

# Healthcare and sick leave costs of lung and trachea cancer before and after diagnosis

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## Introduction

- Lung cancer is one of the most common cancers and a leading cause of cancer-related deaths worldwide causing significant economic burden to societies [1]. It has been suggested that hospitalization costs are the primary driver of the economic burden associated with lung cancer.

## Objectives

- To assess the financial impact of lung cancer and trachea cancer (LCT) in Finland by estimating the annual healthcare costs and costs due to sick leaves, and by comparing costs one year before and after diagnosis among patients with LTC.

## Methods

- A nationwide retrospective registry-based study where patients were identified from the Finnish Cancer Registry.
- The study cohort included newly diagnosed patients in 2017 and prevalent patients in 2018 with lung or trachea cancer (ICD-10 codes C33-C34).
- Data on healthcare resource use (HCRU) were obtained from national specialized and primary healthcare registers. Data on reimbursed medicine purchases and reimbursed sick leaves were collected from the registers of the Finnish Social Security Institution. The estimated healthcare costs closely reflect total costs as patients' out-of-pocket costs are relatively low in Finland.
- The HCRU was valued to monetary units using the latest available national unit costs [2]. The unit costs were inflated to 2022 values

## Results

- In 2017, 2,855 newly diagnosed lung or trachea cancer patients were identified, 63% of whom were male, with a median age of 71 years. Within one year of diagnosis, 61% (1,741) of these patients died.
- Costs per patient-year (PPY) were €9.6K before diagnosis and €35.2K after. During the first year after diagnosis, 52% of healthcare costs were LTC-specific, mainly driven by inpatient episodes and outpatient visits in specialized care.
- For the 7,749 prevalent patients in 2018, total costs were €104M, with 45% being LTC-specific, again driven by inpatient and outpatient visits in specialized care.

## Limitations

- Although the unit costs for outpatient visits and inpatient stays in specialized care include in-hospital medication costs, no detailed per-medication analysis for costs were possible.
- The costs due to productivity losses are incomplete while only costs due to sick leaves were taken into account.

## Conclusion

- LTC imposes a significant economic burden with a sharp increase of healthcare costs after diagnosis. High mortality rates and substantial costs highlight the need for improved early detection and treatment strategies.
- The total health care costs increased more than could be expected based on disease-specific costs. This indicates that all-cause health care costs should be considered when evaluating the overall costs of illness.

