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Case-mix adjusted 30-day mortality post systemic anti-cancer therapy rates for prostate cancer

A companion brief to support the interpretation of this data

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Summary

In February 2021, the National Disease Registration Service (NDRS) team, as part of the SACT-NHSE Partnership at Public Health England (PHE), produced case-mix adjusted 30-day mortality post systemic anti-cancer therapy (SACT) rates (CMAR) for prostate cancer. These CMAR were calculated for NHS trusts and the workbook was circulated to all trusts. The data is case-mix adjusted to allow for comparisons to be made between trusts and within a trust over time. Trusts were able to request NHS numbers of patients who have died within 30 days of receiving SACT at their trust. We developed this information to support clinical governance at trusts and potentially identify areas where clinical care could be improved. We provided all trusts with the opportunity to comment on their data and their statements are included in this Companion Brief, published May 2021.

Key messages

- Across the trusts included in the analysis the average case-mix adjusted 30-day mortality post SACT rate was 5.3%.
- 19 trusts had no deaths within 30-days of SACT treatment, but many of these trusts had fewer than 10 patients included in the analysis.
- 2 trusts were identified as outliers on the funnel plot, with case-mix adjusted 30-day mortality rates post SACT of 18% and 14%. Please see the Interpretation of the data section for important details of how to interpret the findings.
- 96 trusts were included in the analysis, with the number of patients included in the analysis at each trust ranging from just 1 to 342.
    - 15 trusts had fewer than 10 patients meeting the study inclusion criteria so their CMAR values are not considered statistically robust, and accordingly none of these trusts would be classed as an outlier.
    - 11 trusts had no patients meeting the study inclusion criteria.
    - 18 trusts were excluded from the analysis as fewer than 70% of patients finishing SACT treatment for prostate cancer in 2017-2019 (diagnosed between 2010 and 2018) had complete data for SACT fields used to calculate the risk-adjusted rate. Excluded trusts are alerted so that there is the opportunity to review data quality for future CMAR releases should data completeness still be present in more recent SACT submissions.
    - One trust was excluded from the analysis because the combination of a low caseload and patient characteristics meant the case-mix adjusted mortality rate was neither meaningful nor statistically robust.

Background

In 2016, the SACT team at PHE published a paper in the Lancet Oncology providing 30-day mortality post-SACT rates for breast and lung cancer. NHS trusts, NHS England and the clinical community fed back to PHE that this work had been beneficial in terms of setting a national benchmark, identifying variation in clinical practice between trusts and identifying areas where patient care could have been improved. This information helped to inform advancements to clinical practice.

In December 2018, the SACT team released a workbook to trusts providing crude rates for 30-day mortality post-SACT for all cancers combined and breakdowns for Acute Myeloid Leukaemia, Breast, Colon, Children's Teenagers and Young Adults (CTYA), Small Cell Lung Cancer, Non-Small Cell Lung Cancer, Upper Gastro-Intestinal Oesophageal.

Feedback generated from this release highlighted the need for 30-day mortality data which was more timely to support clinical audit, as well as case-mix adjusted which would facilitate the comparison of performance between trusts. Unfortunately, these two needs cannot be met in a single data feed. Case-mix adjusted data cannot be produced soon enough after treatment activity to support clinical audit as it requires linkage to the National Cancer Registration Dataset for England to provide supplementary patient information which operates at an approximate 18-month time lag, and additional analytical time to conduct the work. Furthermore, for rarer cancer types, case-mix adjustment may only be possible when several years of data have accrued to provide sufficient cohort size to support analysis. The SACT team have therefore met these two needs through two outputs: the Rapid Data Review (RDR) and the CMAR. The RDR provides a quarterly data feed to all NHS trusts in England providing key information on patients who died within 30 days of receiving SACT at their trust. This aims to inform 'mortality and morbidity' meetings and develop communications between trusts on initiatives undertaken to reduce 30-day mortality. The CMAR produces 30-day mortality post-SACT rates that are adjusted for key variables which means that rates can be compared between trusts and within trusts over time.

