



# Treating cancer of unknown primary (CUP) in Germany – an economic perspective

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## BACKGROUND

Cancer of unknown primary (CUP) is a cause of major morbidity and mortality. Still, only limited information on epidemiology, treatment and economic data with regards to CUP syndrome exist.

## OBJECTIVE

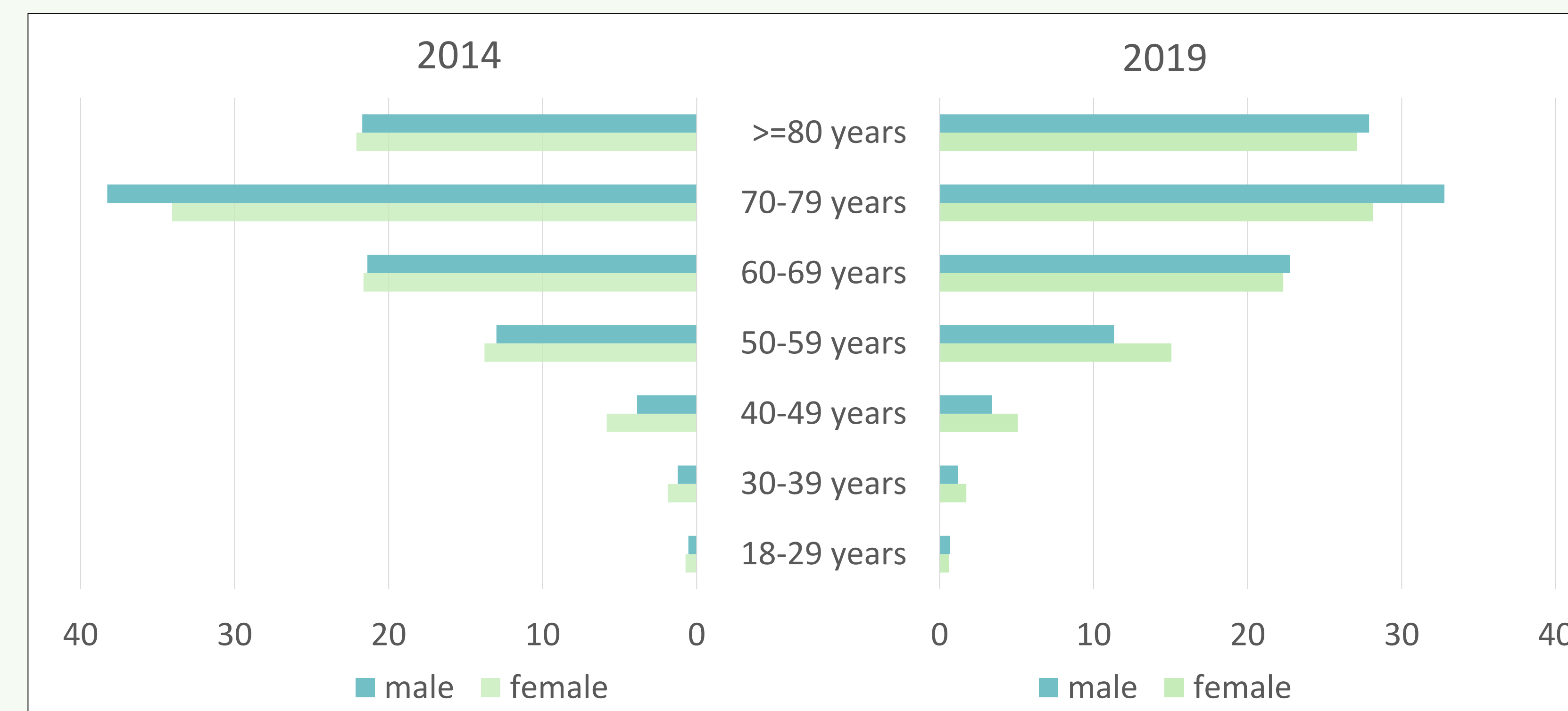
The objective of this study was to project economic consequences associated with treating CUP in Germany and to identify cost drivers from third party payer perspective.

