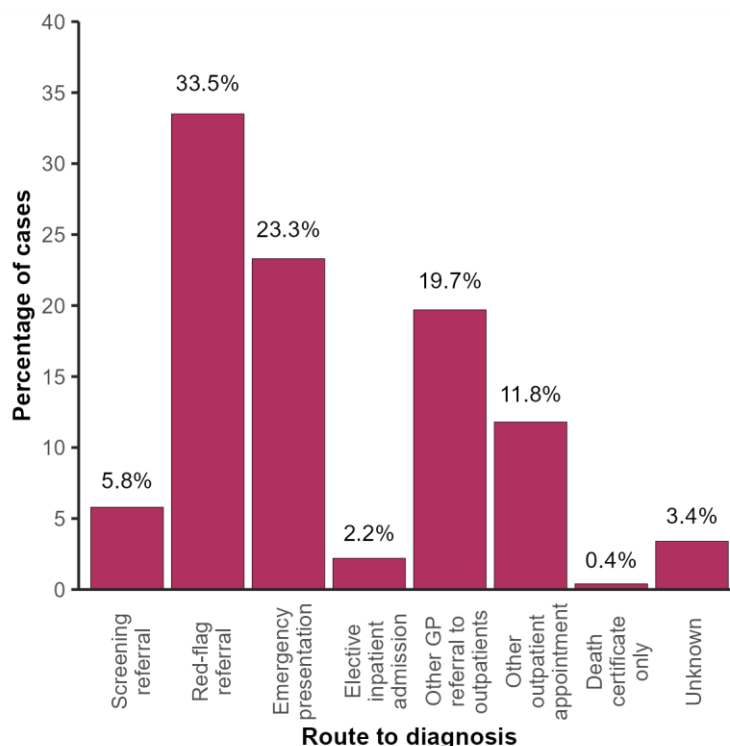


## SUMMARY

The routes to diagnosis project aims to provide an indication of the key event in each cancer patient's pathway that most directly led to their cancer diagnosis. Based upon cancers (excluding non-melanoma skin cancer) diagnosed in 2018-2021 patients were classified as shown in figure 1:

*Summary figure 1: Route to diagnosis for cancer (ex NMSC) patients diagnosed in 2018-2021*

- 5.8%** where the patient was referred from the national screening programmes.
- 33.5%** where the patient had a GP referral with a red-flag to indicate suspected cancer.
- 23.3%** where the patient presented as an emergency inpatient to hospital.
- 2.2%** where the patient had an elective inpatient appointment with no earlier admission recorded.
- 19.7%** where the patient had a GP referral to outpatients that was not a red flag referral.
- 11.8%** where the patient had an outpatient appointment which was not a direct result of a GP referral.
- 0.4%** where no data was available on the patient, except for reference to cancer on a death certificate.
- 3.4%** where no data was available on the patient.



