



# Cancer care in Poland: Activity and spending analysis as a forerunner to oncology reform



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## ABSTRACT

**Aims:** To analyse the current expenditure on cancer services in Poland and the pattern of spending and to estimate the number of patients with cancer who use public healthcare services.

**Materials and methods:** We analysed all healthcare services funded by National Health Fund (NHF) in Poland, collected in central database, together with each individual social security number (PESEL). From the database we selected all healthcare services whose primary diagnosis for a given service indicated cancer i.e. it was contained within C00-D09, D37-48 or Z51 (with a corresponding C or D) of ICD-10 classification. For comparison of hospital inpatient activity we analysed aggregate data from England (NHS Hospital Episode Statistics) and Australia (AIHW).

**Results:** Cancer spending in Poland was PLN 6.3 billion in 2011 and PLN 6.6 billion in 2012, accounting for 6% of total healthcare spending and 10.4% of NHF operating budget. Within the current system only 8% of spending is on ambulatory care and only 39% of admissions are day cases. Excessive inpatient hospitalisation in chemotherapy, radiotherapy and for diagnosis accounts for PLN 1.4 billion or 23% of total cancer spending. Poland has more inpatient bed days (5.3 million vs. 3.2 million for England), even though it has half the reported cancer incidence.

**Conclusions:** Health providers' behaviour is economically rational and driven by the current modalities of healthcare service financing in Poland. It will be shown that the share of healthcare spending for cancer care is about the same as in other countries however the structure of spending is different. At the same time it is a huge window of opportunity to restructure the financing mechanism for oncology in Poland. At the end of article we present how the planned reform of oncological care in Poland will change the economical incentives for providers and the expected results of it.

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## 1. Introduction

Since the historical transition and market reforms Poland has made great progress in reducing mortality from cardiovascular disease – but alas not from cancer, which remains the second cause of mortality in Poland.

Despite some improvements in survival and mortality in recent decades, cancer outcomes in Poland remain extremely poor when compared with the best outcomes in Europe. According to GLOBOCAN [2] Poland shows one of the worst cancer incidence/mortality ratios in the world, even compared with its Central European peers such as Hungary and Czech Republic.

Poland has a health system that is based on single-payer, National Health Fund (NHF) that collects obligatory national insurance (NI) contributions and then funds public provision of services. The amount of public spending by NHF is limited by the current 9% contribution limit. Within the public system, primary health physicians (GPs) act as gatekeepers for access to specialist and hospital services. The total health care spending in 2011 was PLN 105 billion [6], divided into PLN 69 billion current public spending, PLN 28 billion current private spending and PLN 7 billion is investments. Within the current public spending NHF accounts for 88% of total expenditure and the NHF operating budget for 2012 (PLN 62.7 billion) increased by 2.9% from PLN 60.9 billion in 2011.

NHF signs contracts with public and private providers for services on an annual basis, which forms an explicit limit on the cost of services that each provider can get reimbursed for a given service type. Currently very few services or specialties benefit from

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unlimited funding (maternity and neonatal care, interventional cardiology). All other services, if provided above the contracted limit, are sometimes only partly paid after individual negotiations between NHF and each provider.

A recent study by Ernst & Young [5] estimated that expenditures on oncology in Poland in 2011 represented 6.0% of total expenditures on health. This is not lower than in other developed countries such as UK 6.1%, France 4.3% and Norway 2.5%.

It is widely believed that Poland's poor cancer survival results are mostly due to long waiting lists resulting from limited funding and there has been major pressure from oncology specialists and patient organisations to fund cancer services without limits. Key part of the healthcare reform implemented in January 2015 is the so-called "oncology package" based on three principles: (1) introduction of a maximum waiting period for diagnosis and start of treatment for cancer patients, (2) new patient-centred cancer pathway (including multidisciplinary oncological treatment and care coordinator), and (3) unlimited financing of healthcare services for cancer patients.

The proposed healthcare reform announced by the government represented an enormous challenge given the short and medium term constraints: we know that the overall spending by the National Health Fund (NHF) is unlikely to increase, as it would require the increase in NI contribution rate. The possibility of private insurance sector contributing to cancer care is not part of the current policies.

