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Using hospital data to understand secondary care activity in the 5 years after a cancer diagnosis

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Background

Cancer patients typically require significant contact with secondary care during their diagnosis, treatment and recovery, with stays in hospital relating to cancer representing a significant portion of hospital capacity and a practical and emotional burden for patients (1).

Cancer incidence is useful for estimating demand for secondary care to some extent, however demand at diagnosis does not equal demand associated with treatment. We also know many people living with cancer require unplanned and additional hospital care to treat the complications and consequences of cancer treatment. This demand may extend long after the initial diagnosis.

Exploring secondary care data linked to cancer registrations can indicate the burden of hospital care on patients and the requirements for care resources. This can assist in planning resources, and enable healthcare professionals to help cancer patients prepare themselves and carers for the impacts of cancer on their lives.

This ongoing project aims to understand the average extent of secondary care contact cancer patients have in the 5 years after diagnosis.

Methods

All diagnoses of malignant cancer (C00- C97 excluding C44) in patients occurring in 2014 in the NHS England National Cancer Registration Dataset. Each patient's record was linked to their Hospital Episode Statistics (HES) data in the 5 years after their diagnosis date. This includes:

- Inpatient admissions where at least one of the first 3 diagnosis codes associated with the admission is a cancer ICD-10 code
- Outpatient appointments where the treatment specialty of the appointment is one of the top 25 specialties associated with *all* appointments for cancer patients in the first 5 years post-diagnosis. These specialties were also reviewed by Macmillan clinical leadership
- All A&E attendances

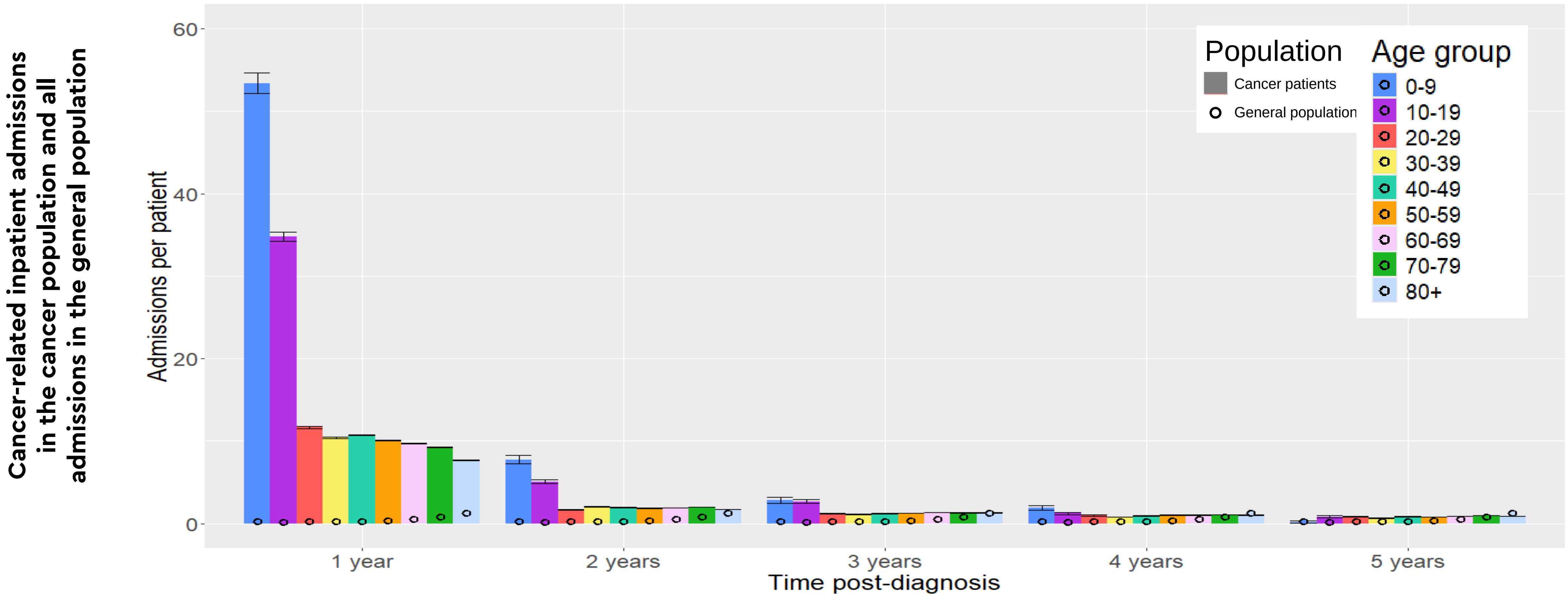
The average admissions, appointments, and attendances per patient by age group, were calculated for each of the 5 years post-diagnosis. The denominators include only those patients surviving to at least the end of each time period. These statistics are compared to the annual average rate of admissions, appointments and attendances, occurring in the same age group in the general population between 2013/14 and 2019/20, taken from published HES data[2]. Denominators are the average number of people in each age group in England, taken from Office for National Statistics mid-year population estimates for equivalent years[3].