### Screening

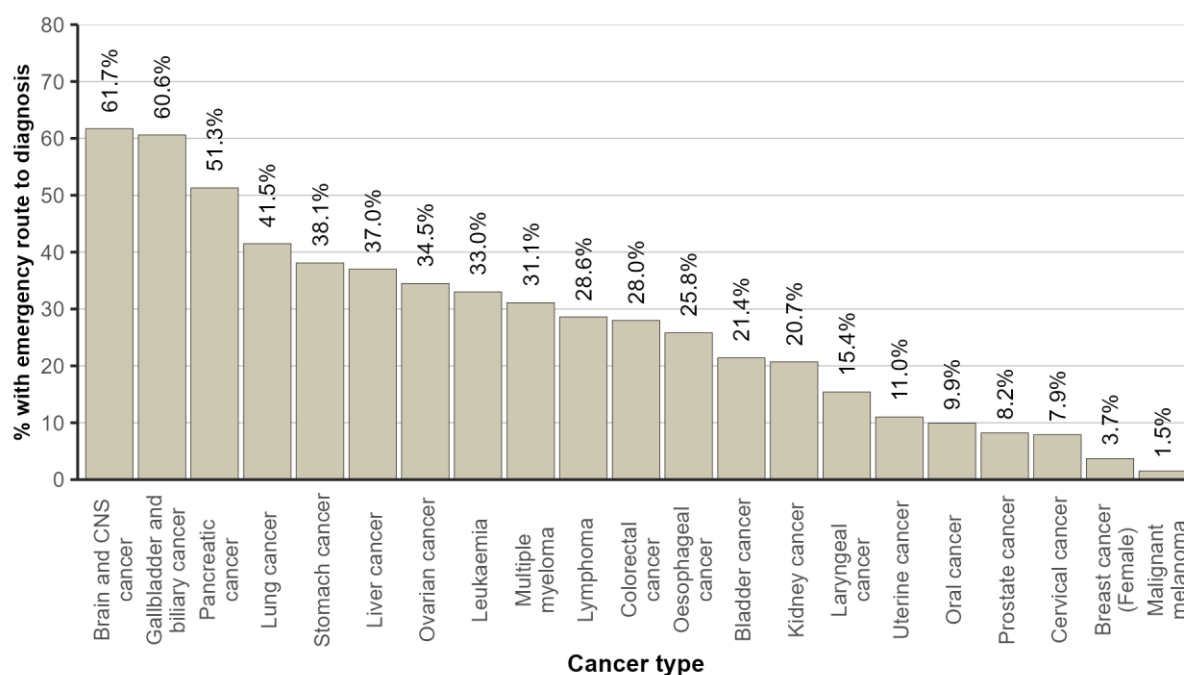
The screening route to diagnosis only applies to certain cancers and age groups. For these groups: 52.5% of female breast cancer patients aged 50 to 70, 43.6% of cervical cancer patients aged 25 to 64 and 22.4% of colorectal cancer patients aged 60 to 74 were diagnosed via the screening route.

### Emergency admissions

For the four most common cancer types: 3.7% of female breast cancer patients, 41.5% of lung cancer patients, 8.2% of prostate cancer patients and 28.0% of colorectal cancer patients were diagnosed via the emergency presentation route.

Diagnosis following an emergency admission ranged from 61.7% for brain and central nervous system cancer patients and 60.6% for gallbladder and biliary cancer patients to 3.7% for female breast cancer patients and 1.5% for malignant melanoma patients.

*Summary figure 2: Percentage of cases diagnosed in 2018-2021 with an emergency presentation route to diagnosis by cancer type*

