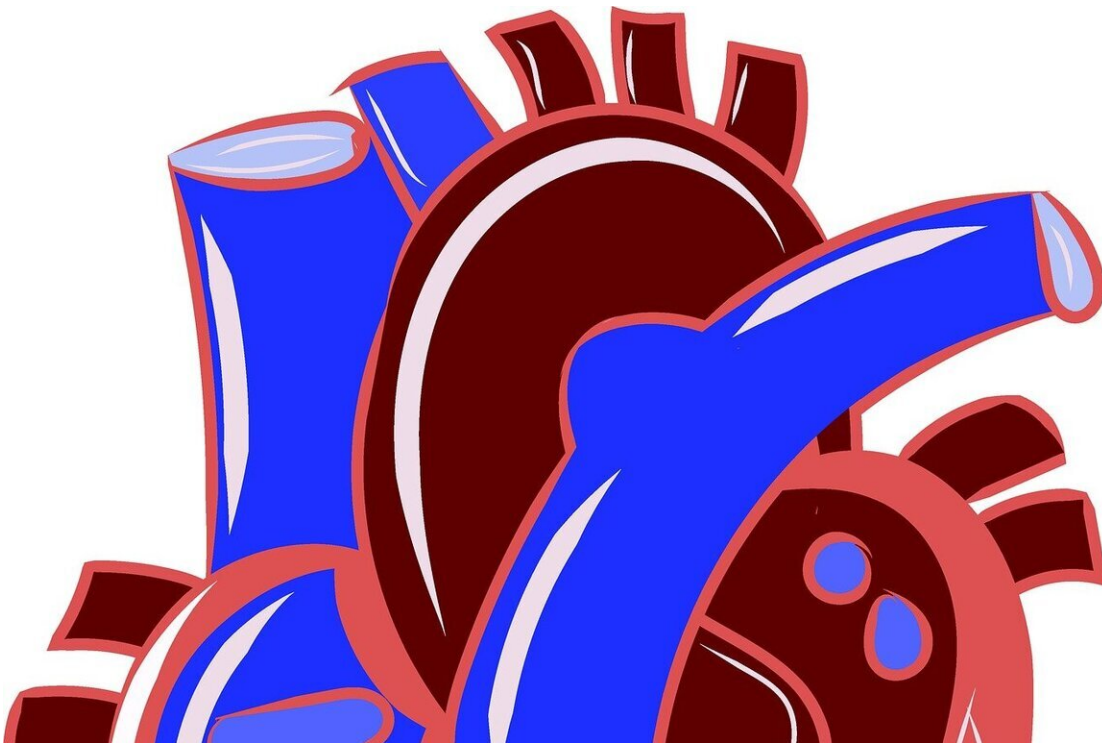


CVD leading cause of death worldwide, but cancer rising cause in rich countries

September 3 2019



Credit: CC0 Public Domain

Cardiovascular disease (CVD) is the major cause of death among middle-aged adults around the world; however, in high-income countries deaths from cancer have become twice as frequent as those from CVD.

The findings come from the first large prospective international study

documenting the frequency of common diseases and [death rates](#) in high-, middle- and [low-income countries](#) using a standardized approach.

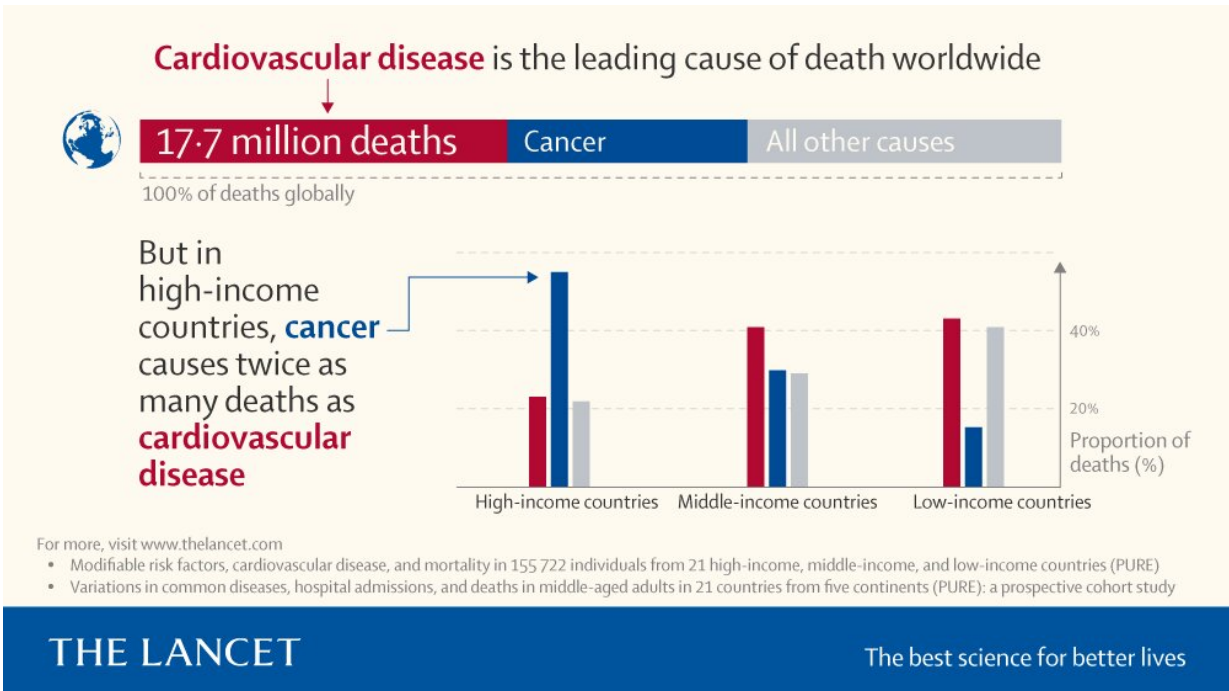
The research, published in *The Lancet* today and presented at the European Society of Cardiology Congress, is from the Prospective Urban Rural Epidemiology (PURE) study led by the Population Health Research Institute (PHRI) of McMaster University and Hamilton Health Sciences in Hamilton, Canada.

