Using registry data to estimate productivity losses due to premature mortality and reduced workforce participation following head and neck cancer

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Introduction

Following a cancer diagnosis, most people take time off work, either temporarily or permanently. Valuing the loss to society of an individual's reduced workforce participation due to cancer can inform policy development and service delivery. Cancer registries can provide a valuable source of information for calculating these losses

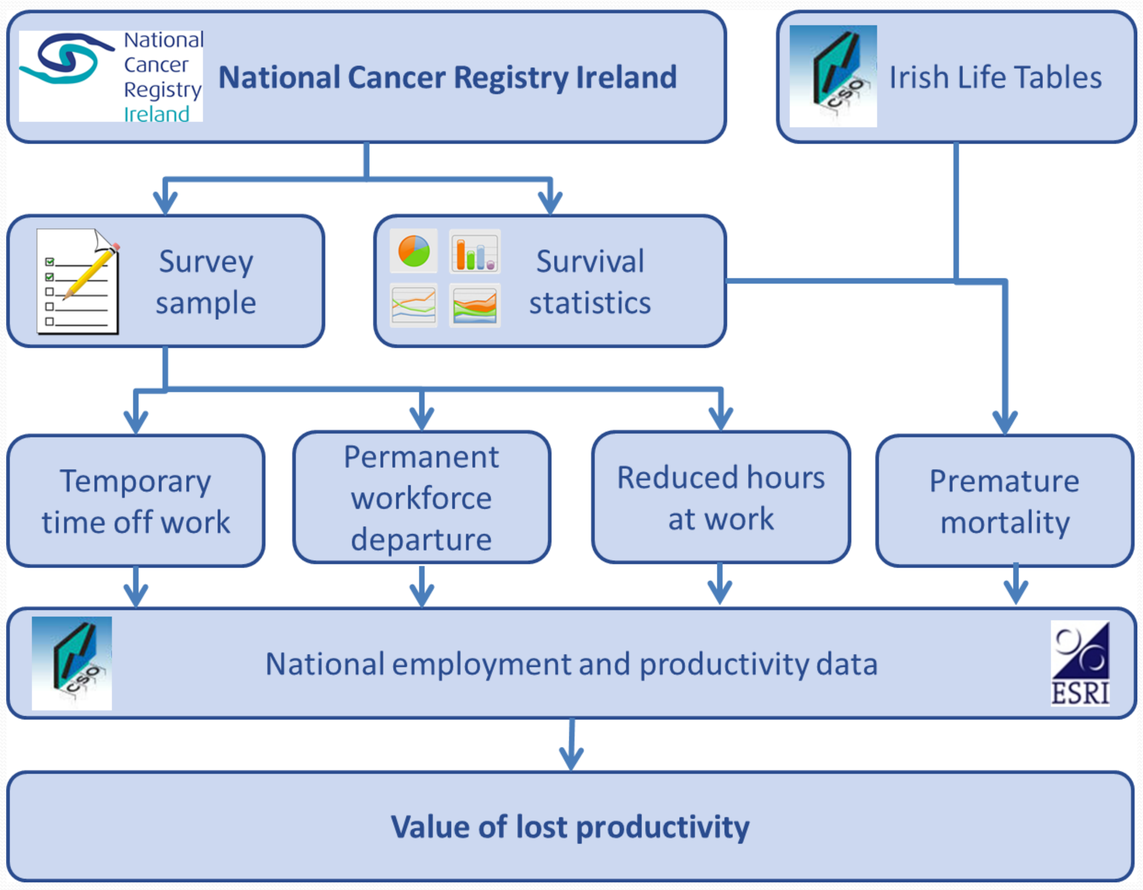
The aim of this analysis was to use cancer registry data and national statistics to estimate productivity losses due to premature mortality and reduced workforce participation following head and neck cancer.

Data

National Cancer Registry Ireland (NCRI) survival estimates for all head and neck cancer types and stages, along with Irish life table data, were used to estimate premature mortality rates. In addition, a sample of head and neck cancer survivors were identified from the NCRI and invited to participate in a survey including questions about workforce participation.

National data such as the average annual wage by gender and occupation, and projected wage growth rates were obtained from national sources, such as the Central Statistics Office. Figure 1 displays how these data sources were used.

Figure 1. Data sources for valuing lost productivity



Analysis

The human capital approach to valuing productivity losses was used. To estimate the value of lost productivity due to premature mortality, the years of potential life lost were calculated and then multiplied by the average annual wage over the remaining working life.

To estimate the value of lost productivity due to reduced workforce participation the average wage was multiplied by the time away from the workforce due to temporary time off work, reduced working hours or permanent workforce departure associated with cancer. All figures were adjusted for wage growth and discounting where appropriate.

Results

Using a human capital approach, the productivity losses associated with head and neck cancer were estimated to be €253,800, with the majority of the costs (38%) attributed to premature mortality. See Table 1 for details of the losses due to reduced workforce participation.

Table 1. Productivity losses of HNC (2013)

Cost category	Base case cost	% of total productivity loss
Temporary time off	€20,400	8%
Permanent time off	€68,600	27%
Reduced hours at work	€67,100	26%
Premature mortality	€97,700	38%
Total	**€253,800**	

Conclusions

This work demonstrates the value of cancer registry data in providing:

a) Local, accurate, cancer specific survival statistics, which can be used to estimate lost productivity due to premature mortality
b) An opportunity for surveying cancer survivors regarding their specific experiences, such as workforce participation, which can be used to estimate lost productivity due to reduced workforce participation.

The productivity costs associated with HNC are significant. An awareness of the societal costs associated with cancer provides policy makers with an additional perspective on the burden of disease, allowing priority setting for service provision, prevention strategies and staff training. This analysis demonstrates the value of registry data for health economic analyses.

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