



Special Commission of Inquiry into Healthcare Funding

Submission Number: 165
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Submission to Special Commission of Inquiry into healthcare funding in NSW

Associate Professor Lukas Kairaitis, MBBS, PhD, FRACP

Head of Renal Services, Blacktown-Mt Druitt Hospitals

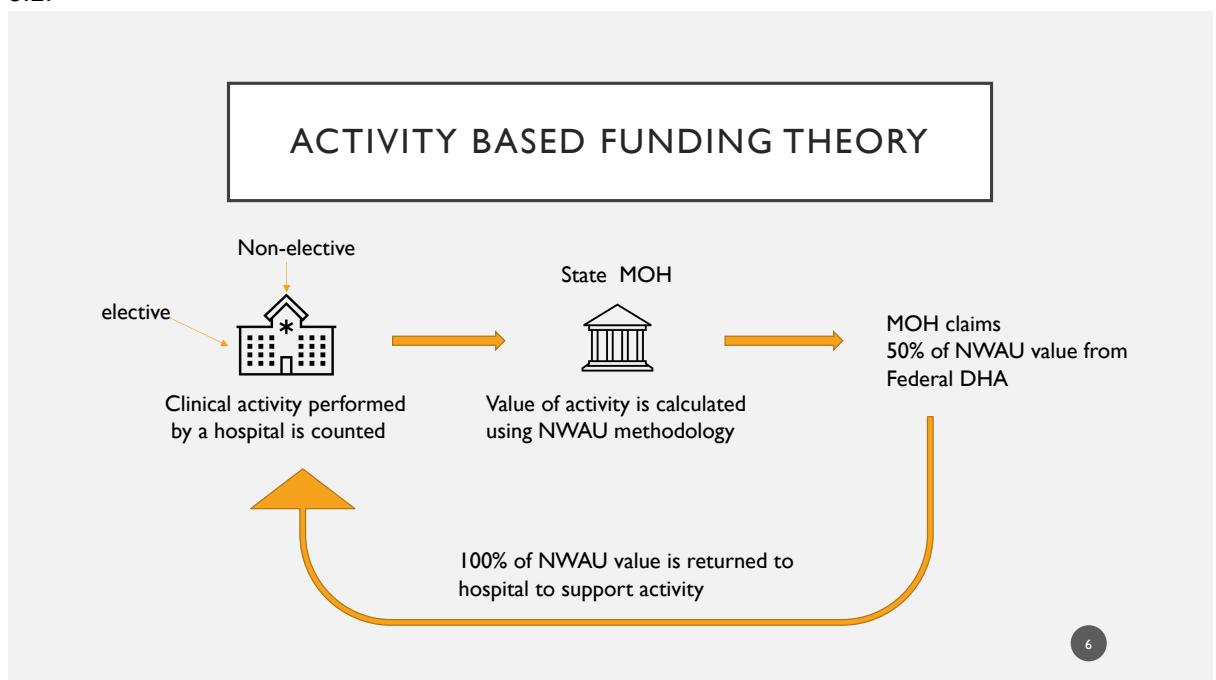
Chair, Blacktown-Mt Druitt Medical Staff councils

The following are my recommendations for consideration.

Recommendation 1. The cost-of clinical activity as measured by diagnosis related groups (DRG) should include a weighting to account for the increased cost of provision of care in areas of significant socioeconomic disadvantage.

Background

- Clinical activity performed by a healthcare provider in NSW is assigned to a specific DRG.
- Under the current activity based funding arrangement, Healthcare Providers are responsible for classifying and counting all clinical activity they perform (as multiple episodes of multiple DRG's) and returning this to the NSW Ministry of Health. (MOH)
- The MOH returns a proportion of the 'cost weight' or 'efficient price' for all DRG related clinical activity (currently 50%) to the Healthcare Provider as part of the operating budget for the Provider. Under the current arrangement, the remaining 50% of DRG-related clinical activity is funded by the Federal Government Department of Health and Aging as per the following diagram.
- Please note that the term 'NWAU' refers to the current methodology by which clinical activity (specified as a specific DRG) is converted into a 'dollar' value (each DRG is costed as a specific proportion of the 'National Weighted Activity Unit'-in dollar terms-which is varied year to year. Therefore the 'value or 'efficient price' for a DRG assigned to a cost weight of 20% of an NWAU can be calculated by multiplying the current dollar value for an NWAU by 0.2.

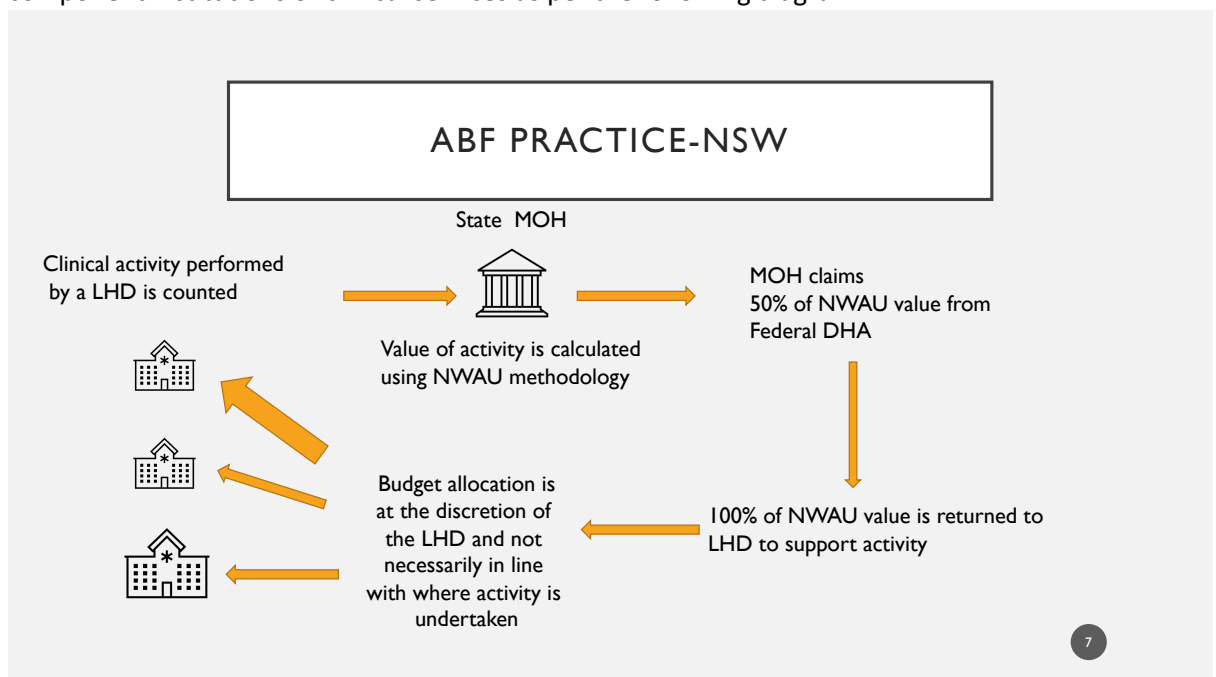


- The 'cost weight' assigned to a specific DRG is currently influenced by a number of patient and location specific factors-for example an increased cost is applied if the patient is indigenous OR if the clinical activity is performed in a rural or regional setting
- The 'cost weight' for a specific DRG is NOT currently indexed in non-rural or regional settings where there is significant socioeconomic disadvantage or inadequate access to federally funded programmes (including primary or specialist care) assumed to be responsible for the management of chronic disease.
- In areas without sufficient affordable access to primary or specialist care (e.g. Western Sydney) the cost of Hospital based care is greater due to local socioeconomic disadvantage limiting health literacy, driving chronic disease and obesity. The impact of this is outlined in the attached PDF document tabled in NSW Parliament in October 2022

Recommendation 2. Healthcare Providers including the Local Health Districts should be accountable to the NSW MOH for the extent to which DRG-related budget generated from clinical activity aligns with the allocation of operating budget to the clinical services responsible for undertaking the clinical activity as part of their Service Agreement to the Ministry.

Background

- Under the current model of Activity-Based Funding (ABF) NSW Public Hospitals described above, Healthcare Providers receive funding for the efficient price of all DRG-related clinical activity undertaken.
- In theory, this arrangement **should** be responsive to local factors that drive demand for specific healthcare activities-since an increase in demand and clinical activity performed in one year should result in increased funding to the LHD in the following year. This will only occur if the LHD clearly links the 'source' of ABF to the 'site' or clinical unit that performs the activity.
- In practice, budgeting processes within an LHD are based on historical allocations to component institutions or clinical services as per the following diagram.



- There are two major concerns related to this practice

1. Clinical Units and institutions who have increased demand for non-elective clinical activities are disadvantaged by budgeting practices within a healthcare provider that utilises historical practices rather than actual activity to determine operating budget to individual clinical units or Institutions.
 - As an example of this, dialysis-related clinical activity undertaken by Western Sydney LHD (WSLHD) has increased by 50% over the last ten years. As the budget allocated by the LHD to the Renal Service has been based on historical practices rather than actual clinical activity, there is an increasing gap between the ABF 'value' of dialysis related activity and the resourcing needed to provide safe patient care. In real terms, the gap between the DRG-related 'value' of dialysis related clinical activity and the budget provided by the LHD to provide this activity has increased both proportionally and in dollar value. In 2016, 70% of the ABF value was reflected in the LHD budget for dialysis activity, a gap of \$9 million dollars per annum. In 2021, less than 50% of the ABF value was reflected in LHD dialysis budgeting, and the dollar value has increased to more than \$28 million per annum.
2. Historical budgeting practices also do not account for the opposite situation-when there is a clear pattern of reduced or falling clinical activity performed by a clinical service or institution. This results in major inefficiencies within Healthcare Providers that does not recognise the situation where a unit or institution needs to contract rather than grow.
 - Misalignment of operational budgets from the service or institutions responsible for performing clinical activity is therefore a risk both the clinical services that experience growth as well as the efficiency of clinical services or institutions that are contracting. There is an implicit assumption that clinical activity within the NSW Healthcare system that growth is inevitable, yet this is clearly not universal.
 - The recommendation given above would require the LHDs to be accountable to the MOH for how it matches ABF to unit or hospital based funding. For example, upper and lower limits for what is an acceptable matching of LHD budget to ABF value could be set, with a requirement for the LHD to account for significant variations-for example when the budget provided to a hospital or clinical service is less than 50% or more than 100% of the ABF value of the clinical work undertaken

Recommendation 3. Compliance with evidence-based clinical guidelines should be considered as a means to limit wastage that results from unrestricted access to high-cost medical investigations, interventions and treatments in NSW Public Hospitals ('low value care'). Auditing strategies are a potential means of limiting this. One auditing strategy would be to target institutions that disproportionately use high cost procedures, treatments or investigations. Auditing or mandating compliance with evidence-based guidelines that often exist to guide the use of high-cost procedures, treatments and investigations are another means of reducing the potential risk of wastage and low value care.

- A potential risk for the current ABF paradigm is that high cost interventions, treatments or investigations that are of limited clinical value will become 'financially justified'. For example, an LHD that increases the number of high-cost treatments or interventions in one

financial year will be 'rewarded' with increased funding in the following year, even if this clinical activity is of dubious clinical benefit to the patient.

- Many high-cost clinical treatments, investigations or interventions have evidence-based guidelines that exist to regulate their use.
- Using coronary intervention as an example, The Australian National Heart Foundation Guidelines and the Cardiac Society of ANZ have clear evidence-based guidelines to direct the use of inpatient cardiac angiography and stenting with pragmatic recommendations for risk stratification of patients based on their clinical presentation as a guide to the use of these interventions.
- Despite these guidelines, there are significant variations in coronary intervention rates amongst NSW Public Hospitals. In hospitals with a high intervention rate (such as my own), the evidence based guidelines and risk stratification of patients are not followed with the decisions for intervention being entirely made by individual clinicians. In the context of a remuneration system that provides a financial incentive to the cardiologist for undertaking a cardiac intervention, this contributes to the risk of wastage of resources and provides care that is recognised as 'low value'.
- The risk of low value care in the NSW Public Health System could be reduced if systems were in place to identify institutions that are outliers in the proportion of patients provided with high cost interventions, or if there was a requirement for the use of high cost interventions to be justified by compliance with evidence based clinical guidelines.



