

# **Scottish Routes from Diagnosis: Multiple cancers and metastatic disease**

## **Summary**

## Acknowledgements

The analysis presented in this report uses data shared by patients and collected by the NHS as part of their care and support.

Thank you to the Macmillan-ISD Steering Group and to the Scottish Routes from Diagnosis Clinical Advisory Group for clinical and research support and advice in relation to the Scottish Routes from Diagnosis project.

## Background

Scottish Routes from Diagnosis (SRfD) was a project between Public Health Scotland and Macmillan, which investigated survivorship outcomes and experiences of residents of Scotland with the four most common types of cancer found in Scotland: breast, prostate, colorectal and lung, using national datasets from 2007 and 2012.

The project developed survivorship Outcome Groups (OGs), which capture the survivorship experiences in four different groups and allows comparisons across (as well as within) cancer types. Reporting patient factors, pathways, and outcomes using these outcome groups allows for investigation into the very different experiences people can have following a cancer diagnosis, both within a particular cancer type and across different types.

For a full explanation of the methodology of SRfD, please refer to the [SRfD Context and Methodology publication](#).

**Please note that this publication is based on data relating to cancer prior to the COVID-19 pandemic. Consequently, caution may be required in generalising these results to later time periods.**

## Multiple cancers, metastatic disease

This chapter presents a summary of the key findings only and focuses on the 2012 cohorts; for all analysis, definitions and context please refer to the full Multiple cancers and metastatic disease report.

This chapter reports on:

- People with multiple cancers of the same cancer type
- People with more than one cancer, in different sites (e.g. a breast cancer and a colorectal cancer).
- People with metastatic disease, i.e. cancer that has spread to other parts of the body.
- Survival in people with a previous cancer diagnosis

## Mortality and end of life care – Summary of key findings

### An Overview of Any Multiple Cancer Diagnosis

- In the 2012 cohorts, in the total 15-year period (10yr lookback, 5yr follow-up), more than 1 in 8 people in the **prostate, lung** and **colorectal** cancer cohorts had at least one other tumour. Just under 1 in 10 of the 2012 **breast** cancer cohort had an additional cancer diagnosis.
- In the **breast** and **colorectal** cohorts, breast and colorectal cancer themselves are common as previous diagnoses.
- In **breast, colorectal** and **lung** cancer the most common diagnosis in follow-up was another tumour of the cohort site.
- For cancers of non-cohort sites, frequency of other cancer sites diagnosed tends to follow that in the general population, sometimes in low numbers. There are a few notable exceptions:
  - Head and neck cancer was overrepresented in the **lung** cancer cohort both as a previous tumour and a follow-on diagnosis.
  - Bladder cancer was similarly overrepresented in the **prostate** cancer cohort, more so as a previous diagnosis.
  - Lung cancer was generally underrepresented as a previous cancer, due to low survival rates.

### Multiple cancers of the same type

- The number of people diagnosed with more than one cancer of the same site is relatively small. It is most common in the **breast** cancer cohort, with 1 in 18 women diagnosed with a second tumour at some point in the lookback and follow-up periods.
- Many of the multiple tumours of the same type in the **breast, colorectal** and **lung** cohorts were diagnosed on the same day or within a few months of the cohort cancer diagnosis.
- People in the **colorectal** cohorts with a previous colorectal cancer diagnosis were, on average, older than those who did not have a previous diagnosis.

### Multiple cancers of different types

- Diagnoses of cancers of other types tend to cluster in time, investigations for one cancer or set of symptoms are likely to uncover multiple tumours if present.
  - Before the cohort diagnosis, other diagnosis rates rise in the preceding 3-6 months.
  - Post-cohort diagnosis the rates of further cancer diagnosis remain high in the first 3-month period and are still elevated for **prostate** cancer 3-6 months later.
  - New tumour diagnosis rates start to increase again 1 year after diagnosis.
- Around 1 in 12 people in the **lung** cancer cohort had a previous diagnosis of a cancer of another site.

- The **breast** cancer cohort had the lowest proportion experiencing another cancer in the previous 10 years – possibly reflecting the younger age and general better health profile of this cohort.
- In general, multiple cancer diagnoses were more common in those over 65 at cohort diagnosis. This is probably because age is a risk factor for many cancers.
- The number of persons diagnosed with another cancer after the cohort cancer diagnosis broadly reflects survival differences; groups with generally short survival have few further cancers diagnosed.
- When converted to tumours per person year at risk (i.e. accounting for survival differences) it can be seen that:
  - The **breast** cancer cohorts have the lowest overall risk of a further (non-breast) cancer.
  - Conversely the **lung** cancer cohorts have the highest risk.
- The rate of other cancer diagnoses increases with age at diagnosis.

### Metastatic Disease

- The **lung** cancer cohort had the highest proportion of people with metastatic disease, and the **prostate** cancer cohort the lowest.
- Most metastatic disease was diagnosed within 0-6 months of the cohort diagnosis. However, there are a minority diagnosed with metastatic disease years later, this proportion is highest in cohorts with higher long-term survival. Some of these late metastatic diagnoses will be related to other cancers, not the cohort cancer.
- Trends in recording of more metastases in younger people in the **breast**, **colorectal** and **lung** cohorts may be due to more missing data in older people's records.
- In **prostate** cancer cohorts, there was more metastatic disease in older people, despite more missing staging data.

### Survival in people with a previous cancer diagnosis

- A recent previous cancer diagnosis was related to poorer prognosis in **prostate** and **breast** cancer.
  - The increase in risk of death was significant for the breast cancer cohorts only for those with a recent (<1-year age) diagnosis.
  - In the prostate cancer cohorts, the risk was increased for those with a previous cancer up to three years before the cohort diagnosis
  - Poorer survival may be due to treatment complications, greater disease burden, or simply because the other cancer may have a poorer prognosis than the breast/prostate cancer, and therefore the course of the other cancer determines survival.
- In the **lung** cancer cohorts survival was better in those who had another cancer diagnosed in the year prior to the lung cancer diagnosis. Earlier presentation of the lung cancer due to investigations for other tumours may be a partial explanation

- People living with cancer in the **colorectal** cancer cohorts had a modestly increased risk if they had experienced a previous diagnosis in the previous year, however this was not statistically significant.

### Further Information

Further information on the Scottish Routes from Diagnosis project, or other work resulting from our partnership, can be found on the [Macmillan](#) or the [Public Health Scotland](#) websites or by contacting us at [phs.macmillan@phs.scot](mailto:phs.macmillan@phs.scot) or [HealthData@macmillan.org.uk](mailto:HealthData@macmillan.org.uk).