Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Navigating Early Careers in Heart Failure in the Era of Novel Coronavirus Disease-2019

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The spread of novel coronavirus disease-2019 (COVID-19) in early 2020 created unprecedented challenges for health care systems and research institutions worldwide. Prompt changes were needed to maintain effective care delivery while mitigating risks for patients, health care workers, and the general population. This evolving era of COVID-19 also continues to affect early career (EC) heart failure (HF) professionals. They must meet training requirements, maintain mentorship, build networks, identify job prospects, and develop clinical and research interests while ensuring safe and effective care for patients. They must also juggle new and challenging personal responsibilities (eg, managing childcare and virtual learning) and ensure that professional activities minimize personal and family exposure to COVID-19. As such, the career goals of EC professionals must be reevaluated to accommodate COVID-19. However, this shift also offered an opportunity for EC professionals to creatively reconfigure HF clinical care, academics, and research while safely advancing their careers. In this Perspective, members of the interdisciplinary Heart Failure Society of America (HFSA) Early Career Committee, a group of cardiologists, nurse practitioners, pharmacists, and research scientists from multiple backgrounds, outline the effects of the COVID-19 pandemic and leverage diverse experiences to identify career growth opportunities for EC HF professionals (Fig. 1).

Changes in Clinical Activities

In the initial phase of the COVID-19 pandemic, several telehealth strategies emerged to decrease in-person visits. Federal initiation of payment parity for telehealth and phone-based services[1,2] incentivized clinicians to provide safe and effective services across state lines. Remote health care options have enabled continued access to HF specialists and decreased patient stress and travel, minimizing COVID-19 exposure for patients and clinicians.[3] Moreover, the telehealth shift highlighted the usefulness of remote monitoring through implantable hemodynamic monitors, proprietary implantable cardioverter defibrillator–based technologies, and care management programs.

Moving forward, EC professionals are encouraged to use their familiarity with audiovisual portals, social media, and telecommunication tools to lead the development and optimization of remote visit workflows and pilot new care mechanisms. For example, noninvasive hemodynamic measurements could be combined with home vital sign readings to titrate diuretics, improving remote visit usefulness. Additionally, EC professionals should be included in decision-making processes regarding clinical care given their frontline exposure.

Changes in Academic Activities

The COVID-19 pandemic acutely decreased HF hospitalizations by about 50%[4] in addition to a decrement in in-person outpatient visits;[5] these changes placed some training programs' accreditation at risk,[6] particularly in relation to procedural skills requirements for trainees in the last year of fellowship. In response, EC professionals have worked in multiple settings to augment clinical and procedural experience. In procedure-heavy areas, clinical competencies and cognitive skills are stressed to bridge gaps in volume.[6] Many organizations have extended certification dates and identified methods to address procedural deficiencies, while also supplementing training with webinars and regional patient case discussions. HFSA embraces similar opportunities with a virtual conference with extended session access.

Repurposing time can offer opportunities for other clinical or academic pursuits, such as the acquisition of additional skills (eg, research methodologies, didactic learning)

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Fig. 1. Challenges and strategic clinical, research, and academic opportunities for EC HF professionals in the new era of COVID-19. COVID-19, coronavirus disease 2019; EC, early career; HF, heart failure.

or re-exploration of uncompleted research and quality improvement projects. EC professionals can also step into administrative and leadership voids created as others shift their time and focus. Additionally, the transition of most educational programs (eg, grand rounds, conferences) to virtual platforms[7] may allow individuals to spend more time learning and integrating evolving clinical guidelines without the expense and hassle of traveling. Nevertheless, current physical distancing restrictions limit critically important in-person interactions needed to build and maintain professional networks. EC HF professionals can leverage virtual platforms (eg, HFSA web forums, Twitter, and Facebook groups) to engage in HF clinical and research dialogue and foster mentorship.