LEGISLATIVE COUNCIL

PORTFOLIO COMMITTEE 2 – HEALTH

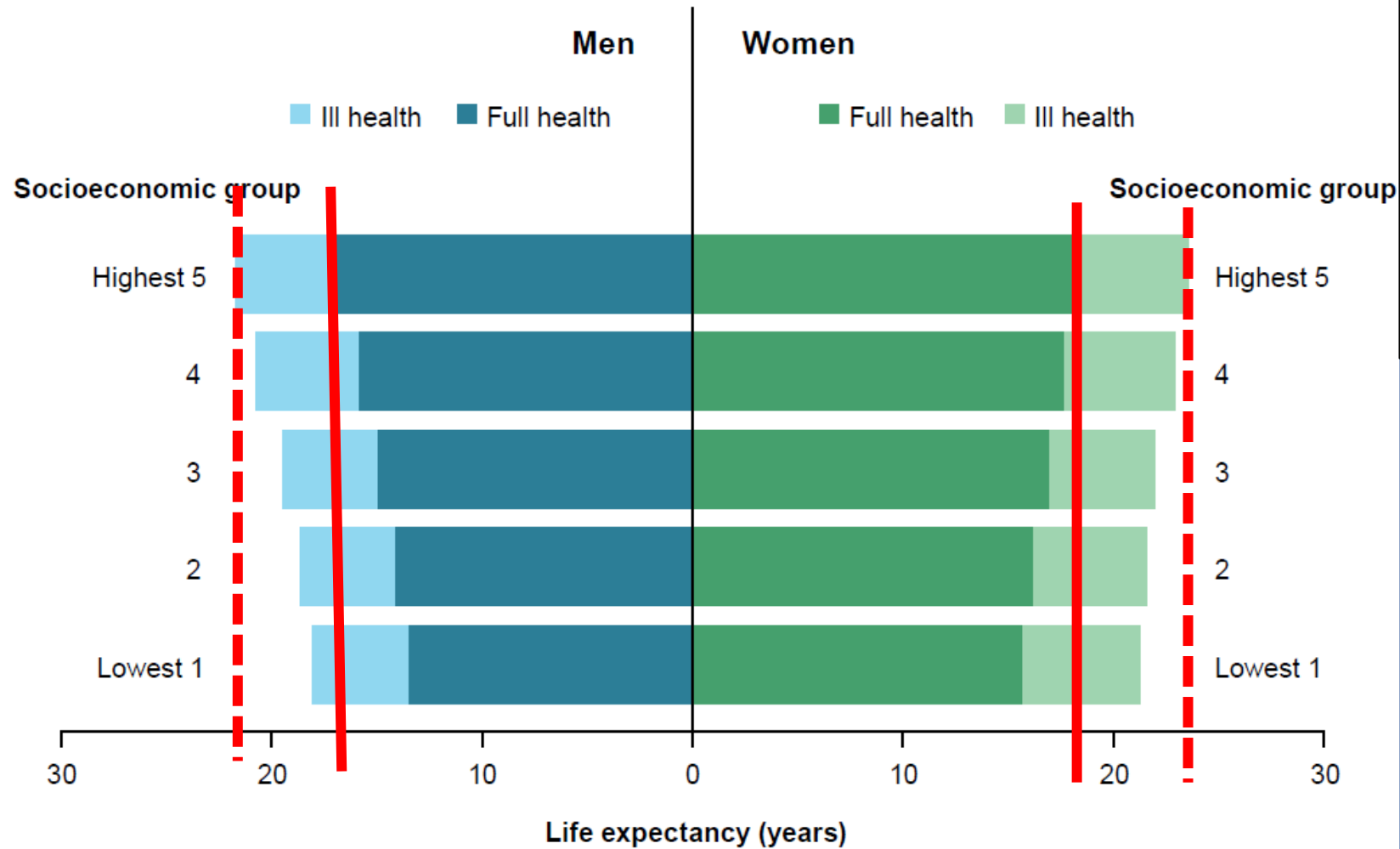
Inquiry into the impact of ambulance ramping and access block on the operation of hospital emergency departments in New South Wales



7 October 2022
Assoc. Prof. Graham Reece

Goal = Equality of Outcome

Figure 5.6: Life expectancy at age 65 in full health (HALE) and ill health, men and women, by socioeconomic group, 2015



Source: Appendix Table D4.

ADDENDUM TO NATIONAL HEALTH REFORM AGREEMENT

P 61. "Low health literacy **compounds the disadvantage** already experienced by marginalised groups"

NSW Cancer Plan



Vision: To end cancers as we know them

Goals

Reduce inequity in cancer outcomes

Reduce the incidence of cancer

Increase cancer survival

Enhance quality of life and experience for people at risk of and affected by cancer

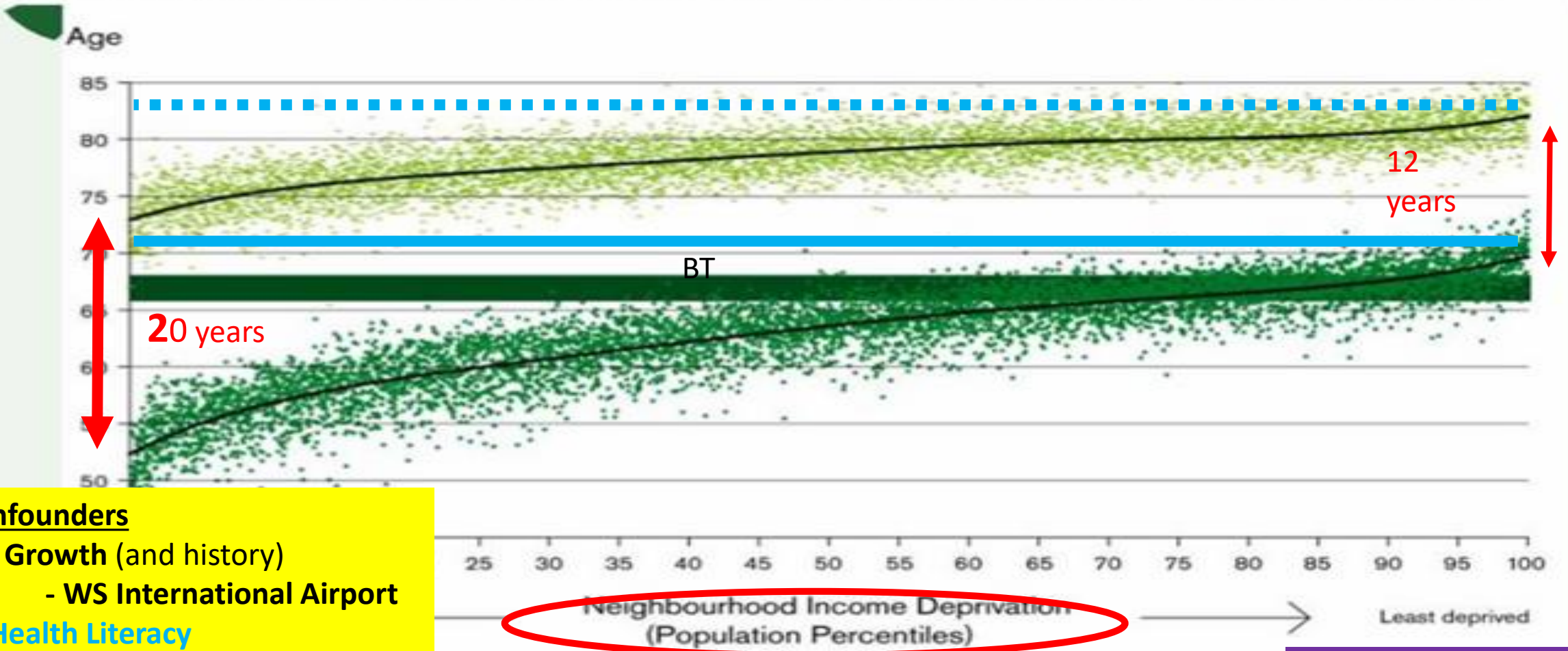
Overriding principles

✓ Equity of outcomes
Improve cancer outcomes in communities that continue to have poorer outcomes to help everyone achieve their best health.

✓ Person-centredness
Focus on the experiences of people with cancer and those accessing screening and prevention services, to ensure they achieve outcomes that are meaningful to them.

✓ Collaboration
Work together at the system, service and care team levels with clear roles, accountabilities and governance, to achieve the best cancer outcomes.

Life expectancy and disability-free life expectancy at birth by neighbourhood income deprivation, 1999-2003



- Confounders**
- 1. Growth (and history)**
- WS International Airport
 - 2. Health Literacy**
 - 3. Staffing**

LEAST DEPRIVED

Sir Michael Marmot : Chair W.H.O. Social Determinants of Health

Source: Office for National Statistics⁵

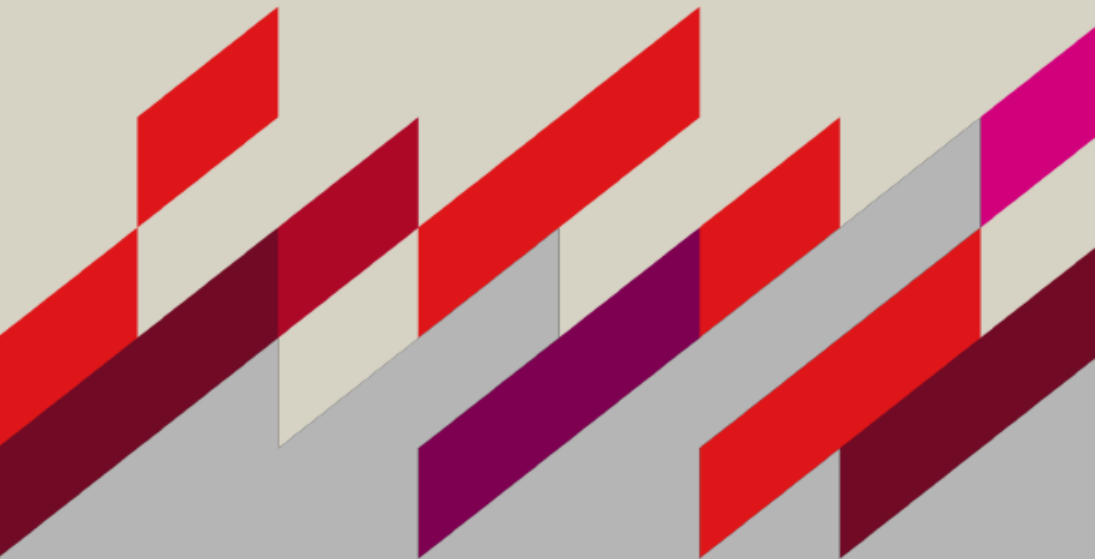
Hospital Funding Models

A rapid review

PREPARED FOR

THE MEDICAL STAFF COUNCIL,
WESTERN SYDNEY LOCAL HEALTH DISTRICT

OCTOBER 2020

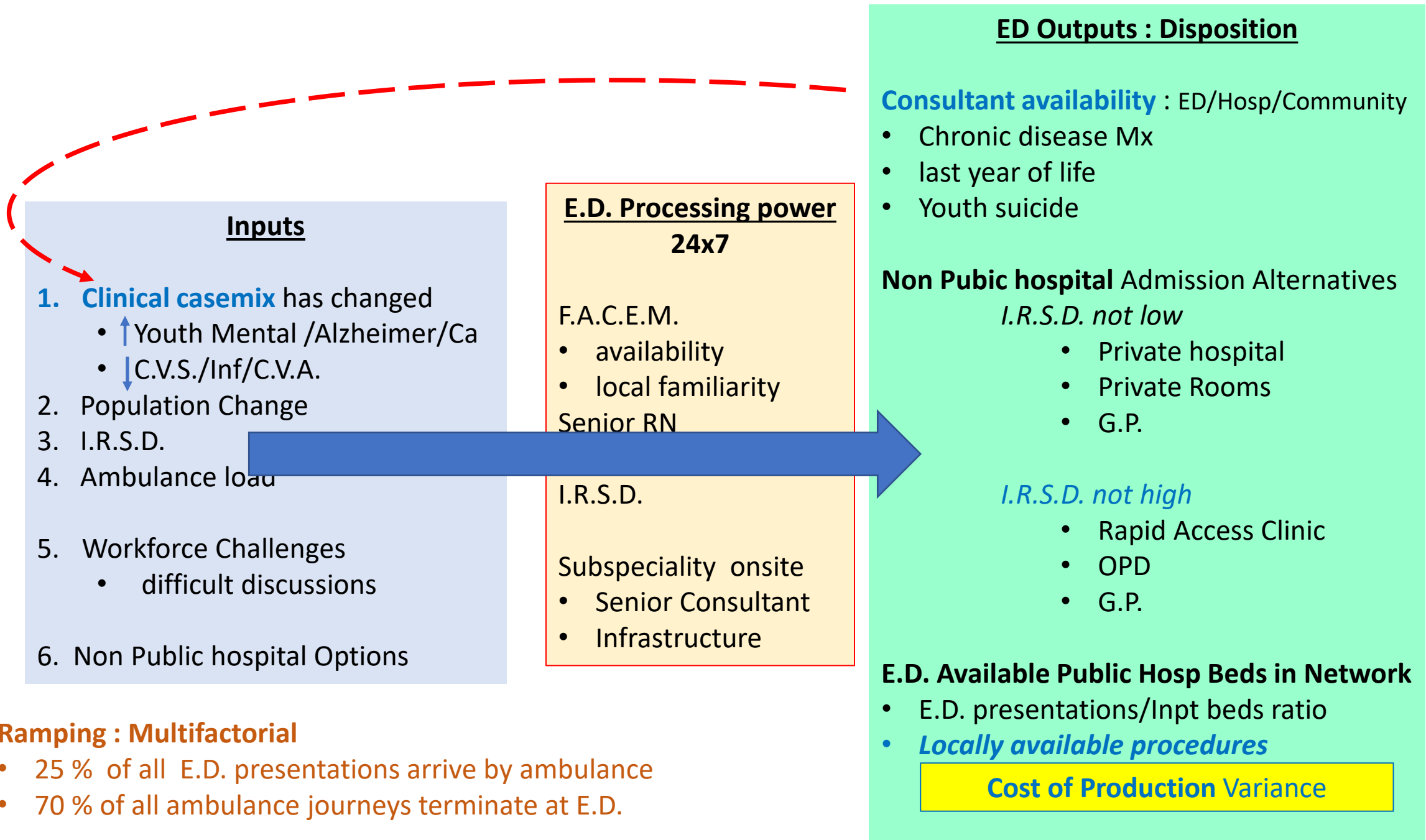


How are the best national health systems in the world coping?

