



Public Health
England

Protecting and improving the nation's health

30-day mortality rates post SACT

A companion brief to support the interpretation of this data

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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Summary

In December 2018, the National Cancer Registration and Analysis Service (NCRAS) team at Public Health England (PHE) produced a workbook documenting 30-day mortality rates post systemic anti-cancer therapy (SACT) for 8 patient groups. These rates were calculated for all NHS trusts, cancer alliances and regions in England, and the workbook was circulated to all trusts.

Trusts were encouraged to request the NHS numbers of patients who had died within 30 days of receiving SACT at their Trust. This information aimed to support clinical case note review in mortality and morbidity meetings, and potentially identify areas where clinical care could be improved. All trusts were provided with the opportunity to comment on their data. The data is not case mix adjusted, and therefore it is not appropriate to use these data to compare outcomes between trusts.

Background

In 2016, the SACT team at PHE published a paper in [the Lancet Oncology](#) providing 30-day mortality rates post SACT 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.

NCRAS have completed the current workbook as a follow-up to this publication, considerably extending the number of cancer types included. The workbook has been developed as a pilot project, with a view to providing an ongoing routine publication of 30-day mortality post SACT.

To evaluate the pilot project, NCRAS sent a questionnaire to trusts to accompany the workbook. The questionnaire was designed to establish the most useful format and content for a routine data publication, which would benefit the largest number of stakeholders. Specifically, NCRAS wanted to understand which elements, such as timeliness and/or risk adjustment of the data or breadth of cancer coverage, would be more important to these stakeholders.

Workbook

The workbook is publicly available.

The workbook is based on routine data submitted by NHS providers to the SACT dataset and includes patients treated with SACT in all NHS trusts in England, 2015 to 2016. Data is presented for the following patient groups:

- all adults
- acute myeloid leukaemia
- breast
- colon
- children teenagers and young persons (CTYA)
- small-cell lung cancer
- non-small-cell lung cancer
- upper gastrointestinal oesophageal

The data was split by:

- curative
- palliative
- intent not assigned

For each patient group, except CTYA, the following age breakdowns were provided:

- 18+
- 18 to 49
- 50 to 69
- 70+

For the CTYA group, data was provided for the 0 to 24 age group only.

Full details of the methodology, including definitions of the patient groups, and SACT regimens included/excluded are published in the workbook.

Communication of workbook

The SACT helpdesk at PHE (SACT@phe.gov.uk) compiled a list of named contacts at each NHS trust; typically these contacts were the individuals responsible for the regular SACT upload and the lead cancer pharmacists.

The workbook was sent by NHS net email to these named contacts. There was no patient identifiable data included in the workbook. Trusts were invited to request the NHS numbers of patients in their data who had died within 30 days of receiving SACT. NHS numbers were only provided following a trust request. This aimed to restrict the circulation of this sensitive information to individuals who intended to use it for clinical audit and local governance processes.

We informed the trusts we would be making the workbook publicly available and invited them to provide an official comment on their data to be published alongside the workbook.

Two weeks after the workbook was sent to the trusts we circulated a questionnaire as described above.

Interpretation of the data

Crude mortality rates are reported in the workbook. The data were not risk adjusted for factors such as performance status, co-morbidity score and stage, all of which may affect a patient's likelihood of dying within 30 days of receiving SACT.

As such, it is not appropriate to use these data to compare outcomes between trusts. Trusts treating more unwell patients may have higher 30-day mortality rates; however, this may be in line with expectations given the number and type of patients they treat.

Not adjusting for risk means that it is inappropriate to use the data in the workbook as a performance or quality indicator, or to inform commissioning decisions.

The data should be used by trusts to identify which of their patients died within 30 days of receiving SACT, and then to direct clinical audit or other governance processes to understand whether there are any potential areas for improvement of care.

The information in the workbook should be considered a management tool, due to the wider contextual information required to interpret the data.

Trust comments

28 trusts contacted the SACT helpdesk to request the NHS numbers of affected patients. A total of 4,060 NHS numbers were provided to these trusts.

