

## **Written evidence submitted by Sarah Stevens, NHS Digital (CSV0062)**

Dear Jeremy

Thank you very much for inviting me to give evidence at your Committee evidence session on Cancer Services on Tuesday 9 November 2021.

There were issues raised during the session for which I did not have information at hand, and on which I agreed to provide further details. This information can be found below. Thank you for allowing us the opportunity to provide these following the session.

### **Variation in Cancer Outcomes**

In England 1 year survival has improved between 2006 - 2010, and 2014 - 2018 for all cancers and both sexes, except for bladder cancer. Childhood cancer has continued to improve for 1, 5 and 10-year survival. Melanoma has the highest 1-year and 5-year survival for both males and females. Pancreatic cancer the lowest 1-year survival in males and 1 and 5 year survival in females. Mesothelioma the lowest 5-year survival in males.

For Cancer Alliances (CAs) the difference between the minimum and maximum 1-year survival estimates vary from 1.5 percentage points for breast cancer (females only) to 13.1 percentage points for brain cancer (all persons).

### **Breast cancer**

For 1-year (female) breast cancer survival, the range is 95.1% (North East London) to 96.6% (East of England – North, Surrey and Sussex, and Thames Valley).

### **What might explain this difference?**

The population in NE London is much younger on average than the three other CAs (48% aged 15-44 vs 34% (EoE-N) 35% (SandS) and 37% (TV)). This means NE London will have proportionately more diagnoses at earlier ages than the three other CAs.

In breast cancer, the predominant subtypes of breast cancer diagnosed changes with age; patients diagnosed at younger ages have a higher proportion of more aggressive/lethal diagnosed than those patients diagnosed in middle age. Even if all the patients and all the clinicians treating them acted identically and all demographics (except the age profile) were equal, this different proportion of more aggressive subtypes would lead to breast cancer survival in NE London to be less good than in areas like EoE-N, SandS, and TV.

In 2018, EoE-N had 87.5% of staged breast cancers at stages 1-2 and 4.3% at stage 4. By contrast, 84.1% in NE London were stage 1-2 and 6.0% at stage 4. This difference in the profile of stage at diagnosis, particularly that in stage 4, is likely to contribute to the differing outcomes seen.

All four CAs had a similar level of urgent referrals per 100k population in financial year 2019 – 2020. However, the conversion rate (% of urgent referrals that result in a cancer diagnosis) in EoE-N (6.6%), SandS (6.2%) and TV (6.6%) is nearly double that in NE London (3.4%). This results in 52% of EoE-N breast cancers being diagnosed following an urgent referral compared to 47% in NE London. Conversely, 14% of breast cancer diagnoses in NE London are the result of a non-urgent GP referral (figures for England and EoE-N respectively are both 9%). This suggests that the urgent referral route could be used with more specificity and consistency in NE London.

There is another difference that may impact on survival outcomes. EoE-N and TV have above average screening coverage (74.2% and 73.9% cf 71.5% for England) whereas NE London is only 59.2%; breast

screening helps diagnose many women before they have symptoms of breast cancer and are typically diagnosed before the disease is advanced, again boosting survival outcomes. This difference results in 28% of breast cancers being screen detected in EoE-N and 25% in NE London.

**Brain cancer**

For 1-year (males & females combined) brain cancer survival, the range is 36.3% (East of England – North) to 49.5% (North Central London). A similar difference in the age distribution between the two areas applies, although not quite as wide (34% aged 15-44 in EoE-N and 46% in NC London).

**What might explain this difference?**

Conversely to breast cancer, being diagnosed at an earlier age sees much higher average survival (1y survival is 85.9% for patients aged 15-44 vs 27.4% aged 65-74 and 7.7% aged 75-99). This will be why EoE-N will, all other things being equal, see lower survival for brain cancer patients than in areas like NC London.

NC London make urgent referrals for brain & CNS tumours at over double the rate of EoE-N (34.0 vs 15.8 per 100k). [The conversion rate cannot be reliably estimated for brain cancer at CA level.]

**Deprivation**

Rates of cancer diagnoses are higher in areas of high deprivation. Rates in the 20% most deprived areas of England are at least 16% higher than those in the 20% least deprived. This applies to all cancers except prostate, breast, and malignant melanoma.

To focus on the five cancer alliances highlighted above. The proportion of cancers diagnosed in each of the CAs (1 – least deprived, ..., 5 – most deprived) is:

Cancer Alliance	Deprivation quintile (%)				
	Least deprived	2	3	4	Most deprived
<b>EoE North</b>	20	29	27	16	8
<b>NE London</b>	7	11	17	33	33
<b>NC London</b>	8	16	20	25	30
<b>SandS</b>	39	25	20	13	4
<b>TV</b>	52	23	15	8	2

The much greater levels of deprivation in NE London may explain the relatively low levels of breast screening uptake and [at least one survey](#) has found that those in least deprived groups have a better experience with their GP which may be reflected in what looks to be suboptimal referral practices. Deprivation is unlikely to explain the differences found between EoE North and NC London in brain cancer survival.

Other factors may also vary between regions, such as differences in the profile of risk factors in the population, for example smoking prevalence. Different cancer sites are known to have [different risk factors](#).

Thank you again for the invitation to provide evidence to your committee. I hope that it is useful in your work going forward. If there is anything else I can assist with to that end, please do let me know.

Kind regards

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