Australian Institute of Health Innovation (Prof. Braithwaite) : October 2020

1. **Inputs**: appropriately nuanced

2. **Outputs** : meaningful, objective, transparent, standardised, dynamic.



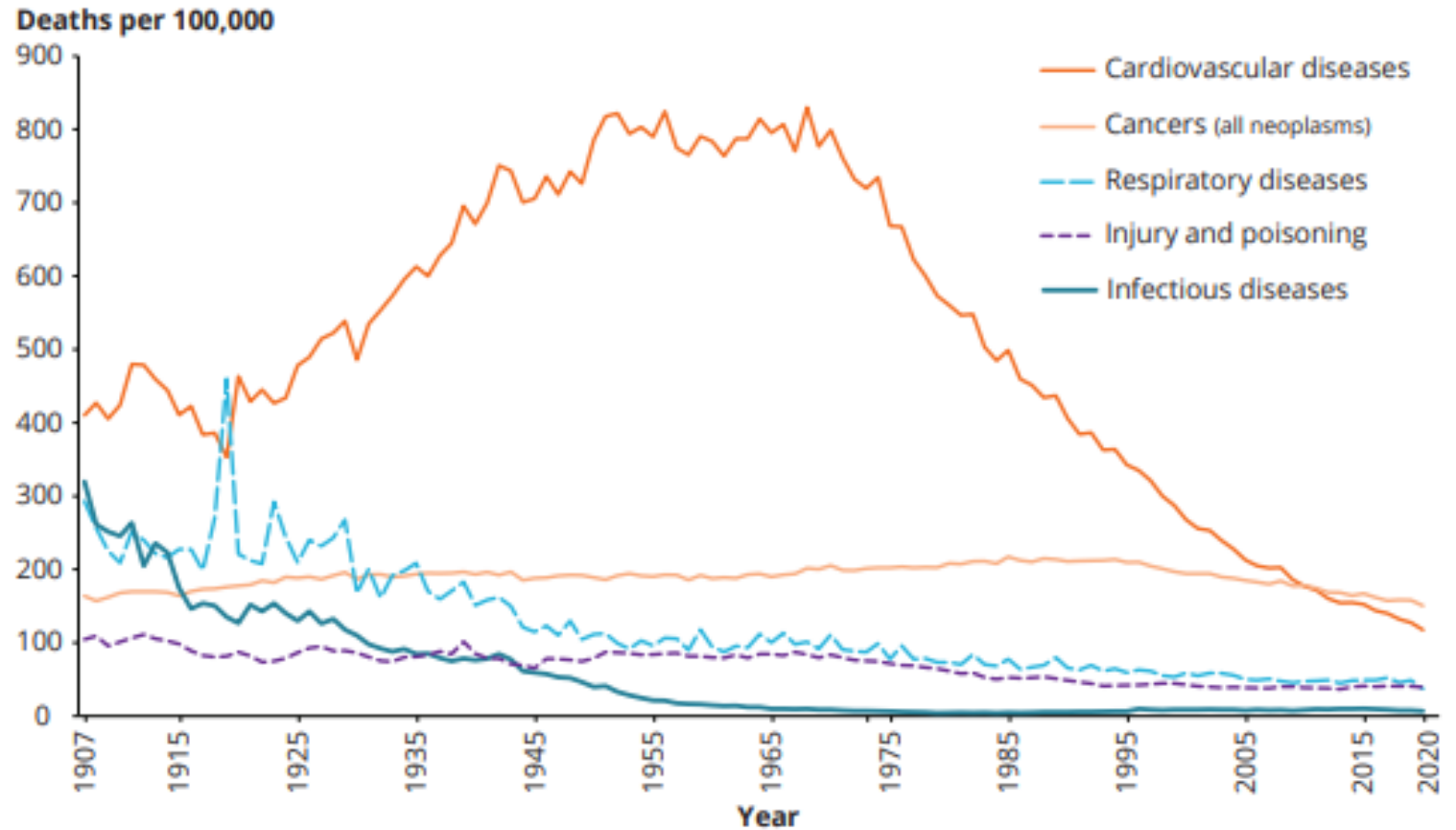
Ramping : Multifactorial

- 25 % of all E.D. presentations arrive by ambulance
- 70 % of all ambulance journeys terminate at E.D.

Disease prevalence has *changed* in Australia



Figure 4.8b: Age-standardised mortality rates (per 100,000 population), by broad cause of death, 1907–2020



Source: AIHW National Mortality Database.

... *but also* by *S.E.S. quintile*.

Australian Burden of Disease Study

Impact and causes of illness and death in Australia

2015



Figure 8.8: Leading causes of total burden (proportion by socioeconomic group, 2015)

Rank	Socioeconomic group			
	1 Lowest	2	3	4 Highest
1st	Coronary heart disease (7.7%; 15.5)	Coronary heart disease (7.4%; 13.5)	Coronary heart disease (6.7%; 11.5)	Coronary heart disease (6.1%; 11.5)
2nd	COPD (4.3%; 8.4)	COPD (4.0%; 7.4)	Back pain and problems (4.0%; 7.8)	Back pain and problems (4.2%; 7.8)
3rd	Back pain and problems (3.9%; 9.0)	Dementia (3.8%; 6.3)	Dementia (3.8%; 6.1)	Anxiety disorders (4.0%; 6.1)
4th	Lung cancer (3.7%; 7.5)	Back pain and problems (3.8%; 8.2)	COPD (3.7%; 6.5)	Dementia (3.7%; 6.1)
5th	Dementia (3.4%; 6.0)	Lung cancer (3.7%; 6.9)	Anxiety disorders (3.3%; 6.8)	COPD (3.7%; 6.1)
6th	Type 2 diabetes (2.8%; 5.7)	Depressive disorders (3.0%; 7.0)	Lung cancer (3.3%; 5.8)	Depressive disorders (3.2%; 6.1)
7th	Anxiety disorders (2.8%; 7.1)	Stroke (2.8%; 5.1)	Depressive disorders (3.2%; 6.6)	Suicide and self-injury (3.1%; 6.1)
	Suicide and self-injury (2.8%; 5.1)	Stroke (2.8%; 5.1)	Suicide and self-injury (3.2%; 6.6)	Suicide and self-injury (3.1%; 6.1)

Growth is *not uniform* across N.S.W.



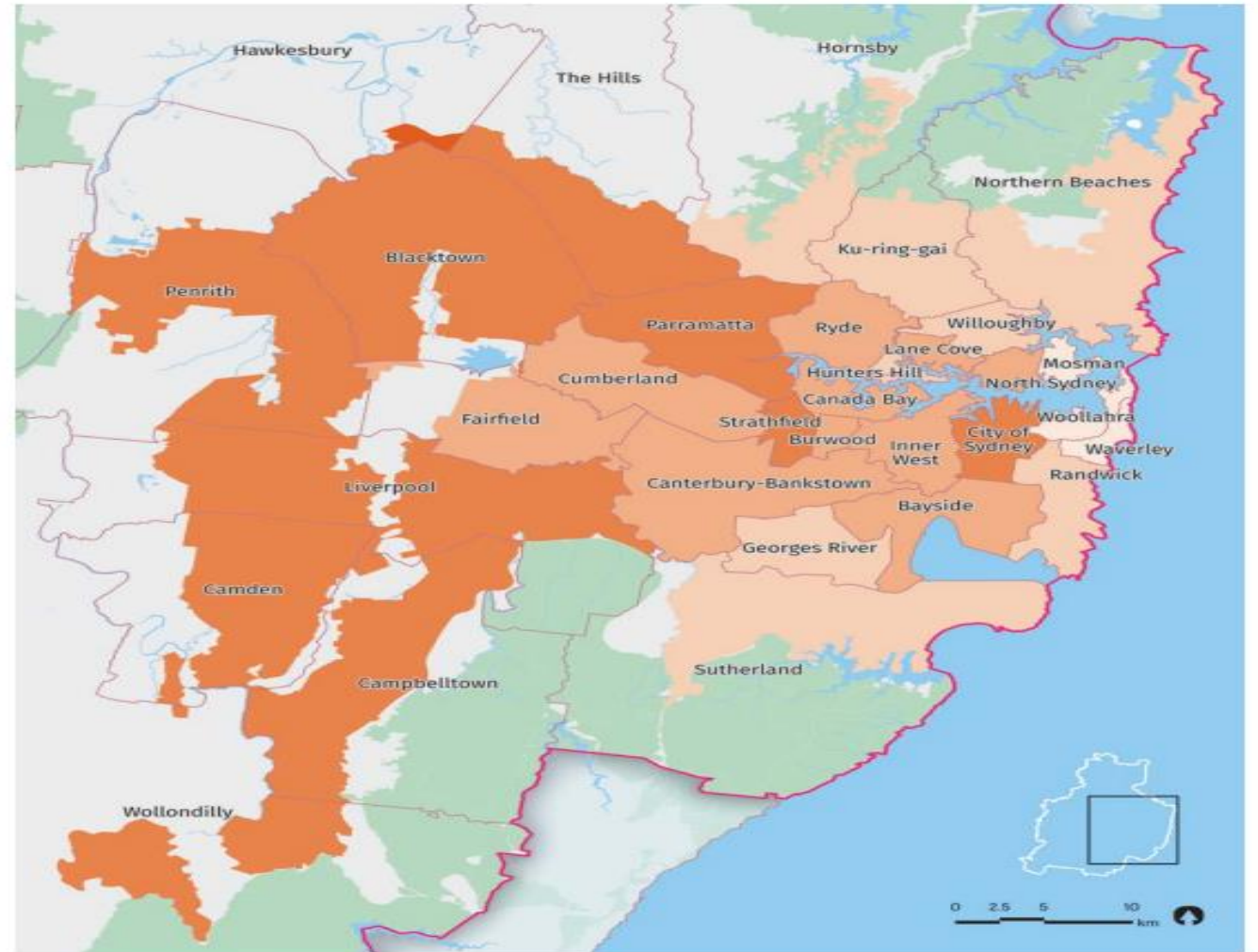
GREATER SYDNEY REGION PLAN

A Metropolis of Three Cities

– connecting people



Figure 12: Projected spatial pattern of population increase over 65 years from 2016 to 2036

