



Aboriginal & Torres Strait Islander CV Health

**Improving health outcomes
through data-driven
policy-relevant research**

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Yorta Yorta, Dja Dja Wurrung, English heritage

Cardiologist, Clinician-Scientist

Cardiovascular (CV) disease is the single biggest cause of death among Aboriginal & Torres Strait Islander people

Management gaps contribute to CV mortality for all Australians

>50% of Aboriginal and Torres Strait Islander people are not screened or treated despite being at high CV risk.

Why?

IRNet Showcase 2020



Question:

Why are Victorian Aboriginal people less likely to receive evidence-based cardiovascular care despite being at higher risk for heart attack and stroke?





To motivate change:

**We will demonstrate the health and economic savings that can be achieved
if evidence-based-cardiovascular care is better implemented
in Aboriginal & Torres Strait Islander communities**

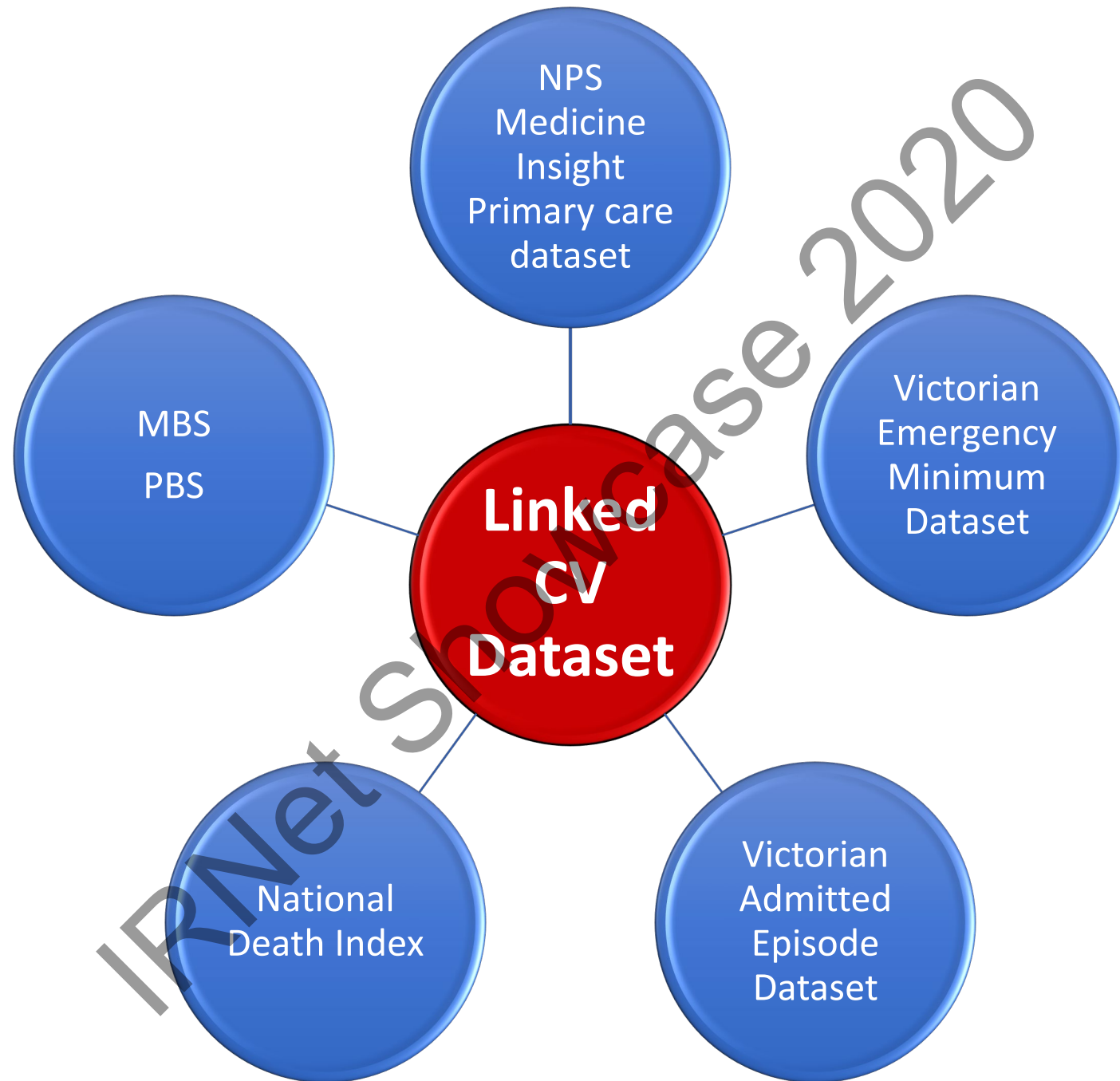




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Health through information

How will we answer this question?

We will **link clinical data** collected by Australian general practices, hospitals and government agencies to determine how variation in CV risk, events and treatment influences Indigenous and non-Indigenous health outcomes.



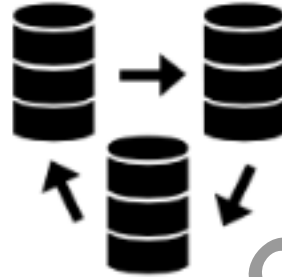