In August 2020 and November 2020, the SACT team released workbooks containing case-mix adjusted 30-day post-SACT mortality rates for adults (aged 18+) a range of cancer sites. The data for these workbooks are now available as an interactive web application at https://www.cancerdata.nhs.uk/sact/cmarreport. This presents all cancer sites from these workbooks in one output and enables new functionality; such as displaying trust name, number of patients treated, and case-mix adjusted 30-day mortality rate when hovering over datapoints on the funnel plot. The August 2020 CMAR workbook reviewed patients aged 18+ diagnosed between 2010 and 2017 treated for lung, gastric, pancreatic cancer, and cancer of unknown primary (CUP) in 2017-2018 (depending on the site). The November 2020 CMAR workbook reviewed patients aged 18+ diagnosed between 2010 and 2018 treated for bowel, breast, myeloma and ovarian in 2018-2019 (depending on the site).

Two further workbooks will be released publicly in May 2021. The first reviewed CTYA (Children Teenager and Young Adult) patients aged 0-24 diagnosed between 2010 and 2018 and treated for acute lymphoblastic leukaemia (ALL) in 2017-2019. The second reviewed patients aged 18+ diagnosed between 2010 and 2018 and treated for acute

lymphoblastic leukaemia (ALL) and acute myeloid leukaemia (AML) in 2017-2019 (depending on the site).

Each workbook was based on data reported by NHS trusts in England through their monthly routine SACT data uploads. In advance of these publications the adult workbooks were sent to the NHS Trusts and the CTYA ALL workbook was sent to Principal Treatment Centres (PTCs) for review, giving them the opportunity to provide a statement to accompany their data. These statements have been included in the companion reports released with the August 2020, and November 2020 and May 2021 CMAR workbooks.

For further information on the SACT data reports please see http://www.chemodataset.nhs.uk/reports/

Workbook

The workbook is produced as part of the SACT-NHSE partnership and is based on routine data submitted by NHS trusts to the SACT dataset. It includes patients diagnosed with prostate cancer in England between 2010 and 2018 and treated with SACT in all NHS trusts in England between January 2018 and December 2019. Patients were only included if they received their latest treatment during the treatment period (i.e. patients still receiving treatment in 2020 were excluded). Each patient was allocated to the trust where they received their final treatment, regardless of any prior treatment received at other trusts.

Table 1. ICD-10 code and treatment activity covered

Cancer site	ICD-10 code	Period of treatment activity
Prostate	C61	Jan 2018 – Dec 2019

The National Cancer Registration and Analysis Service (NCRAS), part of Public Health England (PHE), is the population-based cancer registry for England. It receives data from across the National Health Service (NHS) and produces the National Cancer Registration Dataset for England. The SACT dataset collects systemic anti-cancer therapy activity from all NHS England providers. For the purposes of the analysis, patients were selected from the National Cancer Registration Dataset. This cohort of patients was then linked to the SACT dataset on NHS number in order to retrieve the latest treatment records for these patients. Certain restrictions were applied to the data to ensure the appropriate patients and treatments were selected for each cancer site. These restrictions mean that some trusts may have no data included in the workbook because their patients and patients' treatment activity did not fit the criteria applied. The restrictions applied to the data are outlined below.

Tumour restrictions

- The cohort was restricted to tumours diagnosed between 2010 and 2018.
- Patients whose most recent cancer diagnosis was for prostate cancer were selected. If patients had more than one tumour diagnosed on the same day, the prostate tumour was selected.

It is important to note that in some cases, the cancer diagnosis recorded in the National Cancer Registration Dataset may differ from that recorded by the trust.

If you would like support in improving the quality of the data feed into the NCRAS then please contact NDRSdatasets@phe.gov.uk

Data completeness restrictions

Trusts with less than 70% completeness for the following key variables: stage at diagnosis; performance status; and co-morbidity score were excluded from the analysis. Please note that these variables were sourced from the SACT dataset, and the National Cancer

Registration Dataset. For the CMAR reports, cancer sites were selected for analysis on the basis that less than 20% of trusts would be excluded using the 70% completeness threshold. For the current analysis, 16% of trusts were excluded for prostate cancer.

