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.

acid-treated single antigen beads was also performed on those donors with class I HLA-Ab to confirm that the reactivity observed was to intact HLA.[6]

During the collection period, 157 unique CCP donors underwent HLA-Ab screening, and 16 CCP donors (10.1%) were deferred for a positive HLA-Ab screen. Of 69 unique male CCP donors, 5 screened positive for HLA-Ab (7.2%; Table); HLA-Ab specificities of all 5 male positive HLA antibody screens were confirmed and identified by SAB. Additional testing against acid-treated HLA beads for the 4 donors with class I HLA-Ab revealed that those with detected HLA-Ab essentially did not have reactivity against denatured HLA targets and are thus clinically relevant (Figure). None of these 5 male CCP donors had a history of transfusion, transplantation, or pregnancy. This male HLA-Ab screening positivity rate was significantly higher than expected for this donor population ($P<.0001$; χ^2 test). In all, male donors represented 31% of all CCP donors who have screened positive for HLA-Ab (5 of 16).

Given these findings in this unique donor population, further studies are needed to better understand the association of HLA-Ab with SARS-CoV-2 infection. Confirmation of these findings could have significant implications on CCP donor screening to help mitigate the risk of TRALI, especially now that use of CCP has broadened to any hospitalized patient with COVID-19 under an FDA Emergency-Use Authorization. Confirmation of these findings would also add to the growing body of literature on the role of viral infection in development of HLA-Ab, which could have broader implications for persons prone to chronic infections (eg, patients with cystic fibrosis who need lung transplantation).

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1. Joyner MJ, Wright RS, Fairweather D, et al. Early safety indicators of COVID-19 convalescent plasma in 5000 patients. *J Clin Invest*. 2020;130(9):4791-4797.
2. D'Orsogna L, van den Heuvel H, van Kooten C, Heidt S, Claas FHJ. Infectious pathogens may trigger specific allo-HLA reactivity via multiple mechanisms. *Immunogenetics*. 2017;69(8-9):631-641.
3. Russell MR, Halnon NJ, Alejos JC, Salem MM, Reardon LC. COVID-19 in a pediatric heart transplant recipient: emergence of donor-specific antibodies. *J Heart Lung Transplant*. 2020;39(7):732-733.
4. Triulzi DJ, Kleinman S, Kakaiya RM, et al. The effect of previous pregnancy and transfusion on HLA alloimmunization in blood donors: implications for a transfusion-related acute lung injury risk reduction strategy. *Transfusion*. 2009;49(9):1825-1835.
5. Carrick DM, Norris PJ, Endres RO, et al. Establishing assay cutoffs for HLA antibody screening of apheresis donors. *Transfusion*. 2011;51(10):2092-2101.
6. Jacob EK, De Goey SR, Gandhi MJ. Positive virtual crossmatch with negative flow crossmatch results in two cases. *Transpl Immunol*. 2011;25(1):77-81.

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The Recalibration of Interventional Cardiology During COVID-19: An Opportunity for a Future Paradigm

A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty.
Winston Churchill, 1938

To the Editor: As a consequence of the coronavirus disease 2019 (COVID-19) pandemic, hospitals have had to reconfigure the role for cardiac intensive care unit (CICU) staffing to meet the health care needs of their communities.[1] Interventional cardiologists (ICs), among other specialists, have been redeployed in the CICU to take care of a primary respiratory illness with multiorgan failure.[1,2] These physicians are required to be skilled with ventilator management, end-organ injury, fluid and electrolyte balance, and end-of-life care. Even before the COVID-19 pandemic, the CICU had noted dramatic shifts in its landscape and started to resemble a medical intensive care unit population with a primary cardiac illness complicated by multiorgan involvement and intensive care needs.[2-4] This contrast has been further amplified by the ongoing pandemic.