What is data linkage?



Life or
health event



Data is
collected



Data is
linked



Linkage keys
or codes
created



Linkage keys
are stored

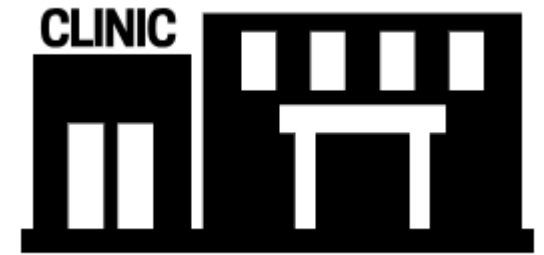
- Also known as **data integration** or **record matching**
- Involves pairing observations from 2 or more files and identifying pairs belonging to the same patient
- Private health information is removed and codes assigned leading to anonymized or de-identified datasets
- Strict protocols are in place to ensure risks to individuals are minimized
- BioGrid is an international leader in data linkage with expertise in data governance, security and ethics



Diagnosis

Treatment

Hospital & Specialist
clinics



Prevention

Symptoms

Diagnosis

Treatment

Post hospital care

General practice

Hospital & Specialist
clinics

General practice

The linked dataset will provide new insights into how cardiovascular disease is assessed and treated across the care continuum



Prevention

Symptoms

Diagnosis

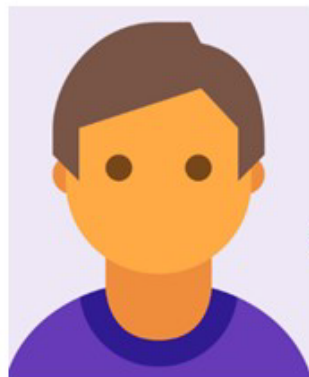
Treatment

Post hospital care

General practice

Hospital & Specialist
clinics

General practice



Joe
Age 50

HT, Smoker, Diabetes
Rural postcode
No regular primary care

Frequent loss to follow-up
Emergency Dept = 2
Hospital Admit = 1

Primary care
Routine visit



Emergency
department (ED)



Hospital
admission



Prescription
not filled



Emergency
department (ED)