Data consistency restrictions

- The trust at which final SACT treatment was completed is important for calculating the CMAR. Any patients whose final SACT treatment was recorded at two different trusts on the same day have therefore been removed from the analysis.
- Any patients who had a record of SACT treatment after death were removed from the analysis.

These were not common events in the data.

Age restrictions

- The cohort was restricted to those aged 18+. As this covers an adult cohort, the following children's hospitals have been excluded from analysis:
    - Alder Hey Children's NHS Foundation Trust
    - Birmingham Women's and Children's NHS Foundation Trust
    - Great Ormond Street Hospital for Children NHS Trust
    - Sheffield Children's NHS Foundation Trust

30-day SACT mortality restrictions

We count deaths (for any reason) within 30 days of the date that the last SACT treatment was administered. For oral treatments the 30-day window starts 28 days after the last administration date recorded in SACT, as most oral treatments have a prescription length of 28 days. Please see the CDF methodology document[1] for further details. The current method of setting all oral treatments as lasting 28 days is being reviewed for future SACT outputs.

Treatment restrictions

For the purposes of the analysis, and to ensure treatment data was relevant to the cancer site, the following rules were applied when linking SACT data to the cohort of patients identified from the National Cancer Registration Dataset:

1. For those patients with only one cancer diagnosed, all treatment records within the relevant time frame were selected.
2. For those patients with more than one cancer diagnosed, treatment records were selected if they fit the following criteria:
    a. Within the relevant timeframe (January 2018-December 2019).
    b. The first three characters of the primary diagnosis recorded in SACT for that treatment record matched the first three characters of the cancer site identified in the registry.
3. For those patients with treatment records that did not fall within categories 1 and 2 outlined above, treatment records were selected if they were within the relevant timeframe and fell within 31 days before and 365 days after the diagnosis of interest. The decision to restrict based on the time between treatment and diagnosis is in

[1] Appendix links for the CDF methodology document: Appendix A (oral treatment duration calculations) and Appendix B (caveats associated with oral treatment duration calculations)

accordance with the 'Linking treatment tables – chemotherapy, tumour resections and radiotherapy' standard operating procedure. The timeframes used ensure that treatment given soon after diagnosis is included for those patients where the diagnosis codes recorded in the National Cancer Registration Dataset are not an exact match to those recorded in SACT. This is particularly relevant for some cancers where coding of the cancer site sometimes differs between data sources.