How then must the IC seek the opportunity within this difficulty? Interventional cardiology has increasingly become subspecialized with training programs for complex coronary, structural, and peripheral interventions. Increasingly, the IC has been required to serve as a leader of the acute cardiovascular team caring for patients with acute coronary syndrome, cardiogenic shock, cardiac arrest, and pulmonary embolism.[2,4] In the catheterization laboratory, rapid decisions such as vascular access, hemodynamic evaluation, mechanical circulatory support, internal cooling, mechanical compression devices, and vasoactive medications are often made while performing diagnostic or therapeutic coronary interventions. In such circumstances, the training

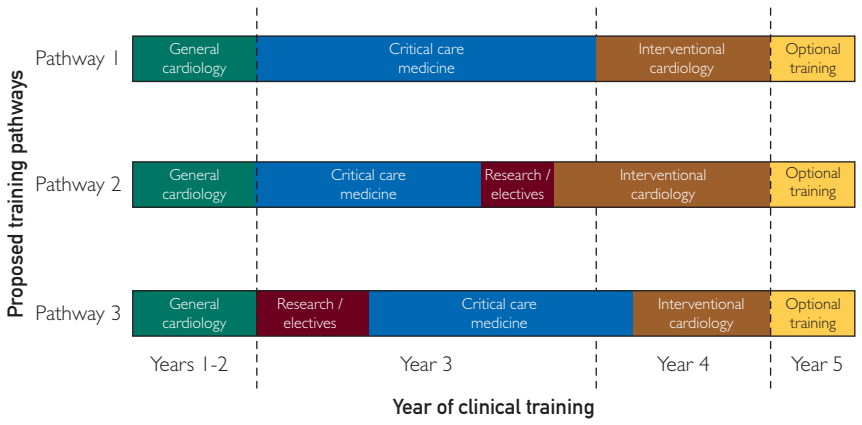

FIGURE. Proposed training paradigms during a 4-year period in interventional–critical care cardiology.

and knowledge in critical care cardiology are of great additional value for the treating IC.[2,4]

Studies have shown that there is clear need for critical care cardiologists; however, there are only 400 critical care cardiologists in the United States.[2-5] In comparison, every major center in the United States employs an IC. In lieu of these established paradigms, we propose a novel training pathway of an acute care cardiologist with dual training in interventional cardiology–critical care cardiology. The requirements for interventional cardiology–critical care cardiology can be achieved in 4 years (Figure) as against interventional cardiology–heart failure or heart failure–critical care cardiology, both of which require 5 years.[2,5] Prior position statements have highlighted the need for a hybrid training paradigm in interventional cardiology–critical care cardiology.[2-5] These physicians serve as an internal referral for acutely ill cardiovascular patients who need percutaneous therapeutic options because they are too sick for surgical therapy. These high-risk operators serve as the connecting link between the 2 acute care realms of the CICU and the catheterization laboratory. This proposed paradigm requires significant intellectual, logistical, and academic commitment from institutional leadership and may remain unique to high-volume centers that are able to confer holistic experiences in both domains.

In summary, we propose a unique training pathway that will serve the acute care needs of the contemporary cardiovascular patient while not burdening the cardiovascular trainee with additional years of training. Although this may have been the logical course of evolution in the decades to come, the COVID-19 pandemic has provided impetus to this change and will likely mark a watershed event in acute cardiovascular care paradigms around the country.[1]

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1. Vallabhajosyula S, Friedman PA, Bell MR. Cardiovascular health in the COVID-19 era: a call for action and education. *Mayo Clin Proc*. 2020;95(8):1584-1588.
2. Vallabhajosyula S, Kapur NK, Dunlay SM. Hybrid training in acute cardiovascular care: the next frontier for the care of complex cardiac patients. *Circ Cardiovasc Qual Outcomes*. 2020;13(8):e006507.
3. Morrow DA, Fang JC, Fintel DJ, et al. Evolution of critical care cardiology: transformation of the cardiovascular intensive care unit and the emerging need for new medical staffing and training models: a scientific statement from the American Heart Association. *Circulation*. 2012;126(11):1408-1428.
4. Klein LW, Rab ST, Anderson HV, et al. The implications of acute clinical care responsibilities on the contemporary practice of interventional cardiology. *JACC Cardiovasc Interv*. 2019;12(6):595-599.
5. Panhwar MS, Chatterjee S, Kalra A. Training the critical care cardiologists of the future: an interventional cardiology critical care pathway. *J Am Coll Cardiol*. 2020;75(23):2984-2988.

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Loop Diuretic Use and Outcomes in Chronic Stable Heart Failure With Preserved Ejection Fraction—Reply

To The Editor: Effective treatments to mitigate the rising prevalence of heart failure (HF) with preserved ejection