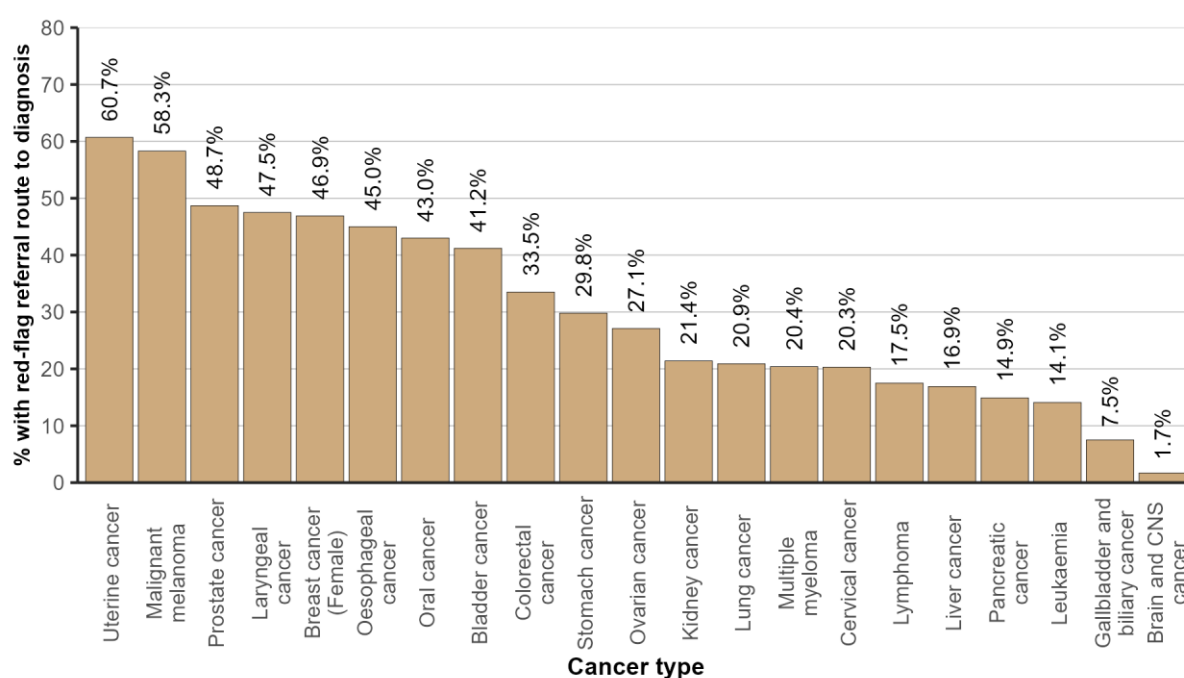


### Red-flag referrals

For the four most common cancer types: 46.9% of female breast cancer patients, 20.9% of lung cancer patients, 48.7% of prostate cancer patients and 33.5% of colorectal cancer patients were diagnosed via the red-flag referral route.

Diagnosis following a red-flag referral ranged from 