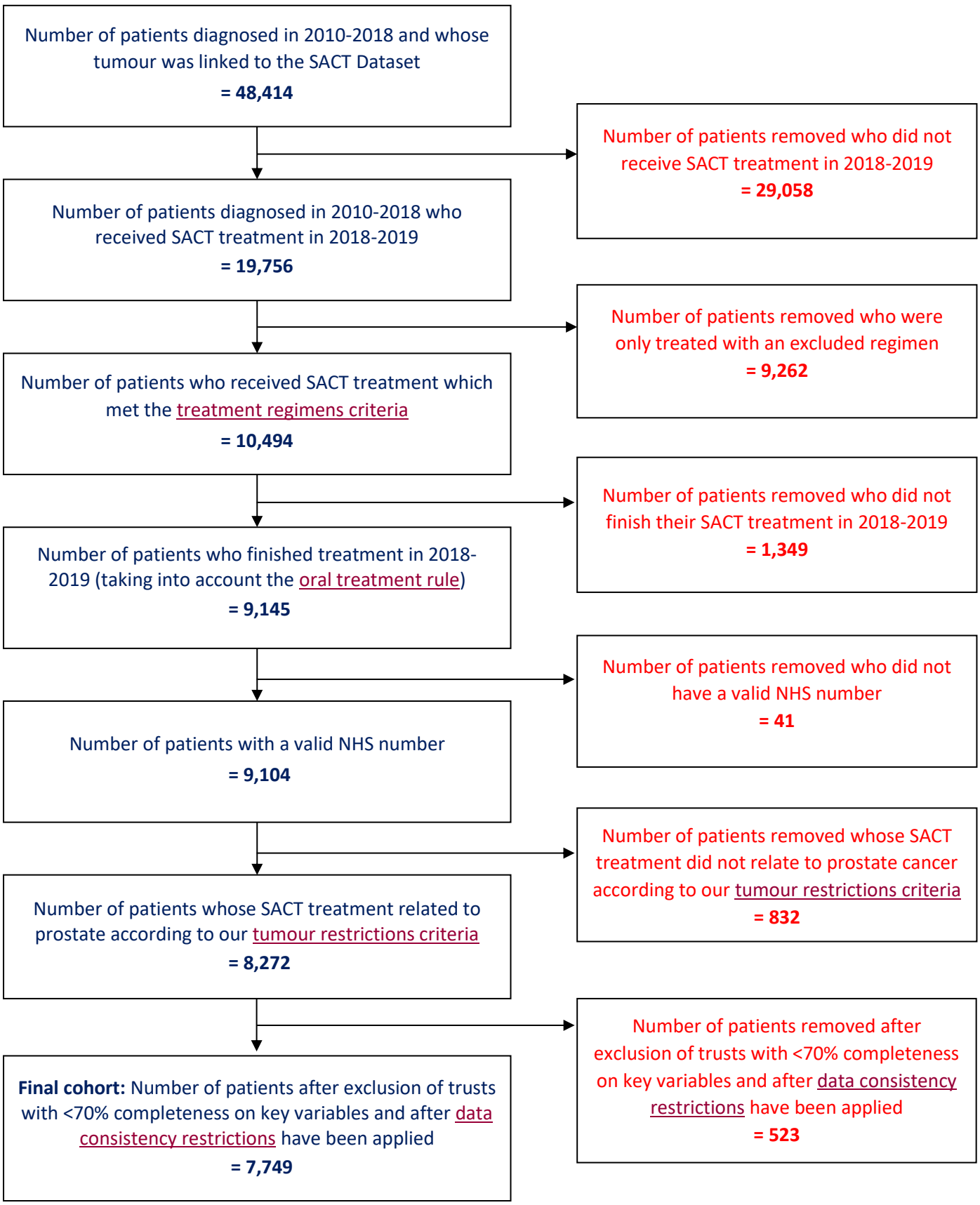
Treatment regimens

Non-harmful, supportive treatments, hormones and non-chemo drugs were excluded from the analysis. The excluded regimens are listed below. These were selected for exclusion in consultation with clinicians and pharmacists and are reviewed on a site-specific basis for every release.

- Abiraterone
- Anagrelide
- Anastrozole
- Anti-Emetics
- Anti-Histamines
- Apalutamide
- APML
- B12
- Bicalutamide
- Bisphosphonates
- Cyproterone
- Darolutamide
- Degarelix
- Denosumab
- Dexamethasone
- Enzalutamide
- Exemestane
- Finasteride
- Flutamide
- Folinic Acid
- Fulvestrant
- GCSF
- Goserelin
- Hepatoblastoma
- Hormone
- Ibandronic Acid
- Lanreotide
- Letrozole
- Leuprorelin
- Medroxyprogesterone
- Megestrol
- Not Chemo
- Octreotide

- Pamidronate
- Pasireotide
- Progesterone
- Retinoblastoma
- Sandostatin
- Signifor
- Somatostatin
- Somatuline
- Steroid
- Stilbestrol
- Stilboestrol
- Tamoxifen
- Trial
- Triple Intrathecal
- Triptorelin
- Vitamin
- Zoledronic Acid

CMAR prostate analysis flowchart



Implications of methodological approach

To get detailed information on the cancer diagnosis, patient and tumour characteristics, tumours recorded in the National Cancer Registration Dataset are linked to those in the Systemic Anti-Cancer Therapy (SACT) datasets. This requires analytical decisions to be made. In particular, the recording of primary diagnoses in the SACT dataset are known to not always exactly match the cancer site recorded in the National Cancer Registration Dataset (the gold standard), so linking records on patient identifiers and tumour site would mean many tumours and their associated SACT treatment could be missed.

The treatment restrictions detailed on the treatment restrictions section, are therefore designed to balance the risks of erroneously excluding patients from the cohort because of errors in the recording of primary diagnosis in the SACT dataset (or errors in the mapping of regimens), with the risk of incorrectly including SACT treatment records that do not relate to the cancer site under consideration in the CMAR report.

