General hospital costs in England of medical and psychiatric care for patients who self-harm: a retrospective analysis

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Summary

Background Self-harm is an extremely common reason for hospital presentation. However, few estimates have been made of the hospital costs of assessing and treating self-harm. Such information is essential for planning services and to help strengthen the case for investment in actions to reduce the frequency and effects of self-harm. In this study, we aimed to calculate the costs of hospital medical care associated with a self-harm episode and the costs of psychosocial assessment, together with identification of the key drivers of these costs.

Methods In a retrospective analysis, we estimated hospital resource use and care costs for all presentations for self-harm to the John Radcliffe Hospital (Oxford, UK), between April 1, 2013, and March 31, 2014. Episode-related data were provided by the Oxford Monitoring System for Self-harm and we linked these with financial hospital records to quantify costs. We assessed time and resources allocated to psychosocial assessments through discussion with clinical and managerial staff. We then used generalised linear models to investigate the associations between hospital costs and methods of self-harm.

Findings Between April 1, 2013, and March 31, 2014, 1647 self-harm presentations by 1153 patients were recorded. Of these, 1623 (99%) presentations by 1140 patients could be linked with hospital finance records. 179 (16%) patients were younger than 18 years. 1150 (70%) presentations were for self-poisoning alone, 367 (22%) for self-injury alone, and 130 (8%) for a combination of methods. Psychosocial assessments were made in 75% (1234) of all episodes. The overall mean hospital cost per episode of self-harm was £809. Costs differed significantly between different types of self-harm: self-injury alone £753 (SD 2061), self-poisoning alone £806 (SD 1568), self-poisoning and self-injury £987 (SD 1823; p<0·0001). Costs were mainly associated with the type of health-care service contact such as inpatient stay, intensive care, and psychosocial assessment. Mean costs of psychosocial assessments were £228 for adults and £392 for individuals younger than 18 years.

Interpretation If our findings are extrapolated to England, the estimated overall annual cost of general hospital management of self-harm is £162 million per year. More use of psychosocial assessment and other preventive measures, especially for young people and against self-poisoning, could potentially lower future costs at a time of major cost pressures in the NHS.

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Introduction

Self-harm is a major public health challenge in many countries worldwide. In a 2016 report1 from the Multicentre Study of Self-Harm in England, age-standardised rates of hospital-presenting self-harm of 362 per 100 000 population were estimated for men and 441 per 100 000 population for women. Extrapolated to England as a whole this equates to more than 200 000 episodes every year. Despite its public health effects, limited information is published about the economic costs of self-harm. What is known about the costs of self-harm needs to be improved, both to better inform service planning and, perhaps more fundamentally, to highlight the extent of the problem and the need for services. This information could also be used to estimate potential savings in resource use and costs to the NHS through increased investment in effective measures both to prevent initial episodes of self-harm and reduce the risk of subsequent events for those who have self-harmed. Having more accurate information about the costs of self-harm is also an essential prerequisite to assessment of the cost-effectiveness of different actions, including use of psychosocial assessment and psychological therapies.

Only a small number of studies in England have attempted to cost self-harm events and most of these have focused on the costs of self-poisoning alone2,3 rather than all types of self-harm. One exception was an analysis using data for individuals originally identified after self-harm in 1997 and followed-up to 2005, to estimate longer-term costs to health and social care services after their initial and subsequent self-harm episodes. In this study,4 inpatient psychiatric care accounted for two-thirds of costs in the year after the initial self-harm event. The National...
Institute for Health and Care Excellence (NICE) has also modelled the costs of providing initial and ongoing psychological support to adults who have self-harmed, but did not combine this with information about the initial (physical) health-care costs of treatment for self-harm.1

Robust evidence about these costs is necessary to plan service provision and assess the effect of interventions targeting self-harm. Such an intervention is the psychosocial assessment to help determine subsequent care for patients who have self-harmed.3,4 Therefore, in this study, we aimed to calculate the costs of hospital medical care associated with a self-harm episode and the costs of psychosocial assessment, together with identification of the key drivers of these costs.

Methods
Study setting and self-harm data
We did a year-long retrospective longitudinal study to estimate the hospital care costs associated with self-harm in a single major general hospital, the John Radcliffe Hospital (Oxford, UK). All patients attending the hospital after self-harm between April 1, 2013, and March 31, 2014, were identified through the Oxford Monitoring System (OMS) for Self-harm. Self-harm is defined as intentional self-poisoning or self-injury, irrespective of the degree of suicidal intention or other types of motives.7 Data routinely collected include general self-harm method (ie, self-poisoning, self-injury, or both), specific self-harm method (eg, poisoning by specific drugs, cutting), hospital admission, patient sociodemographic characteristics (eg, age, gender, residence, and employment status), and resource use (eg, length of inpatient stay, provision of psychosocial-assessment). The OMS routinely collects data from two sources: clinicians who do psychosocial assessments and record demographic, clinical, and hospital management data on each episode, and research clerks who scrutinise emergency department electronic databases for patients who do not receive a psychosocial assessment. The sample consisted of 1647 non-fatal self-harm presentations by 1153 patients in 2013–14. These self-harm presentations were then linked with 2013–14 financial hospital records (Oxford University Hospitals NHS Trust) to obtain the costs associated with them. The pattern of self-harm in Oxford is similar to that of other centres in England where self-harm presentations are identified systematically, except that rates of self-harm in Oxford are somewhat lower than in more socio-economically deprived areas.1

Costs of medical treatment
We obtained costs for 1623 self-harm presentations by 1140 patients (ie, 99% of the total sample). These costs included emergency department attendances, treatments received in the emergency department and hospital wards, and hospital ward and critical care unit.
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