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Health Workforce: Future Issues

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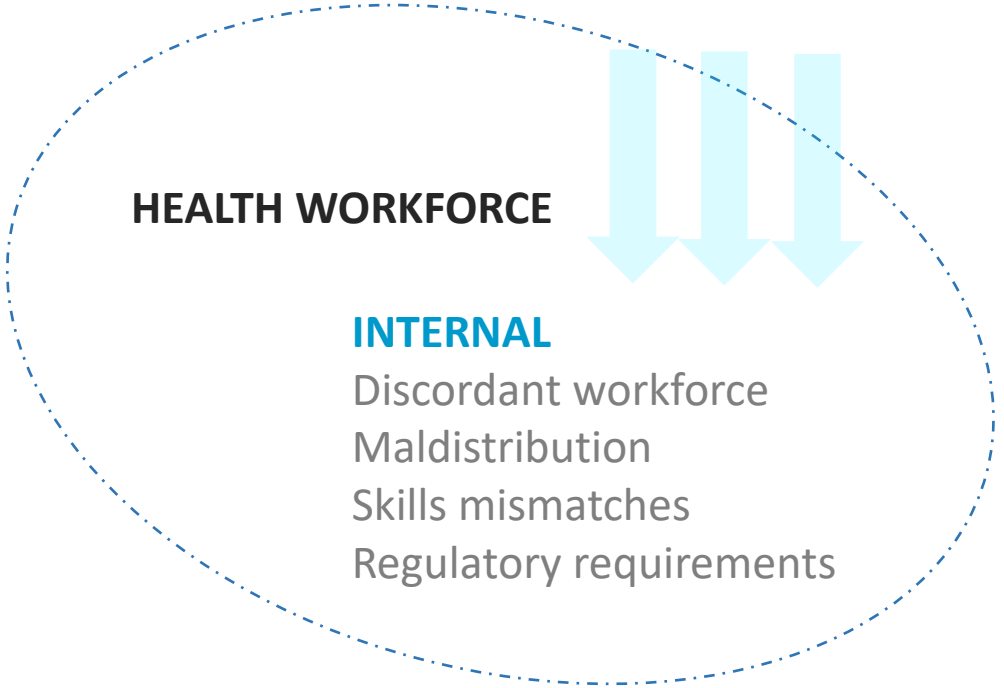
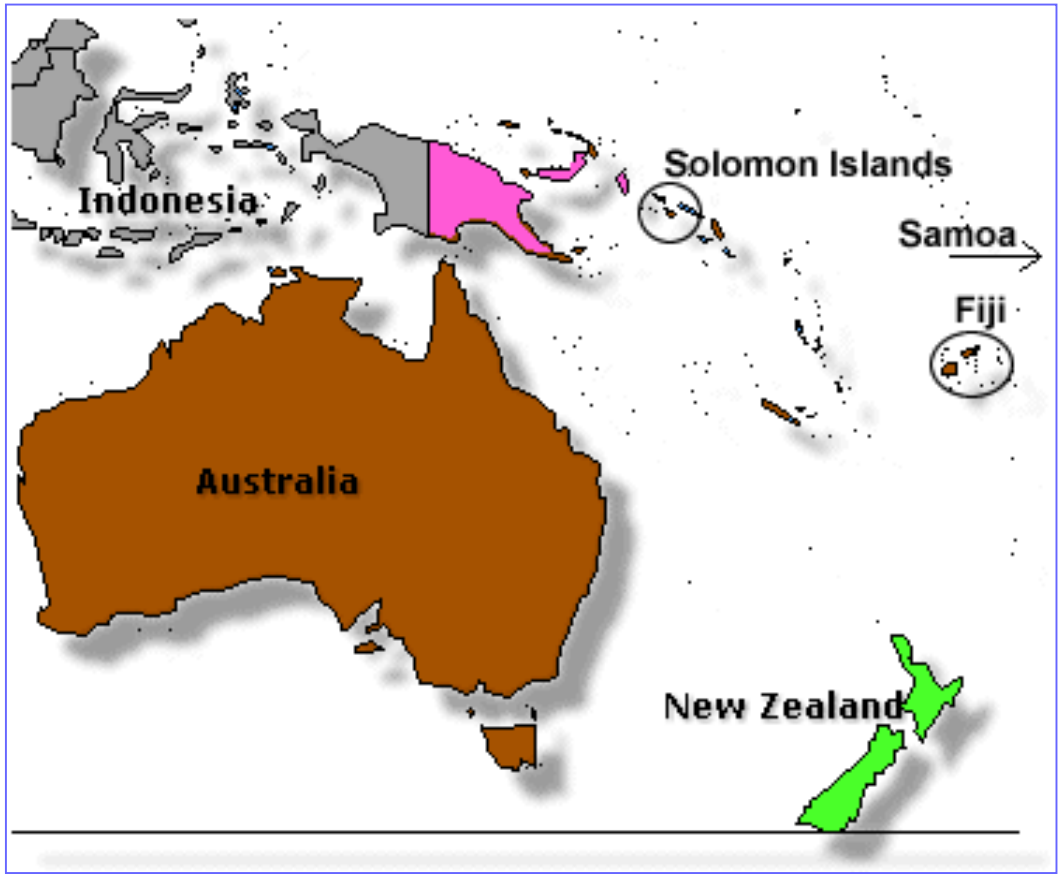
Global forces shaping and challenging the health workforce