In cases where the primary diagnoses recorded in the two datasets differ, we use the time between cancer diagnosis and treatment along with the timeframes cited in the 'Linking treatment tables – chemotherapy, tumour restrictions and radiotherapy' standard operating procedure, to infer whether the treatment captured in the SACT dataset is likely to relate to the tumour of interest. For prostate cancer the recommended window is between 31 days before the recorded date of diagnosis and 365 days after, so it is quite a long window.

The COVID-19 pandemic has unfortunately led to an increased lag in the availability of National Cancer Registration Dataset data, which has meant cancer diagnoses made in 2019 are not yet available. Patients who received a second primary cancer diagnosis in 2019 will therefore have been captured as having 1 prostate tumour. We have included treatment information up to the end of 2019 as SACT data is more timely. The impact of this was assessed in a sensitivity analysis using the Rapid Cancer Registration Dataset. This included data up to the end of December 2019, and found that the same trusts were identified as outliers. Therefore, we do not believe that this lag has introduced errors into these findings.

We follow the approach used for the Cancer Drugs Fund reports for oral treatments, where we estimate how long the patient is 'on treatment' for, by adding days relating to the typical prescription length to the last administration date recorded in the SACT dataset. 28 days was found to be a reasonable proxy for most treatments. Therefore, we add 28 days to the administration date for all oral treatments. This is then taken into account when retrieving the final treatment date for each patient. This may differ from methodologies used within trusts themselves. We are currently reviewing our methodology to consider which approach is of greatest value to trusts.

We are conservative in our approach to excluding regimens from the analyses, to avoid excluding regimens that have been incorrectly mapped. This can, however, result in SACT treatment for cancer sites other than the site of interest being included.

Interpretation of the data

Case-mix adjusted mortality post-SACT rates are reported in this workbook. Each trust will see and treat a wide variety of patients depending on the population they serve and the services they provide. The case-mix adjusted rates take into account these differences by producing rates that are based on an average group of patients as opposed to the trust's own group of patients. The rates can then be compared between trusts and within a trust over time. This was done using statistical modelling (in this case, a mixed effects logistic regression model). Please see the accompanying FAQ document for further technical information on calculating CMAR.

The following variables were adjusted for in the analysis:

- Age calculated as of the 1st January 2019
- Co-morbidity score[2]
- Deprivation status[3]
- Ethnicity[4]
- Hospital trusts (as a random effect[5])
- Performance status at diagnosis[6]
- Stage at diagnosis[7]

These variables were chosen because they are known to influence 30-day post-SACT mortality and have sufficient completeness. It is important to note that due to the absence of any information on factors such as patient choice and clinical factors such as liver function tests, the case-mix adjustment may not fully correct for the differences in caseload between trusts.

The funnel plot[8] presented in the workbook is a means of visualising 30-day mortality post-SACT rates for the eligible[9] trusts in England.

- The volume of patients is on the horizontal axis. The more patients treated by your trust, the further to the right your trust will be.
- The 30-day mortality post-SACT is on the vertical axis. The higher the mortality post-SACT rate at your trust, the further up the graph it will appear.
- The solid red horizontal line shows the average mortality post-SACT rate of all trusts.

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[2] The co-morbidity score relates to the Charlson comorbidity score derived using inpatient Hospital Episode Statistics data from 27 to 3 months prior to cancer diagnosis, with the same methodology as described by Maringe *et al*.

[3] Using the income domain of the Index of Multiple Deprivation. IMD data from 2015 was used for tumours diagnosed between 2010 and 2013 and IMD data from 2019 was used for tumours diagnosed between 2014 and 2018.

[4] Grouped into White, non-White and Unknown categories for analysis as there were insufficient numbers in the other ethnic groups for robust analysis.

[5] In a model, a random effect is usually a grouping factor (e.g. general practice, school, university), in this case the trust, for which we are trying to control and which we expect to be influencing the pattern of 30-day mortality.