Risk assessment
not completed



Primary care
Post-ED visit



Hospital clinic
visit



Primary care
Follow-up



No clinic
Follow-up



A comprehensive health services dataset for cardiovascular disease

**For the first time we will answer these questions
in a local context:**

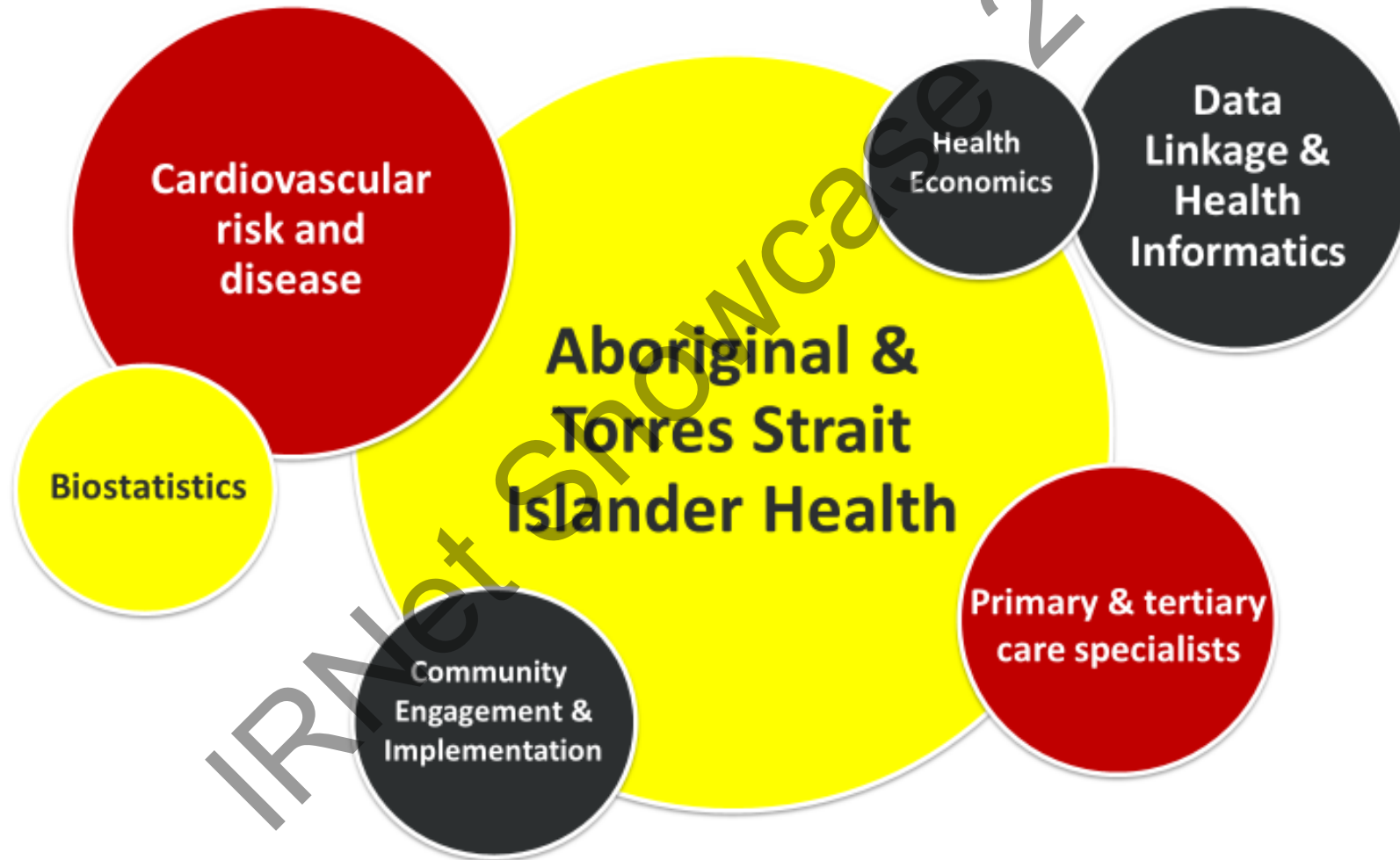
- Why are Aboriginal & Torres Strait Islander people at increased CV risk?
- Are existing risk assessment scores accurate?
- Where does variation in health care access or care occur and for whom?
- What is the health and economic impact of evidence-based CV care?
- How does this differ for Indigenous vs non-Indigenous Victorians?

What makes this unique?

