

Supplementary Table S1: Comparison between pan-Canadian Minimal Oncology Dataset (pCMOD) and CanREValue Interim Data

| Category | Data Element from pCMOD | Status | Available in CanREValue Data Report | Notes |
|--|------------------------------------|--------|-------------------------------------|---|
| Health Service Event | Service Date | M | Yes | The date on which the prescription was dispensed |
| Organization Information (health care facility where the drug was received) | Organization ID | M | No | Will explore in future reports |
| | Organization Province | M | No | N/A – each province maintains their own datasets; |
| | Organization Postal Code | M | No | Will explore in future reports |
| Prescriber Information | Prescriber ID | O | No | Will explore in future reports |
| | Prescriber Specialty | O | No | Will explore in future reports |
| | Prescriber Province | O | Yes | N/A – each province maintains their own datasets; |
| | Prescriber Postal Code | O | No | Will explore in future reports |
| Client/patient information | Client/Patient ID | M | Yes | |
| | Client/Patient Province | M | No | N/A – each province maintains their own datasets; |
| | Client/Patient Postal Code | M | Yes | |
| | Client/Patient Gender | M | Yes | |
| | Client/Patient Date of Birth | M | Yes | |
| | Client/Patient Height | O | Yes | |
| | Client/Patient Weight | O | Yes | |
| | Client/Patient Body Surface Area | O | Yes | |
| | Body Surface Formula | C | No | N/A – This is a formula and not a variable; |
| Disease information | Diagnosis Code | M | Yes | |
| | Topography Code | M | Yes | |
| | Morphology Code | M | Yes | |
| | Topography/Morphology Code Version | M | No | Will explore in future reports |
| | Staging | M | Yes | |
| | Date of Initial Diagnosis | M | Yes | |
| Drug Information | Drug product ID / Name | M | Yes | |
| | Drug Product Strength | C | No | Will explore in future reports |
| | Drug Product dosage form | C | Yes | |
| | Regimen/Treatment Plan | O | Yes | |
| | Quantity Dispensed | M | Yes | |
| | Measurement Unit | O | No | Will explore in future reports |
| | Days supply | O | Yes | |
| | Route of Administration | O | Yes | |
| | Drug Cost | O | Yes | |

Status: M = Mandatory; O = Optional; C = Conditional;

Supplementary Table S2: Additional real-world data elements requiring future exploration

| Type | Variable |
|---------------------------------|---|
| Demographic | Race/Ethnicity |
| | Immigration status |
| Tumor characteristics | Site of metastasis |
| | Number of metastatic sites |
| | Node (+/-) |
| | Tumor mutational burden |
| | Recurrence vs de novo diagnosis |
| | Date of progression |
| | Criteria for evaluating progression |
| | Date of response |
| | Response status |
| | Criteria for assessing response |
| Biomarker status | Drug and disease biomarkers status (e.g. HR+, HER2+, TNBC, EGFR, ALK, ROS1, NTRK, CEA, CA19-9, CA-125) |
| | Biomarker assay used |
| | Date of test |
| | Date of results |
| Lab test | Lab test (E.g. Lymphocyte count, Platelet count) |
| PROMS, PREMS, and QoL | Quality of life (QoL) (e.g. European Organization Research and Treatment of Cancer Quality of Life Questionnaire-C30; EuroQol-5D-5L, Patient Reported Functional Status, Generalized Anxiety Disorder-7, Patient Health Questionnaire-9, Brief Pain Inventory, Chronic Fatigue Syndrome) |
| | Patient-reported outcome measures (PROMS) |
| | Patient-reported experience measures (PREMS) |
| | |
| Healthcare Utilization | Treatment chair time |
| | Nursing time |
| | Pharmacy time to prepare IV dose |
| | Advance care planning |
| Cancer Risk Factors/Confounders | Smoking |
| | Alcohol |
| | Sun Exposure |
| | Diet |
| | Physical Activity |
| | Sleep |
| | Stress |
| | Chemical exposure |
| | Occupational Exposure |
| | Genetic Changes |
| | Infectious disease |
| | Radiation |
| | Family History |

| | |
|-------------------------------|--|
| Social Determinants of Health | Income and social status |
| | Employment and working conditions |
| | Education and literacy |
| | Burden of disease on productivity |
| | Childhood experiences |
| | Physical environments |
| | Social supports and coping skills |
| | Healthy behaviors |
| Outcome Measures | Event-free survival (EFS) |
| | Disease-free survival (DFS) |
| | Invasive-disease free survival (iDFS) |
| | Progression-free Survival (PFS) |
| | Progression-free Survival 2 (PFS2) |
| | Minimal residual disease (MRD) |
| | Pathological complete response (pCR) |
| | Time to next treatment (TTNT) |
| | Treatment-free interval (TFI) |
| | Overall response rate (ORR) and associated strata (stringent Complete Response, Complete Response, Very Good Partial Response, Partial Response, Stable Disease) |

