Bridging the gap between primary and secondary care

Maureen Turner, Chief Executive Officer
Javier Haurat, Project & Data Services Manager

HISA Health Data Analytics Conference, Sydney, 17th October 2019
Presentation Overview

- VCCC Data-Driven Research Program
- Leveraging BioGrid to deliver VCCC program
- Utilising GRHANITE™ to enable record matching
- Preliminary data exploration bridging the gap
- Health services research opportunities
VICTORIAN COMPREHENSIVE CANCER CENTRE
Data-Driven Research Program

Supported by

Victorian Comprehensive Cancer Centre
Level 10, Victorian Comprehensive Cancer Centre
305 Grattan Street, Melbourne VIC 3000
Tel: 03 8559-7160 | www.viccompcancerctr.org
Victorian Comprehensive Cancer Centre Ltd
trading as Victorian Comprehensive Cancer Centre ABN 84 140 233 790

We acknowledge the Traditional Owners of the lands on which we work and pay our respects to their elders past and present.
VCCC Data-Driven Research Program

Linked
Longitudinal
Retrospective
Health care continuum
Secondary use
Bottom-up
VCCC Data-Driven Research Program

Patient
Primary Care
Population registries
Clinical registries
Community
Hospital
BioGrid Australia
A unique data sharing framework
Collaboration framework for researchers

- **Evergreen legal agreement** to facilitate multi-site collaborative research
- **Ethics approval of BioGrid data platform** for each institution and database linked
- **Federated platform for data sharing** with waiver of consent or opt-out consent for hospital data linked to BioGrid platform
Data for Decisions

A university-based program using general practice data for research

Jo-Anne Manski-Nankervis, Rachel Canaway, Jon Emery, Lena Sanci, Douglas Boyle, Jane Hocking, Jane Gunn, Anna Wood, Malcolm Clark, Phillippe Grimes, Jessica Bell, HaBiC R² team, Dr Timothy Monaghan, Sophea Ing, Silvia de Bono, members of the independent Data Governance Committee,

vicren-enquiries@unimelb.edu.au
www.gp.unimelb.edu.au/datafordecisions
GRHANITE® software

- Developed by A/Prof Dougie Boyle, Director of HaBIC R², Department of General Practice, The University of Melbourne
- Enables privacy protected data extraction & linkage
- Excludes person identifiable data fields
- Additional privacy filters in fields where user error is known
- Layers of encryption
- Enables opt-in, opt-out and waiver of patient consent
- Installation does not prevent use of other data sharing tools (Pen CS, POLAR, etc)
- Does not slow computer processing
Preliminary data exploration bridging the gap
VCCC Data-Driven Research Program Hospital Sites

- Austin Hospital
- Peter McCallum Cancer Centre
- Royal Children’s Hospital
- Royal Melbourne Hospital
- Royal Women’s Hospital
- St Vincent’s Hospital
- Western Health hospitals

Preliminary data exploration bridging the gap
VCCC Data-Driven Research Program

- Hospital administrative data (all – not cancer specific)
  - Patient demographics
  - Admissions
  - Emergency
  - Elective Surgery
  - Costings
- Cancer clinical treatment outcome data
- Primary care data from NPS MedicineInsight
Preliminary data exploration bridging the gap
VAED – Victorian Admitted Episode Dataset

The Victorian Admitted Episodes Dataset (VAED) provides a comprehensive dataset of the causes, effects and nature of illness, and the use of health services in Victoria.

Data elements:
- Diagnosis (ICD-10-AM) & Procedures (ICD-10-AM/ACHI/ACS)
- LOS
- Separation mode
- Palliative care data
VEMD – Victorian Emergency Minimum Dataset

The dataset comprises de-identified demographic, administrative and clinical data detailing presentations at Victorian public hospitals with designated emergency departments.

Data elements:
- Diagnosis (ICD-10-AM)
- Nature of Injury
- Injury Cause
- Triage Category
- Arrival and admission times
Primary Care Data Summary

NPS MedicineInsight Databook
JOAN
AGE 56
T2 DIABETES

ROUTINE CARE

ABDOMINAL BLOATING

HOSPITALISED - DIABETES

ABDOMINAL BLOATING & STOMACH PAIN

FBT CA125

ABNORMAL RESULTS > REFERRAL

SPECIALIST

OVARIAN CANCER DIAGNOSED

TREATMENT
- Risk assessment
- Screening
- Lifestyle modification

- Pathology
- Prescriptions
- Imaging and Radiology

- Surgery
- Chemotherapy
- Radiotherapy
- Immunotherapy

- Monitoring and screening
- Managing comorbidities
- Referral to other services
## Tumour Stream

<table>
<thead>
<tr>
<th>Tumour Stream</th>
<th>Pts linked primary care</th>
<th>Avg # appts primary care 12m pre dx</th>
<th>Pts linked primary care 12m post dx</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Neurological</td>
<td>74</td>
<td>8.4</td>
<td>80</td>
<td>10.4</td>
</tr>
<tr>
<td>Haematology</td>
<td>178</td>
<td>13.5</td>
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## Hospital Diagnoses

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**Primary care visits pre-diagnosis**
- Identification of common symptom patterns: headaches, nausea, loss of balance, drowsiness, memory loss
- Monitor abnormal diagnostic/pathology results
- Assess opportunities for early diagnosis and intervention
- Detect risk factors

**Hospital visits/treatment**
- Identify access delays
- Determine optimal care pathways
- Cost treatments
- Explore benefits of rehabilitation upstream
- Determine likelihood of recurrence downstream

**Primary care visits post-diagnosis**
- Assess quality of life
- Determine optimal shared care models
- Identify common co-morbidities
- Establish survivorship pathways
- Targeted screening for recurrence

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Health service research opportunities
Health services research opportunities

Large-scale, comprehensive data linkage that links primary care and hospital data for cancer patients

- Time to cancer diagnosis where delayed diagnosis may impact patient outcomes
- Side effects of cancer treatment seen in General Practice
- Management of co-morbidities in cancer survivors
- Understand ongoing quality of life for cancer patients
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Thank You

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