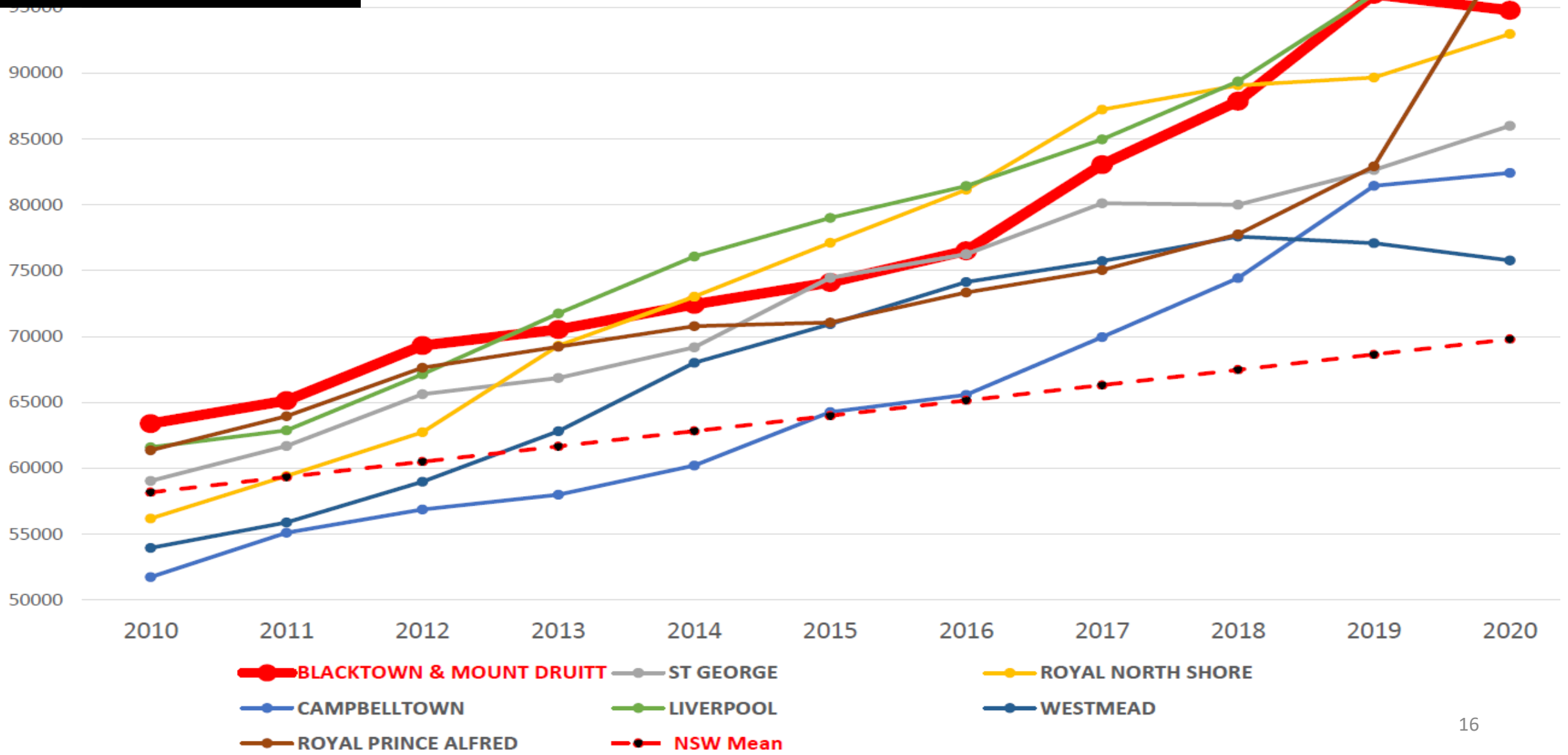


Source: NSW Department of Planning and Environment

...nor are the effects on the *hospital system*
uniform

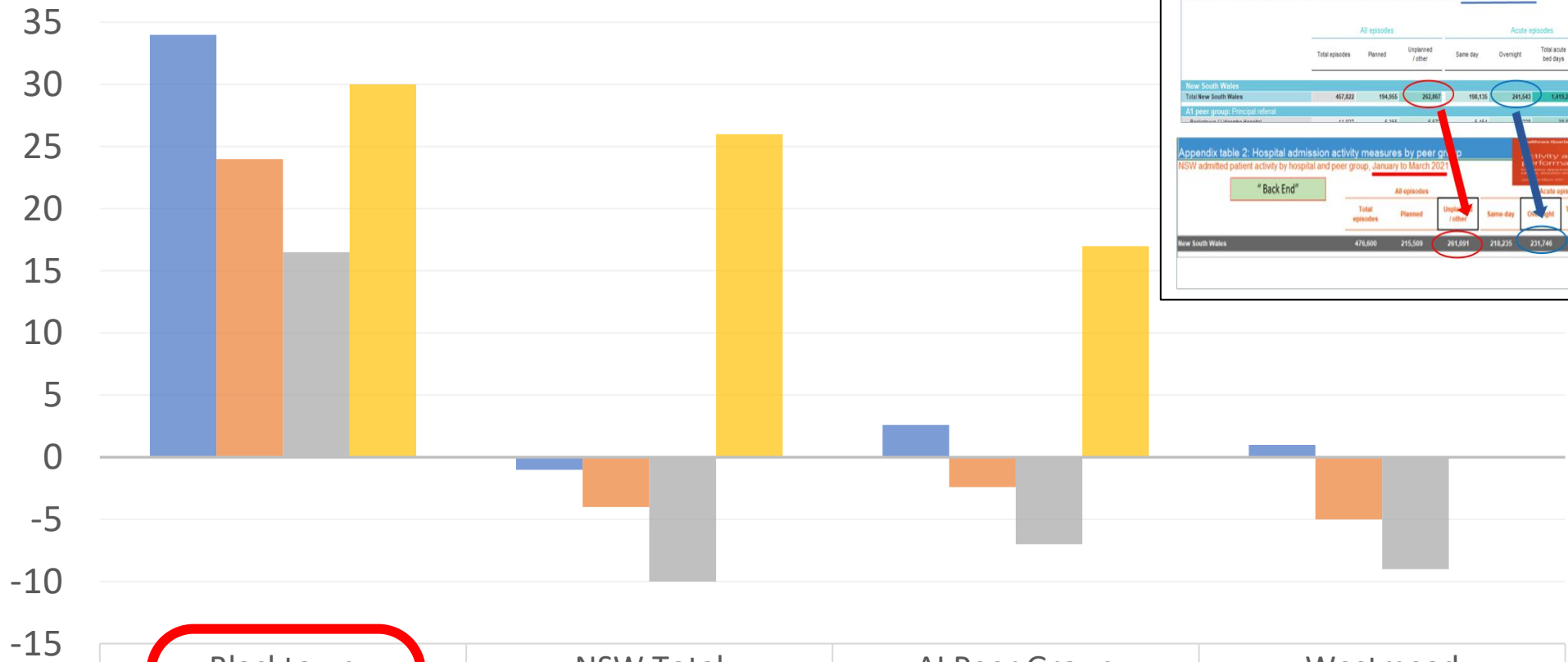
BMDH ED (funnelling to effectively one "back end" department), +/-busiest for ten years

Emergency Department Presentations, 2010 – 2020 (B.H.I.)



Inpateints: Percentage Change 2013 to 2021

(source : B.H.I. Quarterly Reports)



Appendix: activity by hospital and peer group

Appendix table 1b: NSW admitted patient activity by hospital and peer group, July to September 2013

	All episodes			Acute episodes			
	Total episodes	Planned	Unplanned / other	Same day	Overnight	Total acute bed days	Average length of stay (days)
New South Wales							
Total New South Wales	457,822	194,955	262,867	195,135	241,941	1,419,251	3.2
AI peer group: Principal referral	11,077	5,362	5,715	2,464	3,251	20,948	3.9

Appendix table 2: Hospital admission activity measures by peer group
NSW admitted patient activity by hospital and peer group, January to March 2021

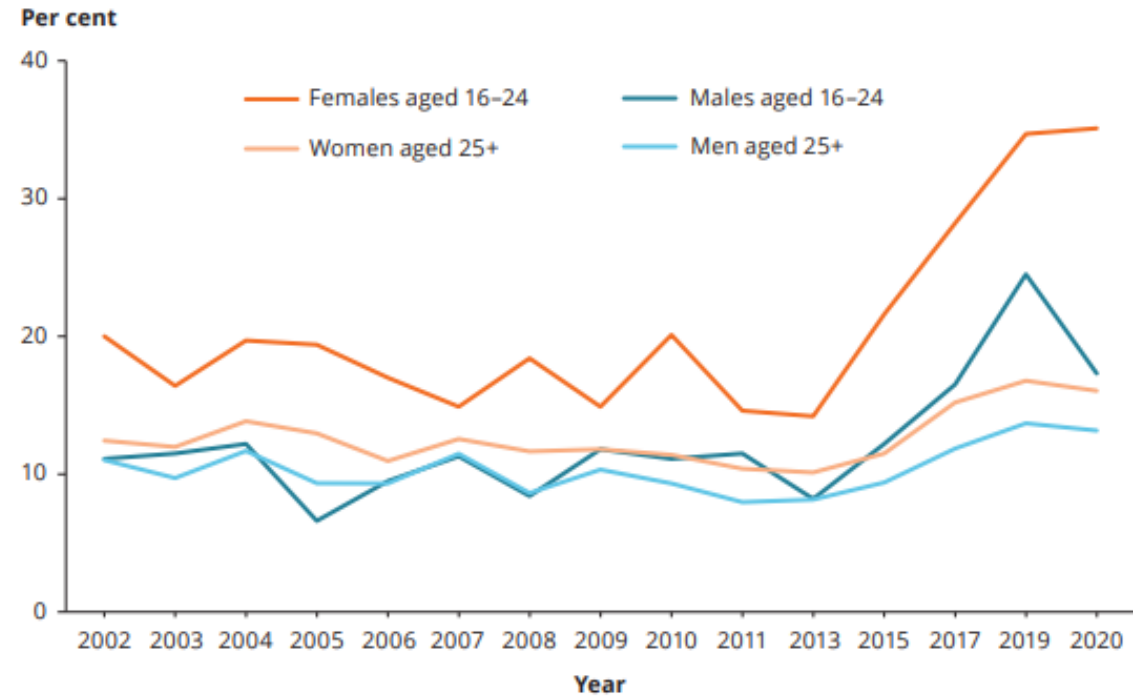
	All episodes			Acute episodes			
	Total episodes	Planned	Unplanned / other	Same day	Overnight	Total acute bed days	Average length of stay (days)
New South Wales	476,660	215,509	261,091	218,235	231,746	1,277,065	2.8

	Blacktown	NSW Total	AI Peer Group	Westmead
■ Unplanned Episodes	34	-1	2.6	1
■ Overnight Episodes	24	-4	-2.4	-5
■ Total Acute Bed Days	16.5	-10	-7	-9
■ E.D. Presentations	30	26	17	17

Newer **models of care** are appropriate to more effectively meet emerging health challenges.



Figure 8.1: Persons aged 16 and over reporting high or very high psychological distress, by age group and sex, 2002 to 2020



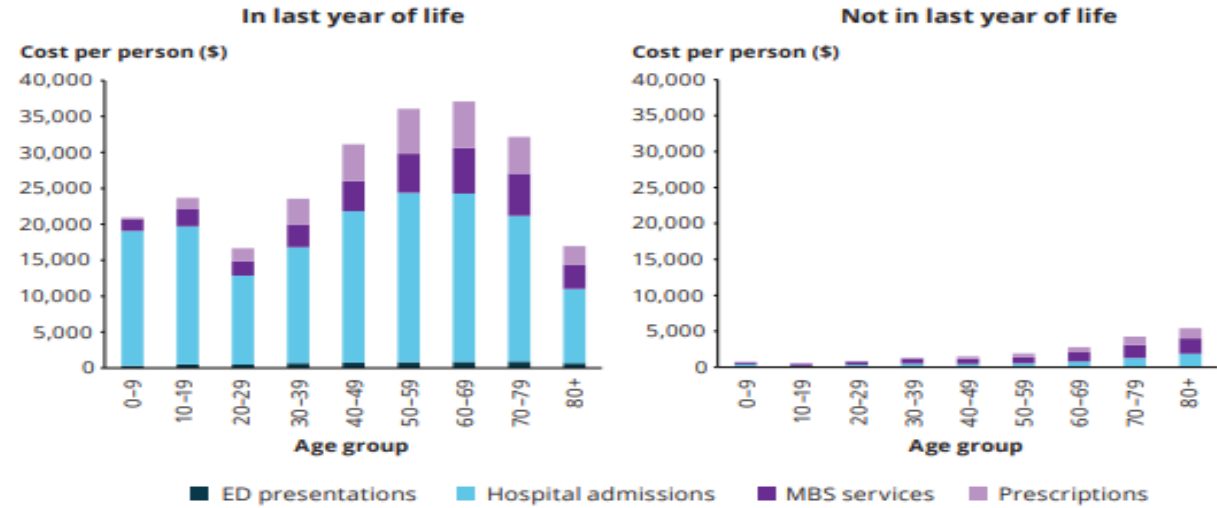
Notes

1. K10 is a 10-item questionnaire that measures anxiety, depression, agitation, and psychological fatigue in the most recent 4-week period.
2. People whose responses had a K10 score of 22 or above were indicated to have high or very high distress.
3. The K10 questions were included in the NSW Population Health Survey every year between 2002 and 2011. After 2011 and until 2019, they were included every second year. The questions were also included in the 2020 survey.
4. The indicator shows self-reported data collected through Computer Assisted Telephone Interviewing. To counter diminishing coverage of the population by landline telephone numbers (<85% since 2010), a mobile phone number sampling frame was introduced in the 2012 survey.
5. The inclusion of mobile phone numbers has substantially increased the Aboriginal sample and this change in design means that the 2012 NSW Population Health Survey estimates reflect both changes that have