60.7% for uterine cancer patients and 58.3% for malignant melanoma patients to 7.5% for gallbladder and biliary cancer patients and 1.7% for brain and central nervous system cancer patients.

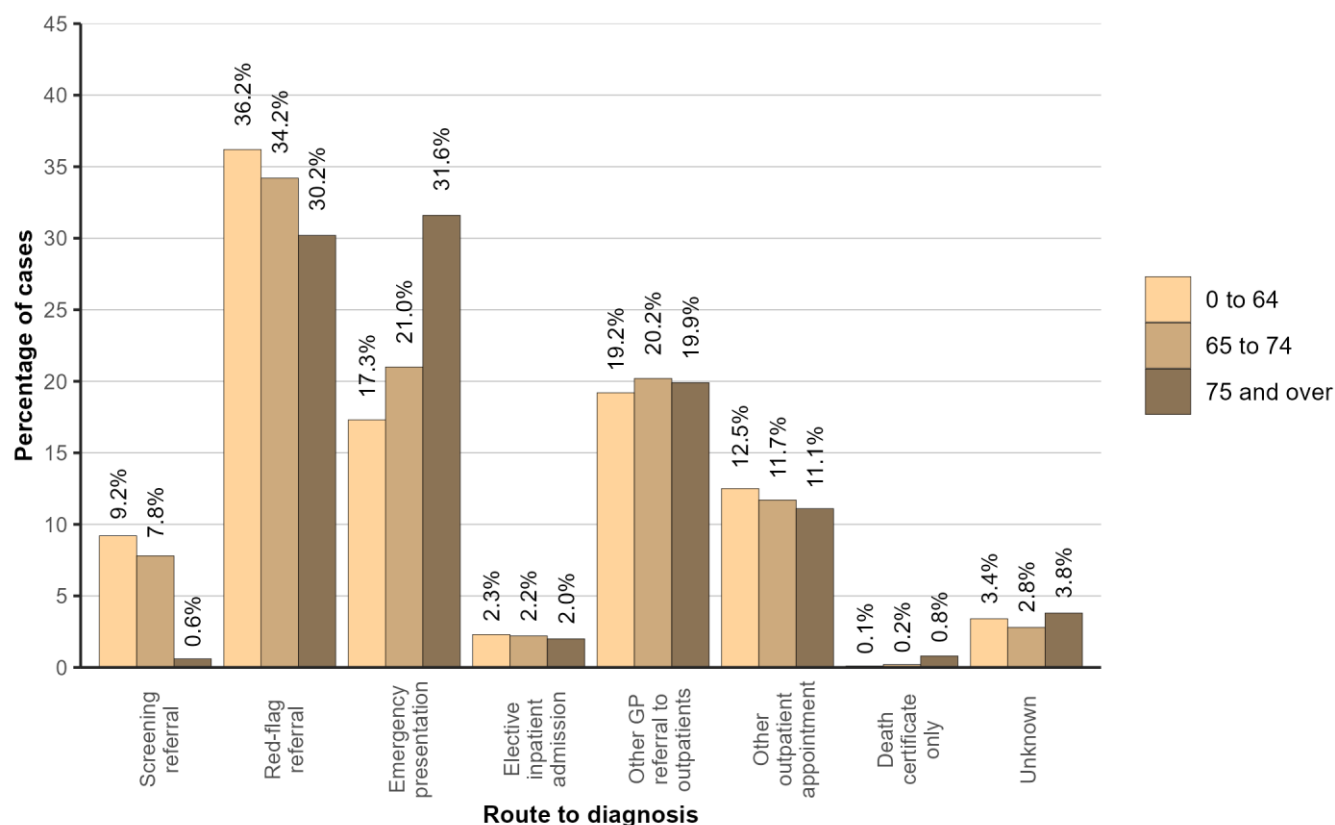
*Summary figure 3: Percentage of cases diagnosed in 2018-2021 with a red-flag referral route to diagnosis by cancer type*