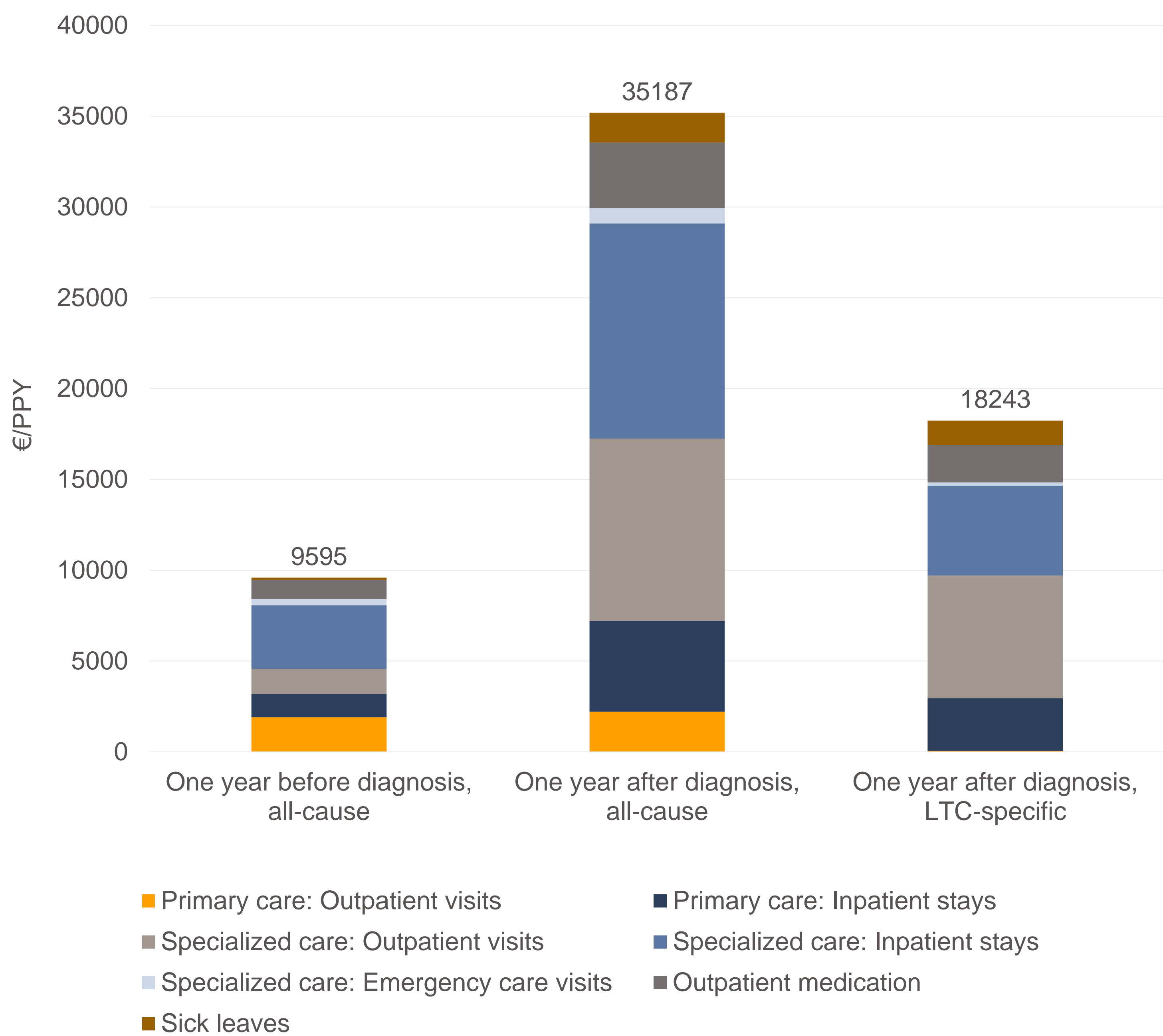


Figure 1. All-cause and LTC-specific costs one year before and after diagnosis

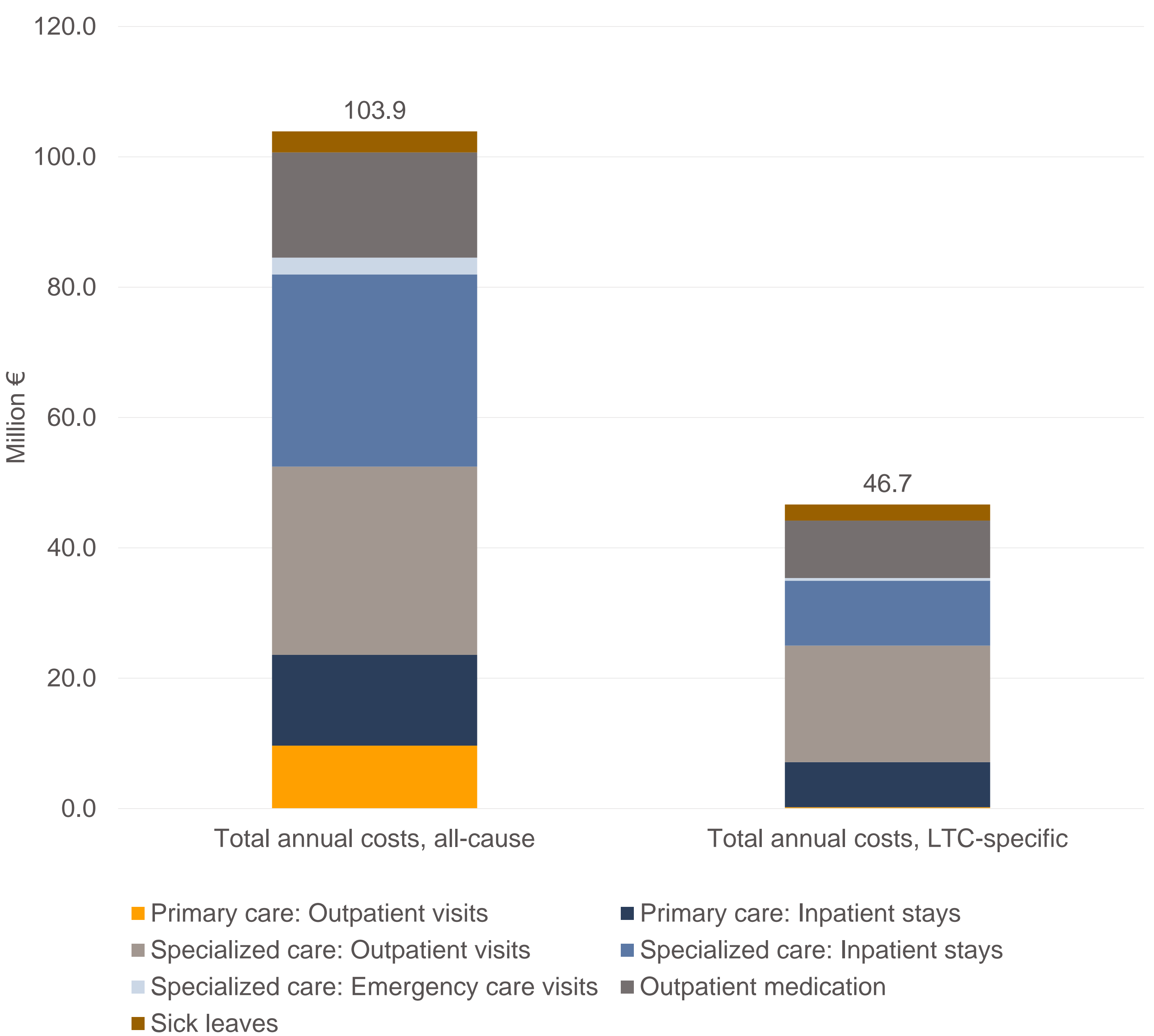


Figure 2. Annual all-cause and LTC-specific costs among prevalent LTC patients

## References

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