**Summary**

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| **Name** | NSWCR All Radiotherapies Data (NSWCR ARtD) |
| **Description** | The NSWCR ARtD captures all radiation therapy treatments for cancer in radiation oncology centres and hospitals in NSW public and private facilities. |
| **Date last updated** | 17 August 2023 |
| **Organisation** | Cancer Institute NSW (Institute) |
| **Sponsor** | Chief Cancer Officer and Chief Executive Officer, Cancer Institute NSW |
| **Steward** | Penny Perry, Data Quality Manager, Clinical Data Collections, Cancer Institute NSW |
| [**Custodian**](bookmark://Dataowner) | Lisa McCallum, Manager, Data Governance, Cancer Institute NSW |
| **Legislation and authority** | * Cancer Institute (NSW) Act 2003 * Public Health Act 2010 * Privacy and Personal Information Protection Act 1998 * Health Records Information Privacy Act 2002 |
| **Data reference** **period** | From 01 January 2013 onwards |
| **Scheduled data release** | Q2 annually |
| **Data update frequency** | Quarterly (March, June, September, December) |
| **Data type** | Unit record data |
| **Privacy and confidentiality** | Data will be used and disclosed in accordance with the [Privacy and Personal Information Protection Act (](https://legislation.nsw.gov.au/view/whole/html/inforce/current/act-1998-133)PPIPA), Health Records and Information Privacy Act (HRIPA) and NSW Ministry of Health policies. |
| **Data asset version number** | Version 1.0 |
| **Data Quality Statement version number** | Version 1.0 |
| **Identifiers for linkage** | MRN(MedicalRecordNumber), PatientAreaUniqueIdentifier, GivenName1, GivenName2, Surname, Sex, DateOfBirth, URAStreet, URASuburb, URAPostcode, URAState, HospitalFacilityIdentifier, TreatmentStartDate. |

**Abstract**

The NSWCR ARtD captures all radiotherapy treatments for notifiable cancers treated in radiation oncology centres and hospitals in NSW public and private facilities for people who began a course of treatment from 01 January 2013.

Within NSWCR ARtD there are two types of data sources: electronic radiation oncology data (EROD) and admitted patient episodes. EROD contains treatment details of radiotherapy treatments delivered in a Radiation Oncology Facility. The coverage of EROD is considered complete and validated annually at a minimum. Admitted patient episodes contain radiotherapy notifications from both Admitted Patient Data Collection (currently in the Health Information Exchange - HIE) in public hospitals and Cancer Notification Portal (CNP) submissions in private hospitals,

The coverage of the admitted patient episodes for radioactive therapies administered in NSW hospitals may be impacted by the accuracy and completeness of the information recorded in source systems depending on hospital procedure codes. The impact on coverage is not currently quantified but is subject to a continuous improvement cycle with notifying facilities.

The completeness of individual NSWCR ARtD data elements is variable and careful consideration needs to be given to the selection of variables for measuring population indicators.

**Key Metrics**

This section covers the key areas of relevance, accuracy, and coherence.

