# Taiwan & Australia: Smart healthcare

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THE UNIVERSITY OF NEWCASTLE AUSTRALIA

**Health** Hunter New England Local Health District
NSW GOVERNMENT

# Agenda

- About HMRI

- Healthcare in Taiwan and Australia

- Better decisions in healthcare
    - The problem – waste in healthcare
    - How we addressed the problem (methods)
    - A solution: **HTAIm**

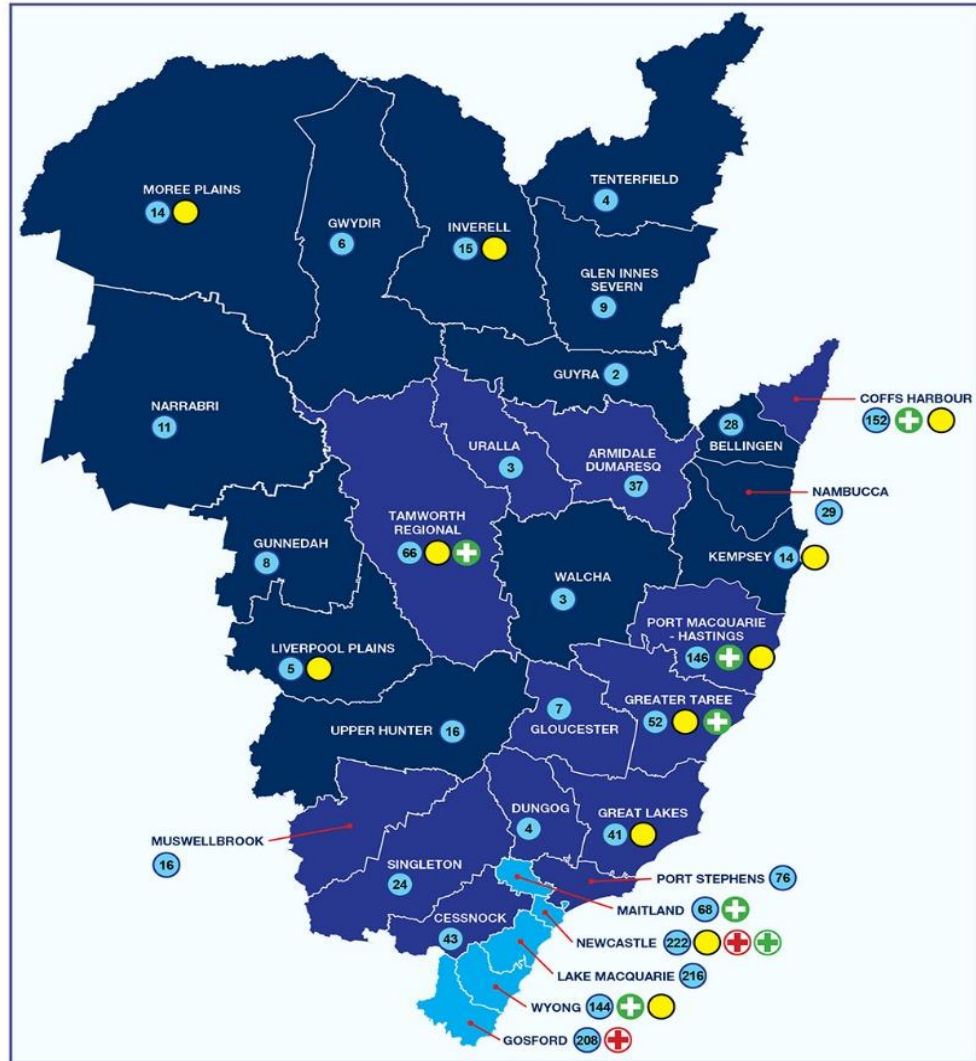- An area for collaboration?

# HMRI research programs

- **Brain and Mental Health**
  Stroke, Schizophrenia, Mental Health, Pain, Dementia

- **Cancer**
  Clinical Trials, Cellular and Molecular Oncology, Drug Development,
  Health Behaviour, Palliative Care, Psycho-oncology

- **Cardiovascular Health**
  Cardiophysiology, Clinical Cardiology, Nutraceuticals and Nutrition, Physical Activity, Obesity,
  Diabetes

- **Information Based Medicine**
  Genetics, Biomarker Discovery, Functional Brain Imaging, Radiation Oncology

- **Pregnancy and Reproduction**
  Infertility, Reproduction, Pregnancy, Premature Birth