[6] Performance status (PS) at start of cycle was used. PS at start of regimen was also included for cases where PS at start of cycle data was missing
This was adjusted for in the regression analysis by categorising as 0, 1, 2+ and Unknown
For further information please see the ECOG Performance Status page

[7] For further information please see the National Cancer Registration Dataset in England, Data Resource Profile

[8] More information on funnel plot uses and interpretation can be found on the PHE Technical Guide and Tower Hamlets Clinical Commissioning Group Guide

[9] See data completeness restrictions section

- Your trust is indicated by the yellow diamond, other trusts are represented by the blue diamonds.
- The dotted lines represent the ±2 standard deviations (SDs) (roughly equivalent to 95% confidence intervals); the dashed lines represent the ±3 standard deviations (SDs) (roughly equivalent to 99.8% confidence intervals). They are higher on the left because when a trust treats a smaller number of patients, chance will have a greater impact on the rate, and therefore the confidence intervals will be wider to reflect this.

The confidence intervals presented in the workbook reflect the distribution of trust mortality post-SACT rates around the national average. The workbook highlights the mortality post-SACT rates for ±2 standard deviations (SDs) (roughly equivalent to 95% confidence intervals) and ±3 standard deviations (SDs) (roughly equivalent to 99.8% confidence intervals). Trusts with rates above the upper, +3SD will be identified as outliers.

- Trusts with rates above the upper, +3SD have a significantly higher than average 30-day post-SACT mortality rate.
- Trusts with rates below the lower, −3SD have a significantly lower than average 30-day post-SACT mortality rate.
- Trusts with rates within the confidence limits have an average 30-day post-SACT mortality rate.

It should be noted that outlier status can occur due to data quality issues, problems with linking the SACT data to the National Cancer Registration Dataset and other factors. All trusts are provided with the workbook prior to public release, and invited to submit a statement. The statements provide valuable context and in some cases suggests that patients have been mistakenly included in the analysis or incorrectly identified as having died within 30-days of SACT treatment. The model is not re-run if new information comes to light after the workbook is shared with trusts, so the output should be interpreted with care, bearing in mind the caveats and methods in this Companion Brief and FAQ documentation and trust responses.

Trusts with no data

Some trusts had ‘no data’ in the workbook. This means that they had no activity data for patients who were treated, and finished treatment, for prostate cancer between January 2018 and December 2019, who fit the inclusion criteria. Strict criteria were applied to the data for this work and so there are a few reasons why a trust may have no data in the workbook. Examples of this include:

- Patients were still receiving treatment after the period of interest (e.g. in 2020)
- Patients were treated with regimens that were excluded from the analysis (see list of excluded regimens)
- Patients received their last treatment at a different trust
- We were not able to match the patient’s diagnosis in the National Cancer Registration Dataset to that of the trust and the patient’s treatment fell outside of the diagnosis-to-treatment time window

The table below presents those trusts with no data in the analysis.

Table 2. Trusts with no data

Trust name	
Barnsley Hospital NHS Foundation Trust	No data
Countess of Chester Hospital NHS Foundation Trust	
Homerton University Hospital NHS Foundation Trust	
Salford Royal NHS Foundation Trust	
Sandwell and West Birmingham Hospitals NHS Trust	
Tameside and Glossop Integrated Care NHS Foundation Trust	
The Hillingdon Hospital NHS Foundation Trust	
The Rotherham NHS Foundation Trust	
Warrington and Halton Hospitals NHS Foundation Trust	
Whittington Health NHS Trust	
Wye Valley NHS Trust	

Excluded trusts and outlying trusts

The table below presents those trusts that were found to be:

- Outliers for the 30-day post-SACT mortality rates, which have been included in analysis[10]
- When running the original mixed-effects logistic regression model, a trust with 1 patient generated a highly inflated case-mix adjusted rate (>100%). This outlier was excluded from the model and is not presented in the data[11]
- Excluded based on the 70% data completeness threshold[12]

Table 3. Trusts that were outliers for the 30-day post-SACT mortality rates and trusts excluded based on the 70% completeness threshold[13], by cancer site