**Relevance**

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| **Scope and coverage** | |
| Data collection purpose | NSWCR ARtD brings together information on radiotherapy treatment across admitted patient and radiation oncology settings in all NSW public and private sector facilities. |
| Target population | All people beginning radiotherapy treatment for cancer in radiation oncology centres and hospitals in NSW (public and private facilities) from 01 January 2013 to 31 December 2022. |
| Data collection period | From 01 January 2013 onwards (updated quarterly) |
| Exceptions to data collection period | None |
| **Geographic Detail** | |
| Level of geographical data | * Postcode of residence * Local Health District * Facility level data is released upon request when justified |
| Geographical coverage | * Data is available for radiation oncology centres, public hospitals, and private hospitals in NSW. * Patients may reside in any Australian state or overseas. |
| **Standards used** | * Cancers are coded according to the International statistical classification of diseases and related health problems, 10th revision, Australian modification, version 12 (ICD-10-AM-V12) or International Classification of Diseases for Oncology, 3rd Edition (ICD-O-3). * Tumour, node, metastasis (TNM) staging is based on the American Joint Committee on Cancer (AJCC) staging system. |
| **Aboriginality Data** | Aboriginal and Torres Strait Islander peoples are recorded in the dataset. The recording of Aboriginality is approximately 95% complete in public radiation oncology centres. Completeness in private radiation oncology centres is low. |
| **Typical Use and Analyses** | The information collected can be used to:   * Assess and determine radiotherapy treatment access and patterns of care for cancer in NSW * Calculate radiotherapy utilisation rates for specific cancer subtypes * Review best practise-based guidelines for timely access to radiotherapy treatments for all cancers and evidence-based prescribing techniques * Identify and examine factors associated with variations in radiotherapy treatments and outcomes for cancer * Identify factors that predict favourable and unfavourable treatment outcomes, particularly in relation to major adverse effects * Analyse specific approaches to cancer treatment to identify risks and benefits * Review the treatment of cancer as a monotherapy, or as an adjuvant or neoadjuvant therapy and impact on disease free survival intervals |
| **Other Cautions** | The completeness of individual NSWCR ARtD data elements is variable and careful consideration needs to be given to the selection of variables for measuring population indicators. Information relating to cancer diagnoses is less reliable and the Institute recommends that information relating to cancer diagnosis is sourced from the NSWCR, as this contains the highest quality information on cancer diagnosis. |

**Accuracy**

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| **Data Collection Methods** | Patient information is recorded electronically at each facility. These records are extracted and sent to Cancer Institute NSW. |
| **Coverage** | ARtD has complete coverage of radiation oncology treatments occurring in NSW in private and public facilities.  The NSWCR ARtD cohort does not include data for NSW residents treated interstate and/or overseas.  Dose information for radiotherapy occurring in admitted patient settings is not available. |
| **Error Types** | The treatment details reported in NSWCR ARtD are high quality and accurate. Information relating to cancer diagnoses is less reliable. This is to be expected as the primary purpose of radiation oncology departments and centres is to treat patients with accurately measured doses of radiation.  Other issues that may impact data accuracy are human error and system-related or database issues. |
| **Steps to minimise processing errors** | The NSWCR ARtD primary contributing dataset, EROD, is validated as part of continuous improvement cycles for assuring data quality. Data is validated in the following ways:   * Attribute values recorded are valid against expected reference lists. * The proportion of unknown values are within an acceptable range. * Data values recorded are within expected ranges * Some data elements are cross validated against each other to ensure they meet disease specific cancer criteria.   Protocols, policies, and quality control processes are in place to minimise these errors. |
| **Data revision or correction** | The quality review and correction cycles follow an annual cycle from 2013-2020. From 2021, a quarterly quality review cycle is conducted. Data quality reviews are a combination of iterative system-based rules, human reviews, and stakeholder feedback to continuously improve data completeness and accuracy. |

**Coherence / Change Notes**

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| **Changes to Data Items /Data Collection** | * The EROD dataset within NSWCR ARtD has been a consistent minimum dataset collection from 1 January 2013, with only minor changes of script-based improvements to ensure data consistency over time. * The public sector hospital admissions data has been consistently collected using the same method and minimum dataset for the same time period, from 1 January 2013. * The private sector hospital admissions data has been a consistent minimum dataset collection submitted to the Cancer Notification Portal (CNP) since July 2015. Prior to that, data was submitted to a legacy notification portal. The changeover from legacy to the CNP system had no detectable coherence issues. |
| **Comparison across data items** | TNM staging editions have changed over time and during the reference period. Edition number is not currently available for TNM stage. |
| **Comparison with other products available** | The cohort in NSWCR ARtD does not align with the NSW Cancer Incidence and Mortality data set cohort, which only includes people residing in NSW at the time of a cancer diagnosis. The NSWCR ARtD cohort includes interstate and overseas residents, who represent approximately 2% of patients being treated in NSW facilities. |