Therefore in order to have unlimited spending on oncology within the same fixed "health budget limit" there were only two choices:

- 1.) To divert funding from other diseases and/or services, which would clearly make the public acceptance and implementation of the reform very difficult, or
- 2.) To verify whether it is possible to achieve efficiency savings and improve the quality of services at the same time within the current cancer spending.

In parallel, all developed countries need to respond to long-term pressure of increase in cancer care costs as incidence increases, people live for longer with cancer and new treatments become available. Therefore even without the introduction of unlimited spending for cancer treatment every country needs to find solution for keeping coverage level unchanged.

One of the key arguments against the proposed reform [3] was that additional financing would be required and it could represent over 100% increase of the oncology budget [4].

The lack of accurate audited healthcare activity data, not just in oncology, has long been a barrier to a rational and objective discussion about the problems in healthcare and therefore potential solutions in Poland. Despite increased availability of evidence-based guidelines from reputable international and Polish cancer organisations, no analysis has been done to benchmark access to cancer services within Poland.

The aims of this paper are to examine:

- The current expenditure on cancer services in Poland and the pattern of spending
- International benchmarks for cancer expenditure patterns and how Poland compares
- The number of patients using the public health services and an estimated data gap compared with expected prevalence
- The incidence of cancer in Poland based on service utilisation and comparison with the National Cancer Registry data

- The proposed oncology reform assumptions and the total future oncology budget that clearly shows that by changing patterns of spending the proposed reform is mostly self-financing.

## 2. Methodology

All healthcare services funded by NHF are collected in one centrally held database, together with each individual social security number (PESEL). From the anonymised database we have selected the following medical services: primary care, specialist and outpatient services, hospital care, emergency care and transport, rehabilitation, palliative and hospice care, psychiatric care, dental services, community and nursing care and emergency care and transport. All the medical services and data pertaining to were selected for total activity reported, regardless of whether all the services delivered were fully funded. Within those categories we then selected all unique patients whose primary diagnosis for a given service indicated cancer i.e. it was contained within C00–D09 and D37–48 of ICD-10 classification or patients whose primary diagnosis was Z51 with a secondary diagnosis of C00–D09 and D37–48. We also included Z51 codes without a co-existing code in radiotherapy and chemotherapy scope. Thereafter these ICD-10 diagnostic codes are referred to as CDZ. We benchmarked Polish hospital inpatient activity data to NHS England [8] and Australian (AIHW) [9] datasets.

We then looked in more detail at medical and surgical inpatient activity in Poland excluding radiotherapy and chemotherapy. This data was extracted by using all DRG coded inpatient activity from catalogue 1a<sup>1</sup> for 2013 and the total value of DRG admission includes all the additional *fee per item* activities from catalogue 1c that occurred during a given hospital admission. All the reported activity under DRG coding was then analysed against the primary ICD-10 classification assigned: confirmed cancer (C00–D09) and uncertain or unconfirmed cancer (D37–48).

We then extracted data to obtain the number of unique patients (as defined by PESEL) that had any contact with the Polish health service in years 2011 and 2012 respectively. We assumed that all cancer patients in Poland are treated at least once a year in a public healthcare system (if they are actively treated). This assumption seems to be methodically correct, as fully privately financed cancer patients are so limited in Poland that they are not statistically significant.

For the first time in Poland we had the opportunity to link the health service database (NHF) with the NCR database (linkage analysis). The Cancer Registry database was obtained in February 2014 and contains all patients entered into the registry since 1999.

## 3. Results

### 3.1. Cancer expenditure analysis and international benchmarking

Cancer spending in Poland was PLN 6.3 billion in 2011 and PLN 6.6 billion in 2012 (Table 1). Within the scope of "oncology"<sup>2</sup>; contracts approximately 9% of total contract value (or PLN 350 million) is spent on non-cancer patients. The total value of services for cancer patients in 2012 was PLN 6.15 billion, a 5.6% increase on 2011.

In Poland the proportion of overall spending allocated to outpatient visits and ambulatory care is very low at 18% [6], but in oncology this proportion is even lower, with only 8% of cancer care delivered outside of the hospital setting.

The number of endoscopic procedures for GI and respiratory tract performed in ambulatory and outpatient settings is very low

<sup>1</sup> See Appendix A

<sup>2</sup> See Appendix A

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