

OP25

AN INVESTIGATION THROUGH MICROSIMULATION OF THE INEQUITIES IN CORONARY HEART DISEASE (CHD) MORTALITY AND MORBIDITY IN WALESWJ Watkins,* ZES Roberts, FD Dunstan, W King, DL Fone *School of Medicine, Cardiff University, Cardiff, UK*

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Objective Levels of mortality and morbidity due to Coronary Heart Disease (CHD) vary considerably over the regions of Wales. The Welsh Assembly has a stated aim to reduce CHD mortality over the whole of Wales while at the same time aiming for a more rapid improvement in the most deprived areas. The main thrust of the work presented here is the examination through microsimulation of inequities in coronary healthcare over the whole of Wales and the determination of how emphasis and facilities may be changed in order to reduce inequities.

Data and design International Classification of Diseases (ICD) codes were used to obtain all CHD admissions and CHD related deaths in Wales from 2003 to 2007. In addition all CHD related hospital procedures were identified. This combined data set was used to estimate parameters and distributions for the care pathways that would follow an individual being admitted with a CHD event.

Methods We used demographic details of the age-sex-deprivation structure of the Welsh population to simulate the 1.7 million people aged 35 and over in Wales. They were followed up for a 5-year period in which we simulated the incidence of CHD and treatment pathways in the non-fatal cases. We validated the model by comparing it with actual data on mortality and the use of procedures and then experimented with changing the level of resources to simulate ways of reducing mortality and more especially inequity in mortality.

Results Analysis of the data showed that the CHD related death rate is over 1.6 times higher for the most deprived fifth of the population when compared to the least deprived fifth. Within the model, initial interventions chosen to combat this inequity were found to reduce the number of CHD deaths

by up to 18% which represents roughly 1000 lives a year in Wales.

Conclusion Various interventions were modelled to increase the resources available for revascularisation procedures. These showed that significant reductions in mortality could be achieved and, if targeted correctly, should reduce inequities. But given the number of deaths that occur before patients reach hospital, in which there is a strong socioeconomic gradient, there are also major potential savings to be achieved by targeting people at high risk.