EXTERNAL

Universal Health Coverage
Population Ageing
Multimorbidities
Changing disease patterns
Expanding middle class
Global mobility
Technological Innovation



Geographic context



- Rural is very diverse, even in Australia
- Construct of Rural, Remote, Indigenous, Tropical provides some delineation
- Challenges to the health workforce are being driven by epidemiological transitions;
- Transitions are the same across many countries, including those of our near neighbors in the Asia Pacific;
- Lessons learnt in providing a rural/remote workforce in Australia are of relevance to many countries looking to provide universal health coverage to underserved areas.

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Rural, Remote, Indigenous, Tropical Health Workforce

- Rural, remote, Indigenous and tropical health typified by workforce shortages;
- Shortages first evident in these areas…. ‘when the tide goes out’
- Skill sets required are horizontal (vs vertical) specializations…..i.e. generalism;
- Australia has come a long way in developing the rural/remote workforce:
  - Concept of generalism
  - Increasing student places
  - Rural Clinical Schools, UDRHs
- Epidemiological transitions are presenting new challenges to the health workforce

Epidemiologic Transitions

- Seminal theories of epidemiological transitions insufficient to describe the transition in many economies;
- For most economies the transition is more like:

  - End of pandemics
  - Infectious diseases
  - Cardiovascular and metabolic syndrome, cancers
  - Injuries, mental health disorders;
  - **Multimorbidity;** and
  - **Disease patterns associated with transition overlap.**

New phases:

- Intermeshed economies viz international travel and trade, e.g. H1n1 2009, facilitating:
  - New infectious diseases - HIV, ebola, legionnaires', Marburg (many arising from animals – 'OneHealth')
  - Re-emerging infections - malaria, TB, parasitic diseases, dengue

Epidemiologic Transitions

Transition overlap = triple burden

Universal Health Coverage

- End of pandemics
- Infectious diseases
- Cardiovascular and metabolic syndrome, cancers
- Injuries, mental health disorders;
- **Multimorbidity;** and
- **Disease patterns associated with transition overlap.**

Global Health Security

New phases:

