# Sustainability of universal health coverage in Italy: a modelling study

Dr Stefano Olgiati PhD a ✉, Prof Alessandro Danovi MSc c, Achille Lanzarini MA a, Prof Giancarlo Cesana MD b

## Abstract

**Background**

Italy and the Eurozone are in their largest ever financial depression. Several, often contradictory, public economic and financial stability emergency interventions are being introduced, whose ultimate effects on public and private health spending and on the sustainability of universal health coverage are difficult to predict. We assessed their magnitude and effect on sustainability of publicly funded health care and universal coverage. The Italian Economic and Stability Reform Program 2011—14 assumes that: gross domestic product will grow exponentially between 2011 and 2014, at a rate of 3·18% per year compared with 3·29% in the period 1997—2010; the public component of health-care financing will not grow in the period 2011—14 compared with growth of 0·82% per year for 1997—2010; and growing expenditure for non-health applications—for example, sovereign debt service, pensions, unemployment subsidies, sovereign debt fiscal compact, and deficit reduction—is not expected to affect health financing and universal coverage.

**Methods**

We analysed the Italian Economic and Stability Reform Program 2011—2014, which incorporates Eurostat and Organisation for Economic Co-operation and Development health and economic data and guidelines, and developed a quantitative synthetic sustainability index σ based on simple partial and absolute differential equations to account for simultaneous variation in total health financing, its public component, and nominal gross domestic product. We tested historical trends and projections adjusted with the sustainability index σ with standard population Pearson's product-moment correlation coefficients.

**Findings**

The Italian Economic and Stability Reform Program 2011—2014 focuses its public health-care financing interventions on freezing the exponential growth of public health financing propensity (the ratio between public health financing and the nominal gross domestic product; presently roughly 7% of gross domestic product), while adjusting the growth rate of public health financing (exponential growth rate=2·83%, r=0·98) to that of gross domestic product (exponential growth rate=3·18%, r=1·00). Under the assumptions of the Economic and Stability Reform Program, the sustainability index σ is in the financially sustainable range ($-1 < \sigma < 0$). If growth of gross domestic product between 2011 and 2014 is insufficient—as it has been for January, to June, 2012 (−2·40%)—then the assumptions of the Program will not hold and the index will increase to more than 1, making universal health coverage financially unsustainable.

**Interpretation**

Health professionals should advise Italian and Eurozone national budget planners and financial health regulators before unselective public health financing and provision shortages following the European Fiscal Compact Convergence and Stability Parameters incorporated in the Italian Economic and Stability Reform Program damage universal health coverage in Italy.

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