For this paper, the research involved more than 162,500 adults aged 35 to 70 from 21 countries who were followed for a median of 9.5 years.

"The fact that [cancer](#) deaths are now twice as frequent as CVD deaths in high-income countries indicates a transition in the predominant causes of [death](#) in middle age," said Salim Yusuf, principal investigator of the study, executive director of PHRI and a professor of medicine at McMaster.

"As CVD declines in many countries because of prevention and treatment, cancer mortality will likely become the leading cause of death globally in the future.

"The high mortality in poorer countries is not due to a higher burden of risk factors, but likely other factors including lower quality and less health care."



Cardiovascular disease is the leading cause of death worldwide. Credit: The Lancet

The high-income countries (HIC) in the study were Canada, Saudi Arabia, Sweden and United Arab Emirates. The [middle-income countries](#) (MIC) were Argentina, Brazil, Chile, China, Columbia, Iran, Malaysia, Palestine, Philippines, Poland, Turkey and South Africa. The lower-income countries (LIC) were Bangladesh, India, Pakistan, Tanzania and Zimbabwe.

Yusuf added that the results are likely to be applicable to other countries with similar economic and social characteristics and health care.

In a pattern observed for all causes of death except cancer, overall mortality per 1,000 person years was lowest in HIC (3.4%), intermediate in MIC (6.9%) and highest in LIC (13.3%).



Over 70% of cardiovascular disease worldwide is caused by modifiable risk factors



But the causes are not the same around the world

Proportion of cardiovascular disease cases and mortality attributable to risk factors



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- Modifiable risk factors, cardiovascular disease, and mortality in 155 722 individuals from 21 high-income, middle-income, and low-income countries (PURE)
- Variations in common diseases, hospital admissions, and deaths in middle-aged adults in 21 countries from five continents (PURE): a prospective cohort study

Over 70% of cardiovascular disease worldwide is caused by modifiable risk

factors. Credit: The Lancet

Regarding deaths, CVD was the commonest cause overall at 40 per cent, but that ranged from only 23 per cent in HIC to 41 per cent in MIC and 43 per cent in LIC, even though the CVD risk factors were highest in the HIC and lowest in LIC. Cancer was the second most frequent cause of death at 26 per cent of deaths, but this proportion varied and was responsible for 55 per cent of deaths in HIC, 30 per cent in MIC and 15 per cent in LIC.

The other major findings of the study were:

- With higher country income, a higher proportion of deaths and hospitalizations were from non-communicable diseases compared to infectious diseases;
- The higher rates of CVD and related deaths in poorer countries compared to richer countries occurred despite much lower CVD risk factors in poor countries;
- There is an inverse association between use of hospital care and effective medication versus deaths, suggesting that lower quality [health care](#) may be responsible, at least in part, for the higher mortality in [poorer countries](#).

"The implications are that in HIC, while continued efforts to prevent and treat CVD should continue, new efforts to reduce cancer are required," said Darryl Leong, the co-lead author of the study, scientist at PHRI, and assistant professor of medicine at McMaster University.

Gilles Dagenais, professor emeritus of medicine at Laval University and lead author of one of the PURE papers, added: "If ways of lowering CVD deaths that have been effective in [high-income countries](#) are

implemented in middle- and lower-income countries, we could expect large drops in CVD deaths there as well over time. If that happens, we might also expect that cancer will become relatively more common as a cause of death."

More information: Gilles R Dagenais et al, Variations in common diseases, hospital admissions, and deaths in middle-aged adults in 21 countries from five continents (PURE): a prospective cohort study, *The Lancet* (2019). DOI: 10.1016/S0140-6736(19)32007-0 , [www.thelancet.com/journals/lan ... \(19\)32007-0/fulltext](http://www.thelancet.com/journals/lan... (19)32007-0/fulltext)

Provided by McMaster University

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