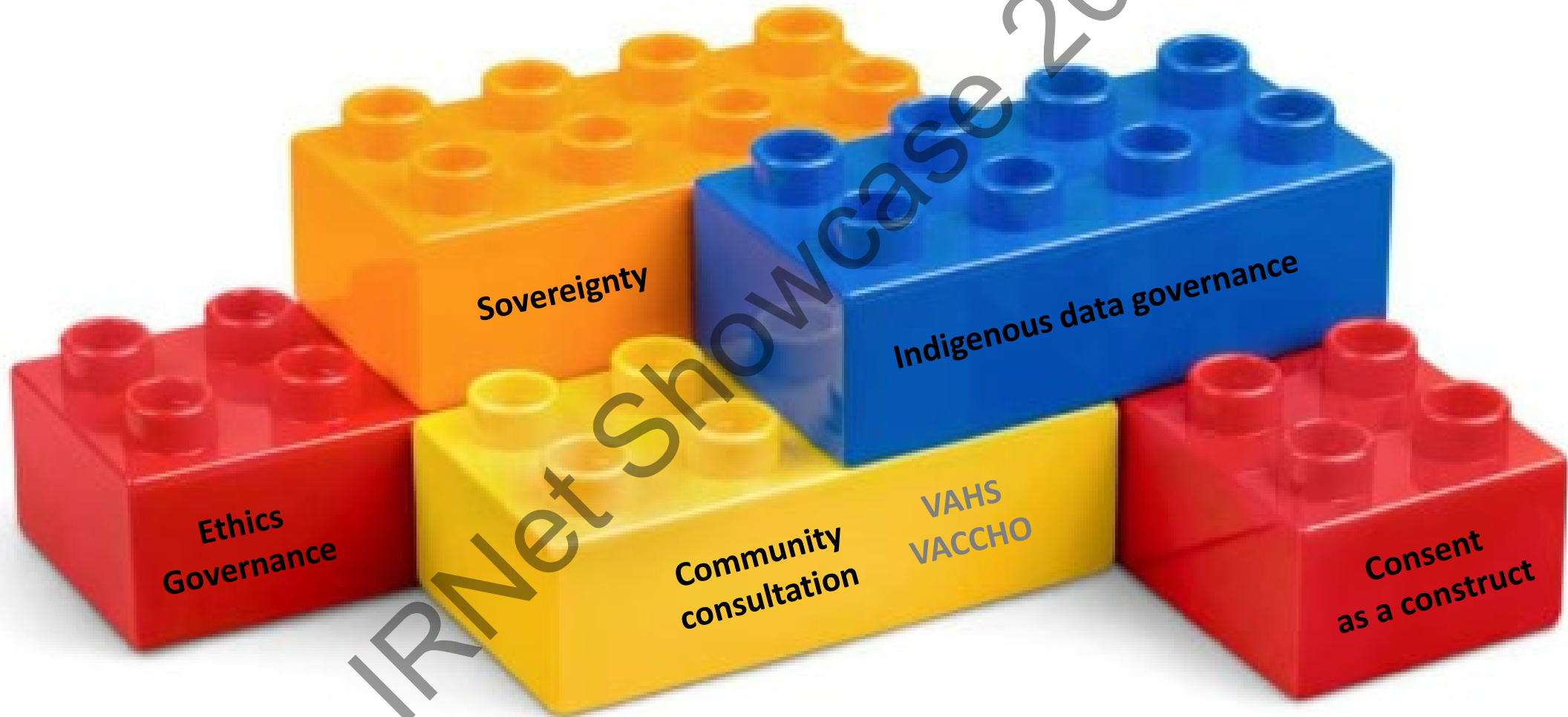
- (i) Indigenous-led**
- (ii) Whole of life perspective**
- (iii) Whole of systems approach**
- (iv) Local contexts can be assessed**
- (v) Data driven research, innovation and translation**

The dataset will identify where investment is most needed to strengthen Victorian Aboriginal CV health risk assessment, treatment & outcomes

CROSS-CUTTING INTERDISCIPLINARY RESEARCH



LAYING THE FOUNDATION



What makes this unique?