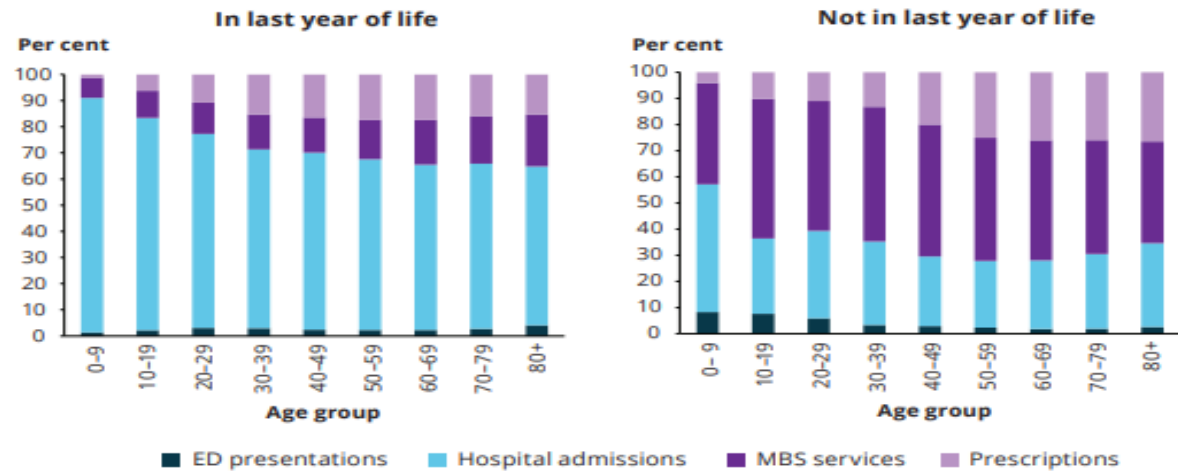


Figure 6.4: Average annual health service cost (a) and relative proportion of total average annual health service cost (b) per person, by age group, health service type, and whether in the last year of life

(a) Average annual cost per person



(b) Relative proportion of total average annual cost per person



Source: AIHW analysis of the National Integrated Health Services Information Analysis Asset (version 0.5).

Patients' abilities to *access* certain types of health facilities is **varied**

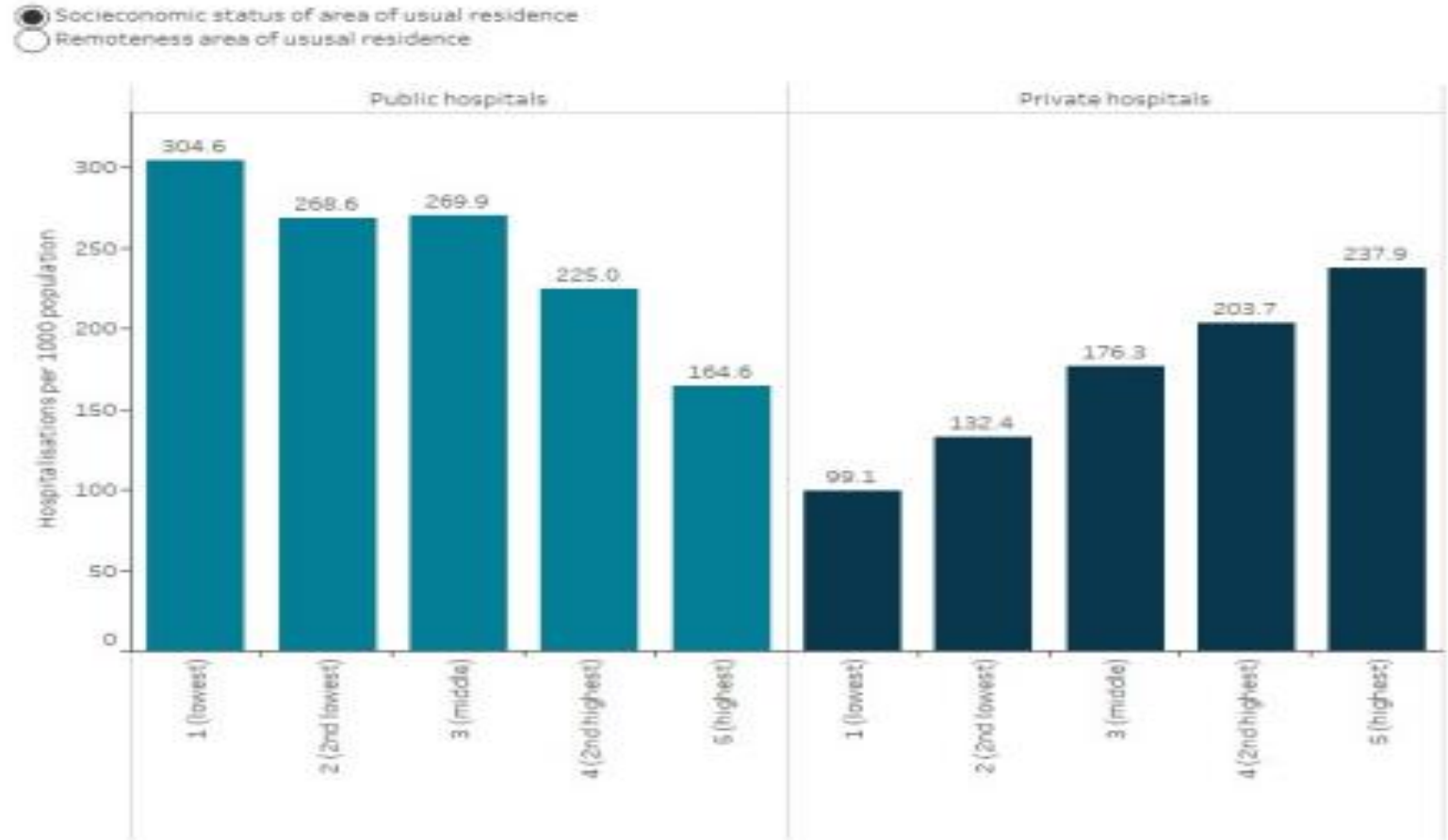
Australia's hospitals at a glance

Web report | Last updated: 29 Jul 2022 | Topic: [Hospitals](#) |

Citation

AIHW
Australian Institute of Health and Welfare (2022) [Australia's hospitals at a glance](#), AIHW, Australian Government, accessed 02 August 2022.

Figure 6: Hospitalisations per 1,000 population by socioeconomic status and remoteness, 2020-21



Source: NHMD 2020-21
<http://www.aihw.gov.au/>

Table 1.8: People who died from COVID-19 in Australia, by socioeconomic area, as at 30 April 2022

IRSD quintile	Deaths	Rate (per million)	95% CI	Age-standardised rate (per million)	95% CI
Males					
1 (lowest)	1080	462	434-489	143	130-156
2	676	274	254-295	93	83-104
3	538	211	193-229	80	70-91
4	465	174	158-190	73	63-83
5 (highest)	328	126	112-140	53	44-62
Females					
1 (lowest)	790	331	308-354	77	68-85
2	482	191	174-208	50	43-57
3	420	161	146-177	48	40-55
4	320	117	105-130	39	33-46
5 (highest)	199	75	64-85	26	20-31
Persons					
1 (lowest)	1870	396	378-413	105	98-113
2	1158	232	219-246	69	63-75
3	958	186	174-197	62	56-68
4	785	145	135-155	55	49-60
5 (highest)	527	100	92-109	38	33-43

IRSD = Index of Relative Socio-economic disadvantage; CI = confidence interval.

Notes

1. This table includes information on doctor or coroner certified deaths registered by 30 April 2022 and numbers will differ from those reported by disease surveillance systems.
2. Deaths due to COVID-19 in this table have an underlying cause of either ICD-10 code U07.1 - COVID-19, virus identified or U07.2 - COVID-19, virus not identified.
3. The analysis uses IRSD, which ranks areas in Australia according to relative socioeconomic disadvantage. Socioeconomic group 1 represents people living in the lowest socioeconomic areas (most disadvantaged) and group 5 represents people living in the highest socio-economic areas (least disadvantaged)
4. The 95% CI is the range of values that are likely to contain the true estimate with 95% confidence.
5. Data are provisional and will change as additional data are received.

Source: ABS customised report.

However outcomes *can be modified* even in those with a lower I.R.S.D., if well planned with **value adding partnerships** + when **I.T.** is utilised wisely.

Managing COVID-19 services in the community

Prof Golo Ahlenstiel
Medical Lead, COVID inTouch, ICP
Chair of Medicine Blacktown Mount Druitt Hospital
Clinical Network Director, Specialty Medicine, WSLHD



Health
Western Sydney
Local Health District



And how did we do?

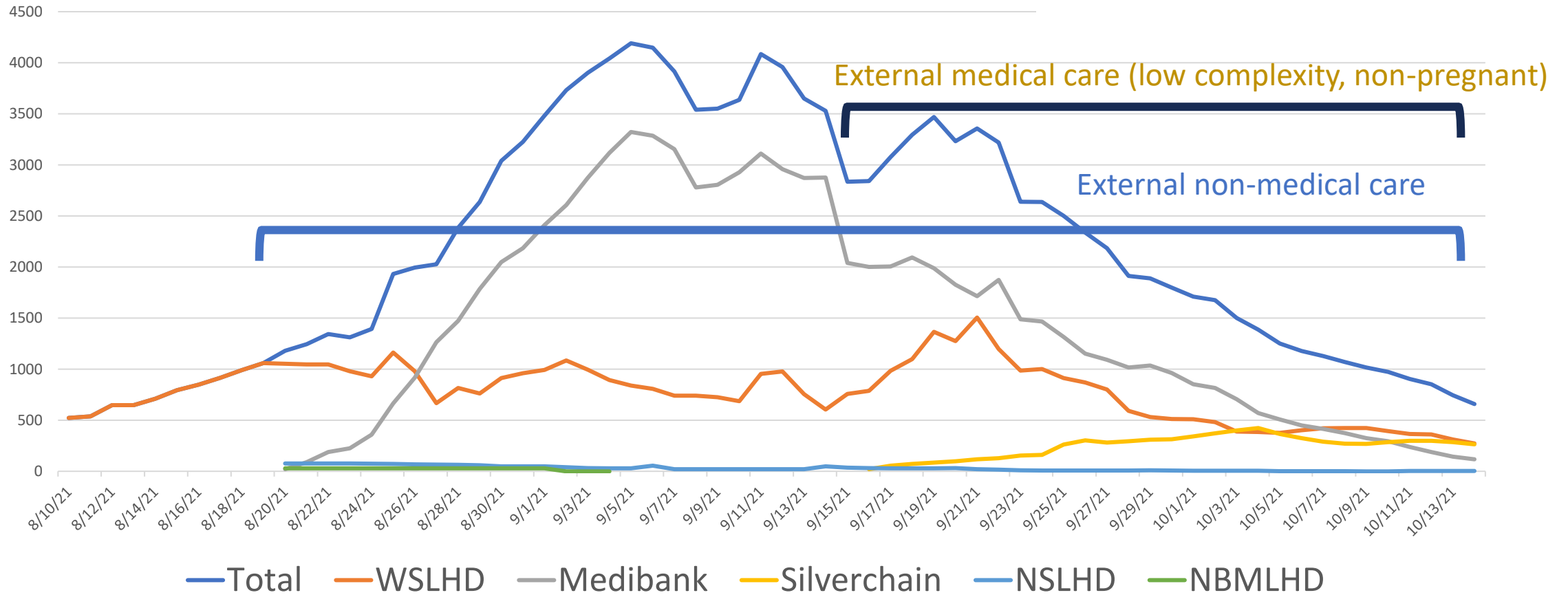


	Condition	WSLHD - inTouch	NSW
Morbidity	admitted (total)	4.6%	25%
Mortality	Actual (intention to treat)	0.04% (0.23%)	1.4%