## METHODS

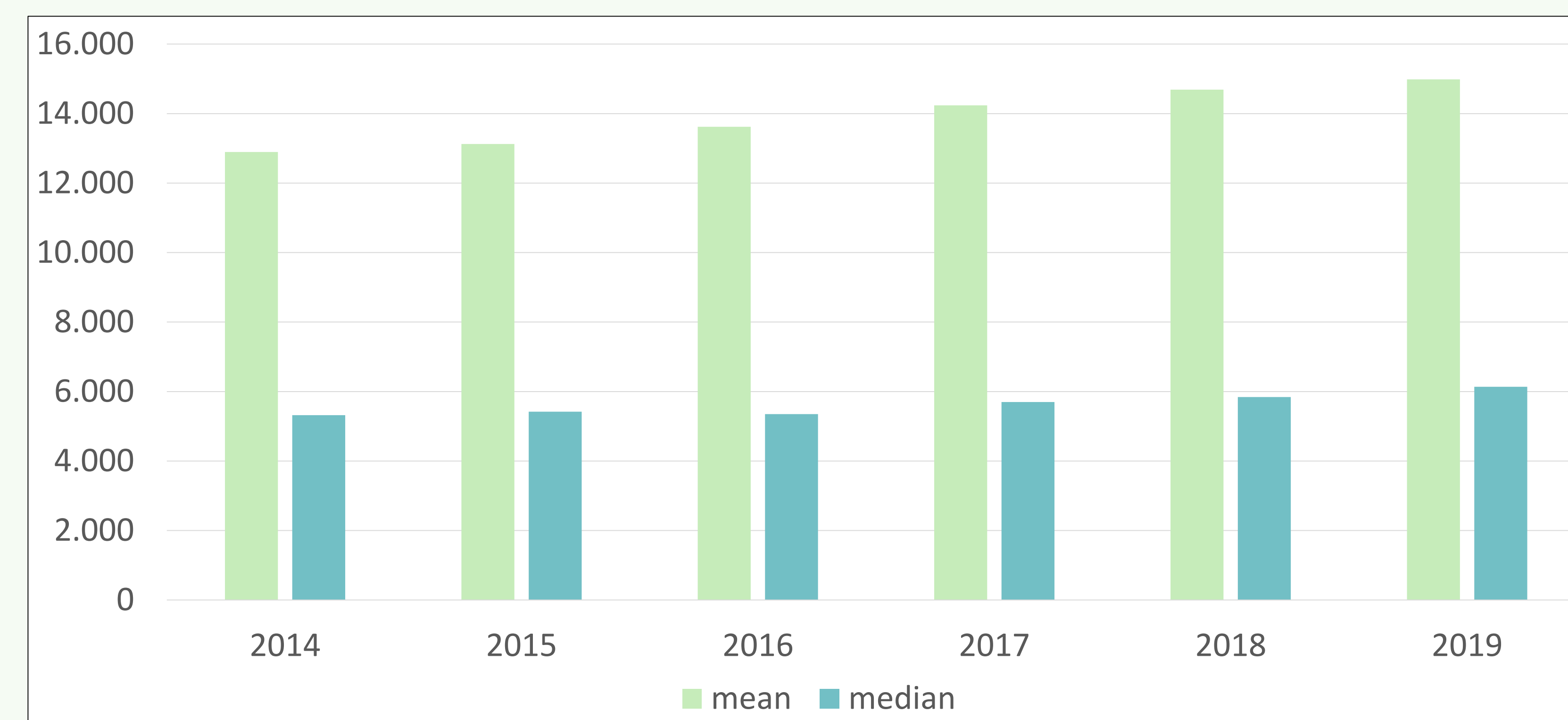
A retrospective cohort study based on anonymized German claims data (InGef research database) was carried out. Observation period: 2014 - 2019. Inclusion criteria:  $\geq 18$ y, inpatient or outpatient diagnosis of CUP per year (prevalent patients; ICD-10-Code: C80). The evaluation was carried out annually.

