Impact of the Public Health Responsibility Deal on salt intake, cardiovascular disease and gastric cancer: interrupted time series and microsimulation study

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**Abstract**

*Background*

In 2011, England introduced the Public Health Responsibility Deal (RD), a public private partnership (PPP) which gave greater freedom to the food industry to set and monitor targets for salt intakes. We estimated the impact of the RD on trends in salt intake and associated changes in cardiovascular disease (CVD) and gastric cancer (GCa) incidence, mortality and economic costs in England 2011-2025.

*Methods*

We used interrupted time series models with 24-hour urine sample data and the IMPACTNCD microsimulation model to estimate impacts of changes in salt consumption on CVD and GCa incidence, mortality and economic impacts, as well as equity impacts. We modelled a baseline scenario of sodium intake continuing as it had pre-RD and compared observed intakes with this.

*Results*

Between 2003 and 2010 mean salt intake was falling annually by 0.20 grams/day among men and 0.12g/d among women (p value for trend both <0.001). After RD implementation in 2011, annual declines in salt intake slowed statistically significantly to 0.11g/d among men and 0.07g/d among women (p values for differences in trend both p <0.001).  We estimated that the RD has been responsible for approximately 9,900 (Interquartile Quartile Range: 6,700 to 13,000) additional cases of CVD and 1,500 (IQR: 510 to 2,300) additional cases of GCa between 2011 and 2018. If the RD continues unchanged between 2019 and 2025, approximately 26,000 (IQR: 20,000 to 31,000) additional cases of CVD and 3,800 (IQR: 2,200 to 5,300) cases of GCa may occur.

*Interpretation*

Public private partnerships such as the RD which lack robust and independent target setting, monitoring and enforcement are unlikely to produce optimal health gains.

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