P<0.0001

Lesson 8. The Power of Partnerships

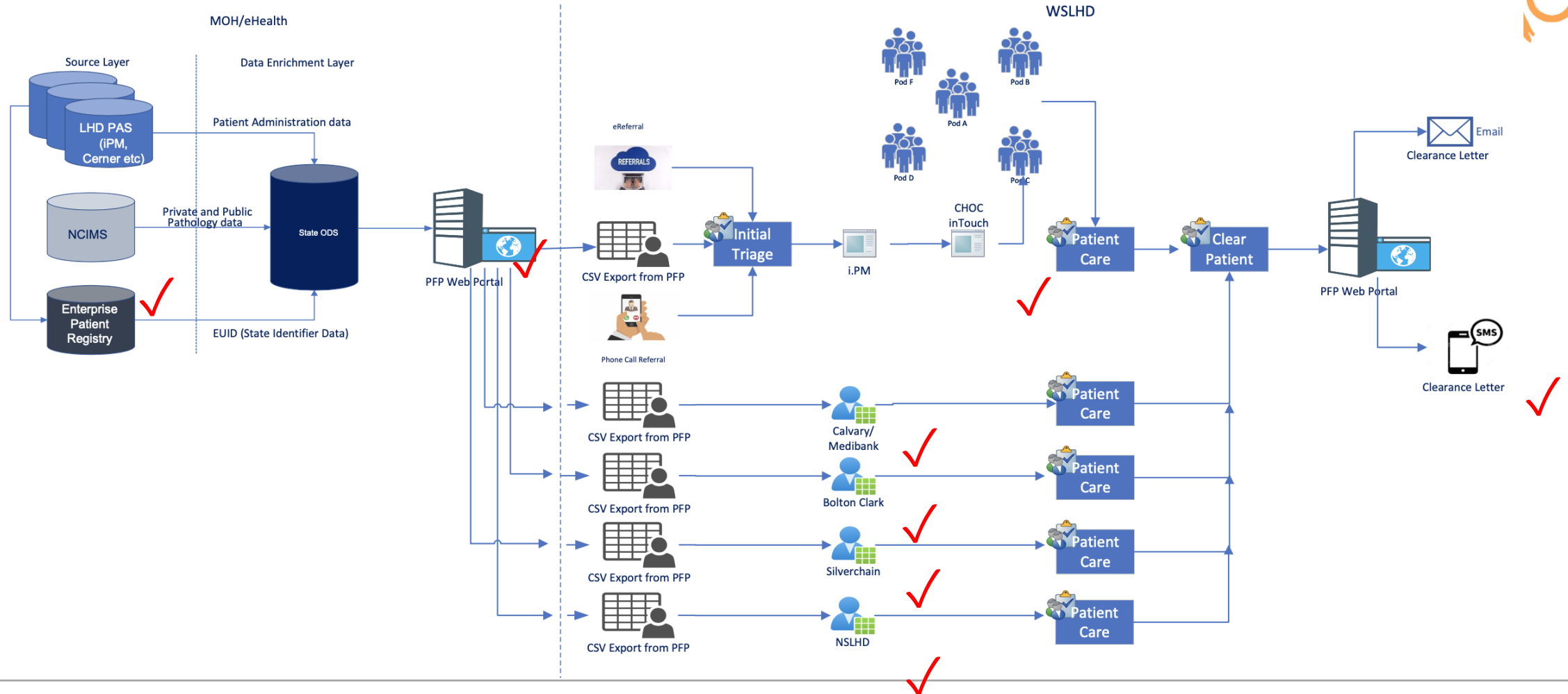
[aim for superiority, but you may have to accept non-inferiority in a pandemic]

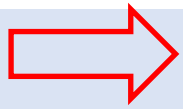


Lesson 14. Be solution focused and “Don t be shy to about asking”

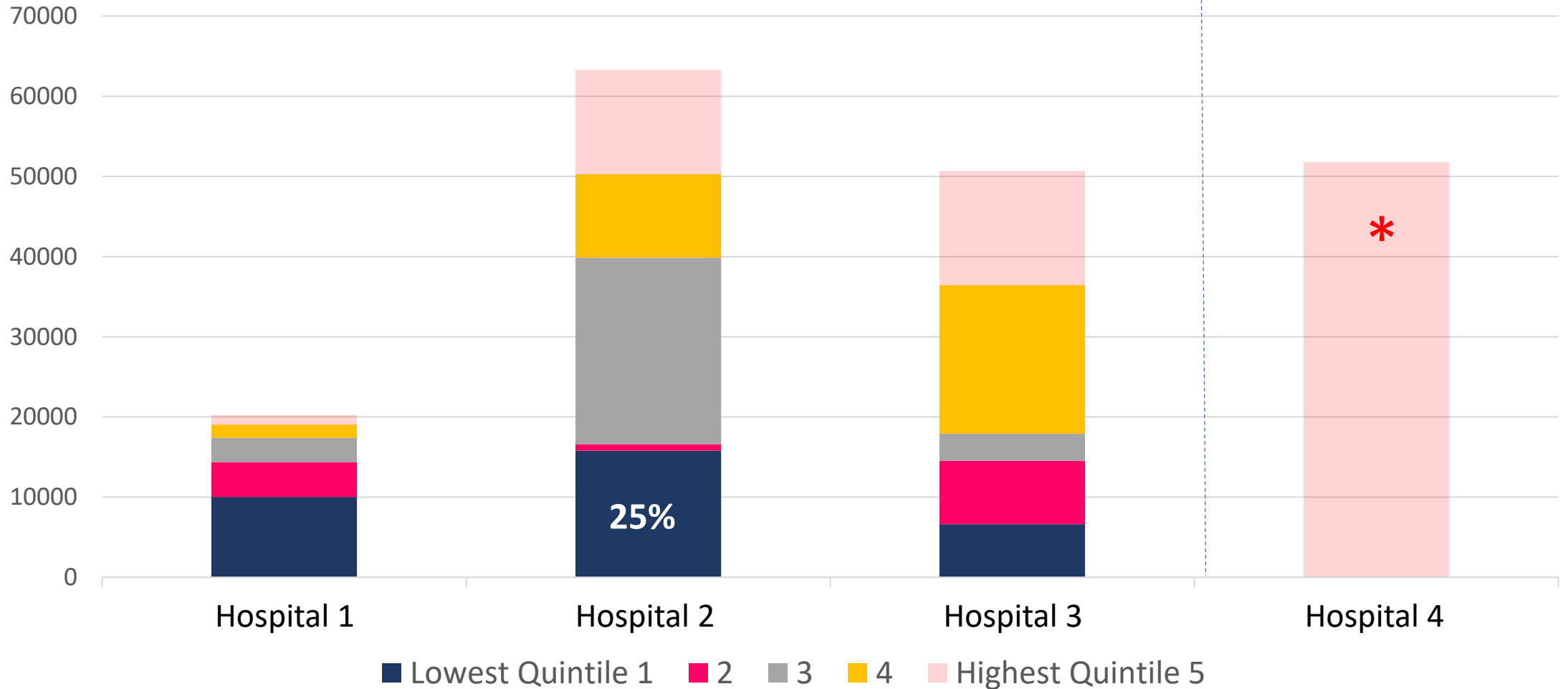


Future State





Are All E.D.'s treating patients with the same Health Literacy? *by Quintile , 2020*



Lower I.R.S.D. LGA's should have the **best** staffing (*see slides 4 and 6*)

2021, B2 Hub :

- Executive Director,

System Information and Analytics at NSW Health (+ “The Francis Report”)

“What must we do to attract more “high fraction” Staff Specialists to Bt ?”

- Director General (2011) – *asked the same question (and also in 2000)*

Blacktown and Campbelltown are special cases due to

- **socioeconomic status** and
- **growth**

therefore ...consider special arrangements.

Recruitment strains

(Note: Not limited to psychiatrists in Western Sydney)



Australian Government
Productivity Commission

Mental Health

Productivity Commission
Inquiry Report
Volume 2

No. 95, 30 June 2020

Australia relies heavily on the immigration of overseas-trained psychiatrists. The share of psychiatrists trained overseas (excluding New Zealand) has grown from about 30% to over 36% from 2013 to 2018. Immigration has major advantages in reducing the time taken to increase the workforce, brings diversity of backgrounds and expertise, and reduces net training costs. However, overseas-trained clinicians may also encounter more pronounced language and/or cultural adjustment where treatment relies on good communication. In addition, it may not always be easy to attract such professionals and there are benefits in some self-sufficiency. Above all, the need to attract overseas-trained psychiatrists without existing Royal Australian and New Zealand College of Psychiatrists (RANZCP) registration is a sign of workforce pressures.



...hence “costs of production” may differ (slide 8)

WSLHD, the Blacktown population and low health literacy



Table 1. The prevalence of LHL in the Blacktown local government area (LGA) by domain (6 and 9).

Age Groups	Total Population 2020 (n = 258,223)	LHL Population (Domain 6) (n = 53,451)	% of LHL (Domain 6)	LHL Population (Domain 9) (n = 35,667)	% of LHL (Domain 9)
20–24 years	24,368	12,050	49.45	3979	16.33
25–34 years	56,171	2663	4.74	2663	4.74
35–44 years	55,807	13,667	24.49	6741	12.08
45–54 years	44,218	14,888	33.67	10,573	23.91
55–64 years	36,522	6428	17.60	2410	6.6
≥65 years	41,137	3756	9.13	9301	22.61

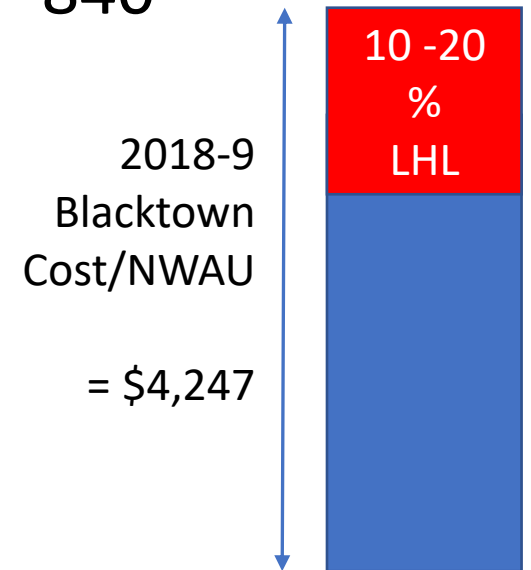
Table 2. Total extra direct health care costs incurred due to LHL by type of chronic disease group in the Blacktown LGA (Domain 6).

Type of Chronic Disease Group	Direct Health Care Cost (\$)	Direct Health Care Cost (%)
Cardiovascular disorders	1,680,869	18.3
Musculoskeletal disorder	1,886,681	20.6
Mental illness	2,269,347	24.8
Cancer	1,298,083	14.2
Chronic Kidney Disease	665,277	7.3
Respiratory disorders	705,970	7.7
Diabetes	660,182	7.2

LHL Cost - quantifying a previously unrecognised *increased Cost of Production.*

- In 2018-9, Blacktown campus generated 70,690 N.W.A.U *
- Low Health Literacy additional cost per N.W.A.U. = \$424 - 840 ^
- Blacktown total cost/N.W.A.U. = \$ 4,257

➔ 10-20 % of Blacktown's cost of production was due to LHL.



(Based on ABM Portal *and WSU Economic analysis^)



Healthcare & Social Security

The change the Whitlam Government enacted in the area of healthcare was transformative.

Medibank

“The primary achievement of the Whitlam Government *in health* was the **creation of Medibank**, Australia’s national health insurance system.

The system would provide free access to hospitals and a range of other medical services. The maximum gap between a doctor’s fee and the Medibank rebate was to be \$5.

Medibank was designed to provide health coverage for the **17% of Australians** who did not have, or could not afford private health insurance”.

