

# Cardiovascular disease and covid-19 in Europe: Seeing the warning signs and preparing for action



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## The effects of covid-19

Covid-19 has been responsible for significant morbidity and mortality globally, and cardiovascular disease (CVD) is one of the conditions which exacerbate its impact. Compared with people who do not have CVD, those with CVD are:

Up to **3.9x** times more likely to experience severe symptoms from covid-19<sup>1</sup>

Up to **2.7x** times more likely to die from covid-19<sup>1</sup>

**Survivors of covid-19 can continue to experience negative health effects after recovery (sequelae),** including cardiovascular effects. Growing evidence suggests that covid-19 itself, as well as measures taken to fight the pandemic, are likely to drive an overall increase in the CVD burden.

## Covid-19 increases CVD-related risks



**Chest pains** are among the most common patient-reported after-effects of covid-19, affecting around 17% of people<sup>2</sup>



**40% of people** showed signs of stiffening of their heart muscle (diastolic dysfunction) on echocardiography 3 to 6 months after having covid-19<sup>3</sup>



**Major cardiovascular events\*** affect almost 5% of people hospitalised with covid-19 in the 5 months following discharge—3 times higher than the rate in the general population<sup>4</sup>

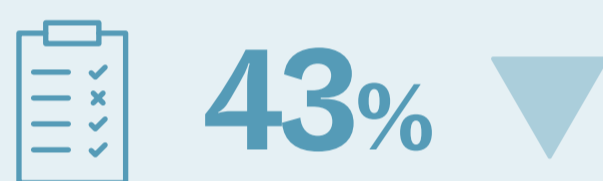
\*Heart failure, heart attack, stroke or irregular heart beat (arrhythmia)

## The pandemic disrupted CVD care

During the pandemic prioritisation of emergency covid-19 services as well as lockdown measures led to **delays in risk factor detection, diagnoses, and routine and emergency cardiovascular care**, and this was made worse by patients being too afraid to present.



Deaths from cardiac conditions, lung clots, or stroke rose by 7.6% in central Germany during lockdown, compared to the same period in 2019 – suggesting that people were presenting later, reducing the chances of successful treatment<sup>5</sup>



There was a 43% reduction in expected diagnoses of circulatory-system diseases during the first wave of the pandemic in an area in the UK<sup>6</sup>



Up to 31% of countries reported disruption to emergency cardiovascular services<sup>7</sup>