## RESULTS

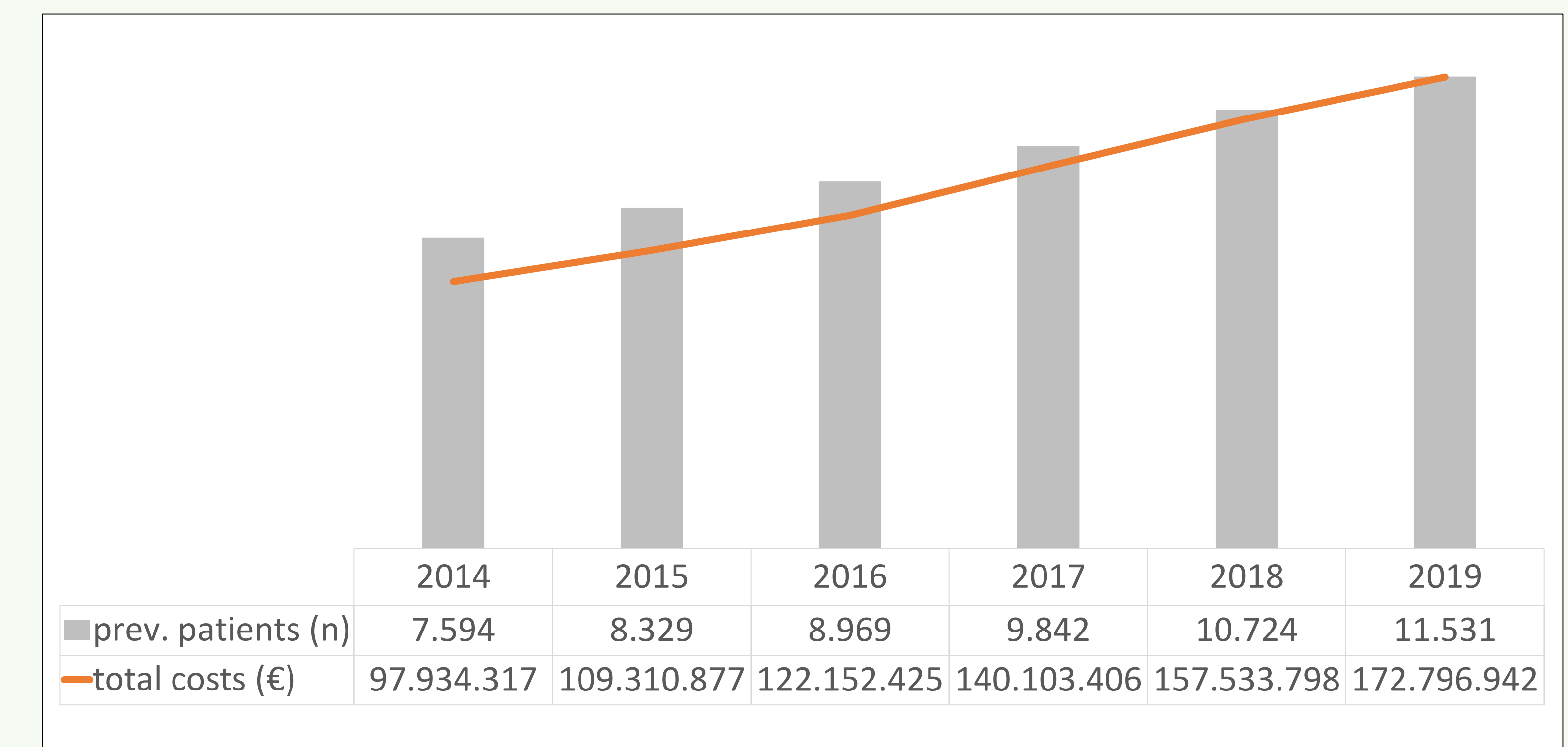
- Age and sex did not change over 5 years; mean age 71 years (median 73; range 18 - 104) and 52% male (2019) (Figure 1)
- Prevalence of documented CUP per 100.000 increased between 2014 – 2019 by 47% (2014: 226; 2019: 332)
- Number of prevalent patients (n) increased between 2014 and 2019 by 52% (Figure 2)
- There were no differences in TOP-5 prescriptions of antineoplastic and immunomodulating agents (ATC code L) between 2014 and 2019:
  - Platinum-containing compounds
  - Pyrimidine analogues
  - Monoclonal antibodies
  - Taxane
  - Colony stimulating factors
- Percentage, number and length of hospitalization have not varied between 2014 and 2019:
  - 84% had a minimum of one hospitalization
  - mean 3 admissions (2; 0 – 25)
  - mean 19 inpatient days ppt (4; 0 - 365)
- Total costs from third party payer perspective increased about 76% between 2014 and 2019 (Figure 2)
- Mean costs per patient were €12.894 in 2014 (5.319; 0 – 457.248) and €14.148 ppt in 2019 (6.139; 0 – 600.558) (Figure 3)
- The distribution of costs did not change over 5 years (Figure 4)