All trusts were invited to comment on their results. We received the following comments;

Blackpool Teaching Hospitals NHS Foundation Trust

Every patient death within 30 days of receiving systemic anti-cancer therapy (SACT) is reviewed at the Oncology or Haematology SACT Mortality Meeting and the care reviewed along with a determination of whether the death was related to the SACT.

The data from 2015 indicate that the Trust was a negative-outlier for all patients treated for any indication with any treatment intent. Further inspection reveals that this is driven largely by the number of deaths in the NSCLC-Palliative intent group (over a quarter of all the deaths within 30 days are from this group). A significant minority of these patients died as a result of neutropenic sepsis, usually following treatment cycle 1. The Trust subsequently instigated a number of measures to reduce the number of neutropenic sepsis deaths and improve the door-to-needle treatment time.

The data from 2016 indicated that the Trust was a negative-outlier for all patients treated for any indication with any treatment intent. This appears to be driven by the patient group treated with palliative intent without any specific focus on 1 particular tumour type. This reflected some of the improvements in treating potential neutropenic sepsis in patients with NSCLC.

Guy's and St Thomas' NHS Foundation Trust

Guy's and St Thomas' NHS Foundation Trust welcomed the opportunity to review the "Systemic Anti-Cancer Therapy (SACT) 30-day post chemotherapy mortality workbook" prior to its publication by Public Health England (PHE).

Our clinical teams have a process to regularly review all deaths that occur within 30 days of SACT as part of routine practice and learning.

In preparation for the PHE publication our teams reviewed the data submitted to PHE for all patients who had died within 30 days of receiving SACT at our Trust during 2015-16.

We identified the following themes or limitations which should be considered when interpreting the data:

- 1) The data published by PHE has not been "risk-adjusted". As a large tertiary referral cancer centre treating a wide range of tumour types we often see the most complex and advanced cases. This means that comparing crude mortality rates between providers will often reflect unfavourably on specialist centres such as ours.
- 2) Some of the patients died within 30 days of SACT but their death was not attributable to their SACT treatment and they died of other causes.
- 3) Some patients' treated with palliative intent had their treatment incorrectly recorded as having curative intent. We are working with clinical teams to ensure accurate coding.
- 4) A small number of patients with more than 1 primary malignancy had their treatment attributed to the incorrect tumour. This arises from a system limitation in our software used to record this data, which our supplier is unable to rectify.

Northern Devon Healthcare NHS Trust

The data submitted by our Trust shows that we are within reasonable expected variation for all cancer groups except for AML; we have low patient numbers in this cancer group which have skewed the results.

Nottingham University Hospitals NHS Trust

We welcome the publication of the 30-day mortality post-SACT for 2015 and 2016. Many thanks for giving us the opportunity to comment on the report.

The data identifies that Nottingham University Hospitals NHS trust (NUH) had a higher than average 30-day post-SACT mortality rate for patients treated for SCLC in 2015. This information prompted our lung cancer team to undertake a thorough review of patients dying within 30 days of their last reported cycle of SACT for SCLC and indeed all patients treated for SCLC in 2015.

106 patients were treated with SACT in 2015. 86 of these had extensive stage SCLC. 21 patients died within 30 days of SACT; 13 of these were considered to be disease related and 1 of unknown cause. Of the remaining 7, 3 died of neutropenic sepsis and 4 possibly of SACT related complications. WHO performance score at first treatment for these patients (including the patient who died of an unknown cause) was 1 (n=3) or 2 (n=5). The review did not find any evidence that these patients should not have been offered treatment with SACT.

This work has highlighted the need to audit the process for identifying patients for discussion at the morbidity and mortality meetings to ensure this is robust.

We are pleased that our 30-day mortality post-SACT for SCLC in 2016 is in line with the national average, despite there being no significant change in practice. We look forward to reviewing the 2017 and 2018 data when available.

South Tyneside NHS Foundation Trust

As the number of treatments provided by South Tyneside Trust are low, a small number of deaths can appear as a large percentage. This is especially evident in the findings for acute myeloid leukaemia (AML) and is compounded by the fact that AML patients who have intensive, curative treatment planned are transferred to other centres, further reducing the size of the cohort treated at South Tyneside. It should be noted that the deaths recorded are from all causes and may not be related to chemotherapy treatment.