## Age at diagnosis

Route to diagnosis was associated with the patients age at diagnosis with the proportion of cases of cancer (ex NMSC) diagnosed via a red-flag referral being 36.2% among patients aged 0 to 64 compared to 30.2% among patients aged 75 and over. The proportions diagnosed via an emergency presentation were 17.3% and 31.6% for patients aged 0 to 64 and 75 and over respectively, while a screening referral was the route taken by 9.2% of patients aged 0 to 64 and 0.6% of patients aged 75 and over.

*Summary figure 4: Route to diagnosis for cancer (ex NMSC) patients diagnosed in 2018-2021 by age group*



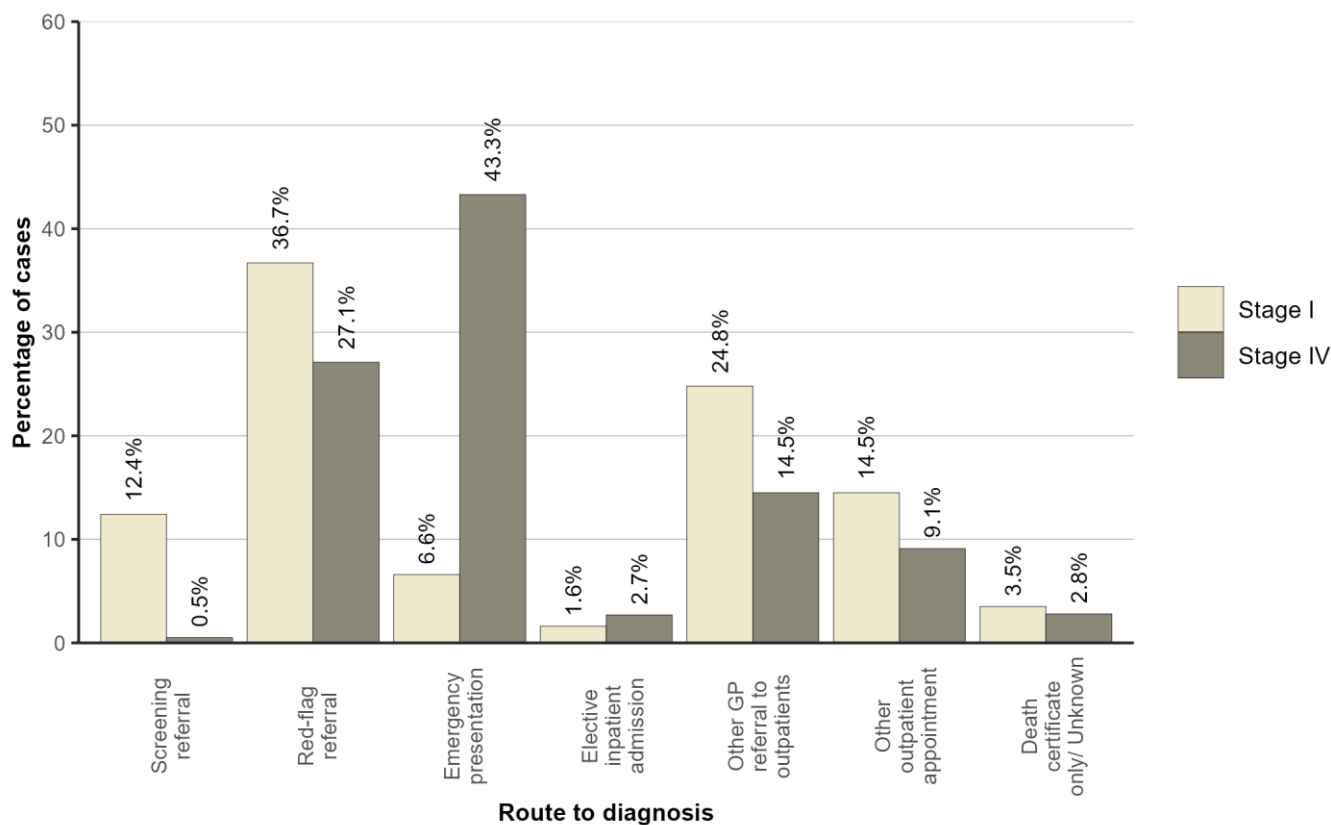
