



Overcoming cancer together

DATA CONNECT

Current sources

January 2023

Data Sources	Description
MedicineInsight	Primary care database containing de-identified patient level data on almost 1.5 million patients in Victoria including information about: <ul style="list-style-type: none">• Encounters• Diagnoses• Prescriptions• Billing• Observations• Signs, symptoms and conditions
PATRON Data for Decisions database	Primary care database containing de-identified patient level data on almost 1.9 million patients in Victoria including information about: <ul style="list-style-type: none">• Encounters• Diagnoses• Prescriptions• Billing• Observations• Signs, symptoms and conditions

Victorian Non-Admitted Health Episodes dataset (VINAH)	Data from two health services in Metropolitan Melbourne containing de-identified patient-level data on patients using outpatient services.
Victorian Emergency Minimum Dataset (VEMD)	Data from three health services in Metropolitan Melbourne containing de-identified patient-level data on patients presenting to hospital emergency departments.
Victorian Admitted Episodes Dataset (VAED)	Data from four health services in Metropolitan Melbourne containing de-identified patient-level data on patients admitted to hospital.
Various clinical registries	Data rich information pertaining to the care of cancer patients by specialists. Currently working with: <ul style="list-style-type: none"> • Sarcoma • Pancreatic cancer • Colorectal cancer • Lung cancer
Centre for Victorian Data Linkage	Population wide linked data including VINAH, VEMD & VAED, Victorian Cancer Registry, National Death Index and linked to the PATRON dataset.

Examples of data queries completed by Data Connect:

Data query area	Description	Datasets used	Key Words
End Of Life Care	Establishing patterns of primary care usage for cancer patients in the last six months of life	<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patient – Encounter – Billing – Requests – Prescription (x2) • VAED <ul style="list-style-type: none"> – Episodes – Diagnosis – Procedures • VEMD <ul style="list-style-type: none"> – NDI (Linked) 	<ul style="list-style-type: none"> • NDI linkage - cause of death, date of death • cancer diagnosis (VAED) • Charlson index, comorbidities (VAED) • patient locality (urban/regional) • ICU use, ED use, bed days (VAED) • imaging, surgery, treatment (chemotherapy, radiotherapy) (VAED) • palliative care (VAED) • quality indicators of end of life • home/hospital visits (MedicineInsight billing) • opioid and anticipatory medicine prescriptions (MedicineInsight)
Lung Cancer	Numbers of Lung cancer patients in a cancer registry and linkage rates to MedicineInsight, as well as lung cancer coding in MedicineInsight.	<ul style="list-style-type: none"> • Cancer registry • MedicineInsight <ul style="list-style-type: none"> – Patient – Condition 	<ul style="list-style-type: none"> • lung cancer
	Primary care encounters, hospital admissions and ED presentations in	<ul style="list-style-type: none"> • Cancer registry 	

Data query area	Description	Datasets used	Key Words
	lung cancer patients in 6-/12-months prior to diagnosis.	<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patient – Encounter • VAED <ul style="list-style-type: none"> – Episodes • VEMD 	
Melanoma	Numbers for a presentation to Melanoma Research Victoria.	<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patient – Conditions – Encounters – Requests – Prescriptions • VAED Episodes • VEMD 	<ul style="list-style-type: none"> • melanoma
Upper gastrointestinal cancer.	Machine Learning and Patterns of Primary Care Utilisation in Cancer Diagnosis and Outcomes - Upper gastrointestinal cancer. Patient cohort and controls created and MEDICINEINSIGHT datasets prepared.	<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patient – Encounter – Diagnosis – Prescription (x2) – Results 	<ul style="list-style-type: none"> • machine learning • upper GI cancer
High-level summary	Includes number of patients/encounters and linkage	<ul style="list-style-type: none"> • MEDICINEINSIGHT 	<ul style="list-style-type: none"> • linkages