IRNet Showcase 2020

The health of urban Aboriginal people: insufficient data to close the gap

Sandra J Eades, Bronwen Taylor, Sandra Bailey, Anna B Williamson, Jonathan C Craig and Sally Redman for the SEARCH Investigators

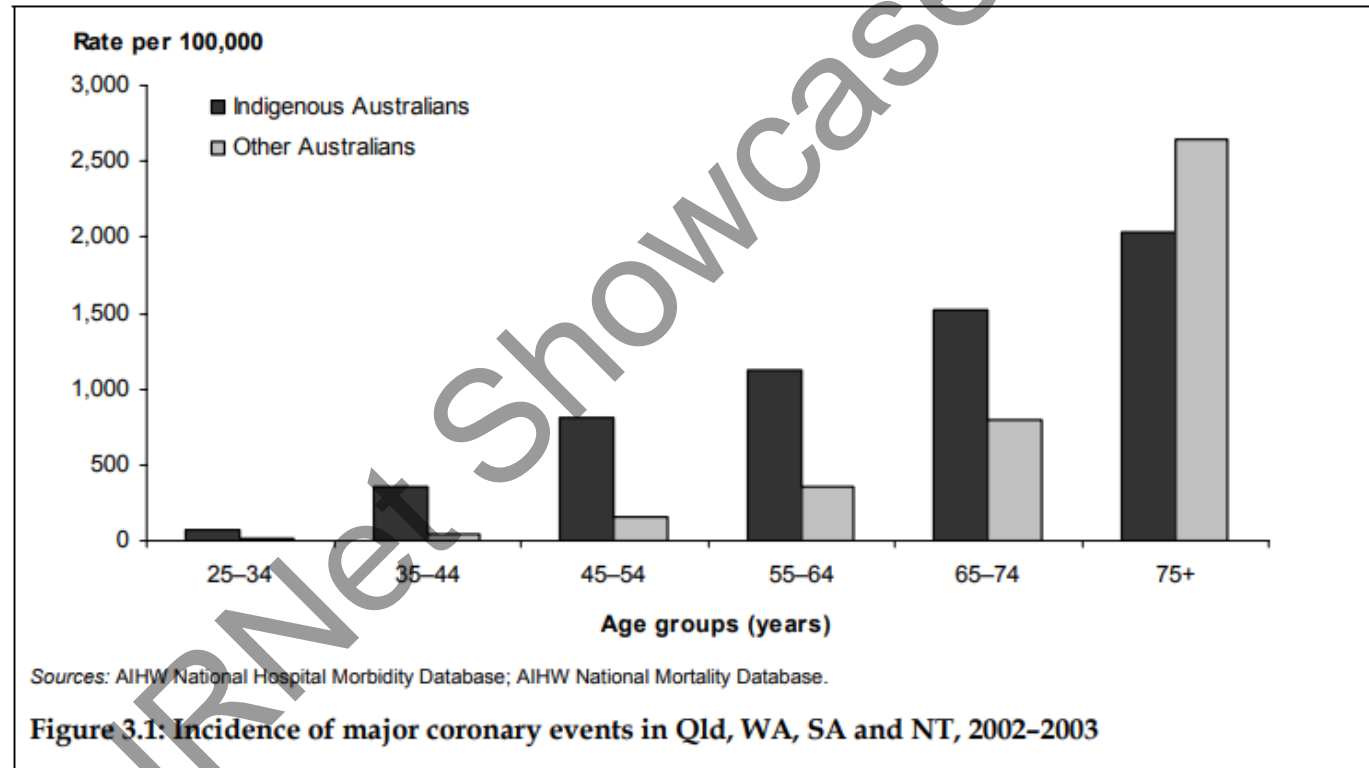
60% of the health gap is attributable to the health of urban Aboriginal and Torres Strait Islander communities