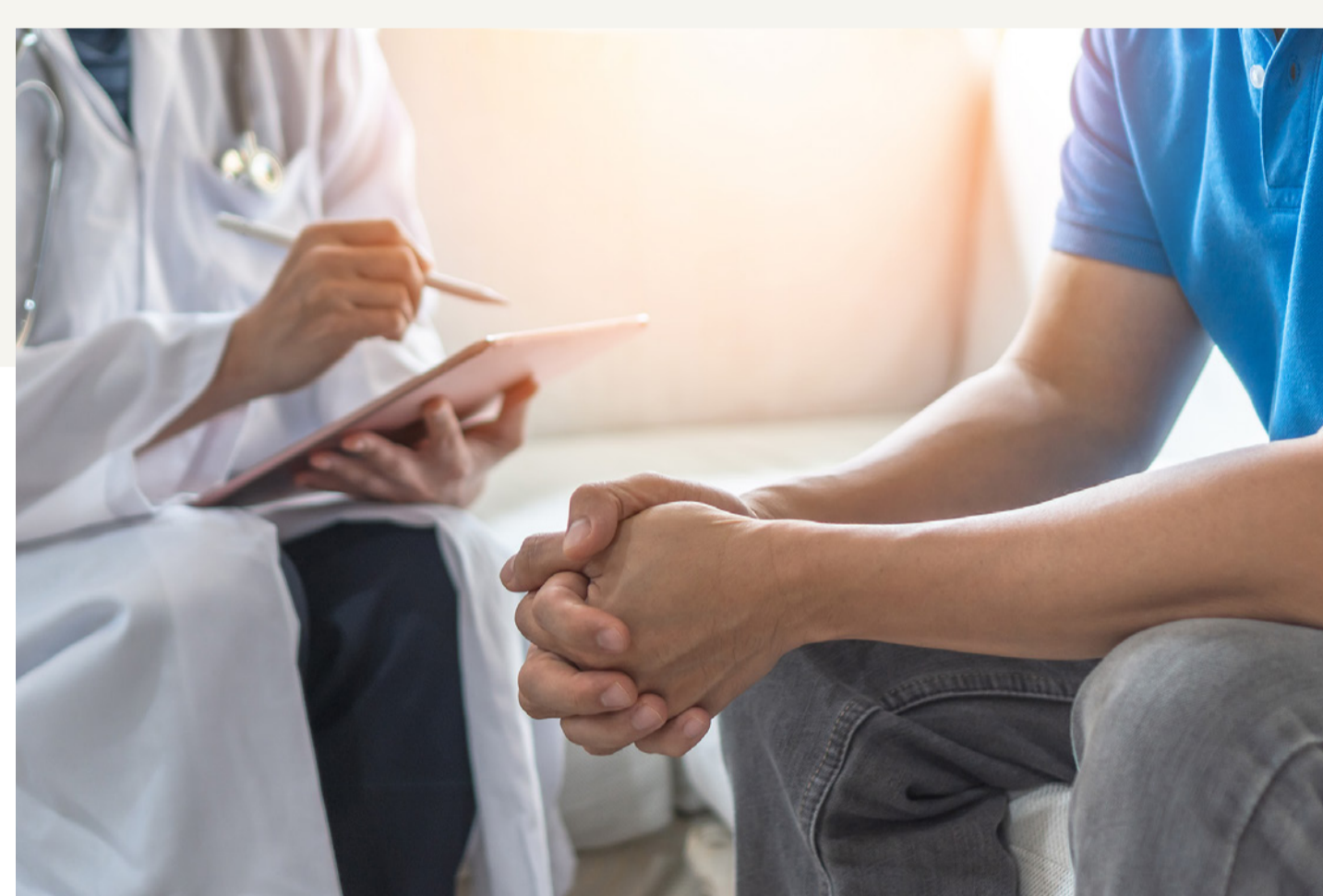
Up to 53% of countries reported disruption to routine high blood pressure management<sup>7</sup>



Hospitalisations for cardiovascular events fell by as much as 85%<sup>8</sup>

## Long covid's knock-on effect on CVD risks

Long covid lacks a single agreed definition but generally refers to the **persistence or presence of symptoms** that are likely to be attributable to covid-19 three months or more after the original infection.



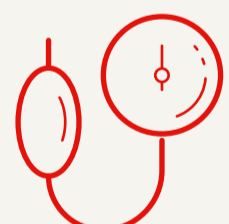
Long covid is associated with conditions which raise the risk of CVD:

**39%** of patients reported **shortness of breath (dyspnoea) after 12 weeks**,<sup>2</sup> which is associated with a greater risk of heart failure and heart attack

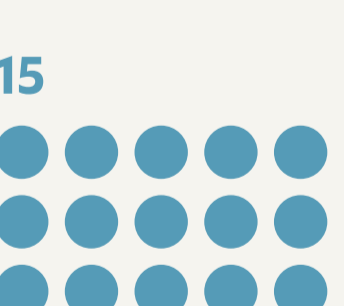
Among patients admitted to an ICU with covid-19, there were **109 new cases of anxiety** and **88 more new cases of depression** per 1,000 patients after six months than among people who did not have covid-19<sup>9</sup>

Between one and six months after having covid-19, the risk of a range of CVD diagnoses is raised<sup>9</sup>:

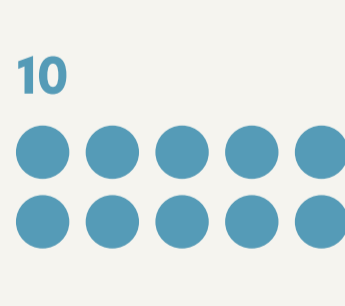
● Extra cases per 1,000 patients post-covid-19



