Introduction

In Hungary salt intake is very high compared to the WHO recommendations and in international comparison. Recent salt intake data call for quick and effective measures which are able to reduce daily salt population-wise in the long run. For the initiative of the European Commission most EU member states including Hungary have joined a EU-wide salt-reducing framework program with the intention to implement salt-reformulation in the whole territory of the EU. The National Institute for Food and Nutrition Science (NNFS) leads the Stop Salt program in Hungary. To support the program the Syreon Research Institute was asked to develop a health-economic model to study the cost-effectiveness of the salt intervention program.

Aim

The aim was to build a health-economic model which can estimate the cost-effectiveness of the salt consumption program based on assumptions of the achieved salt intake reduction and on the financial investment in the program.

Background

The recommendation of WHO for the daily maximum salt intake is 5 g/day. According to the data of NNFS in Hungary the average daily sodium consumption of men is 17.25g and of women it is 12.05g. The association between salt intake and the risk of hypertension, stroke and heart attack is well documented. Salt intake reduction leads to direct health gain by reducing the incidence of these diseases. International examples show that salt intake reduction can be achieved considerably according to the time elapsed after the event. The shift of the blood pressure distribution reduces the proportion of persons with hypertension. 3 gram salt intake reduction reduces the mean systolic blood pressure by 5 mmHg. The shift of the blood pressure distribution reduces the proportion of persons with hypertension. 1 mmHg mortality reduction reduces the prevalence by 1% (absolute). Thus the effect of the salt intake reduction is modeled in such a way that the transitional probability from the state from “Health” to “Hypertension” is reduced according to the size of the salt intake reduction. This leads to less stroke and myocardial infarction, longer life, better quality of life, and less direct medical costs related to stroke and myocardial infarction.

Methods

The effect of salt intake reduction was modeled in the following way. Salt intake reduction shifts the population distribution of blood pressure towards the lower values. 3 gram salt intake reduction reduces the mean systolic blood pressure by 5 mmHg. The shift of the blood pressure distribution reduces the proportion of persons with hypertension. 1 mmHg mortality reduction reduces the prevalence by 1% (absolute). Thus the effect of the salt intake reduction is modeled in such a way that the transitional probability from the state from “Health” to “Hypertension” is reduced according to the size of the salt intake reduction. This leads to less stroke and myocardial infarction, longer life, better quality of life, and less direct medical costs related to stroke and myocardial infarction.

Results

Here, we present 2 scenarios to illustrate the results. 1st scenario: if the salt intake could be reduced by 16% in 4 years with a yearly investment of 100HUF/person for 4 years; the program would not only be cost-effective, but it would save money.

Discussion

Since the salt intake is high in Hungary, the potential size of the health gain of an effective salt intake reduction intervention is large. Even with a reasonably high investment it is cost-saving if only the costs of the intervention and the direct health care and of corresponding to hypertension, myocardial infarction, stroke is taken into account. In summary, just like in other countries salt intake reduction would be a cost-effective strategy to reduce the burden of non-communicable diseases in Hungary.