- **Public Health**
  Ageing, Health Behaviour, Health Services Research, Health Risk

- **Viruses, Infection/Immunity, Vaccines & Asthma (VIVA)**
  Asthma, COPD, GI, Viral Oncolysis, Infection and Immunity

# Our backyard

# Provision of healthcare in Taiwan & Australia

# Provision of healthcare

| | Taiwan | Australia |
|---|---|---|
| Population | 23.5 million | 24.1 million |
| Health insurance coverage | Universal | Universal |
| Health finance | Insurance based / patient co-payments | Mostly tax (Govt.) based / private health insurance / patient co-payment |
| Life expectancy | M:77    F:83.6 | M:80.4   F: 84.5 |
| Health as a % of GDP | 6.2 | 9.4 |
| Care delivery | Public / private | Public / private |
| Health technology assessment | Used extensively for medicines and devices (National Institute for HTA) Strong belief in HTA | Used extensively for medicines and devices (PBAC, MSAC) Strong belief in HTA |

# A project to support better decisions in healthcare

## HTAIm: Health Technology Assessment and Implementation

# The problem

## Declining affordability of the cost of healthcare

The annual real increase in health spending has outpaced GDP growth for nearly a decade.

Australian Institute of Health and Welfare (2016). Australia's Health 2016. Canberra, Australian Institute of Health and Welfare.

# Waste (money that could be better spent)

Of the **$160 BILLION** we spend on health in Australia each year

about **$30 BILLION** is **waste**... which, for payers of healthcare (& patients), is **the problem ...**

$30b derived from Australian Government: Productivity Commission (2015). Efficiency in Health. Productivity Commission research paper. Canberra.

# Waste is…

- **Over** or **under use** of health **technologies;**

- Use of **technologies** that **don't work** or even **cause harm;**

- The existence of **errors;** and,

- Unexplainable **variation** in the cost, use or consequence of a **technology between hospitals or regions**.

….So, what are these "technologies"?

# Technologies are...



Devices



Health policy



Medicines

# Health Technologies



Models of care, e.g. managing chronic disease, mental health



Tests, procedures, diagnostics



Health administration

# Technologies are...

Devices

Medicines

**Health Technologies**

Health policy

DIABETES
Cycle of Care

Models of care, e.g. managing chronic disease, mental health

Tests, procedures, diagnostics

Health administration

For Facility Administration and Executive Suite

# HTA is …

- …the **evaluation** of technologies **within a given healthcare model** to understand their short and long-term clinical, organisational, economic, social and ethical implications.[1,2]

1 Sampietro-Colom L, Lach K, Haro IE, et al. The AdHopHTA Handbook. A Handbook of Hospital-Based Health Assessment Technology; 2015.
2 Jonsson E. History of health technology assessment in Sweden. *International Journal of Technology Assessment in Health Care* 2009; **25**(S1): 42-52.

# HTA case study…

## Improving outcomes after stroke

➢ **Setting**: 1995 in the UK (small London borough)

➢ **The need**: Stroke was typically managed in general hospitals. At the time it was debated how to best manage stroke patients.

➢ **The HTA**: Study had three arms:

1) *a **stroke unit*** (24 hour care from a specialist multidisciplinary team in a specialised ward);

2) *a **stroke team*** that involved specialist team support on general wards; and,

3) *a **stroke specialist*** in a general ward.

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# HTA case study…

## Improving outcomes after stroke

➢ **HTA outcome**:  The **stroke unit** was determined to be a more cost-effective intervention than the alternatives.

➢ **HTA impact**: Reported in the Lancet and cited in Cochrane. Multiple policy guidelines cite this HTA.

➢ **For patients, the HTA showed reduced mortality and morbidity as a consequence of stroke units**.

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# Better decisions in healthcare at the local level

# Project Aims & Methods

## Aims

1. **Audit the current state of HTA**

2. **Design a platform to improve HTA**

## Methods

1. Review **literature**

2. Stakeholder **consultations**

3. Design of **HTAIm**

# Results...

- Literature revealed

  - Sixteen principles for a best practice HTA platform [1]
  - Views on implementing HTA outcomes
  - Engagement with end users

1 Drummond MF, Schwartz JS, Jönsson B, et al. Key principles for the improved conduct of health technology assessments for resource allocation decisions. *International journal of technology assessment in health care* 2008; **24**(03): 244-58

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# Results...

## Consultations key findings

- Most HTA capacity at HMRI

- Consider *local context*,

- Don't replicate work of existing HTA agencies

- Address gaps in HTA: *models of care, procedures and policies*

- Ensure the evaluation outcomes are **implemented**

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# Results...

