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FELLOWS-IN-TRAINING & EARLY CAREER SECTION

INTRODUCTION

The Crucible of Crisis

Responses of Fellows-in-Training and Early Career Cardiologists to the COVID-19 Pandemic



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The only constant in life is change.

—Heraclitus of Ephesus

The coronavirus disease 2019 (COVID-19) is a global pandemic resulting from an acute viral illness that can manifest as severe derangements of the respiratory, cardiac, and immune systems (1). Many patients presenting with acute complications of COVID-19, especially those with underlying cardiovascular comorbidities, have succumbed to its devastating morbidity and mortality (1). As of April 13, 2020, >1.7 million COVID-19 cases have been reported worldwide, resulting in >110,000 deaths globally (2). The COVID-19 pandemic has also resulted in a cataclysmic stress on our health care system, organizational structure, and health care workforce. It has abruptly and adversely impacted the cardiology fellows-in-training (FIT) and early career (EC) cardiovascular professional community. Given the critical need for rapid assimilation and dissemination of knowledge regarding COVID-19, the *Journal* is pleased to share with our FIT-EC readership a series of insightful perspectives from courageous members of our community. We herein provide a brief introduction to this collection and posit questions for readers to consider as they peruse these papers.

From an FIT perspective, Drs. DeFilippis, Stefanescu Schmidt, and Reza share a compelling commentary on how the cardiovascular educational community can support FITs during the COVID-19 pandemic (3). As the authors eloquently discuss, despite the changes deemed necessary due to the pandemic, many FIT educational modalities abound. These include experiential learning, online simulations, virtual procedural experience, telemedicine, and remote education (3); however, several challenges persist. For example, the social and physical distancing imperative (4) has catalyzed a significant transformation of traditional inpatient team structures, including FIT roles and responsibilities. How should FITs contribute meaningfully to inpatient clinical care during this COVID-19 era? Besides supporting direct bedside participation in the care of cardiac intensive care and intermediate care units, to which other inpatient cardiovascular and non-cardiovascular services should programs now assign FITs? Given the very real risks of exposure, how can FITs protect themselves and fulfill their professional and educational responsibilities? From a procedural standpoint, many health systems have deferred elective procedures; consequently, FITs are receiving diminished exposure to critical hands-on, interactive, and supervised experiences performing invasive procedures. It does not seem fair that these FITs should be penalized for not fulfilling all major Accreditation Council for Graduate Medical Education (ACGME) milestones. How then should training programs restructure their curricula? Some institutions may choose to declare Pandemic Emergency Status. However, it is not entirely clear how program directors and clinical competency committees should evaluate which FITs may be ready to matriculate and which may require extensions of training. Perhaps one of the most formidable

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exercises for graduating FITs will be securing job placement. Many FITs may feel particularly disadvantaged as several institutions have implemented hiring freezes in the midst of this COVID-19 pandemic. Some employers have indicated there is no precedent to hire prospective candidates without an in-person interview taking place at some point during the recruitment process. Furthermore, the economic and financial impacts of the pandemic could linger long after the short-term stress on the health care system resolves, thereby hindering job search prospects for FITs. Unfortunately, no clear answers are readily available.

In the next piece in this series, Drs. Almarzooq, Lopes, and Kochar embellish on the theme of virtual learning (5). Cancellation or postponement of educational activities, including national professional society scientific meetings, institutional grand rounds, and departmental journal clubs, has inspired utilization of remote teleconferencing platforms (e.g., Zoom [Zoom Video Communications, San Jose, California], BlueJeans [BlueJeans Network, San Jose, California] WebEx [Cisco Webex, Milpitas, California], etc.) to permit FIT engagement in virtual teaching (3). Dr. Almarzooq and colleagues specifically examine the development and implementation of virtual learning at their institution using Microsoft Teams (Microsoft Corporation, Redmond, Washington), which is similar to the aforementioned platforms in providing a collaborative environment through an integrated, secure, cloud-based system (5). The platform these authors describe is quite versatile and has enabled FITs within their program to share and store articles in the cloud, collaborate on shared documents and projects, and participate in virtual conferences. The latter has been of particular interest, as it has enabled polling of FITs during virtual conferences and utilization of the chat box to promote discussion. Several sessions have been recorded and stored on the work cloud, empowering fellows engaged on the front lines to review important topics and content as their clinical obligations permit. Drs. Almarzooq and colleagues share several important lessons and insights that may be useful to other programs adopting virtual learning platforms (5). We applaud training programs for rapidly adopting virtual learning as a potential strategy to maintain education in the era of social and physical distancing; however, the ultimate educational effectiveness of these virtual conferences compared to traditional live learning remains unproven, particularly in the current environment. We also

wonder which of these innovative strategies will endure in the post-COVID-19 era. Ultimately, only time will tell.

Finally, Dr. Celina Yong shares a thoughtful EC perspective on the myriad challenges the COVID-19 pandemic has imposed on the professional and personal lives of cardiologists (6). She tackles an array of themes including reducing personal risk through a team-based approach, relying on community-based solutions to achieve the ever-elusive work-life balance, and transforming FIT education, among others (6). This personal essay describes the poignant experience of an early career interventional cardiologist in a leadership role. What does one do if his or her hospital runs out of personal protective equipment? How does one responsibly and effectively leverage social media campaigns such as #GetMePPE on Twitter? How should FIT and EC professionals address pragmatic familial concerns, such as abrupt closure of child daycare programs? From a practical and safety standpoint, how does one make the difficult decision to have one's parents, who may be elderly and most vulnerable, babysit one's children? Do universally accepted decontamination protocols exist upon returning home from the hospital? Finally, how do we protect our senior faculty members who may be among the most experienced but also the most medically vulnerable to complications from COVID-19? These are but a few of the thought-provoking questions that Dr. Yong critically examines in her compelling personal essay (6).

In summary, these 3 publications in this COVID-19 series for the *Journal's* FIT-EC section provide unique and valuable insights into the current pandemic. Changing times call for changing measures. While our health system, medical profession, and world economy have dramatically shifted in unprecedented ways within the last few weeks, the commitment, ingenuity, and dedication of our colleagues provide cautious optimism. The late great astrophysicist Stephen Hawking once said, "Intelligence is the ability to adapt to change" (7). These creative and intelligent solutions published in this series will inform our FIT-EC community during a time of grave uncertainty and heightened complexity. We applaud the authors for their contributions and look forward to learning from each other as we grapple with this crisis.

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