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ESTIMATING THE GAP IN THE PROVISION OF SPECIALIST CANCER NURSES IN ENGLAND

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Background

Specialist cancer nurses (SCNs) play an essential role in supporting people living with cancer. The Macmillan Cancer Workforce in England census[1] identified 4,000 whole time equivalent posts in October 2017. However, the system is showing signs of strain and nurses report this number is insufficient to provide people living with cancer the care they need[2]. We aim to estimate the number of additional SCNs needed in England to guide national planning for the future workforce.

Methods

Published data were used to predict the cancer population in England in 2017 and 2030 for ten cancer type groupings[3], sub-divided by Cancer Alliance. We then reviewed the cancer pathway for each of the ten cancer types, categorised them into one of two groups, and then produced a model pathway structure for each group (figure 1 and 2), to which we applied our population estimates. The custom cancer groups and combined stage data were calculated using weighted averages where available.

Over 50 lead and clinical nurses provided insight into the scope of SCN roles across the patient pathway and informed assumptions about the time spent with patients. They indicated the proportion of people in each stage of the pathway who are seen at least once by a SCN. For those who are seen the nurse's time is split into clinic time (holding clinics, writing notes and supporting other healthcare professionals) and other support (e.g. non-clinic admin focused on a single or group of patients, phone calls or being at or preparing for the MDT). The nurses also explored how they might expect this to change if there were more SCNs in post who would deliver high quality care.

Finally, the required number of SCNs will be compared to data from the Macmillan census on current (2017) supply. Only nurses that are believed to cover a caseload will be considered, which excludes 167 vacant posts, 401 in Acute Oncology Services, 335 that are not cancer type specific and 166 predictive job tiles such as advanced nurse practitioners. It will be assumed SCN have 37.5 days leave a year[4], 4% sickness absence[5] and should have on average 5 days study leave[6].

Results

In 2017, SCNs in England needed to support 350,000 patients with a new cancer diagnosis[7], one million people in follow up[8] and 130,000 people who died from cancer[9]. We will estimate the number of nurses require to provide high quality care in 2017 and 2030 and how this varies by cancer type. Nurses believe meeting the demand could result in better cancer patient experience, more cost-effective care, improved staff progression and more people on stratified follow up.

Limitations

The assumptions gathered in this analysis were designed to build on typical practice but there is a high degree of variation. For example, for some hospitals and cancer types, caring for people with suspected cancer is a large part of the SCN role and all people with suspected cancer are seen. In other contexts support before diagnosis is provided entirely by other types of healthcare professional. There is also variation based on the type of referrals seen by the hospital, the way work is shared with support workers, palliative care nurses and doctors and the configuration of services. This variation along with gaps in cancer data availability causes uncertainty in our estimates.

The clinic timings and time for other support that will be used on the analysis are not recommendations as it depends heavily on local context. Instead they will aim to describe an average that would be possible with the greater number of SCNs needed to deliver high quality care. This should be used help plan the future workforce on a national level rather than make predictions applicable for individual NHS Trusts.

Conclusion

Specialist cancer nurses are critical in providing holistic care to people living with cancer, but this can only be delivered if, amongst other factors, the workforce is large enough to deliver a high-quality service. When published these estimates will offer a national benchmark, though workforce planning should be tailored to the local context.

Figure 1: Proposed cancer pathway model structure for breast, urology, lower gastrointestinal (GI), gynaecology, skin and head and neck. Assumptions for breast cancer in 2017 are shown:

