Health and ageing: Waste in the System

Dr Steve Hambleton

- Member of the Health Care Home Implementation Advisory Group - Former Chair Primary Health Care Advisory Group
- Australian Digital Health Agency
  - Deputy Chair My Health Record Expansion Program, Medicines Safety, Clinical Governance Committees
  - Deputy Chair MBS Schedule Review Task Force
  - Member Quality and Safety Commission Atlas of Healthcare Variation Advisory Group

ceda
committee for economic development of australia

Overall, Australia performs well on health outcomes

Life expectancy at birth (years)

Years per capita, 2013

Japan	84
Australia (2)	83
Italy	83
Spain	83
Switzerland	83
Canada	82
France	82
Iceland	82
Luxembourg	82
New Zealand	82
Norway	82
South Korea	82
Israel	82
Sweden	82
Austria	81
Finland	81
Germany	81
Portugal	81
United Kingdom	81
Greece	81
Ireland	81
Netherlands	81
Belgium	80
Denmark	80
Chile	80
Slovenia	80
USA	79

Self-reported health score

(%) of population aged 15+ who report their health to be good/very good, 2011[1]

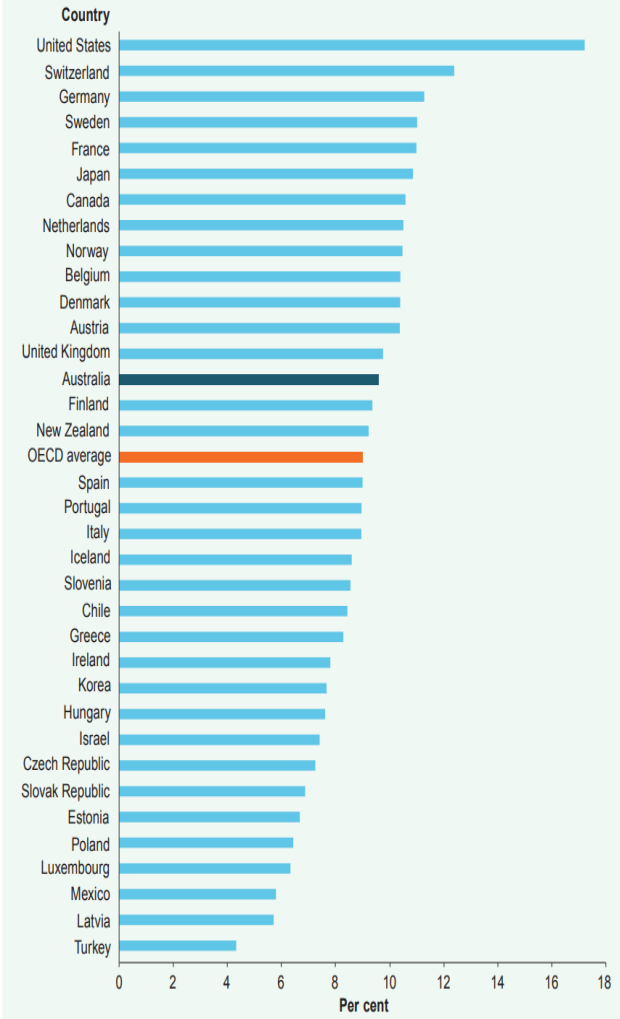
New Zealand	90
Canada	89
USA	88
Australia (4)	85
Israel	84
Ireland	83
Switzerland	82
Sweden	81
Norway	79
Iceland	77
Netherlands	76
Greece	75
United Kingdom	75
Belgium	74
Spain	74
Luxembourg	74
Denmark	71
Austria	70
Turkey	69
Italy	68
France	68
Finland	67
Slovak Republic	66
Mexico	66
Germany	65
Slovenia	63

1 2011 data for most countries. Exceptions: for some countries only prior data is available (2006-2010). Newer data is used (2012-2013) where available

SOURCE: World Health Organization (life expectancy), OECD (self-reported health score)

Health Expenditure as a proportion of GDP

Figure 2.2.5: Health expenditure as a proportion of GDP, using the OECD System of Health Accounts, OECD countries and OECD average, 2016



Source: OECD 2017; Table S2.2.5.

Australian Institute of Health and Welfare 2018. *Australia's health 2018*. Australia's health series no. 16. AUS 221. Canberra: AIHW.

Where is the waste?