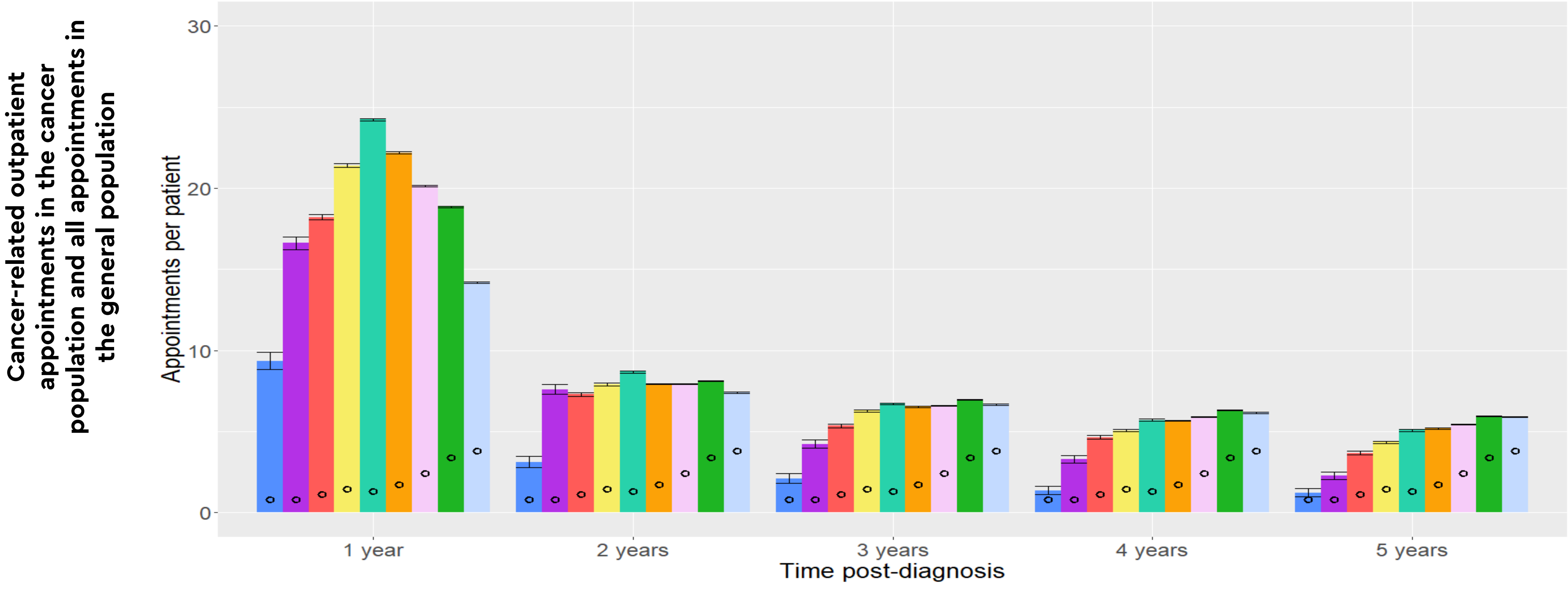
Results

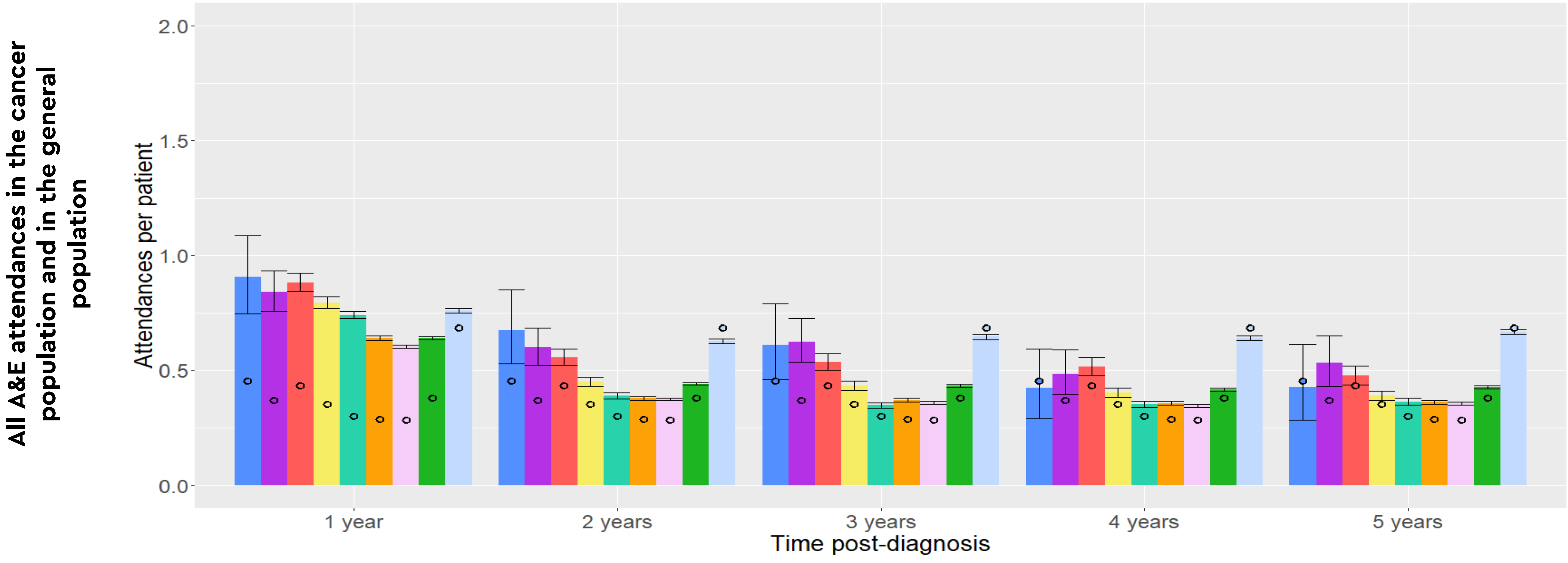
Across the 5 years post-diagnosis, cancer patients have an average of 21 cancer-related inpatient admissions, 37 cancer-related outpatient appointments, and 3 A&E attendances.

In all years post-diagnosis, in all age groups except those 80+, the average number of inpatient admissions for cancer patients, for care relating to their cancer, is higher than the average number of all inpatient admissions experienced by the general population. In all years and all age groups, the average number of cancer-related outpatient appointments in the 5 years after diagnosis is higher than the average number of all appointments in the general population. The same is observed for A&E attendances.

Younger cancer patients have higher rates of inpatient activity than other ages throughout. People diagnosed between 30 and 70 have high levels of outpatient activity soon after diagnosis, likely representing treatment choices. People in older age groups have the highest levels of A&E attendances, though this includes all attendances so may not represent a need for cancer-related care.







Graphs show 'period-specific' activity in those diagnosed with cancer i.e. '2 years' refers to those occurring between 12 months and 2 years post-diagnosis

Conclusions

Substantial secondary care relating to cancer is required long after the initial diagnosis. The amount of time spent in secondary care for cancer patients is higher on average than the secondary care contact of the average person of the same age in the general population, across this time period.

Cancer-related secondary care represents a significant burden on patients and the NHS long after diagnosis, meaning patients may require support with the physical impacts of cancer for a long time. Prevention of cancer and earlier diagnosis may help to reduce this burden.

Further work will disaggregate by clinical and demographic characteristics, such as deprivation, cancer type, and stage at diagnosis. We also plan to explore the costs of cancer-related secondary care in the 5 years post-diagnosis.

This work demonstrates the value of this approach to secondary care data for understanding cancer care, and of the linked data available in the NDRS cancer registry. We have drawn on previous work using similar methodology to explore the experience and demands of cancer care in the long term.

References

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This work uses data that has been provided by patients and collected by the NHS as part of their care and support. The data are collated, maintained and quality assured by the National Disease Registration Service, which is part of NHS England.