Of 555 Indigenous health research articles 2004 – 2009

Only 11% focused exclusively on people living in urban areas

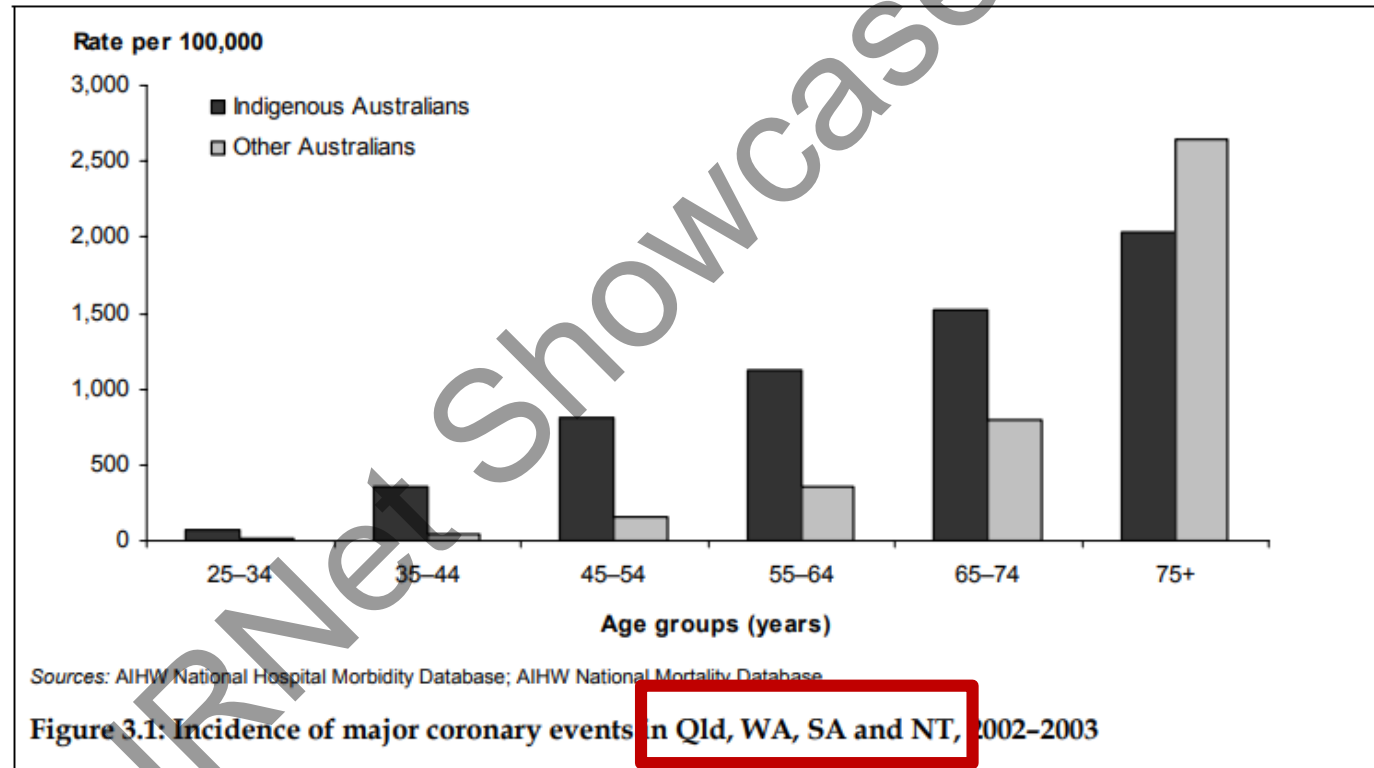
Incidence of major coronary events

Aboriginal and Torres Strait Islander people were far more likely to have a major coronary event than other Australians, across all age groups under 75 years in 2002–2003. This is clearly demonstrated in Figure 3.1, where the age-specific rate for Indigenous Australians is markedly higher for all age groups from 25–34 to 65–74. For the 75 years or over age group, the rate of major coronary events was lower in Aboriginal and Torres Strait Islander people than in other Australians.



