

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.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Preface The Critical Need for Process Improvement in Heart Failure





Clyde W. Yancy, MD, MSc, MACC, FAHA, MACP, FHFSA



Editors



Eduardo Bossone, MD, PhD, FCCP, FESC, FACC

When we conceived our vision for a contribution to Heart Failure Clinics on process improvement in heart failure in mid-2018, we could not have imagined the future we would have to navigate (as of this writing in mid-2020). We have faced 3 major forces that have emphasized that indeed process improvement leading to ideal execution is a much needed skillset if today's challenges are to be overcome and success is to be realized in 2020 and beyond. Those 3 forces have included striking progress in new therapeutics and new approaches in the treatment of heart failure¹; the glaring exposition of still evident health care disparities brought forward by the pandemic of COVID-19^{2,3}; and the heavy weight of racism, including structural racism in medicine,⁴ that must now be executed. The triangulation of these compelling forces finds heart failure in the epicenter.

Interposing into this moment an issue on heart failure process improvement may seem at first glance as an imposition, but those of us in the quality improvement space understand that process improvement and the attainment of best quality is race/color/socioeconomic status/sex/ gender blind, and with the correct process strategies and performance metrics in place, all persons benefit. This has not however been an easy issue to compose. Our sense of normal has evaporated; we are now in an era where nothing is routine. Even in the absence of a pandemic or in an environment where our awareness of social causes was more quiescent, we would still face an almost unnavigable clinical conundrum—just for heart failure with reduced ejection fraction, there are now 10 approved medical therapeutics, five approved devices, a multitude of accepted care strategies,⁵ and an increasingly scrutinized regulatory space still being met with harsh penalties for presumed lapses in care.⁶

We align with those who have remarked that within every crisis lies an opportunity. Thus, we applaud our contributors for seizing this opportunity—even in the midst of this trying moment and evolving a robust, well-referenced, and deeply grounded approach to process improvement that may restore our current frayed infrastructure and yield a heretofore unimagined victory in the quality of care. We believe the strategies developed in this issue extend far beyond heart failure; we suspect this issue will now serve as a template for other disease entities intent on crafting a path forward.

Our answer to establishing that path forward is simple: process improvement, rooted in pragmatism, is paramount. Our impact on human health is not measured by the elegance of our ideas, but by the fullness of our patients' lives. Can we treat all the right patients at the right time with the correct interventions delivered in the most equitable manner feasible? Process improvement creates the conduit through which the hard-won advances in our laboratories and the successes of our clinical trials flow to people burdened by heart failure. Process improvement creates structure from disorder; emphasizes the patient, regardless of patient characteristics, over the provider; and insists on integration over uncoordinated activity. Building this scaffolding of process improvement helps everyone and especially helps the most vulnerable among us.

In composing this issue, we have invited experts in the field to contribute their latest thinking on diverse topics pertaining to process improvement. You will see from the contents herein that effecting process improvement in modern health care requires a diverse skillset, including understanding operations management principles; harnessing the power of informatics for patient identification, prediction, and records integration; developing a focus on patients and populations while attending to comorbidities; and adapting to new payment models. Not all our contributors are cardiologists; that is for the good. See the economists, data scientists, informatics experts, guideline writing experts, and public policy leaders. This is how we more fully develop the best processes and in turn impact the most patients.

Process improvement work is not easy, and is certainly not glamorous, but it is necessary. We execute the heavy lifting that needs to be done regardless of reward as we understand that good process improvement is the foundational pillar of successful execution. Given the millions of lives and billions of dollars at stake for heart failure alone, we can't miss this opportunity.

We are confident the tools and information in this issue will aid you in your work to improve the care of patients with heart failure. And that through today's multifaceted and challenging lens, this will be the template that will serve as a touchstone for best processes of care in the treatment of heart failure.

Quality of care in heart failure is no longer just about alignment with evidence-based guidelinedirected care. In contemporary care we must understand the many dimensions of care and seek every opportunity to optimize outcomes. Process improvement allows us to go well beyond application of guidelines and/or those improvements we can enable with order sets. The incorporation of unique skill sets in informatics, patient-reported outcomes, enabling technologies including electronic health records, and a deeper understanding about population health unlocks significant new potential for process improvement to enhance the life and living experience of those with heart failure. When incorporated with the many iterations of the clinical experience of heart failure including the

surfeit of comorbidities and the ascertainment of risk for poor outcomes, even more opportunities to improve care become evident. Finally, calculating precise value-based assessments and adding best business practices to the model take us well beyond the use of any given indicated medical therapeutic and well into a new era of deep interconnected process improvement. For the challenge that heart failure represents, made so evident during the COVID-19 deeper considerations crisis, these of process improvement are now timely and necessary as we prepare to care for heart failure in the future.

Clyde W. Yancy, MD, MSc, MACC, FAHA, MACP, FHFSA Division of Cardiology Northwestern University Feinberg School of Medicine 676 North Saint Clair Street Chicago, IL 60611, USA

> R. Kannan Mutharasan, MD, FACC Division of Cardiology Department of Medicine Northwestern University Feinberg School of Medicine Bluhm Cardiovascular Institute 676 North Saint Clair Street Chicago, IL 60611, USA

Eduardo Bossone, MD, PhD, FCCP, FESC, FACC Division of Cardiology Cardarelli Hospital Via A. Cardarelli, 9 Naples 80131, Italy

E-mail addresses: cyancy@nm.org (C.W. Yancy) kannanm@northwestern.edu (R.K. Mutharasan) ebossone@hotmail.com (E. Bossone)

REFERENCES

- Vaduganathan M, Claggett BL, Jhund PS, et al. Estimating lifetime benefits of comprehensive diseasemodifying pharmacological therapies in patients with heart failure with reduced ejection fraction: a comparative analysis of three randomised controlled trials. Lancet 2020;396(10244):121–8. https://doi. org/10.1016/S0140-6736(20)30748-0.
- 2. Yancy CW. COVID-19 and African Americans. JAMA 2020. https://doi.org/10.1001/jama.2020.6548.
- Bhala N, Curry G, Martineau AR, et al. Sharpening the global focus on ethnicity and race in the time of COVID-19. Lancet 2020;395(10238):1673–6. https:// doi.org/10.1016/S0140-6736(20)31102-8.

- Yancy CW. Academic medicine and black lives matter: time for deep listening. JAMA 2020. https://doi. org/10.1001/jama.2020.12532.
- Takeda A, Martin N, Taylor RS, et al. Disease management interventions for heart failure. Cochrane Database Syst Rev 2019;(1):CD002752. https://doi.org/ 10.1002/14651858.CD002752.pub4.
- Wadhera RK, Vaduganathan M, Jiang GY, et al. Performance in federal value-based programs of hospitals recognized by the American Heart Association and American College of Cardiology for high-quality heart failure and acute myocardial infarction care. JAMA Cardiol 2020. https://doi.org/10.1001/ jamacardio.2020.0001.