**Health Technology Assessment and Implementation (HTAIm)**

- Uses **best practice principles for HTA**

- Focus on **front line health services in the local setting** (models of care, procedures and polices)

- Based on **capacity building in health services workforce** (embedding evaluation research)

- Model extends beyond evaluation, **develops relationships between evaluators and decision makers** (change managers) **(Implementation)**

- **Engagement** with all end users (patients, clinical workforce, and community)

# Better decision making
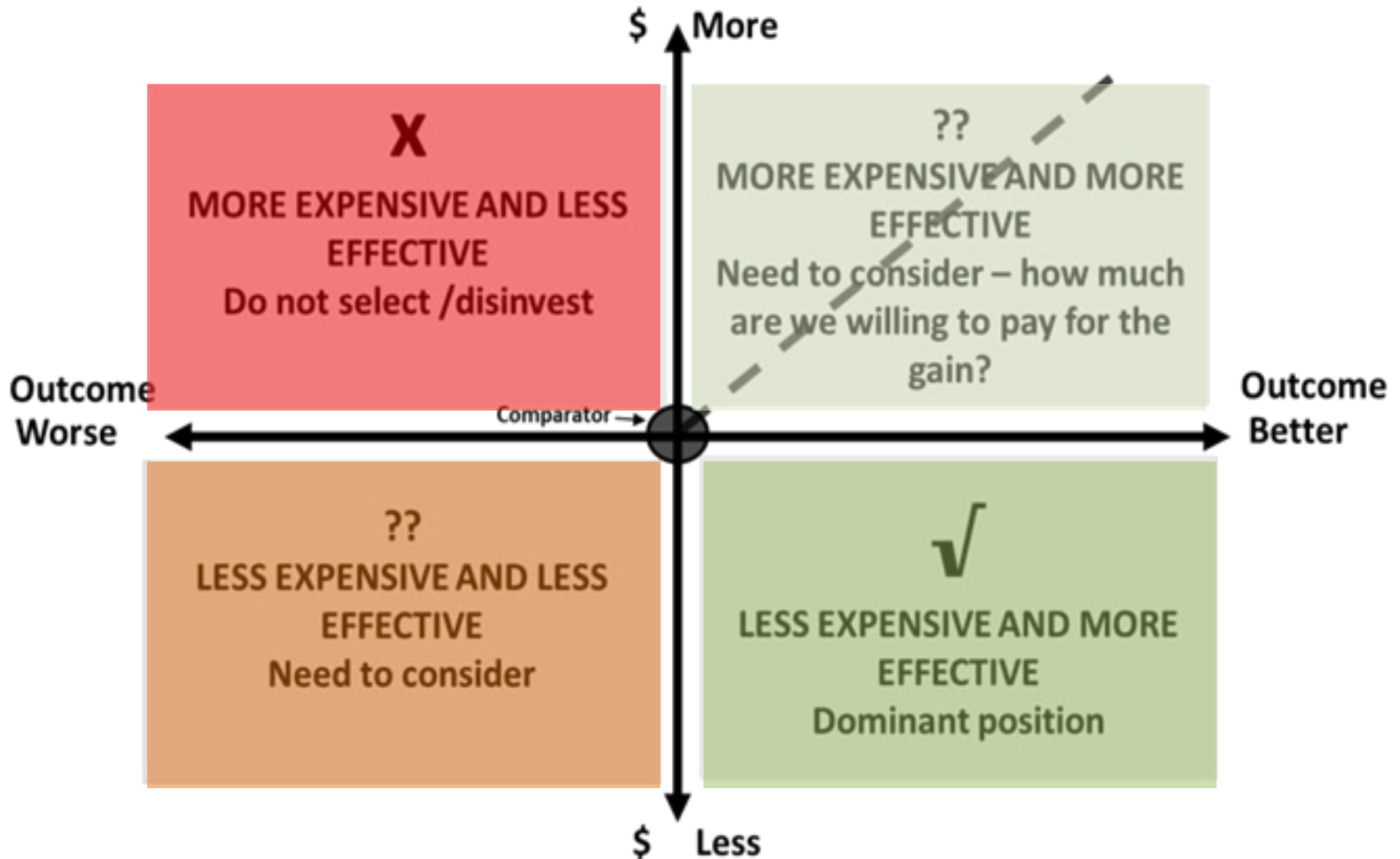
# Possible collaboration in HTA between

# Taiwan & Australia?