The Challenge
Heart attacks remain a leading cause of death in developed countries. Comparing the ways different countries treat patients can help lead to better care and outcomes for patients and lower costs for the NHS.

In 2014, researchers at The Farr Institute in London, in partnership with colleagues in Sweden, reported a surprising difference in the number of deaths following a heart attack in the UK compared with Sweden (10.5% of patients in the UK died within 30 days of having a heart attack compared with 7.6% in Sweden). This difference was alarming given that the two countries have similar healthcare systems and provide similar care for heart attack patients.

The Research
The research team decided to investigate this further, and carried out a study to look at the possible reasons for this difference while taking into account the different mix of patients who suffered a heart attack. By linking hospital records with detailed national data collected for all patients who were admitted to hospital following a heart attack, researchers were able to study how hospitals in both countries treat heart attack patients.

The Results
Researchers found that in Sweden fewer heart attack patients died within 30 days (8.4%) after taking into account the mix of patients compared with the UK (9.7%) (for example, making sure that the patients who died were not sicker in Sweden compared to those in the UK). In Sweden, compared with the UK, there was earlier and more extensive uptake of primary percutaneous coronary intervention and more frequent use of β blockers at discharge. After casemix standardisation the 30-day mortality ratio for UK was about 1.37 times higher than in Sweden, which corresponded to 11,263 excess deaths.

The mortality difference between the two countries however did reduce over time. This was consistent with the narrowing gap between treatments. In a hypothetical scenario if UK patients received the Swedish rates of primary PCI and β blocker use, they would experienced a lower mortality after heart attack.

For Sweden our results highlight the value of quality of sustained, system-wide initiatives to improve quality, including the public reporting of outcomes at hospital level. For the UK our results suggest the usefulness of learning from systems that seem to be performing better.

The Impact
By comparing patient data from another country that has a similar health system to that in the UK, this study was able to highlight the importance of following national guidance in the treatment of heart attack patients to reduce differences in the way patients are treated and improve patient survival following a heart attack.

For more information about heart attacks visit: www.nhs.uk/conditions/Heart-attack

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