The A.B.S. *now* provides a means to objectively recalibrate funding at relevant intervals

All four SEIFA Indexes / 4, per S.A. 1

ABS:
S.E.I.F.A
Score



Table 1 Statistical Area Level 1 (SA1) SEIFA Summary, 2016

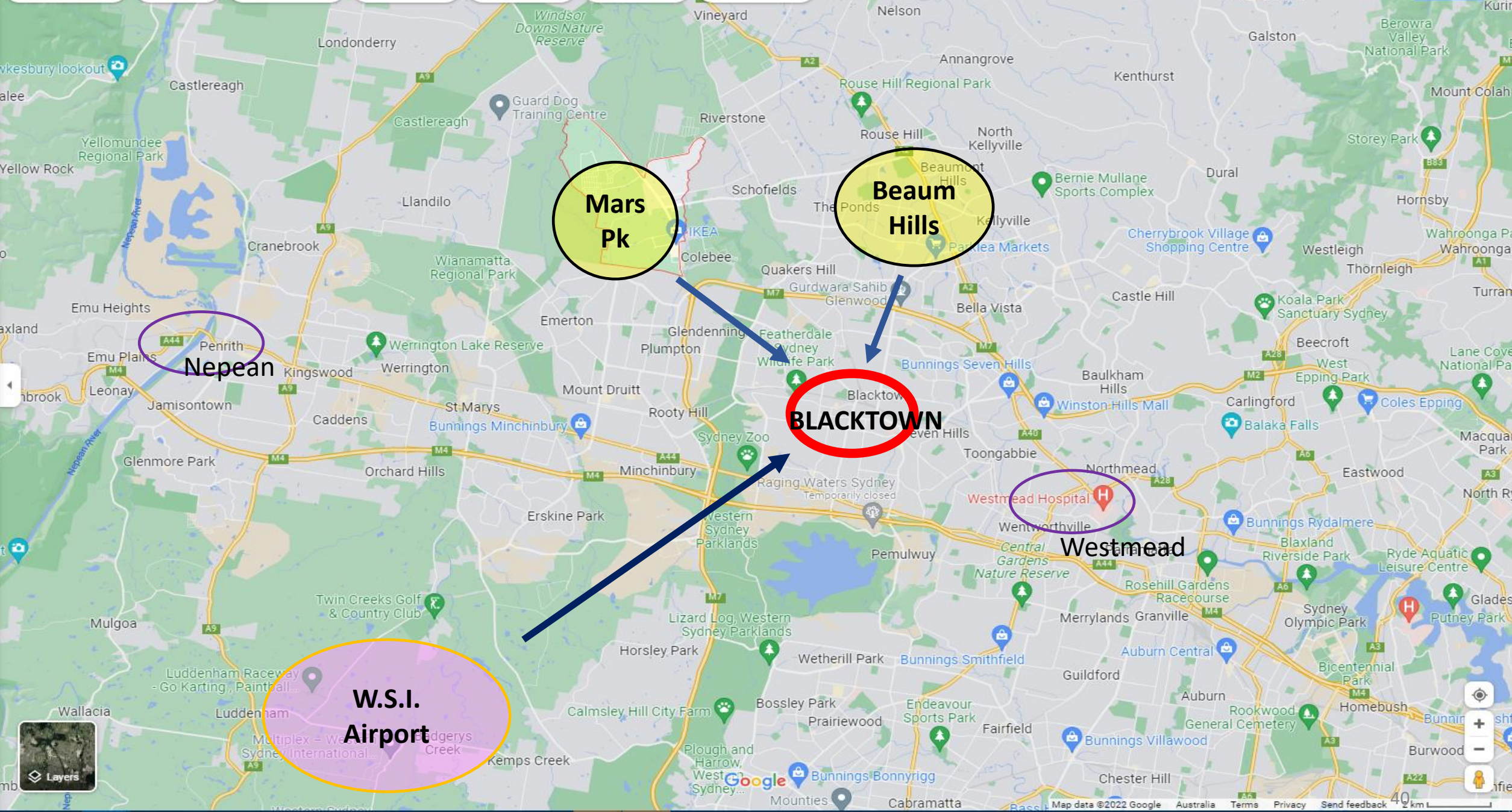
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1100709	1.01E+10	7	8	9	7
1100708	1.01E+10	7	7	8	9
1100707	1.01E+10	6	6	6	7
1100706	1.01E+10	4	3	5	3
1100705	1.01E+10	3	3	4	5
1100704	1.01E+10	4	4	4	5
1100703	1.01E+10	4	4	3	6
1100702	1.01E+10	7	7	8	7
1100701	1.01E+10	4	4	5	5
1100710	1.01E+10	6	5	6	6
1100801	1.01E+10	6	5	6	4
1100802	1.01E+10	7	7	8	6
1100803	1.01E+10	1	1	1	1
1100804	1.01E+10	2	2	2	2
1100805	1.01E+10	1	1	1	1
1100806	1.01E+10	5	5	6	3
1100807	1.01E+10	4	3	3	4
1100808	1.01E+10	3	4	4	4
1100810	1.01E+10	9	8	10	7
1100811	1.01E+10	6	6	6	5
1100812	1.01E+10	10	10	9	9
1100813	1.01E+10	9	8	9	7
1100814	1.01E+10	7	7	8	6
1100815	1.01E+10	4	3	3	3
1100816	1.01E+10	1	1	1	2
1100817	1.01E+10	4	4	4	3
1100818	1.01E+10	4	3	2	2
1100819	1.01E+10	8	8	10	6
1100820	1.01E+10	5	5	6	4
1100821	1.01E+10	8	8	10	5
1100822	1.01E+10	9	8	10	6
1100823	1.01E+10	6	7	7	7
1100901	1.01E+10	7	7	6	7
1100902	1.01E+10	5	6	7	5
1100904	1.01E+10	7	7	9	6
1100905	1.01E+10	5	5	6	5
1100907	1.01E+10	4	4	3	6

(Socioeconomic weighting /NWAU could be derived and applied based on SEIFA x ED presentation number)

... which will provide a dynamic and transparent mechanism for achieving

1. **Equity of Outcomes** (slides 2-6) and

2. Auditable, appropriate **financial accountability**,
systemwide



Mars Pk

Beaum Hills

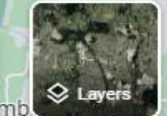
Nepean

W.S.I. Airport

BLACKTOWN

Westmead Hospital

Westmead



OUR GREATER SYDNEY 2056

Central City District Plan

– connecting communities



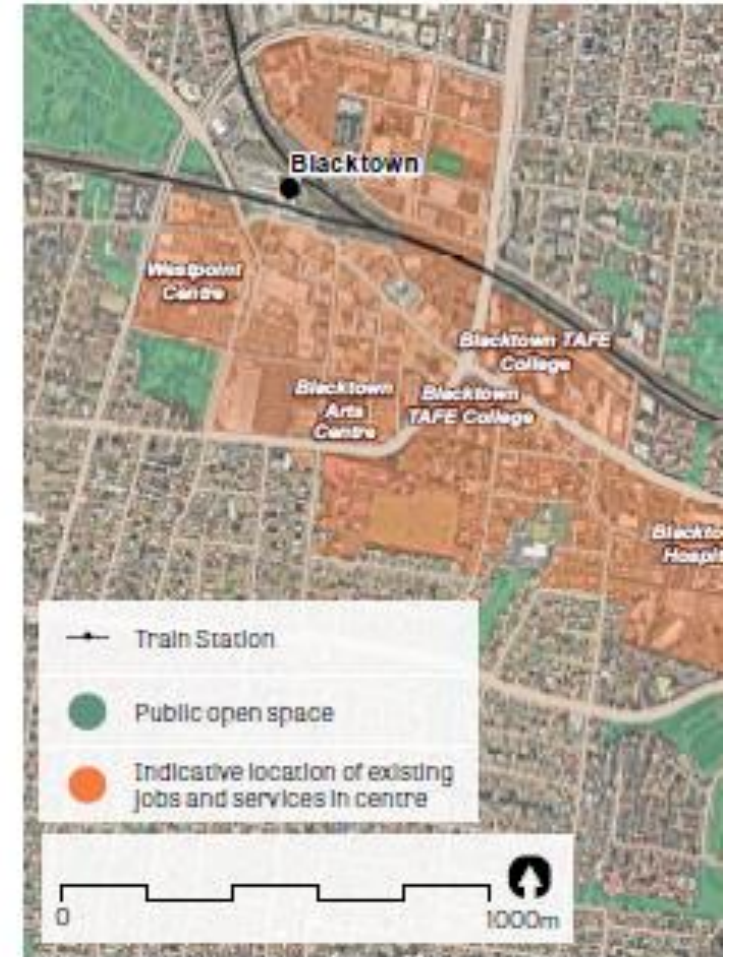
March 2018

Blacktown

Blacktown offers a variety of business, retail, mixed-use residential and administrative functions that create vibrancy and attract investment, employment and diversity of housing. It also includes a range of community and cultural facilities such as the Blacktown Arts Centre and Library. Blacktown Station is the confluence of the Western and Richmond Rail Lines, and the North West Transitway connects it with The Hills.

Blacktown City Council has a range of initiatives that seek to shape the future of Blacktown City Centre. These include the redevelopment of the Warrick Lane Precinct, securing a university campus for Blacktown, facilitating development of the health and education precinct and developing an office accommodation strategy for council's future.

Blacktown Hospital and Clinical School form part of the District's health facilities and specialist services. **The expansion of Blacktown Hospital will make it the third-largest public hospital in NSW generating**



Data sources: Public open space – Sydney Open Space Audit (DPE 2018)

End

Apendixes

Life expectancy in Australia's Commonwealth Electoral Divisions, 2016–2018

Michael Roden
Statistics and Mapping

Socio-economic and Indigenous status

“The remoteness of an area does not of itself determine life expectancy, but rather is indicative of relationships with a range of direct and indirect health risk factors such as those previously mentioned. **Nevertheless the findings point to two factors long associated with health outcomes: socio-economic status (SES) and Indigenous status.** The ABS[5] reports that life expectancy is on average 8.2 years lower for Aboriginal and Torres Strait Islanders than the non-Indigenous population, **while the NSW Government[6] recently cited a 4.8 year e(0) gap between the highest and lowest SES quintile areas in that state.**

Figure 4 shows the association between SES and life expectancy across the 151 divisions ($r^2=0.64$, $p<0.0000$).[7] **The gradient indicates that for every 50 points (i.e. more advantage) on the 2016 Census Index of Relative Socio-economic Advantage and Disadvantage (SEIFA) an extra year of life expectancy is gained.**

The median life expectancy in the most advantaged quintile of 85.3 is 3.7 years higher than the median in the least advantaged quintile (81.6). Such results are consistent with earlier studies examining the effect that relative disadvantage and/or geographic remoteness has on mortality across Australia.[8] [9]

By adding divisional population proportions of Aboriginal and Torres Strait Islanders to the regression model, the predictive power increases to an adjusted r^2 of 0.84 ($p<0.0000$). **Thus 84 per cent of the variation in divisional life expectancy can be explained by SES and Indigenous status.**[10] These factors do not inherently determine life expectancy, but do point towards many of the known causes of better and poorer health outcomes”.

Local Residential growth, accessible to employment

1. **Most houses added** over next 20 years in “Central City District” (includes Bt)
2. **Adjacent aerotropolis**



NSW GOVERNMENT Greater Sydney Commission

GREATER SYDNEY REGION PLAN

A Metropolis of Three Cities

- connecting people

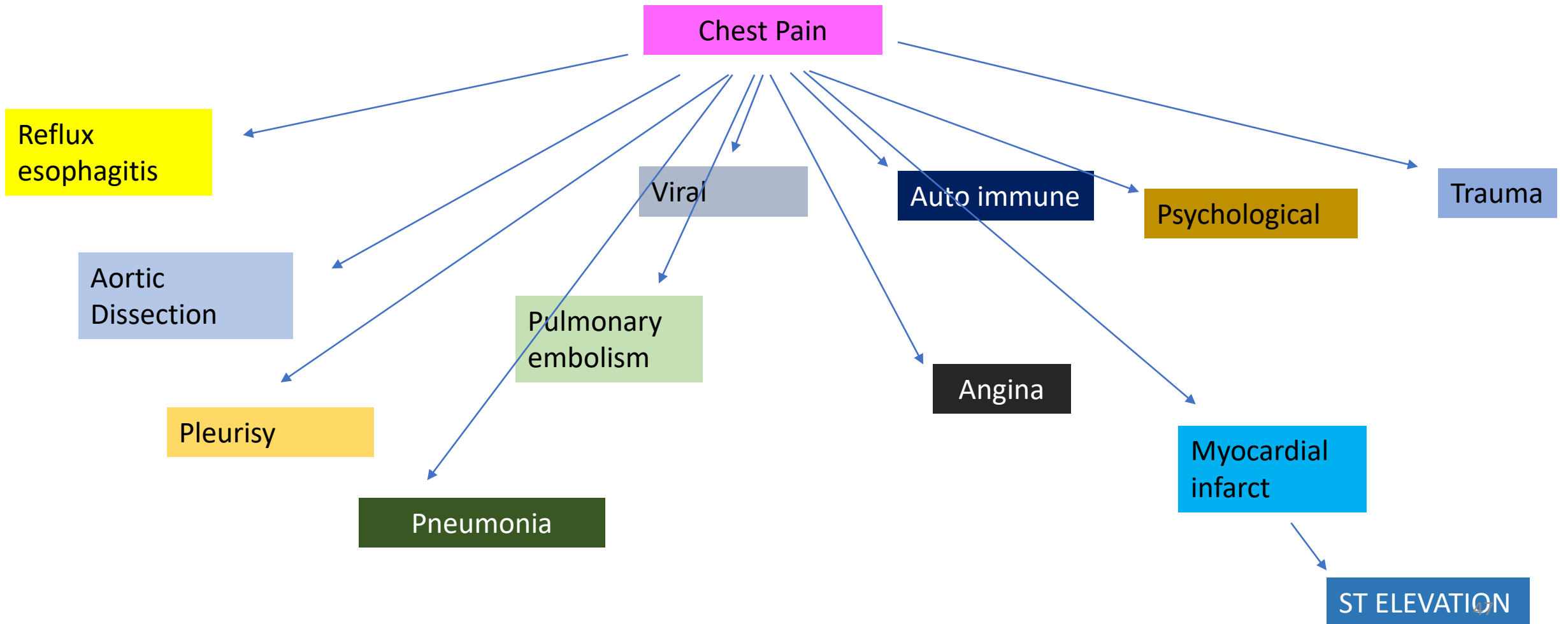
NSW GOVERNMENT WESTERN SYDNEY PLANNING PARTNERSHIP