Supplementary Table S3: Potential private/academic databases for RWE analysis

- **Disease site specific database:**
 - Canadian Melanoma Research Network: healthie™
 - Pan-Canadian Lung Cancer Observational Study (PALEOS)
 - Uveal Melanoma Registry
 - Canadian Prostate Cancer Biomarker Network (BPCBN)
 - The Alberta Prostate Cancer Research Institute Initiative (APCaRI): Alberta Prostate Registry
 - The Myeloma Canada Research Network (MCRN) Canadian Multiple Myeloma Database
 - Canadian Bladder Cancer Information System (CBCIS)
 - Canadian Kidney Cancer Information System (CKCIS)
 - GlansLook Lung Cancer Database (Alberta)
 - McPeak-Sirois Breast Metastases Registry (Montreal Region)
 - Enhanced Pancreatic Cancer Profiling For Individualized Care (EPPIC)
- **Pediatric oncology database:**
 - Pediatric Oncology Group of Ontario Networked Information System (POGONIS)
 - Cancer in Young People in Canada (CYP-C) databases
- **IQVIA Databases: Private Drug Claims and RxDynamics**
- **The Canadian Personalized Healthcare Innovation Network (C-PHIN)'s databases**
- **Palliative care databases owned by the Alberta Health Service Palliative Care Zonal program leaders**
- **Patient Support Programs Database (PSPs)**
- **Private insurance disability registries**
- **O2 Oncology Outcomes program databases**
- **Programme de Gestion Thérapeutique des Médicaments databases**
- **Personalize my Treatment (PMT) Registry**
- **International registries:**
 - Flatiron Electronic Health Record Database (US)
 - The National Lung Cancer Registry (Sweden)
 - CRISP register (Germany)

Note: The databases were identified through Stakeholder consultation

Supplementary Table S4: Survey on databases and data elements

| Category | Variables | Description | Database Name | Notes |
|---|-------------------------------------|-------------|---------------|-------|
| Cohort Creation: Identify disease of interests | Topography | | | |
| | Morphology | | | |
| | Behaviour | | | |
| | Date of diagnosis | | | |
| Cohort Creation: Identify treatment of interest | Drug Identifier – IV | | | |
| | Drug Identifier – Oral | | | |
| | Treatment Indication | | | |
| | Intent of treatment | | | |
| | Line of therapy | | | |
| | Date of treatment administration | | | |
| | Dispensing date | | | |
| Demographic and Clinical Characteristics | Provincial Patient Identifier | | | |

| Category | Variables | Description | Database Name | Notes |
|------------------------|---|-------------|---------------|-------|
| | Sex | | | |
| | Date of Birth | | | |
| | Age at first treatment | | | |
| | Rural/Urban residence | | | |
| | Neighbourhood Income Quintiles | | | |
| | Regional Health Authority | | | |
| | Charlson's Score | | | |
| | Adjusted Clinical Groups(ACG) | | | |
| | ECOG-Performance Status | | | |
| | Palliative Performance Status | | | |
| | Radiation Use | | | |
| | Radiation – Dose/minutes per fraction | | | |
| | Radiation – Intent | | | |
| | Radiation – visit date | | | |
| | Surgical resection code | | | |
| | Surgical resection date | | | |
| Clinical Effectiveness | Date of Death | | | |
| | Date of last contact | | | |
| Safety & Toxicity | ED Visit - Date of registration ²⁶ | | | |
| | ED Visit - Main Problem ²⁶ | | | |
| | ED Visit - Visit disposition code ²⁶ | | | |
| | Hospital Visit - Date of admission ²⁷ | | | |
| | Hospital Visit - Diagnosis codes or procedure codes ²⁷ | | | |
| | Hospital Visit - Discharge disposition ²⁷ | | | |
| Cost-effectiveness | Drug (IV) – total cost | | | |
| | Drug – reimbursed cost | | | |

| Category | Variables | Description | Database Name | Notes |
|---------------------------|---|-------------|---------------|-------|
| | Drug (oral) – total cost | | | |
| | Drug – Dispensing fees | | | |
| | Drug – Compounding fee | | | |
| | Physician fee – Billing code | | | |
| | Physician fee – Amount paid | | | |
| | Outpatient laboratory and imaging services – Billing code | | | |
| | Outpatient laboratory and imaging services – Amount paid | | | |
| | ED cost/resource intensity weight | | | |
| | Hospitalization cost/resource intensity weight | | | |
| | Home Care | | | |
| | Complex continuing care | | | |
| Budget Impact | Doses dispensed – Days supplied | | | |
| | Treatment dose given | | | |
| | Body Surface area | | | |
| | Height | | | |
| | Weight | | | |
| Patient reported outcomes | Edmonton Symptom Assessment Score | | | |

Supplementary Table S5: Survey on capacity assessment

Intravenous Drug

[illegible]

Oral Drug

[illegible]

Supplementary Table S6: Glossary

| | |
|------------|--|
| AB | = Alberta |
| ACG | = Adjusted Clinical Group |
| BC | = British Columbia |
| CanREValue | = Canadian Real-World Evidence for Value of Cancer Drugs |
| CCI | = Canadian Classification of Health Interventions. |
| CCMB | = CancerCare Manitoba |
| CCO | = Cancer Care Ontario |
| CCP | = Canadian Classification of Diagnostic, Therapeutic, and Surgical Procedures; |
| CIHI | = Canadian Institute for Health Information |
| DAD | = Discharge Abstract Database |
| DIN | = Drug Identifier Number |
| DoH | = Departments of Health |
| ECOG | = Eastern Cooperative Oncology Group |
| ED | = Emergency Department. |
| ENCR | = European Network of Cancer Registries |
| HDNS | = Health Data Nova Scotia |
| HTA | = Health Technology Assessment |
| ICD-O-3 | = International Classification of Disease for Oncology Third version. |
| IV | = Intravenous |
| MB | = Manitoba |
| mCODE | = Minimal Common Oncology Data Elements |
| MoH | = Ministries of Health |
| NACRS | = National Ambulatory Care Reporting System |
| NB | = New Brunswick |
| NL | = Newfoundland and Labrador |
| NS | = Nova Scotia |
| ON | = Ontario |
| pCMOD | = pan-Canadian Minimal Oncology Dataset |
| PEI | = Prince Edward Island |
| QB | = Quebec |
| RCT | = Randomized Clinical Trials |
| RWD | = Real World Data |
| RWD | = Real World Evidence |
| SK | = Saskatchewan |
| WG | = Working Group |