## Stage at diagnosis

There was a strong relationship between route to diagnosis and stage at diagnosis with the proportion of cancer (ex NMSC) cases diagnosed via a red-flag referral being 36.7% among stage I cancers compared to 27.1% among stage IV cancers. The proportions diagnosed via a screening referral were 12.4% and 0.5% for stage I and stage IV cancers respectively, while an emergency presentation was the route taken in 6.6% of cases diagnosed at stage I and 43.3% of cases diagnosed at stage IV.

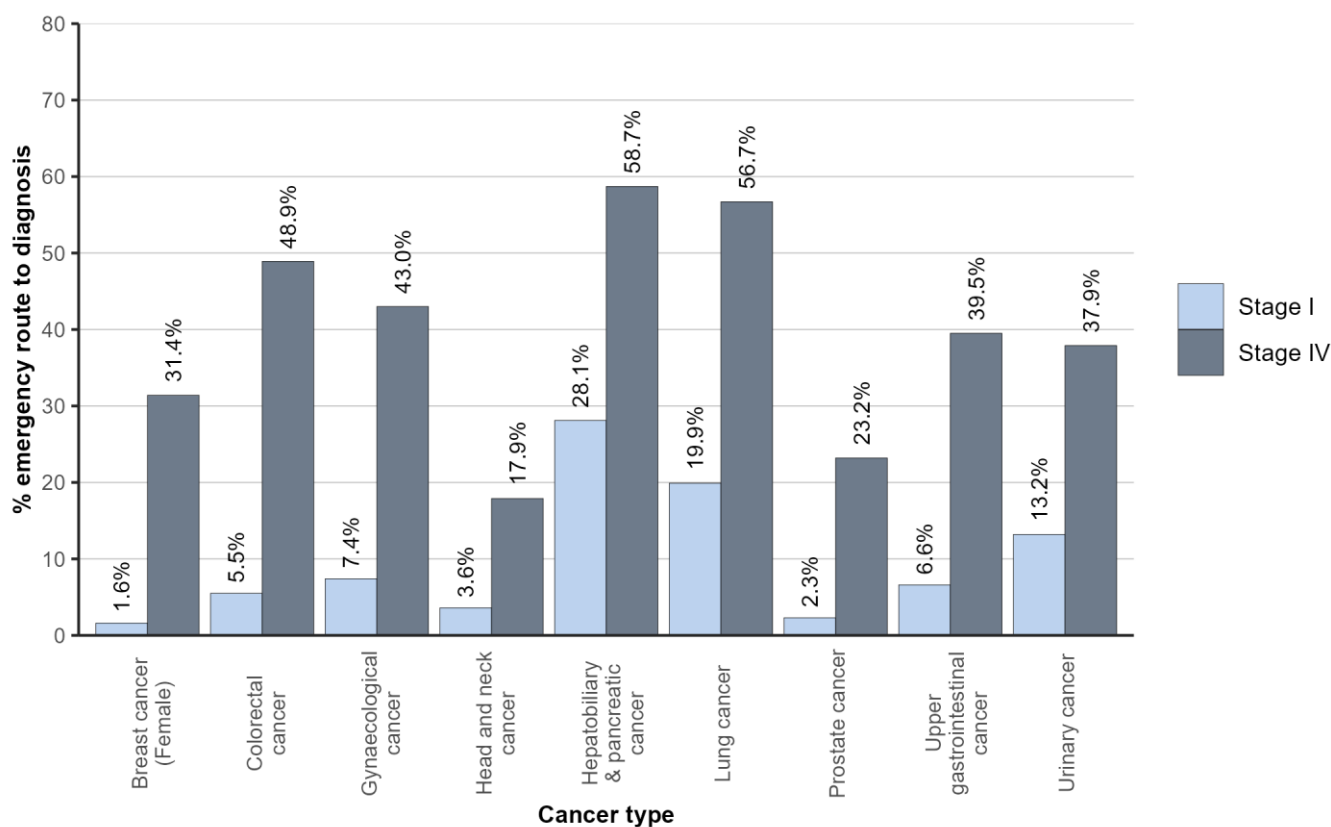
The large variation in emergency route to diagnosis by stage was apparent for most cancer types.