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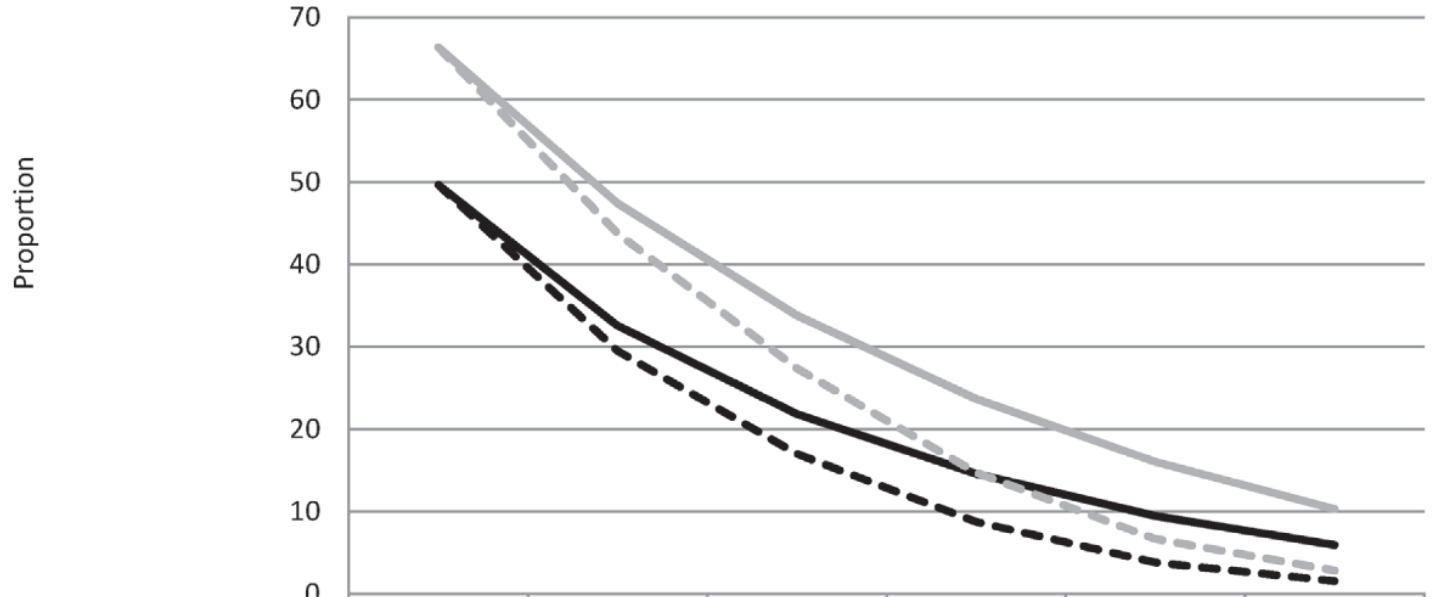
Multimorbidity and the Patterns of Disease

- Multimorbidity is the emergent, predominant disease pattern;
- Overlap of disease is not the same across or within societies;



	One or more	Two or more	Three or more	Four or more	Five or more	Six or more
Chronic conditions - at GP encounters	66.3	47.4	33.8	23.7	16.0	10.3
Chronic conditions - in population	49.6	32.6	21.8	14.6	9.5	5.9
ICPC-2 chapters - at GP encounters	66.3	43.7	27.4	14.7	6.7	2.8
ICPC-2 chapters - in population	49.6	29.5	17.0	8.8	3.8	1.5

The prevalence of complex multimorbidiy in Australia

The prevalence of complex multimorbidity in Australia, Volume: 40, Issue: 3, Pages: 239-244, First published: 30 March 2016, DOI: (10.1111/1753-6405.12509)

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Ageing populations (frailty)

- Australia's population is ageing;
- Asia and the Pacific experiencing unprecedented population ageing; older population in less developed economies growing faster than in more developed economies;
- Sequelae of population aging, multimorbidity and frailty

Example: Frailty

Data were sourced from the UK Biobank. Frailty phenotype was based on five criteria (weight loss, exhaustion, grip strength, low physical activity, slow walking pace). Sociodemographic characteristics and long-term conditions were examined. Frailty was significantly associated with multimorbidity (prevalence 18% [4435/25 338] in those with four or more long-term conditions; odds ratio [OR] 27·1, 95% CI 25·3–29·1) socioeconomic deprivation, smoking, obesity, and infrequent alcohol consumption. (*Hanlon et al. The Lancet Public Health, Volume 3, Issue 7, e323-e332*)

Personalised Medicine

- Personalised medicine is highlighting differences in individuals within the taxonomy of organ and system based diseases, e.g. heart, kidney, liver, circulatory

Example: Cancer Genomics Service Provision

To broaden access to and implementation of precision medicine in the care of pancreatic cancer patients, the Know Your Tumor (KYT) program was initiated using a turn-key precision medicine system. Patients undergo commercially available multi-omic profiling to determine molecularly rationalized clinical trials and off-label therapies. Tumor samples were obtained for 640 patients from 287 academic and community practices covering 44 states. . A tumor board reviewed the results for every patient and found actionable genomic alterations in 50% of patients (with 27% highly actionable) and actionable proteomic alterations (excluding chemopredictive markers) in 5%. Among patients with highly actionable biomarkers, those who received matched therapy (n=17) had a significantly longer median progression-free survival (PFS) than those who received unmatched therapy (n=18; PFS = 4.1 vs. 1.9 months; HR: 0.47; 95% CI: 0.24-0.94; adjusted P-value = 0.03).

