

Cardiology after COVID-19: *Quo Vademus?*

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Since the beginning of 2020, the novel SARS-CoV2 has dramatically changed the global landscape. Undoubtedly, the COVID-19 pandemic will, and already has, encroached on everyone's life. Similarly, all healthcare systems will be profoundly affected by its surge. In this difficult time, all efforts have focused on the reorganization of stressed healthcare systems. Hospitals have significantly reduced non-COVID bed capacity and redeployed significant parts of their workforce to COVID wards and intensive care units. Non-urgent procedures have been postponed and routine outpatient appointments have been either cancelled or conducted remotely. Managing the strain on healthcare systems while continuing to provide the best possible care for our patients is currently the most compelling issue in medicine. During this time, the response of healthcare professionals has been admirable and passionate, and has no doubt mitigated the morbidity and mortality associated with COVID-19.

In cardiology, as in other areas of medicine, there has been a concomitant reduction in the number of hospital presentations for cardiovascular conditions, including ischemic heart disease, endocarditis, and decompensated heart failure²⁻⁴. Although the real impact on demand for cardiovascular services is not yet known, these reports highlight an associated significant reduction in emergency procedures for cardiovascular diseases during the outbreak²⁻⁴. Whether this change reflects a change in patient or doctor behaviour is unknown, but probably relates to both. Undeniably, the psychological impact of the pandemic on patients is significant. Fewer subjects with cardiac conditions are seeking help as most are reluctant to visit hospital^{3,5}. This behaviour, together with the cessation of routine cardiovascular procedures, is helping healthcare systems to cope with the excessive admission rate of patients with COVID-19. It also presents an important opportunity to reassess the role of cardiovascular services forged through real world experiences during the pandemic.

The last decades have seen dramatic improvements in cardiology practice, with concomitant improvements in survival^{6,7}. Complex interventions are now being offered to increasing numbers of patients for ever-widening indications. This drives progress and innovation but comes at a cost to struggling healthcare systems.

Although it is unlikely that the epidemiology of cardiovascular disease has changed during the COVID-19 pandemic, the range of investigations and treatments has certainly contracted. Whether this will translate into adverse outcomes will become evident in the months and years to come. Evidence that predates the pandemic does suggest that certain elements of cardiovascular practice, such as withdrawing disease-modifying therapy from patients with heart failure or a less invasive approach to treating aortic stenosis, might be harmful^{8,9}. However, other evidence suggests that aggressive or invasive management may be less effective for a wide range of stable patients¹⁰⁻¹³. Some of these changes, such as a shift towards medical management of stable angina, are controversial but have been enforced by the COVID-19 pandemic. This, therefore, presents an opportunity to confirm, or dispute, the results of recent trials in a real-world population setting.

We may get some indication by carefully observing changes in demand for cardiology services after the pandemic. The current reduction in cardiovascular admissions and routine outpatient work might be followed by two profoundly different phenomena: either a rebound of patients with cardiovascular conditions requiring intensive treatment, or a more blunted recovery.

In the first scenario, the suspension of routine cardiovascular care would be expected to result in deterioration of chronic cardiovascular conditions, increased admissions, and higher morbidity and mortality. This will mandate a prompt return to normal, or even increased, patterns of work.

Conversely, we may experience a more moderate increase in demand in the first weeks after the pandemic. In this case, the postponement in elective procedures and a shift towards more virtual care may not be associated with a significantly higher demand of cardiovascular care. If there is no concomitant increase in mortality, it might suggest an overly invasive existing model of care. In this

situation, novel strategies to follow up cardiac patients, such as virtual appointments, might become the norm. The reduction in bureaucracy we have observed during the COVID-19 pandemic, and more timely and efficient decision-making strategies, could become commonplace. If trial evidence is borne out in retrospective cohorts, less invasive approaches might be considered for low-risk patients, without considerable impact on outcomes.

These two different scenarios will provide important insights into our daily practice and it is important that we seize this unique opportunity to reflect on the status quo. Careful and unbiased analysis of epidemiological data is required to ascertain what facets of 'routine' care we can do without. The COVID-19 pandemic will provide the kind of comparison data that few imagined possible, and careful scrutiny could help trim unnecessary and burdensome interventions for the benefit of patients, healthcare professionals and healthcare systems. Renewed purpose towards achieving optimum cardiovascular care must take place promptly to realise the maximum benefit from this challenging and stressful situation.

It is our choices that show what we truly are, far more than our abilities.¹⁴

The profound changes in healthcare systems that are necessary to face the COVID-19 pandemic might represent a chance to address the limitations of our systems and to facilitate more novel, but equally effective, future care. A recalibration of everyday life follows every catastrophic event, such as wars or pandemics, and medicine should not miss this unique opportunity to improve healthcare for future generations.

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