- 31.4% of stage IV female breast cancers were diagnosed via an emergency admission route compared to 1.6% of stage I cancers.
- 56.7% of stage IV lung cancers were diagnosed via an emergency admission route compared to 19.9% of stage I cancers.
- 23.2% of stage IV prostate cancers were diagnosed via an emergency admission route compared to 2.3% of stage I cancers.

*Summary figure 5: Route to diagnosis for cancer (ex NMSC) patients diagnosed in 2018-2021 by stage at diagnosis*



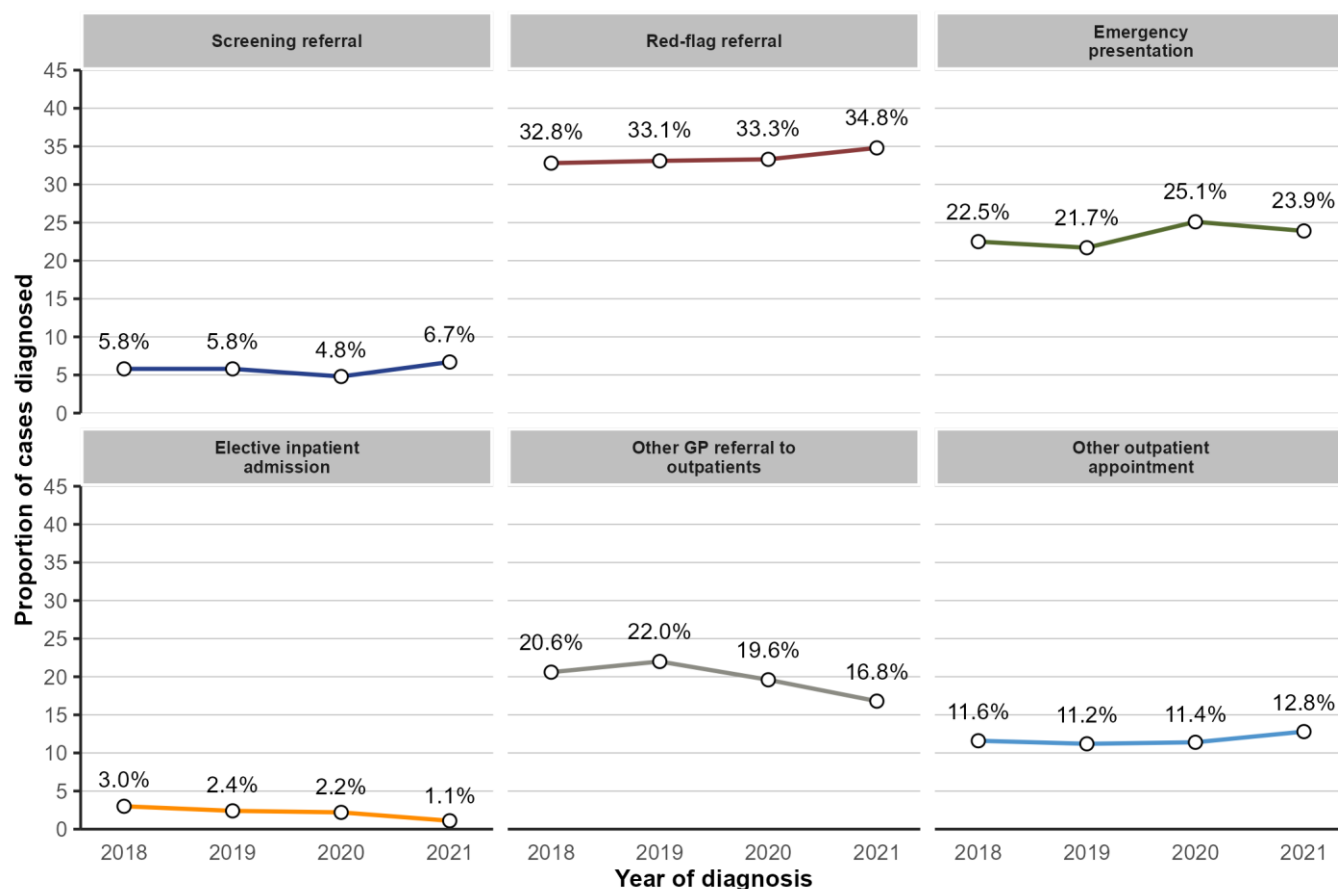
*Summary figure 6: Percentage of cases with an emergency route to diagnosis for patients diagnosed in 2018-2021 by cancer type and stage at diagnosis*



## Trends over time

The proportion of cases diagnosed via a screening referral route increased from 4.8% in 2020 to 6.7% in 2021, while presentation via a red-flag referral route increased from 33.3% to 34.8%. The proportion of cases diagnosed via an emergency presentation route decreased from 25.1% in 2020 to 23.9% in 2021.

*Summary figure 7: Trends in route to diagnosis for cancer (ex NMSC) patients diagnosed in 2018-2021*