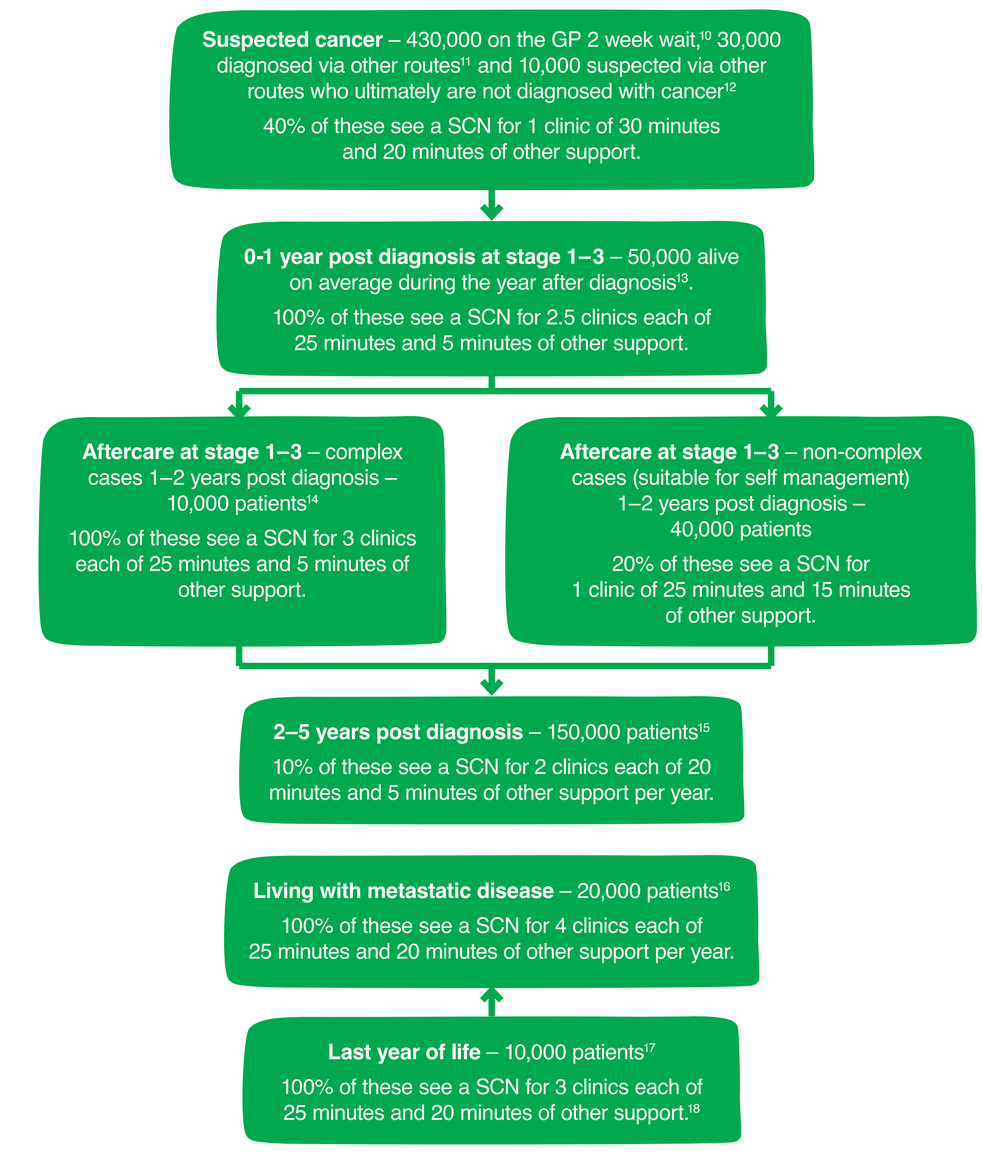
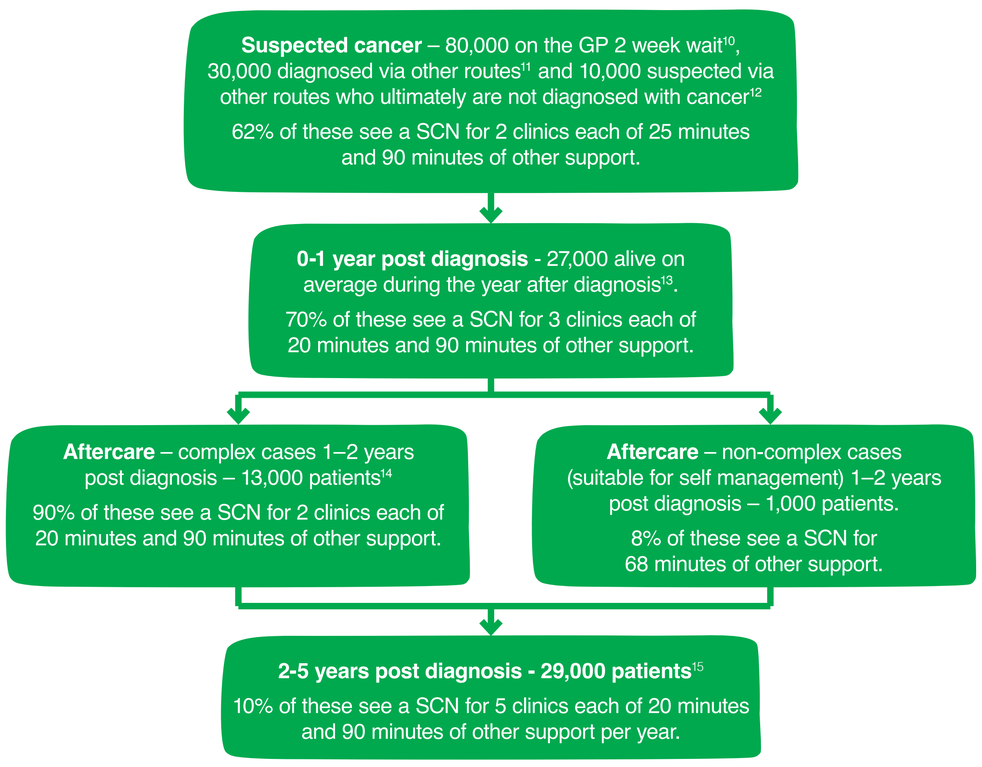