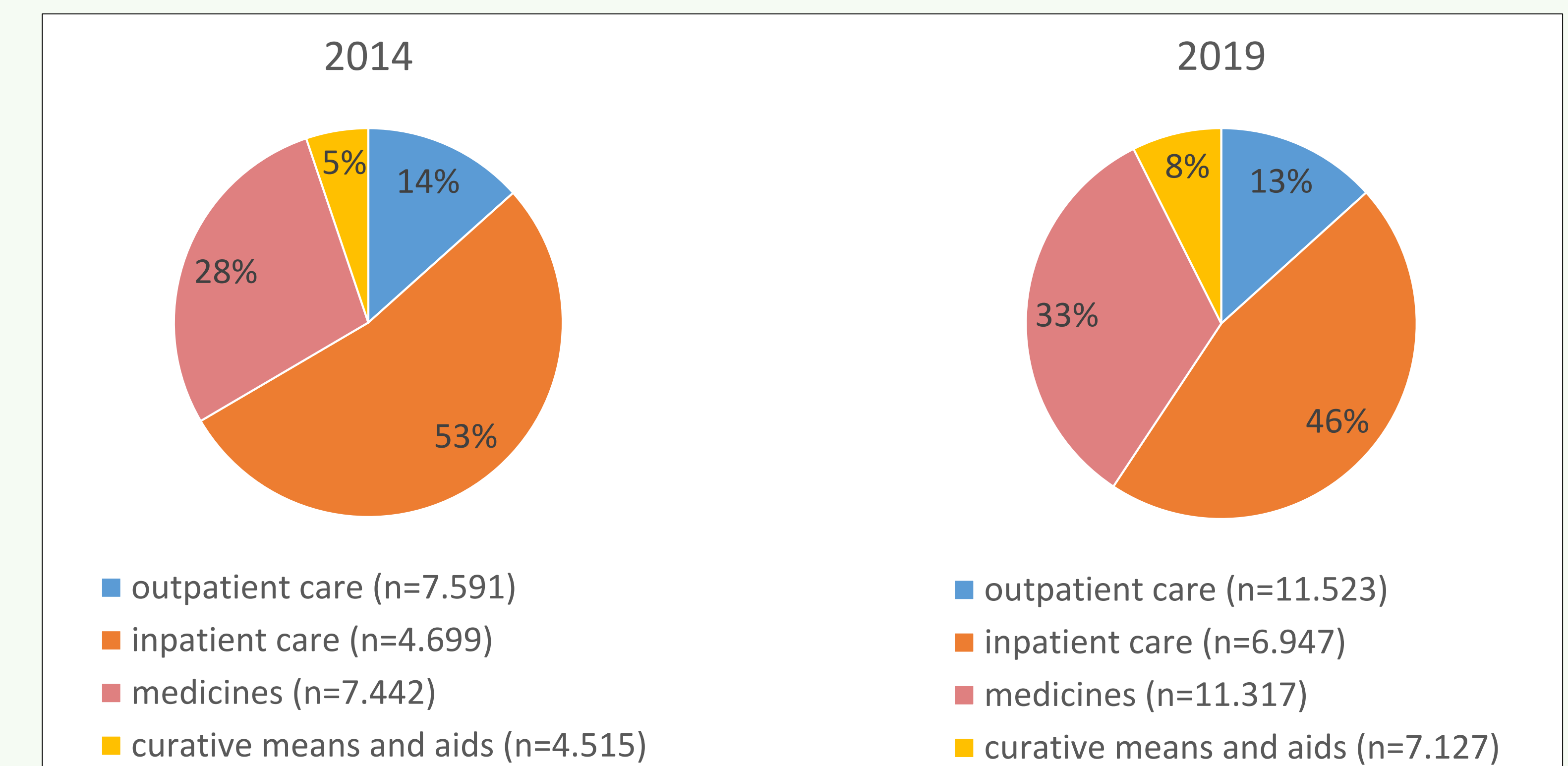
► Figure 1: Sex and age distribution in %



► Figure 3: Total annual costs per patient (€)



► Figure 2: Annual number of patients (n) and total costs (€)



► Figure 4: Distribution of total costs (%)

## CONCLUSION

- Inpatient care and drug therapies are main annual cost drivers
- Compared to German Cancer Registry data (1), our results show a higher rate of prevalent patients. This higher number may result from inconsistent coding, e.g. suspected CUP diagnosis or due to the fact that no primary tumor could be diagnosed for a while
- The shown CUP costs might include as well patients with a latter diagnosis of a specific primary tumor
- The heterogeneity of the use of ICD-10-Code: C80 may be also a reason for the wide cost range seen in these analyses
- More comprehensive cost analyses for CUP would require granular information like the UICC status, number to line of therapies and associated diagnostics. This information is not reflected by payers claims data
- Future efforts should aim additional data sources, e.g. prospective registries, in order to monitor CUP coding and to provide a holistic view of treatment patterns, outcomes and costs