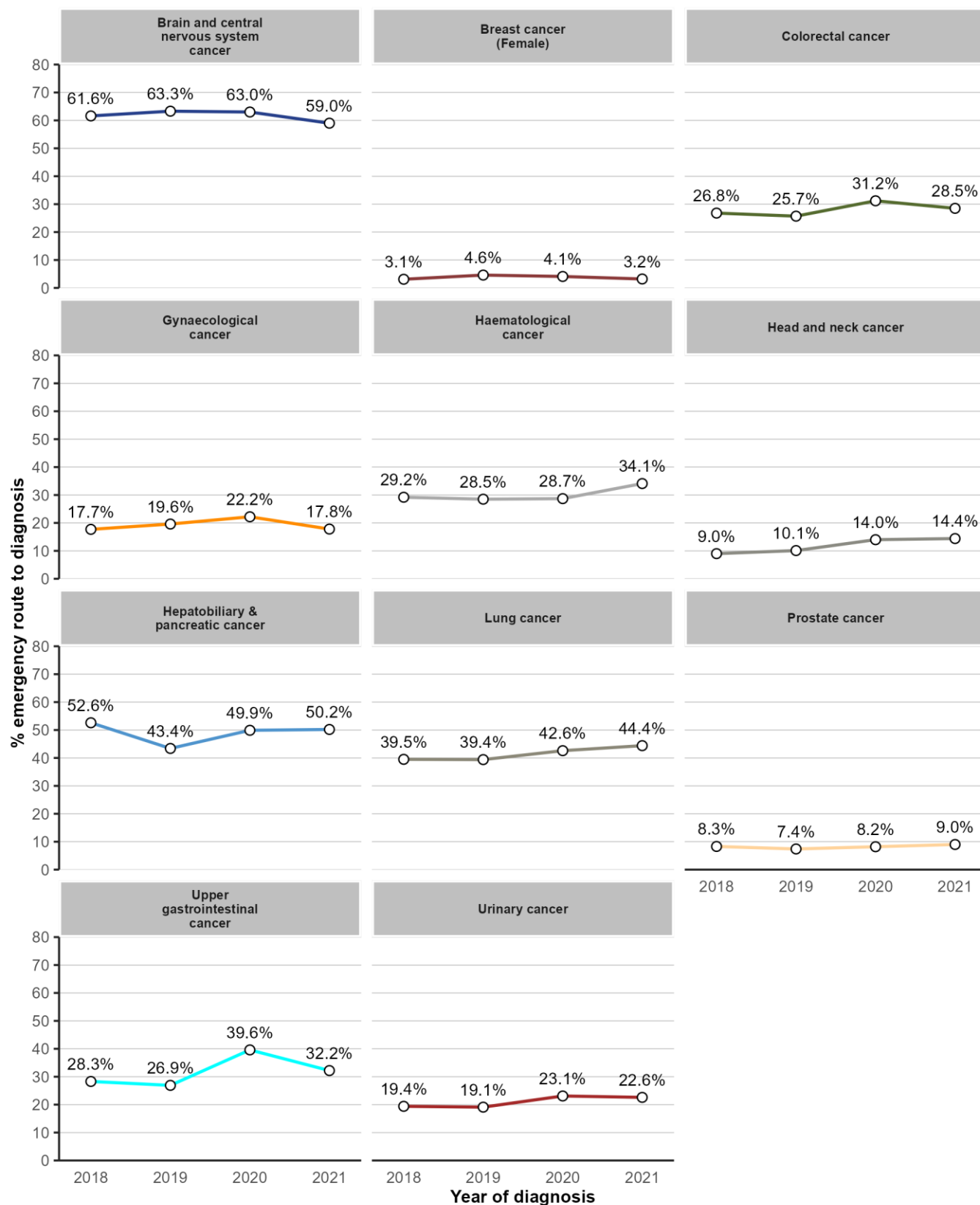
The distribution of cases diagnosed by route to diagnosis varied over time for specific cancer types.

Those demonstrating significant changes between 2020 and 2021 were female breast cancer, colorectal cancer, lung cancer, prostate cancer and malignant melanoma.

For those demonstrating significant changes in the previous two years the proportion with an emergency presentation route:

- decreased for female breast cancer from 4.1% in 2020 to 3.2% in 2021.
- decreased for colorectal cancer from 31.2% in 2020 to 28.5% in 2021.
- increased for lung cancer from 42.6% in 2020 to 44.4% in 2021.
- increased for prostate cancer from 8.2% in 2020 to 9.0% in 2021.

*Summary figure 8: Trends in percentage of cases with an emergency route to diagnosis for cancer (ex NMSC) patients diagnosed in 2018-2021*



## Survival

During 2018-2021 one-year age-standardised net survival from cancer (ex NMSC) ranged from 42.1% for those diagnosed via an emergency presentation route to 87.3% for those diagnosed via a red-flag referral route. Two years from diagnosis age-standardised net survival ranged from 32.7% for those diagnosed via an emergency presentation route to 80.6% for those diagnosed via a red-flag referral route.

*Summary figure 9: Age-standardised net survival by route to diagnosis for cancer (ex NMSC) patients diagnosed in 2018-2021*