Trust name	Prostate
Ashford and St Peter's Hospitals NHS Foundation Trust	Excluded
Barking, Havering and Redbridge University Hospitals NHS Trust	Outlier (>3SD)
Calderdale and Huddersfield NHS Foundation Trust	Excluded
Chelsea and Westminster Hospital NHS Foundation Trust	Excluded
Hampshire Hospitals NHS Foundation Trust	Excluded
Isle of Wight NHS Trust	Excluded
Liverpool University Hospitals NHS Foundation Trust	Excluded
London North West University Healthcare NHS Trust	Excluded
Maidstone and Tunbridge Wells NHS Trust	Excluded
Medway NHS Foundation Trust	Excluded
Norfolk and Norwich University Hospitals NHS Foundation Trust	Excluded
Northern Lincolnshire and Goole NHS Foundation Trust	Outlier (>3SD)
Pennine Acute Hospitals NHS Trust	Excluded
Sherwood Forest Hospitals NHS Foundation Trust	Excluded
Southport and Ormskirk Hospital NHS Trust	Excluded

[10] Outlier trusts included in analysis are referred to as 'Outlier (>3SD)' in the table. Please see funnel plot section for further information on the 3SD (standard deviation) calculations
[11] Outlier trust excluded from analysis is referred to as 'Excluded Outlier' in the table
[12] Trusts with less than 70% completeness for the following key variables: stage at diagnosis; performance status; and co-morbidity score were excluded from the analysis. Please note that these variables were sourced from the SACT dataset, and the National Cancer Registration Dataset
[13] Trusts excluded based on the 70% completeness threshold are referred to as 'Excluded' in the table

St Helens and Knowsley Hospitals NHS Trust	Excluded
Surrey and Sussex Healthcare NHS Trust	Excluded
The Princess Alexandra Hospital NHS Trust	Excluded
University Hospitals Plymouth NHS Trust	Excluded
Wirral University Teaching Hospital NHS Foundation Trust	Excluded outlier
Wrightington, Wigan and Leigh NHS Foundation Trust	Excluded

Trust comments

Trusts were invited to comment on their results. We received the following comments:

Barking, Havering and Redbridge University Hospitals NHS Trust

This is the Barking, Havering and Redbridge University Hospital NHS Trust (BHR) official response to the case-mix adjusted 30-day mortality post SACT analysis: CMAR workbook information, which was shared with the Trust on 26th February 2021 suggested that BHR was an outlier in relation to Prostate patients treated within the Trust.

BHR were able to provide further information which indicates that the calculations are incorrect as the calculations had included patients in error.

In the initial report there were 68 patients identified of which 12 were recorded as 30-day mortality patients which indicated that BHR had a mortality rate of 18.3% for this group of patients.

Trust Code	Trust Name	Number treated in 2018-2019	Adjusted 30-day mortality rate (%)	National average (%)	Lower 2SD Limit (%)	Upper 2SD Limit (%)	Lower 3SD Limit (%)	Upper 3SD Limit (%)	> Upper 3SD Limit
RF4	BHRUT	68	18.3	5.3	0.0	10.0	0.0	14.1	> Upper 3SD Limit

When BHR studied this information we identified that 5 of the 68 were not being treated with SACT for prostate cancer therefore there should only be 63 patients in the cohort.

Of the remaining 7 – 30-day mortality patients, 2 had not received SACT within 30 days of death which indicated that 5 patients should be included in the interpretation of our data.

Trust Code	Trust Name	Number treated in 2018-2019	Adjusted 30-day mortality rate (%)	National average (%)	Lower 2SD Limit (%)	Upper 2SD Limit (%)	Lower 3SD Limit (%)	Upper 3SD Limit (%)	> Upper 3SD Limit
RF4	BHRUT	63	8%	5.3	0.0	10.0	0.0	14.1	> Upper 3SD Limit

A meeting was held with representatives from BHR and the SACT team at PHE, where our data was discussed and the methods that SACT use to assess the information were explained. It was acknowledged that the data that was submitted by BHR was of good quality but unfortunately the methodology of the analysis used is not sophisticated enough when the patient pathway is a complex one.

When calculating the mortality rate of 5 patients within a cohort of 63 correctly identified as being treated, the percentage for the mortality rate would fall to 8%. This would place the trust in the upper 2SD Limit for your report as indicated within the table below[14].