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At present, there is considerable variation across the states and territories in the completeness of mortality and hospital data for Aboriginal and Torres Strait Islander people. Mortality data for Queensland, Western Australia, South Australia and the Northern Territory are considered to have sufficient level of coverage to produce reliable statistics on Indigenous Australian deaths for the period 1998–2003. A recent AIHW report, examining the quality of Indigenous identification in the National Hospital Morbidity Database, has also recommended that data from only those same jurisdictions should be used for analytical purposes (for further details see AIHW 2005a). For these reasons the mortality and hospital data in this report include data from only Queensland, Western Australia, South Australia and the Northern Territory. Indigenous people in these jurisdictions represent 60% of the total Indigenous population. Even within these jurisdictions, data on Indigenous deaths and hospitalisations vary in their completeness. It should be noted that these data may not be representative of Australia, as the jurisdictions included may differ from those excluded (New South Wales, Victoria, Tasmania and the Australian Capital Territory).



“Terra Nullius” revisited



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Question:

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**What makes our approach to
research novel?**

IRNet Showcase 2020

Progress to Date

(i) See report

The dataset will identify where investment is most needed to strengthen Victorian Aboriginal CV health risk assessment, treatment & outcomes

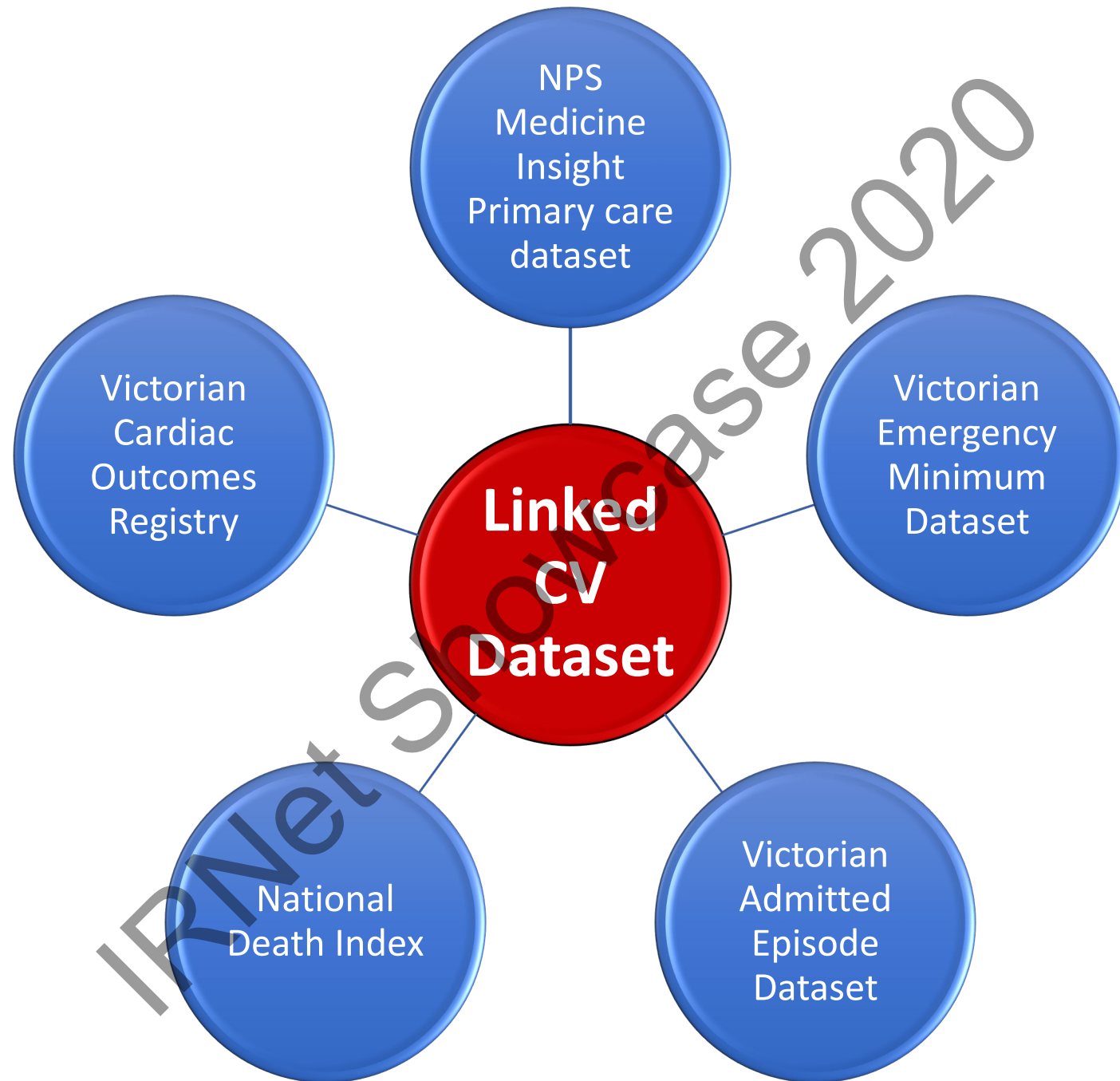
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Indigenous data sovereignty

