearly, the duration of the disruption will be very different in these cases.

Perhaps nowhere is the impact of an interruption as great as in education or training. The quality educational time lost is both an immediate problem and creates a challenge to recovery. The challenge seems clearly to be related to the level of education at which the disruption occurs. When learning is stopped at a grade school level, particularly low grades, many subsequent years of schooling remain with which to catch up. Upper grades, high school and college, provide ample opportunity for rescue. When the interruption occurs during college or graduate schooling, the opportunities for recovery are much less. Often such individuals are facing additional periods of education.

An important additional factor impacting the difficulty in regaining the education lost by an interruption is the nature of the learning underway. If the education is primarily book learning, especially memorization, this should be able to be accomplished anytime and with relatively little oversight. If the instruction involves reasoning and judgment, the ability to master this by a student alone might be more difficult. Finally, learning that involves training and the development of sensory or motor skills is the most challenging for a student to acquire on their own. Of relevance to the readers of Structural Heart, cardiac auscultation, interpreting an echo, implanting a coronary stent, and replacing a heart valve are all skills that require both cognition and dexterity. Proficiency at these procedures is closely related to experience, especially when guided by a talented instructor.

The foregoing discussion brings me to the critical question of the impact of COVID upon medical education, especially postgraduate education and specialty training. If teaching hospitals are in lock down, or limited to only emergencies, or nearly totally filled with COVID patients who require the care of all available personnel, the opportunity for education and training is markedly challenged. I am told that this was the case for some institutions at the onset of the pandemic, with house staff essentially fully occupied with COVID patients. My own medical center was limited to only emergencies at that time, and may be again. This obviously creates holes in the education of students, residents, and fellows.

In this regard, advanced training in structural heart disease represents the epitome of highly specialized training that requires cognitive and manual talents largely dependent upon experience. Since patients with structural heart disease do not often present as emergencies (depending, of course, on the definition), they are frequently among the first cases to have restricted admission. This, of course, limits exposure, experience, and expertise. Moreover, since those pursuing advanced structural heart instruction are typically at the very end of a prolonged period of training, the opportunity for catch up is limited. Depending upon the circumstances, trainees confronted with this COVID imposed challenge may find themselves working 24/7 to gain experience or even extending the fellowship program duration. The same would, of course, apply to any trainee that is in the terminal year of the educational program in any discipline.
I must admit that I have not heard much discussion of the effect of COVID upon postgraduate medical education. Perhaps it is not much of an issue. However, I am inclined to think that, as is often the case, the problem is easy to define but the solution is more complicated. If we hypothesize the situation of a trainee that loses access to or is diverted from experience and instruction for one-third or more of a year, how are we to handle this? Clearly it will depend upon the length of the educational program; a three or more year program provides more flexibility than a one or two year fellowship. For those specialties that specify a certain number of procedures, do we require the resident/fellow to continue training until they reach that number, and if so, who pays the salary? Do we try to arrange some form of a transitional position in which the individual is no longer a trainee but works in conjunction with and under the observation of an experienced physician? Or do we just declare that, under the circumstances, the amount of instruction and experience available is adequate, and additional on-the-job training will fill in any gaps?

While it probably looks like a cop-out, it seems obvious to me that the answer is to individualize. The action taken will almost certainly be different for shorter interruptions than lengthier ones, and for longer duration training programs than shorter ones. The importance of manual skills will also likely be an important variable. Of greatest importance will be the rapidity with which the trainee masters the knowledge base and procedural skills. Although specialty programs are typically of fixed duration, it has always been clear that some students require less time, and others a bit more, to acquire expertise. Finally, the concept of “battle ground promotions” needs to be considered. When emergent conditions require immediate action, and few options are available, individuals often assume roles for which they may not be completely or optimally prepared. The COVID pandemic has already elicited such a response on several occasions, including early graduation from nursing school.

Interruptions to training have particular relevance for structural heart disease. The duration of an advanced structural disease program is relatively short, typically one or at most two years. Trainees are almost always at the very end of a protracted period of postgraduate education. Moreover, structural heart procedures require both cognitive and manual skills, and procedural volumes are of definite importance. Some patient anxiety might be expected to arise from being scheduled for transcatheter edge to edge mitral repair performed by an interventionalist and guided by an imager, both of whom were recently trained and had their fellowship disrupted for four or even more months. These considerations will surely occupy a great deal of the attention of the Directors of training programs in advanced structural heart disease. No doubt they will individualize, and ensure that each trainee acquires the appropriate expertise and skills. Interruptions in instruction due to COVID will be a major concern at every level of education, especially in medicine. It seems likely that they will be of particular significance for structural heart disease training programs.

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