Trust Code	Trust Name	Number treated in 2018-2019	Adjusted 30-day mortality rate (%)	National average (%)	Lower 2SD Limit (%)	Upper 2SD Limit (%)	Lower 3SD Limit (%)	Upper 3SD Limit (%)	> Upper 3SD Limit
RF4	BHRUT	63	8%	5.3	0.0	10.0	0.0	14.1	> Upper 3SD Limit

As a consequence it was agreed that the position which initially identified BHR as an outlier in respect of the case-mix adjusted calculations for Prostate patients was incorrect. It was explained by your team that unfortunately the report cannot retrospectively be altered but a response from the trust would be held on file when the report is published.

Cambridge University Hospitals NHS Foundation Trust

Following receipt of the Case Mix Adjusted 30-day Mortality Report (CMAR) from Public Health England for Prostate Cancer on 26 February 2021, a data review was undertaken.

1. Patients dying within 30 days of Chemotherapy
   The report stated that there were 5 deaths at CUHFT that fitted these criteria. Following an internal review the following was found:
   a) 3 patients had received chemotherapy for other malignancies but not for prostate cancer.
   b) 2 patients who had received IV chemotherapy for prostate cancer did not die within 30 days.

2. Number of patients treated for Prostate Cancer

   The report stated that there were 46 prostate cancer patients who received their last cycle of chemotherapy between Jan 2018 – Dec 2019. These figures appear unrealistically low and CUHFT are awaiting the methodology from PHE to enable internal analysis using PHE methodology.

King's College Hospital NHS Foundation Trust

King’s College Hospital NHS Foundation Trust does not provide SACT treatment for prostate cancer. Any data showing deaths within 30-days of SACT treatment for prostate cancer is incorrect and is a result of data inaccuracy.

[14] The figures presented in the table show crude mortality rate rather than case-mix adjusted 30-day mortality rate.

Northern Lincolnshire and Goole NHS Foundation Trust

The Trust have undertaken a review of the patients identified in the PHE return as having prostate cancer who died within 30-days post SACT. This has identified some data quality concerns in relation to the tumour site diagnosis recorded and a number of cases where the death occurred more than 30 days following SACT. Given the small number of deaths on which this alert is based, it is possible that these corrections in the data would impact on the adjusted mortality rate and bring the Trust back in line with the national average. If it were feasible for PHE to either repeat the analysis with an updated data set or provide the Trust with the necessary spreadsheet and adjustment data for the benefit of our understanding of any persistent outlier issues then the Trust would be grateful. In the remaining cases where death was within 30 days of SACT a further case review will be undertaken to determine if there is any learning to support service improvement.

Communication of the workbook

The SACT helpdesk at PHE (SACT@phe.gov.uk) compiled a list of named contacts at each NHS trust including the SACT uploader, lead cancer clinician, the regimen mapper, CEO and medical director, unless we were otherwise notified.

The workbook has been sent to these named contacts. There was no patient identifiable data included in the workbook. Trusts are invited to request the NHS numbers of patients in their data who have died within 30 days of receiving SACT. NHS numbers will only be provided via secure means following a request from a trust. This aims to restrict the circulation of this sensitive information to individuals who intend to use it for clinical audit and local governance processes.

We informed the trusts that we would be making the prostate workbook covering those aged 18+ publicly available on the SACT website[15] in May 2021 and invited them to provide a statement for inclusion in this companion report.

Trusts were invited to provide a statement for inclusion across all published CMAR reports. Other reports published on the SACT website[15] in May 2021:

- Acute lymphoblastic leukaemia (ALL) and acute myeloid leukaemia (AML) workbook covering those aged 18+
- Children, teenager and young adults (CTYA) acute lymphoblastic leukaemia (ALL) workbook covering those aged 0-24

Each release will be publicised through a range of channels, including the SACT and the National Disease Registration Service (NDRS) newsletters.

If you have any questions regarding this work, please contact the SACT Helpdesk (SACT@phe.gov.uk).

[15] SACT website: http://www.chemodataset.nhs.uk/