

Assessment of the Belgian Poison Centre and its impact on healthcare expenses

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1) Background

The Belgian Poison Centre (BPC) is a public foundation, funded by the federal government in the context of urgent medical assistance. A team of thirteen specifically trained physicians provide 24/7 toll-free telephone advice to the general public and healthcare professionals in case of (suspected) toxic exposures. Depending on the severity of poisoning, the advice is either (1) to stay at home and/or advice on first aid, (2) to consult a general practitioner (GP) (3) to visit an emergency department of a hospital (ED). This study focuses on people calling the BPC in case of an unintentional poisoning.

2) Problem

In case of poisoning problems, people can use different medical services: some call the BPC, while others directly consult a GP or an ED. Although the service quality of these services is considered comparable, there are nevertheless substantial differences in costs.

3B) Improvement-related question

The aim of this study is to assess the additional value of the BPC in terms of potential cost savings in the Belgian healthcare system. More precisely, the cost of a call to the BPC versus the cost of a visit to the GP and/or ED in case of unintentional poisonings is analyzed. The hypothesis states that unavailability of the BPC would lead to higher costs and thus a less cost-efficient healthcare system. Although there are some cost-benefit-analyses available in Europe and the US investigating the impact of a PC on healthcare costs, this study is the first one combining the technique of a decision tree with data from a prospective telephone survey and data from the government.

4) Intervention

To sensitize the general public to first call the BPC in case of non-intentional poisonings.

6) Measurement of improvement

The probability of either calling the BPC, consulting a GP or an ED was examined by means of a telephone survey. A random sample of BPC-callers were asked whether they had followed a previously given BPC advice and what they would have done in case of unavailability of the BPC. The probability and cost for ED-consultation, ED-24-hours-observation or hospitalization was estimated using data from the government. A cost-benefit analysis was performed using a decision tree methodology.

All unintentional cases (n=485) out of 1,045 calls to the BPC during 7 days in February-March 2016 were included. In the week following the call, 404 patients were contacted again. After having called the BPC, 92.1% did not seek further medical help, 4.2% consulted a GP and 3.7% went to an ED. In the hypothetical absence of the BPC, 13.8% would not have sought any further help, 49.3% would have consulted a GP and 36.9% would have gone to the hospital (of which 46.0% ED-ambulatory-consultation, 20.8% ED-24-hours-observation and 33.2% hospitalisation). The cost-benefit-ratio of the availability of the BPC as compared with its absence was estimated at 4.04.

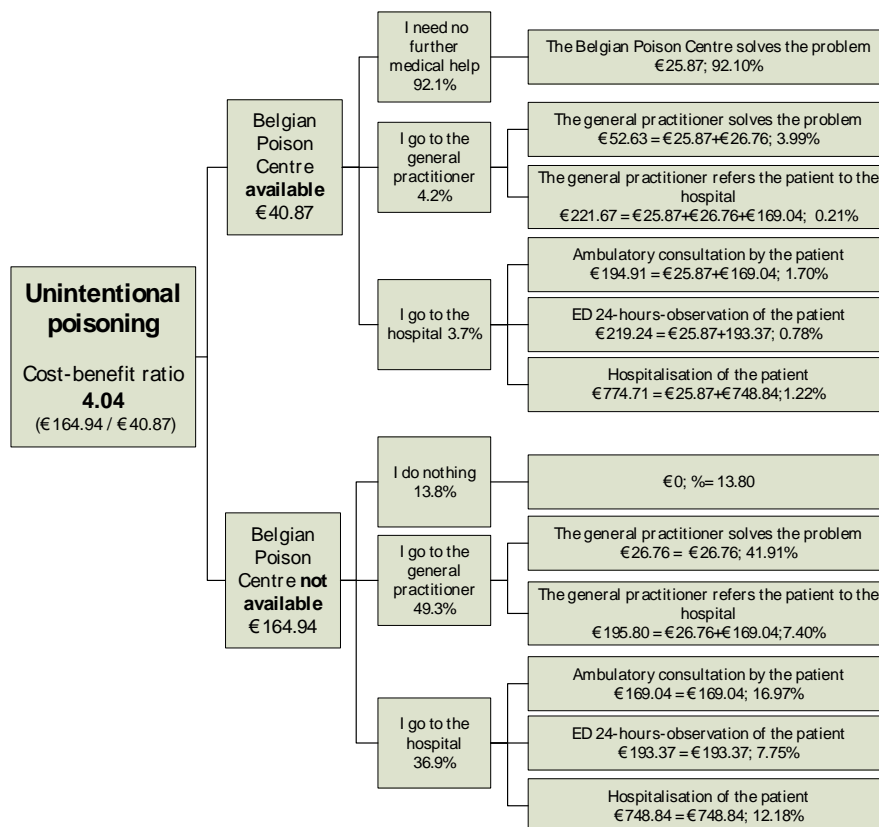


Figure 1: Decision tree for unintentional poisonings in the presence or unavailability of the BPC

7) Effects of changes

As positive effects for the patient, respectively, the quick and qualitative triage by experts in the field and the fact that a call is free of charge were considered.

More efficient triage of patients to the appropriate level of care contributes to avoiding the negative aspect of overcrowding in EDs, resulting in less time left for patient care for the most severe cases.

For the government, the presence of the BPC was found to be four times more cost-efficient as compared to the other medical services.

8) Lessons learnt

This study is the first step in introducing change. People should know that it is advisable to first call the BPC in case of poisoning problems. A comprehensive communication campaign is needed in order to realize such a change in behaviour.

9) Messages for others

As a medical advice service 24/7, the telephone triage by the experts of the BPC guides patients to the appropriate care, and this in a cost-efficient way. Cost savings can be made if people first call the BPC in case of unintentional poisonings.

10) Involving patients, carers or family members in the project

Thirteen physicians of the BPC participated in this study. They carried out the prospective telephone survey. Patients who gave informed consent were subsequently contacted during the days following the call. Furthermore, the government participated in data collection.

11) Conflicts of interest

The authors report no conflicts of interest.

12) Ethics Approval

The study protocol was approved by the Ethical Committee of the Ghent University Hospital.