Figure 2: Proposed cancer pathway model structure for lung, upper GI, haematology and brain. Assumptions for lung in 2017 are shown:



References

1 Macmillan Cancer Support. Cancer workforce in England. 2018. https://www.macmillan.org.uk/_images/cancer-workforce-in-england-census-of-cancer-palliative-and-chemotheraphy-speciality-nurses-and-support-workers-2017_tcm9-325727.pdf
2 Macmillan Cancer Support. From the frontline. https://www.macmillan.org.uk/_images/Macmillan-WorkplaceSurvey-ReportMAC16756_tcm9-316125.pdf
3 Brain/central nervous system (C47, C70 – C72, C75, D32-D33 D35.2-D35.4 D42-D43 D44.3-D44.5), breast (C50, D05), lower GI (C18-C21, C26), gynaecology (C51-CC58), haematology (C81-CC85,C88, C90-C96, D46, D47.1) head and neck (C00-C14,C30-C32, C73), lung (C33-C34, C37-C39, C45), skin (C43 and squamous cell carcinoma), upper GI (C15-C16, C22-C25) and urology (C60-C68, D09)
4 https://www.rcn.org.uk/employment-and-pay/nhs-conditions-of-employment
5 Sickness Absence Rate for Nurses & health visitors in 2018-19. https://digital.nhs.uk/data-and-information/publications/statistical/nhs-sickness-absence-rates/january-2019-to-march-2019-and-annual-summary-2010-11-to-2018-19
6 Expert nurse opinion
7 Based on the 10 cancer types included which include benign disease11. 2016 incidence from CancerStats from Public Health England forecasted forwards based on growth rates in Smittenaar CR, Petersen KA, Stewart K, Moitt N. Cancer Incidence and Mortality Projections in the UK Until 2035. Brit J Cancer 2016
8 Sum of estimated number alive 1.5,2.5,3.5 and 4.5 years post diagnosis based on incidence and survival at 1 and 5 years. For breast, urology, lower GI, gynaecology, skin and head and neck it is just those at stage 1 to 3.
9 Based on 2016 mortality from CancerStats from Public Health England forecasted forwards based on growth rates in Smittenaar et al.
10 Estimated from 2017 quarterly provider data on suspected cancer going through the GP referral 2 week wait pathway. https://www.england.nhs.uk/statistics/statistical-work-areas/cancer-waiting-times/quarterly-prov-cwt/2019-20-quarterly-provider-based-cancer-waiting-times-statistics-provider-based-cancer-waiting-times-for-q1-2019-20-provisional/
11 Estimated based on incidence and routes to diagnosis data on those diagnosed in 2006 to 2016. www.ncin.org.uk/publications/routes_to_diagnosis
12 Rate of people not on the GP 2 week wait who are suspected of cancer but do not have cancer based on expert nurse opinion
13 Based on 2016 incidence from CancerStats forecasted forwards based on growth rates in Smittenaar at al. Stage at diagnosis data in 2016 and 2017 by Cancer Alliance (http://www.ncin.org.uk/view?rid=3864) and average 1 year net survival by stage weighted across stage 1 to 3 for adults diagnosed in 2013-2017 (https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/cancersurvivalinengland/nationalestimatesforpatientsfollowedupto2017) Average survival based on an exponential decay model
14 Estimated number alive 1.5 years after diagnosis based on incidence and survival at 1 and 5 years. Proportion that are complex or suitable for self management based on expert nurse opinion.
15 Sum of estimated number alive 2.5,3.5 and 4.5 years post diagnosis.
16 Duration of time with metastatic cancer estimated from the estimated time point with 50% survival of those diagnosed at stage 4. 1 year is deducted from this to exclude the last year of life. This is then multiplied by the number of deaths per year to estimate the population size.
17 Based on 2016 mortality from CancerStats from Public Health England forecasted forwards based on growth rates in Smittenaar et al.
18 Assumptions based on cancer type specific nurses and do not include palliative care specialist nurses.