**Interpretability**

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| **Data Sources** | NSWCR ARtD is sourced from the following:   * EROD– contains information about people treated for cancer in NSW and the detail of treatments they have received in public and private radiation oncology facilities in NSW. EROD has full-service coverage of therapy administered in a radiation oncology facility. * Admitted patient radioactive treatment procedures - from admitted patient episodes where the admission was coded to cancer and a procedure code was assigned indicating a radioactive therapy was administered. These provide fact of treatment only. Cancer information managers may have supplemented records with updates to details of treatment in some cases. |
| **Elements** | Refer to the NSWCR ARtD data dictionary for the complete list of data elements. |
| **Elements with interpretation issues** | * The total dose and fractions delivered for a treatment course may need to be derived from multiple data rows in NSWCR ARtD. Dose and fractions for a treatment may appear in more than one row due to the use of more than one treatment technique or changes to treatment plans. * The data contains some duplication of treatment information, where additional information was supplemented for particular treatment records. This issue impacts the data prior to 2019 when information was regularly being supplemented by Cancer Information Managers. Care is required when analysing the data to ensure that this is considered. |
| **Completeness** | NSWCR ARtD includes information on diagnosis, stage, treatment, and quality of care indicators. The completeness of this information varies by data element. Using data elements with lower levels of completeness such as TNM staging variables, and some quality-of-care indicators, can affect results and impact interpretation. Careful consideration should be given to the selection of variables to measure population indicators and caution should be taken when interpreting results that use data elements with lower levels of completeness. A completeness report for this data will be available on our website in the future. |
| **Additional data context** | None. |
| **Error correction** | The data supplied by radiation oncology centres undergoes data quality review and correction cycles at regular intervals.  The admitted patient hospital data quality processes are determined by each hospital, national coding standards, and Ministry of Health policies and are not part of the Institute’s quality improvement initiatives.  Existing records are updated if:   * new, more precise information about the treatment procedure is obtained. * any typographical errors that are discovered by routine data checking procedures are corrected. * Script-based improvements are identified. These are applied prospectively and retrospectively if a systematic data error is identified. |
| **Data delays** | None |

**Accessibility**

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| **Relevant publications and reports** | Relevant publications and reports can be found at the links below:   * <https://www.cancer.nsw.gov.au/research-and-data/cancer-data-and-statistics/publications-using-our-data> * <https://www.cancer.nsw.gov.au/what-we-do/supporting-cancer-care/reporting-for-better-cancer-outcomes-program> * <https://www.cancer.nsw.gov.au/what-we-do/supporting-cancer-care/leading-better-value-care> |
| **Relevant and related data sets** | Further information relating to cancer diagnosis should be sourced from the NSWCR.  The NSWCR ARtD contains data elements that were captured in the historical NSW Clinical Cancer Registry (2008-2012) data (ClinCR). |
| **How to access data** | Unlinked data requests can be made at:   * <https://www.cancer.nsw.gov.au/research-and-data/cancer-data-and-statistics/data-available-on-request>   NSWCR ARtD is included in the Enduring Cancer Data Linkage (CanDLe). Further information about access to CanDLe is available at:   * <https://www.cancer.nsw.gov.au/research-and-data/cancer-data-and-statistics/data-available-on-request/candle-program>   Data for linkage to NSW Health datasets is available at:   * <https://www.cherel.org.au/datasets>   General enquiries about NSWCR ARtD data can be made to CINSW-DARenquiries@health.nsw.gov.au |

For further information regarding this data quality statement please contact the Data Quality and Clinical Data Program Manager at [CINSW-ClinicalData@health.nsw.gov.au](mailto:CINSW-ClinicalData@health.nsw.gov.au).

**References**

Australian Bureau of Statistics, ABS Data Quality Statement Checklist, Australian Bureau of Statistics, Canberra, accessed 11 May 2022, <https://www.abs.gov.au/websitedbs/D3310114.nsf/home/ABS+Data+Quality+Statement+Checklist>.