Refers to refers to the right of Indigenous people to **exercise ownership over Indigenous Data**. Ownership of data can be expressed through the **creation, collection, access, analysis, interpretation, management, dissemination and reuse of Indigenous Data**.



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Specific Aims

1. Compare evidence-based-CV care for Indigenous vs. non-Indigenous Australians
2. Contrast CV disease prevalence and incidence differ greatly for Indigenous versus non-Indigenous Australians
3. Assess CV risk and mortality in Indigenous versus non-Indigenous Australians
4. Recalibrate existing risk prediction tools for Indigenous Australians
5. Assess the impact of evidence-based CV care on CV health & economic outcomes including the cost-effectiveness of early CV disease prevention.

Risks of Big Data & Data Linkage

"Amongst the biggest problems that investigators face are data collection, data storage, data analysis, statistical analysis of data. A second order of problems is concerned with ethics and privacy and the amazing thing about BioGrid is that it addresses all those things."

Sir Gustav Nossal, Professor Emeritus, Department of Pathology, The University of Melbourne

QUICK LINKS

[Apply For Data Access >](#)
[Data Analysis and Training >](#)
[How BioGrid Works >](#)
[Featured Researchers >](#)
[Testimonials >](#)
[Media Releases >](#)

AWIA NATIONAL DEATHS DATA

Apply here for project specific access to the AIHW National Death Index

ADVANCING HEALTH RESEARCH THROUGH COLLABORATION

BioGrid Australia operates secure research infrastructure that provide access to real-time clinical, imaging and biospecimen data across jurisdictions, institutions and diseases. The web-based platform provides ethical access while protecting both privacy and intellectual property.

[Find out more about BioGrid Australia and how it works](#)

LATEST NEWS

1-Sep-2013: MRI-identified pathology in adults with new-onset seizures

AVAILABLE DATA

Click on the data type to view more information about data collected and the institutions. Numbers show current record numbers (updated: 27-Aug-2018).

Government Datasets
 Patient Administration Systems
 Bone Density

Apply Online
 1305834
 174

Sarcoma
 Familial Cancer
 Renal Cancer

6588
 35247
 152

32
 DATA TYPES

- VCCC Cancer Health Services Data Platform
- Victorian Cancer Registry
- NPS MedicineWise
- Australian Institute of Health & Welfare
- Australasian Sarcoma Study Group (ASSG)
- TRACC – Advanced Metastatic Colorectal Cancer
- ADDN (Australasian Diabetes Data Network) for Type 1 Diabetes.
- National Diabetes Services Scheme

Closing the Gap on Indigenous Cardiovascular Health Disparities

MACH Council Presentation November 22nd 2018

Dr Luke Burchill MBBS PhD FRACP
University of Melbourne
Royal Melbourne Hospital
Australia

Aboriginal people are less likely to complete assessment or treatment of advanced coronary disease

