

Trends in Mortality, Incidence, Hospitalisation, Cardiac Procedures and Outcomes of Care for Coronary Heart Disease in Singapore, 1991-1996

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Abstract

In this study, we used Singapore population-based data from 1991 to 1996 to examine recent trends in mortality, incidence and hospitalisation for acute myocardial infarction (AMI), and explored the roles of primary prevention and medical care interventions in explaining these trends. We examined trends in medical interventions, namely coronary angiography (catheterisation), coronary artery bypass graft (CABG), and percutaneous transluminal coronary angioplasty (PTCA), length of stay, and payment methods, and explored the roles of technological, healthcare financing and delivery, and regulatory factors in influencing the diffusion and outcomes of these medical interventions.

During the period 1991 to 1996, there were parallel declines in resident population rates of mortality, incidence and hospitalisation for AMI. The rates of angiograms, CABG and PTCA among residents also increased greatly, with the greatest increase among elderly aged 60 years and above. The rates of invasive cardiac procedures for AMI were all lower in females than in males. The population case-fatality rate of AMI declined slightly only for persons below 40 years of age. The case-fatality rate was higher in females than in males.

The number of hospitalisations and cardiac procedures all rose sharply, and was phenomenal for PTCA (247%). The increase in volume of resource use was starkly greater in private hospitals than in restructured hospitals. The ratios of PTCA to CABG from 1991 to 1996 for private and restructured hospitals showed a greater rate of technology substitution in restructured hospitals than in private hospitals. The average length of stay (LOS, 6.7 days) was fairly constant in restructured hospitals. For private hospitals, LOS declined from 7.6 days in 1991 to 5.6 in 1996. LOS varied little among individual restructured hospitals, but widely among private hospitals. The most common method of payment for AMI hospitalisation was Medisave alone (50%), but for CABG surgery, the proportion of payment made through this method was only 12%. Out-of-pocket payments, Medisave, Medishield and private insurance have increased steadily.

These data indirectly suggest that primary prevention and medical care interventions might have begun to succeed in reducing the rates of coronary heart disease in Singapore. The sharp increases in cardiac procedures may be explained by changing supply and demand factors for care of AMI and chronic ischaemic heart disease, including consumer preference for cardiac procedures, overuse of medical intervention, and technological change. More studies are needed to test these hypotheses.

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