Technology

- New technologies and innovations will drive increased demand for health services:
  - Augmented reality
  - Drone delivery of pharmaceuticals
  - Nanosatellites
  - Telehealth/telemedicine
  - Personalised medicine, driven by advances in genetics
- Remote practitioners will become ‘nodes’ in an increasingly integrated system.

ABS, Multipurpose Household Survey (MPHS) for 2016–17

Health system financing

- Focus on episode of care by disease
- Need to move to patient-centred and integrated care delivery;
- How to provide patient-centred and integrated care in rural/remote areas where the care team may be geographically dispersed? E.g. communication between local primary care physician and acute care providers in different locations

Example: Medicare Australia Chronic Disease Management items

Billing codes that allow GPs to choose items for GP-managed care planning and/or team-assisted care planning. Meant to encourage a more coordinated approach to chronic disease management and a shift away from billing for individual treatments and episodes of care. Uptake and use has been low.

Health workforce evolution

- The health system and workforce need new models to adapt to the sequelae of multimorbidity, population ageing and frailty;
  - Increased role for Allied Health and Aboriginal Health Workers
  - Construct of Remote Area Nurses as a horizontal specialization
  - Horizontal vs vertical specialization – reinvigoration of ‘general specialists’
  - Use of technology in an increasingly integrated system
  - Expansion of the Academic Health Centre

Health Workforce development in our region

- Asia Pacific experiencing similar epidemiological transitions
- Lessons learned in rural and remote areas can be applied to underserved areas in our wider region:
  - E.g. expansion of generalism to other countries, such as Japan, Canada

- A workforce for outbreaks……intersection between universal health care and global health security

Health Workforce composition in Asia Pacific

- Adoption of generalism across different contexts

- Expanded scope of practice for nurses…..the Nurse Practitioner
- The role of allied health (independent allied health professionals?)
- Assistants
- Community health workforce

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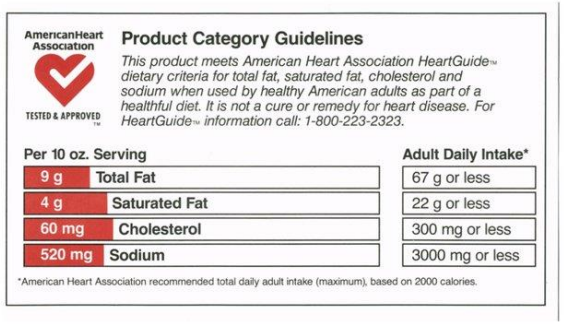
Thank you

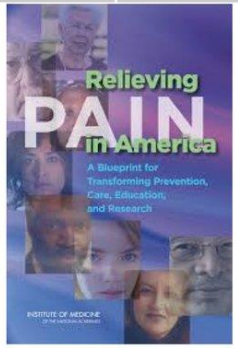
Questions?

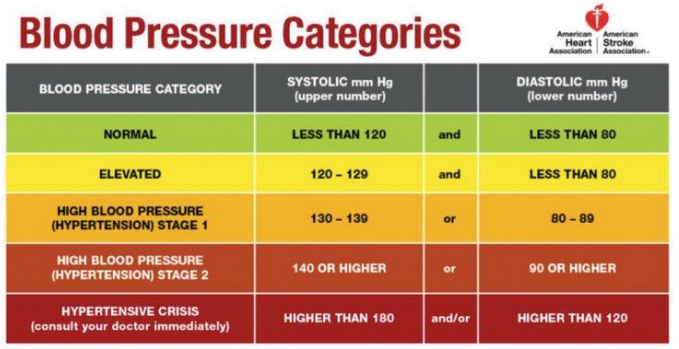
Negative impacts of public health messages

Organization	Recommendation	Year	Adverse Effect
American Heart Association	Low fat, low saturated fat, hi CHO diet	1993*	Promoted overweight/obesity
National Academy of Medicine	Liberalize use of opiates for pain	2011	Facilitated opioid crisis
American Heart and Association & American College of Cardiology	Lower the blood pressure definition for diagnosis of hypertension	2017	Errant diagnosis and unnecessary treatment, side effects, cost



* Dietary recommendations of very low fat stem back to 1973





Source: Eric Topol 5 Aug 2018: https://twitter.com/EricTopol/status/1026121209073754112/photo/1