Data query area	Description	Datasets used	Key Words
numbers of Data Connect datasets	percentages between datasets, for all patients and for cancer patients identified from VAED diagnoses.	<ul style="list-style-type: none"> – Patient – Encounters • VAED <ul style="list-style-type: none"> – Episodes – Diagnosis • VEMD 	<ul style="list-style-type: none"> • cancer diagnoses • tumour streams
Weight loss as an early indication of cancer	<p>Number of MEDICINEINSIGHT Patients with "unexpected weight loss" recorded. Potential validation of UK study (Brain Nicholson).</p> <p>Includes:</p> <ul style="list-style-type: none"> • number of patients with cancer recorded within 12-months • weight observations • requests (FBE, LFT) and results (albumin, platelets, calcium, white cell count, CRP) within 3-month prior and 1-month after weight loss. 	<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patients – Encounters – Diagnoses – Conditions – Observations – Requests – Results 	<ul style="list-style-type: none"> • reason for encounter • unexpected weight loss
Platelets	Prevalence of patients with raised platelet results, additional raised platelet results in the following 12-months, and cancer conditions within 12-months. For ECHO presentation.	<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patient – Encounter – Pathology results – Conditions 	<ul style="list-style-type: none"> • platelets

Data query area	Description	Datasets used	Key Words
Anaemia	Prevalence of patients with anaemia markers over a 1-year period, split by sex and age groups (>40 years, >50 years). Proportion of those patients diagnosed with cancer in the following 6-/12-months.	<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patient – Encounter – Pathology results 	<ul style="list-style-type: none"> • anaemia (haemoglobin, MCV, MCH, ferritin)
Sarcoma	Number of patients linked between a sarcoma clinical registry and MedicineInsight. Counts for linked patients: MedicineInsight Encounters, Requests, Results, Prescriptions, and linked to VAED or VEMD.	<ul style="list-style-type: none"> • Clinical registry data • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patient – Encounters – Requests – Results – Prescriptions • VAED Episodes • VEMD 	<ul style="list-style-type: none"> • sarcoma • MedicineInsight request flags
Cancer Registry Pilot	<p>Analysis of registry and MedicineInsight linkage. Includes:</p> <ul style="list-style-type: none"> • number of patients linked - stratified by sex, age, cancer type. • encounters - total, 6-/12-months pre-/post-diagnosis, 6-months pre-death, all stratified by cancer type • requests (FBE, LFT, CRP, imaging (x-ray, ultrasound, CT, MRI)) 	<ul style="list-style-type: none"> • Cancer registry • MedicineInsight <ul style="list-style-type: none"> – Patients – Encounters – Requests – Results – Conditions • VAED Episodes 	<ul style="list-style-type: none"> • Validation of MedicineInsight Cancer coding against cancer registry data

Data query area	Description	Datasets used	Key Words
	<ul style="list-style-type: none"> • results • conditions. • VAED linkage & number of admissions VEMD linkage & number of presentations	<ul style="list-style-type: none"> • VEMD 	
Central vascular access device (CVAD) use	Use in haematological cancer patients post-diagnosis.	<ul style="list-style-type: none"> • VAED • Diagnosis • Procedures 	<ul style="list-style-type: none"> • CVAD procedures
Palliative Care	Emergency department presentations for cancer patients in the 6-months prior to death	<ul style="list-style-type: none"> • Cancer registry • VEMD 	
Abnormal blood test results	Estimate the prevalence of abnormal blood test results and rates of follow-up.	<ul style="list-style-type: none"> • Patron <ul style="list-style-type: none"> – Patients – Encounters – Conditions – Results – Result headers – Requests 	<ul style="list-style-type: none"> • anaemia (haemoglobin, MCV, MCH, ferritin) • thrombocytosis (platelets) • PSA • red cell count, B12, folate, iron studies • coeliac serology (tTG, gliadin, endomysial Ab) • FOB, endoscopy, gastroscopy, colonoscopy • ultrasound, chest x-ray • CA-125 • supplements

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Colorectal Cancer	Analysis of Patron test result data, to determine if there were reasonable numbers of test results for further study	<ul style="list-style-type: none"> • Patron <ul style="list-style-type: none"> – Patients – Results 	<ul style="list-style-type: none"> • anaemia (haemoglobin, MCV, MCH, ferritin) • thrombocytosis (platelets) • PSA • red cell count, B12, folate, iron studies • coeliac serology (tTG, gliadin, endomysial Ab) • FOB, endoscopy, gastroscopy, colonoscopy • ultrasound, chest x-ray • CA-125 • supplements
Health equity	Preliminary analyses on available linked data to inform work in the equity in vulnerable groups	<ul style="list-style-type: none"> • VAED <ul style="list-style-type: none"> – Episodes – Diagnoses • VEMD • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patients – Encounters 	<ul style="list-style-type: none"> • blood results
Cerebral palsy	Cancer screening program (bowel, breast, cervical) rates and cancer diagnosis for patients identified with Cerebral palsy in MedicineInsight.	<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patient – Encounter – Diagnosis – Prescription – Results header 	<ul style="list-style-type: none"> • ATSI • CALD - country of birth, preferred language, interpreted required • SEIFA • Palliative care • ASGS remoteness

