

COVID-19's toll on global cardiac services

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A major study has revealed the "global collateral damage" caused by the disruption to cardiac services from the COVID-19 pandemic.

The researchers warn that problems with [heart health](#) will "...continue to accrue unless mitigation strategies are speedily implemented".

In the two years from December 2019, when [health systems](#) around the world were under extreme pressure and people were fearful of catching COVID-19, individuals experiencing an acute cardiac event such as a heart attack or heart failure either stayed away or could not get admitted to a hospital.

The study describes a "substantial global decline" in hospital admissions of people suffering from cardiovascular disease.

As a result, the number of people dying at home or in the community from heart conditions increased.

In cases where people did get [medical help](#) there was, on average, more than an hour's delay in reaching hospital or having contact with paramedics. The chances of people surviving a major heart attack depends on timely and appropriate treatment.

Although the problems identified by the researchers were seen across the world, they were exacerbated in low to [middle income countries](#).

Hospitals and clinics in those locations struggled to give the gold standard treatment, in some cases using drugs instead of interventional procedures such as fitting a stent into a blocked artery.

The result has been an increased death rate among cardiovascular patients in hospitals in low to middle income countries, as well as more people dying at home from cardiovascular disease in the UK.

Involving an international team of doctors and data scientists led by the University of Leeds, the study gives the first global assessment of the way cardiovascular services coped during the pandemic.

The study, "The collateral damage of COVID-19 on cardiovascular

services—a [meta-analysis](#)", is published today (Tuesday, May 31) in the *European Heart Journal*.

In the review, the research team analysed data from 189 separate research papers looking at COVID-19's impact on cardiovascular services from 48 countries on six continents and covering a two-year period from December 2019.

Dr. Ramesh Nadarajah, a British Heart Foundation Clinical Research Fellow at the University of Leeds and lead author of the paper, said: "Heart disease is the number one killer in most countries—and the analysis shows that during the pandemic people across the world, people did not receive the cardiac care they should have received.

"That will have ramifications.

"The longer people wait for treatment for a heart attack, the greater the damage to their [heart muscle](#), causing complications that can be fatal or cause chronic ill health. Health systems need to reinforce systems to help support and treat people whose [heart conditions](#) will inevitably be worse because of the pandemic. The paper provides evidence of that."

Previous systemic reviews of the impact of COVID-19 on cardiovascular services have presented an "incomplete overview", say the researchers. To address that, they comprehensively investigated a range of heart services from hospitalisations, heart disease management, diagnostic procedures, outpatient consultations and mortality rates and across regions. They combined data from multiple studies to give a value for the number of cases hospitals and clinics were seeing compared to the expected caseload if there wasn't a pandemic.

Data from low to middle income countries is sparse and the researchers believe their findings underplay the true extent of the impact of

COVID-19 disruption on heart services in low to middle income countries.

Dr. Samira Asma, Assistant Director-General for Data, Analytics and Delivery for Impact at the World Health Organization (WHO) and one of the paper's authors, said: "This research shows how the COVID-19 pandemic has disrupted cardiac services at all levels and across all continents, and it would be important to continue studying the impact of this disruption.

"The analysis is revealing that the burden of COVID-19 has disproportionately fallen on low to middle income countries and we suspect it will widen the inequality gap in health outcomes of cardiac care between high-income countries and low to middle income countries, where 80% of the world's population live. This underscores the need for universal health coverage and access to quality care, even more so during the pandemic."

Earlier this month, WHO published estimates of the excess deaths associated with COVID-19 pandemic, which would include people who were unable to access prevention and treatment for cardiovascular diseases due to overwhelmed health systems.

During 2020 and 2021, WHO calculated there were 14.9 million excess deaths globally.

Problems with heart health 'will accrue'

Writing in the research paper, the authors warn that the disruption to cardiovascular services will leave a legacy that will require prompt action on the part of health administrators.

The researchers said: "Collateral cardiovascular damage from missed

diagnoses and delayed treatments will continue to accrue unless mitigation strategies are speedily implemented. The deferral of interventional procedures, especially for structural heart disease, leaves many patients at high risk of adverse outcomes."

Professor Chris Gale, Consultant Cardiologist and senior author said: "The repercussions of the COVID-19 pandemic on cardiovascular care and outcomes will be with us for a long while yet.

"There is little doubt that there will continue to be deaths and illness that would not have otherwise occurred. Urgent action is needed to address the burden of [cardiovascular disease](#) left in the wake of the pandemic."

Professor Deepak L Bhatt, Executive Director of Interventional Cardiovascular Programs at Brigham and Women's Hospital, Professor of Medicine at Harvard Medical School and a senior author in the paper, said: "This analysis really brings to light the substantial impact the COVID-19 pandemic has had and will continue to have in harming cardiovascular health globally."

Headline findings

Because of the different way the statistics in the survey had been collated, the researchers used percentages to compare services.

Hospitalisations

- Hospitalisations—across the world, hospitals saw a 22% decline in people experiencing a serious heart attack where one of the arteries serving the heart is completely blocked (STEMI heart attack). There was 34% decline in people attending hospital with a less severe form of heart attack, where an artery is partially blocked (NSTEMI heart attack). The drop in patients was not

due to fewer heart attacks but fewer people attending hospital for treatment.

The decline in people attending hospital was seen around the world but was greater in low to middle income countries.

Treatment delays

- On average, it was taking patients 69 minutes longer to receive medical assistance for a serious heart attack after the start of their symptoms.

Management of a heart attack

- The gold standard treatment for many heart attack patients is to have a stent inserted into the blocked artery. In many low to middle income countries there was a sharp decline in those procedures being carried out: in just 73% of cases where the patient was having a major heart attack and 69% of cases where the patient was suffering a less severe heart attack. There was a shift to treat patients with clot busting drugs instead.

Heart operations

- Globally, there was a 34% drop in heart operations.

Interventional procedures

- Just over half (51%) of the electronic implantable devices, such

as pacemakers, used to control abnormal [heart](#) rhythms were fitted when compared to the non-COVID-19 period.

Deaths due to [heart disease](#)

- Globally, among patients in hospital after having had a major [heart attack](#) or [heart failure](#), the number of people dying from any cause was up by 17%. This was driven by an increase in the death rates among cardiovascular patients in low to middle income countries.
- Studies from the early phase of the pandemic in the UK revealed a "displacement of death" effect where more people were dying from acute coronary events at home—running at 31% rather than the expected 24%. In care homes, the figures were 16% versus 14%.

More information: The collateral damage of COVID-19 on cardiovascular services—a meta-analysis, *European Heart Journal* (2022). [DOI: 10.1093/eurheartj/ehac227](https://doi.org/10.1093/eurheartj/ehac227)

Provided by University of Leeds

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