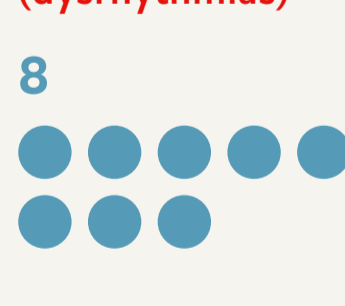
**High blood pressure**



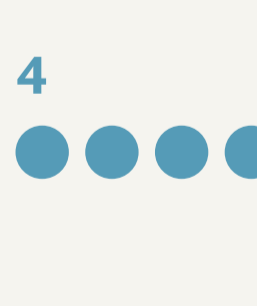
**Chest pain**



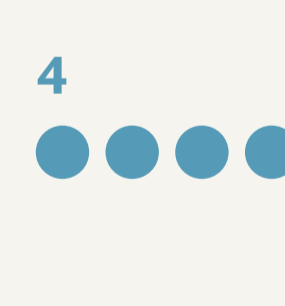
**Irregular heart beat (dysrhythmias)**



**Coronary atherosclerosis**



**Heart failure**



## Covid-19 lessons learned: optimising CVD care

Health systems in Europe need to prepare for an increase in CVD burden in the coming years. Key actions include:

**Greater recognition of the impact of covid-19 on CVD** and other non-communicable diseases by policymakers, leading to **more strategic investment and provision decisions** based on holistic population health needs rather than a narrow emergency-driven focus.

Transformation of health services to offer both **digital and face-to-face consultations** based on patient and need.

**More research** into the impacts of long covid and treatment options.

Building on positive outcomes of at-home CVD management: increasing provision of **at-home cardiac rehabilitation programs and blood pressure monitoring**.



Sources

<sup>1</sup> Harrison SL et al. Cardiovascular risk factors, cardiovascular disease and covid-19: an umbrella review of systematic reviews. European Heart Journal—Quality of Care & Clinical Outcomes. 2021;7(4):330-9.  
<sup>2</sup> Iqbal FM et al. Characteristics and predictors of acute and chronic post-covid syndrome: A systematic review and meta-analysis. EClinicalMedicine. 2021;36:100899.  
<sup>3</sup> Ramadan MS et al. Cardiac sequelae after coronavirus disease 2019 recovery: a systematic review. Clinical Microbiology and Infection: the official publication of the European Society of Clinical Microbiology and Infectious Diseases. 2021;27(9):1250-61.  
<sup>4</sup> Ayoubkhani D et al. Post-covid syndrome in individuals admitted to hospital with covid-19: Retrospective cohort study. BMJ. 2021;372:n693.  
<sup>5</sup> Nef HM et al. Impact of the covid-19 pandemic on cardiovascular mortality and catheterization activity during the lockdown in central Germany: an observational study. Clinical Research in Cardiology. 2021;110(2):292-301.  
<sup>6</sup> Williams R et al. Diagnosis of physical and mental health conditions in primary care during the covid-19 pandemic: a retrospective cohort study. The Lancet Public Health. 2020;5(10):e543-e50.  
<sup>7</sup> WHO. Pulse survey on continuity of essential health services during the covid-19 pandemic: interim report. Geneva: World Health Organization, 2020. Available from: [https://www.who.int/publications/item/WHO-2019-nCoV-EHS\\_continuity-survey-2020.1](https://www.who.int/publications/item/WHO-2019-nCoV-EHS_continuity-survey-2020.1). (Accessed on 28/02/22)  
<sup>8</sup> Hoyer C et al. Acute stroke in times of the covid-19 pandemic: a multicenter study. Stroke. 2020;51(7):2224-7.  
<sup>9</sup> Al-Aly Z et al. High-dimensional characterization of post-acute sequelae of covid-19. Nature. 2021;594(7862):259-64.