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Exercise physiology	Exercise physiology use in cancer patients	<ul style="list-style-type: none"> • VAED <ul style="list-style-type: none"> – Diagnosis – Procedures • VINAH • MEDICINEINSIGHT <ul style="list-style-type: none"> – Encounters – Billing • Patron <ul style="list-style-type: none"> – Encounters – Billing 	<ul style="list-style-type: none"> • cancer screening programs • cerebral palsy
Melanoma	<p>Management and screening for melanoma in primary care:</p> <ul style="list-style-type: none"> • Diagnostic biopsies of suspected skin cancer in general practice from 2010 to 2017 in Victoria (led by Chi So) • The upfront and downstream patterns and costs of skin checks in Australian general practice 	<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patient – Encounters – Billing – Diagnosis – Request – Prescription (x2) 	<ul style="list-style-type: none"> • physiology • MBS billing codes
Neuropathic pain	Numbers of Patients and Encounters with “neuropathic pain” related reasons for encounter (RFE) , as well	<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Encounters 	<ul style="list-style-type: none"> • biopsy, excision • skin check

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	as numbers for the drugs provided, for both MedicineInsight and Patron.	<ul style="list-style-type: none"> – Diagnosis – Prescriptions (x2) • Patron <ul style="list-style-type: none"> – Encounters – Conditions – Prescription 	<ul style="list-style-type: none"> • MBS billing codes • consultation and procedure costing (from billing)
Prostate cancer	Number of prostate cancer patients and encounters and PSA results for these patients in MedicineInsight/Patron. Number of "digital rectal exam"/"Prostate check" (reasons for encounter or billing). For OCP pathways in regional areas.	<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patient – Encounter – Conditions – Billing – Results • Patron <ul style="list-style-type: none"> – Patients – Encounter – Conditions – Results 	<ul style="list-style-type: none"> • neuropathy • neuralgia
USIs	<p>Initial linkage from hospital patient administrative systems to ascertain linkage rates.</p> <ul style="list-style-type: none"> • number of patients diagnosed with cancer (VAED), by tumour stream 	<ul style="list-style-type: none"> • VAED <ul style="list-style-type: none"> – Episodes – Diagnoses • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patients 	<ul style="list-style-type: none"> • prostate cancer

Data query area	Description	Datasets used	Key Words
	<ul style="list-style-type: none"> count of admitted episodes for cancer patients - total, 12-month per-/post-diagnosis, by tumour stream unplanned admissions stratified by CALD linkage to MedicineInsight and Patron <p>Counts of patients with other chronic conditions (diabetes, chronic kidney disease)</p>	<ul style="list-style-type: none"> Encounters Patron Patients Encounters 	
Myeloma	Prevalence of myeloma diagnoses in Patron	<ul style="list-style-type: none"> Patron Encounters Conditions 	<ul style="list-style-type: none"> linkage - cancer patients CALD unplanned admissions
Prostate & ADT medications	Numbers of ADT medications for Prostate patients in MedicineInsight. Potential link to a prostate cancer registry	<ul style="list-style-type: none"> MEDICINEINSIGHT Conditions Prescriptions (x2) 	<ul style="list-style-type: none"> myeloma
Hepatitis B and C	Numbers of Hepatitis B and C patients from VAED for a potential MPhil project	<ul style="list-style-type: none"> VAED Episode Diagnosis VEMD VINAH 	<ul style="list-style-type: none"> prostate cancer androgen deprivation therapy (ADT) medications

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		<ul style="list-style-type: none"> • MEDICINEINSIGHT <ul style="list-style-type: none"> – Patient – Encounters • Patron <ul style="list-style-type: none"> – Patient – Encounters 	
Pancreatic Cancer	Potential numbers of Pancreatic Cancer patients admitted to hospital and percentage linked to MedicineInsight/Patron	<ul style="list-style-type: none"> • VAED Diagnosis • MedicineInsight Patient • Patron Patient 	<ul style="list-style-type: none"> • Hepatitis • pancreatic cancer



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