Western Sydney Aerotropolis Plan

September 2020

	Total episodes	Unplanned / other	Overnight
New South Wales	469,631	270,040	237,365
A1 peer group: Principal referral			
Bankstown-Lidcombe Hospital	11,866	6,108	5,615
Concord Repatriation General Hospital	15,238	5,418	4,667
Gosford Hospital	13,993	9,367	8,480
John Hunter Hospital	19,623	1 10,468	10,637
Liverpool Hospital	22,306	2 13,242	11,367
Nepean Hospital	16,056	3 10,053	8,789
Prince of Wales Hospital	12,325	6,637	5,513
Royal North Shore Hospital	19,935	4 12,252	10,249
Royal Prince Alfred Hospital	20,454	5 11,833	10,499
St George Hospital	16,318	9,187	8,562
St Vincent's Hospital Sydney	10,934	5,350	4,289
Westmead Hospital	25,166	6 11,263	10,896
Wollongong Hospital	13,431	9,449	8,014
Total A1 peer group	218,070	120,628	107,931
B peer group: Major			
Auburn Hospital	4,025	2,956	2,160
Blacktown Hospital	10,803	8,268	7,132
Mount Druitt Hospital	2,544	1,410	1,112
BMDH	13,347	7 9,678	8,244

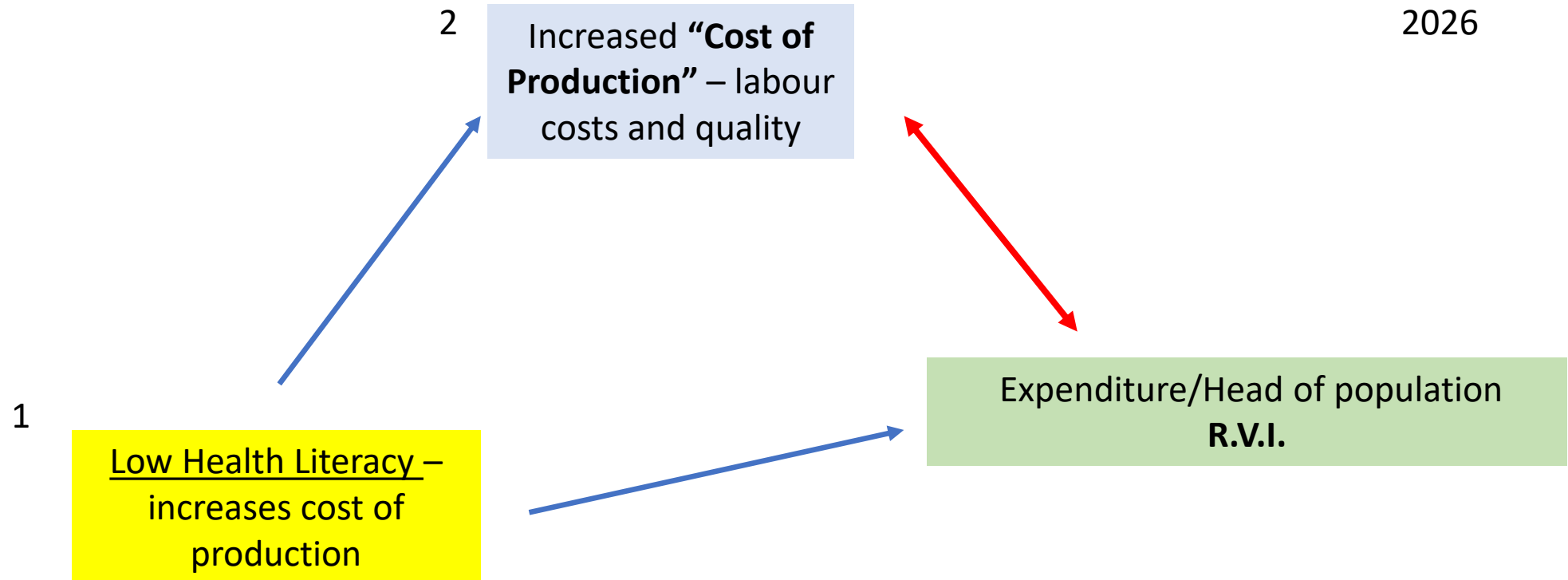
Coming to the most likely “Diagnosis” is core and *pivotal*



SES Direct and Indirect Factors



2026



Concluding... "Further, the **gap** in health outcomes between the **most disadvantaged** in cities and the **most advantaged**, exceeded the gap attributed to rurality".

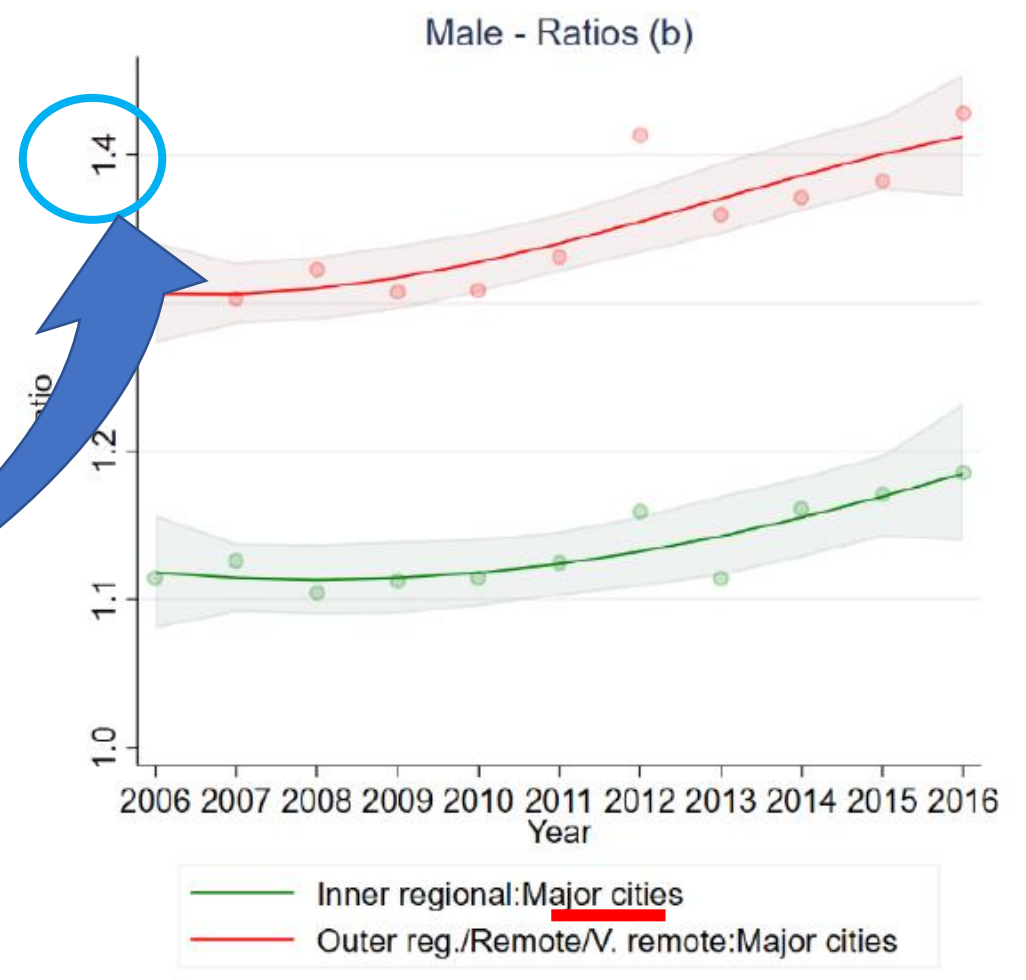
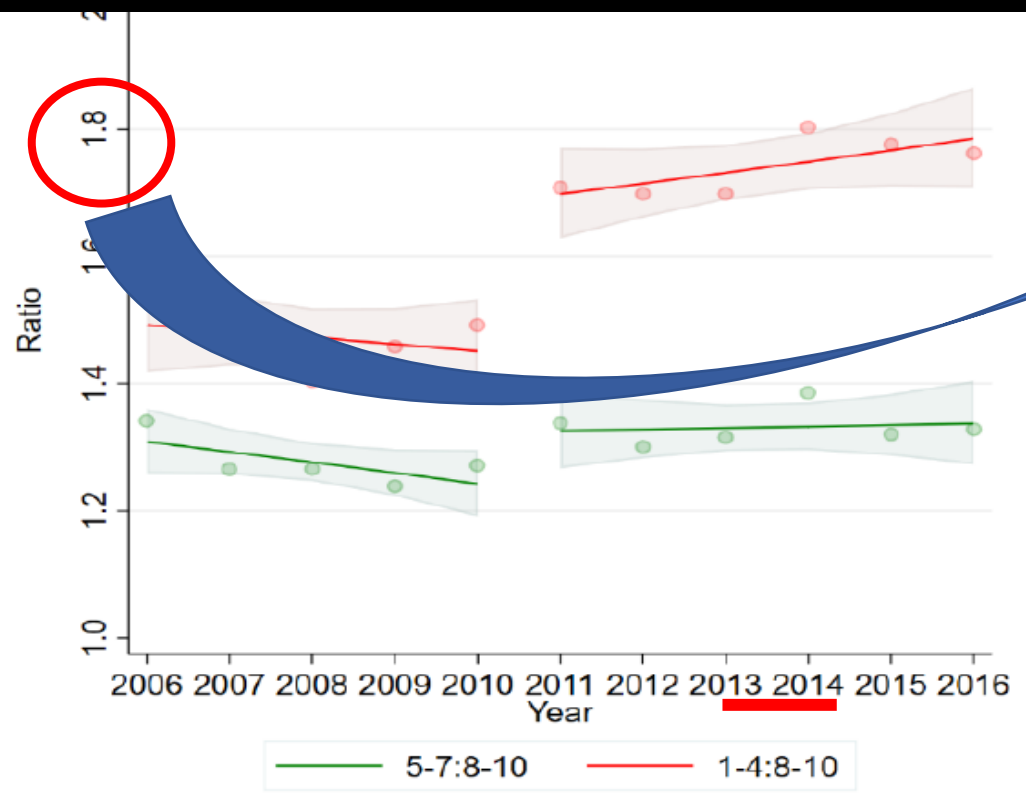


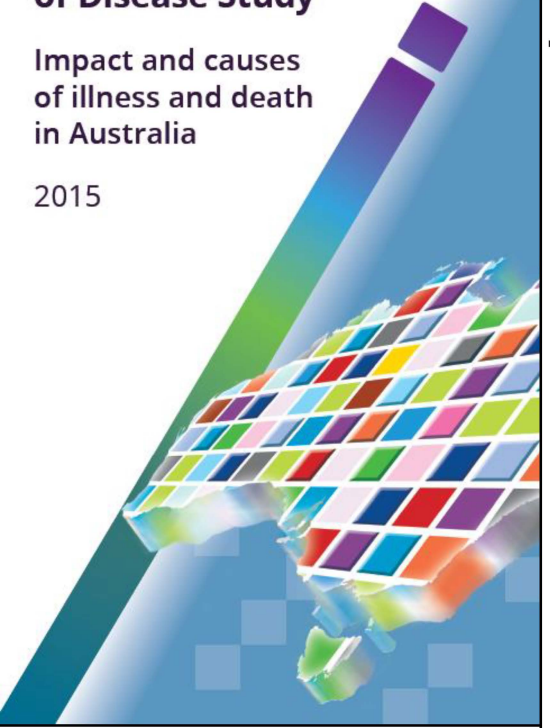
Figure 2: ASDR (per 100,000) by sex and remoteness: trends and ratios (versus Q5), 35-74 years, Australia, 2006-16

Figure 3: ASDR (per 100,000) by sex and major cities area socio-economic decile group (1-4, 5-7, 8-10): trends and ratios (versus 8-10), 35-74 years, Australia, 2006-10 and 2011-16

**Australian Burden
of Disease Study**

Impact and causes
of illness and death
in Australia

2015



**Change in disease ranking and age-standardised DALY rate (DALY per 1,000 population),
2003 and 2015**