Changes in Research Activities

In parallel with sudden clinical changes, nonessential research activities were suspended to protect research staff and high-risk patients. Estimates suggest that nearly 80% of in-person research was halted within days of the recognition of the COVID-19 pandemic.[8] To maintain clinical trials, researchers pivoted to remote data collection when possible. However, basic science laboratories were forced to shut down on-going experiments and cull animal colonies at significant financial and professional costs. Many efforts were diverted toward understanding COVID-19 at the molecular and epidemiologic levels, but these shifts often relied on established senior researchers, and EC professionals had difficulty becoming involved to grow themselves as independent investigators.

As research resumes in this new landscape, EC professionals have to be nimble and creative in research pursuits. For example, because patients with HF are at high risk for serious COVID-19 complications,[9] clinical studies will use remote data collection methodologies whenever possible. EC HF professionals may leverage their experiences to lead these efforts to restructure data collection within the home and community environments, including partnering with HF patients' families and community settings. The current environment might facilitate improved local interactions, such as partnerships with new clinical facilities (eg, local laboratory testing) and enhanced connection with HF patients in rural settings via telecommunication, and thereby better local uptake of interventions. There will also be new opportunities for quality improvement and comparative effectiveness programs for new HF clinical workflows. Additionally, EC investigators can capitalize on many areas

of HF research such as incorporating the plethora of data on COVID-19 pathophysiology, as well as addressing the non-clinical sequelae of COVID-19 (eg, impact of social isolation measures).[10] There may be greater opportunity for collaboration on studies using large datasets in a virtual space. Because EC professionals may lack substantial funding at this stage, it will be critical to lean on strong mentors who can help to nurture these pursuits.

Conclusion

The COVID-19 pandemic generated significant clinical, academic, and research challenges for EC HF professionals at a critical juncture of their career trajectory. Many EC HF professionals are also navigating added family responsibilities, disruptions to childcare, and virtual learning for children. Because it can be difficult for EC HF professionals to juggle all of these changes, the effects of the COVID-19 pandemic should be factored into career progression metrics (eg, adjusting tenure clocks). However, the pandemic has also created unique opportunities that EC HF professionals may be well poised to lead, including reconfiguring the delivery of clinical care in the context of the HF patient's home and community setting, spearheading efforts to remain connected to HF colleagues through social media platforms, and redesigning HF research studies that leverage new collaborations and have broader reach. Across all of these efforts, EC HF professionals can use this opportunity to redefine successful work−life balance with support from institutions and organizations such as the HFSA.

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References

1. List of Telehealth Services. Available at: https://www.cms.gov/Medicare/Medicare-General-Information/Telehealth/Telehealth-Codes. Published 2020. Accessed August 28, 2020.
2. H.R. 6074. Coronavirus Preparedness and Response Supplemental Appropriations Act. In: 116th Congress; 2020. (2019−2020).
3. Gorodeski EZ, Goyal P, Cox ZL, et al. Virtual visits for care of patients with heart failure in the era of COVID-19: a statement from the Heart Failure Society of America. J Card Fail 2020;26:448–56.
4. Hall ME, Vaduganathan M, Khan MS, et al. Reductions in heart failure hospitalizations during the COVID-19 pandemic. J Card Fail 2020;26:462–3.
5. McIlvennan CK, Allen LA, Devore AD, Granger CB, Kaltenbach LA, Granger BB. Changes in care delivery for patients with heart failure during the COVID-19 pandemic: results of a multicenter survey. J Card Fail 2020;26:635–6.
6. Gupta T, Nazif TM, Vahl TP, et al. Impact of the COVID-19 pandemic on interventional cardiology fellowship training in the New York metropolitan area: a perspective from the United States epicenter. Catheter Cardiovasc Interv 2020. May 16 [Epub ahead of print].
7. Almarzooq ZI, Lopes M, Kochar A. Virtual learning during the COVID-19 pandemic. J Am Coll Cardiol 2020;75:2635.
8. Wigginton NS, Cunningham RM, Katz RH, et al. Moving academic research forward during COVID-19. Science 2020. eabc5599.
9. Ranard LS, Fried JA, Abdalla M, et al. Approach to acute cardiovascular complications in COVID-19 infection. Circ Heart Fail 2020;13:e007220.
10. Reza N, DeFilippis EM, Jessup M. Secondary impact of the COVID-19 pandemic on patients with heart failure. Circ Heart Fail 2020;13:e007219.