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Estimating health gains and costs from improving diagnosis and treatment of Heart Failure in England

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Objectivos (Objectives):

Heart Failure (HF) is a complex syndrome that can result from any structural or functional cardiac disorder that impairs the ability of the heart to function as a pump to support a physiological circulation. Evidence shows that HF causes a high Burden of Disease (BoD) and costs, particularly in the elderly; there are large numbers of HF cases with poor quality of life; and prevalence has been increasing, due to aging of the population and improved survival from other diseases.

The English government has been promoting a quality agenda which has meant increases in funding for HF related services, with the Department of Health setting targets to improve the management of cases with HF in line with the clinical guidelines set from NICE.

Nevertheless, some reports recognise that there is still a long way to go in improving services, as there is a gap between current and effective delivery of care related to HF. Also, there is no systematic evidence on the health gains and costs associated with different health care interventions on HF. In this paper we explore the impact on health gains and costs from improving diagnosis and treatment of HF.

Metodologia (Methodology):

We developed a population-based simulation model to simulate the impacts of six interventions that can reduce the BoD from HF: earlier diagnosis of all HF cases identified by emergency admissions; providing treatment to all newly-diagnosed cases with HF; extending primary and outpatient care to the prevalent population; extending treatment to all diagnosed HF prevalent cases; treatment with ACE inhibitors to all undiagnosed prevalent HF cases (with LVSD); and making patients to comply with HF ACE inhibitors treatment.

The simulation model accounts for disease progression and the effect of diagnosis and treatment on mortality and morbidity; and it captures the evolution of population groups over time and the interactions between parameters of the model and variables such as

mortality, morbidity, epidemiological values, treatment variables and population compliance.

We applied the model to English data, for five years. We have calculated the impact of the selected policy interventions on various measures of the current and 'avoidable' BoD due to the intervention (as measured by QALYs, YLLs, average deaths and functional outcomes). We estimated the monetary values of 'avoidable' deaths, the monetary value of QALY gains, and the net costs of the intervention (i.e. gains or losses in NHS net output).

Resultados (Results):

Key results show that over the next five years, the current BoD due to HF is approximately 220,000 QALYs (discounted) and the potential reduction in the BoD from the various interventions is: 5% from improving compliance with ACE inhibitors; 4% from earlier diagnosis of incident patients and extending prescription of ACE inhibitors; 1% and 3% from extending treatment to diagnosed incident and to prevalent patients. All interventions taken simultaneously can reduce the BoD due to HF by 24% (with 76% being 'unavoidable'). The largest gains are achieved from reducing morbidity, with a reduction in annual deaths by 1,300.

We found out that all six interventions when combined have the potential of producing an average 0.19 QALY gains per case; and the highest QALY gain per case (2.68 QALYs) is achieved from earlier diagnosis of incident patients. All the interventions appear to be cost effective, and the highest net monetary gains were produced by improving compliance, earlier diagnosis of incident patients, and extending prescription of ACE inhibitors.

Conclusões (Conclusions):

This study shows that a package of care that aims at improving diagnosis and treatment of HF could materially reduce the BoD it causes and the selected interventions are cost effective. This information allows those responsible to develop health policies to have a clearer expectation on what proportion of the current BoD can be reduced by selected policies.