There is a potentially preventable hospitalisation for chronic disease in Australia every 2 minutes (285,000) – (a diabetes related amputation every 2-3 hrs)

Price for medical services has little relationship with quality

There is a potentially preventable hospitalisation for **medication misadventure** every 2.3 minutes (250,000) – ($1.4 Billion)

- 70% of Medicare Benefits Schedule's 5700 items had not been reviewed in 30 years

In 2017 chronic disease cost $27 billion - 30% budget
Prevention cost $2 billion 1.34% of expenditure

Disturbing patterns of inequity have emerged from all three Atlases of Healthcare Variation

14% of pathology tests are ordered due to lack of access to patients history

Death rates for remote Australians are **40% higher** for **coronary heart disease**

We are very good at Sick Care but we need to be good at Healthcare

ceda
committee for economic development of australia

Primary Health Care Advisory Group findings

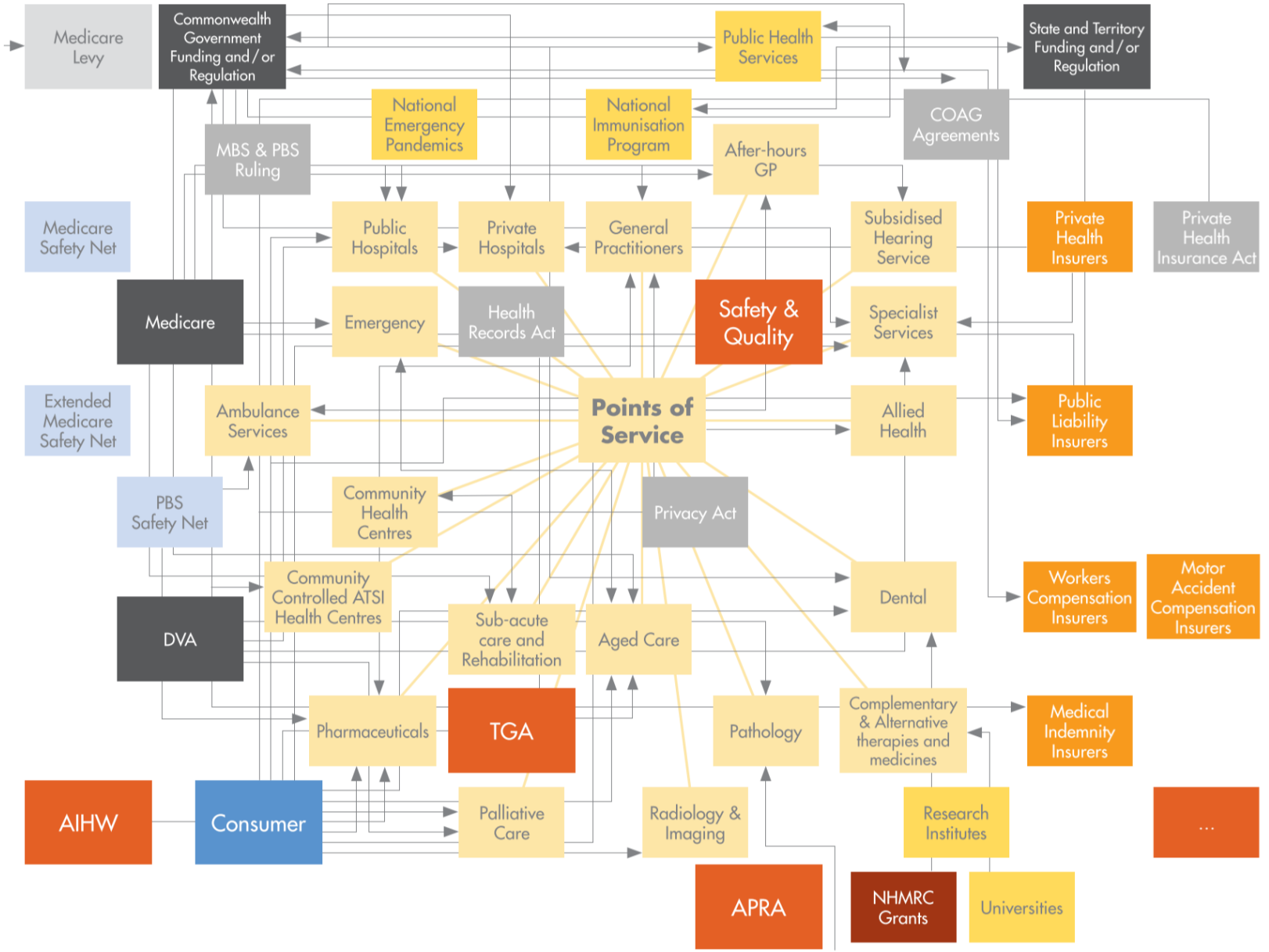
Patient experience

- a fragmented system, with providers and services working in isolation from each other rather than as a team;
- uncoordinated care;
- difficulty finding services they need;
- significant service variation;
- at times, service duplication; at other times, absent or delayed services;
- low uptake of eHealth and other health technology to overcome these barriers
- difficulty in accessing services due to lack of mobility, transport, language, financial barriers and remoteness; and
- feelings of disempowerment, frustration and disengagement.

Providers Experience

- System inefficiency
- Fragmentation
- Red tape
- Poor communication
- Lack of funding for innovative care

The Australian Healthcare System

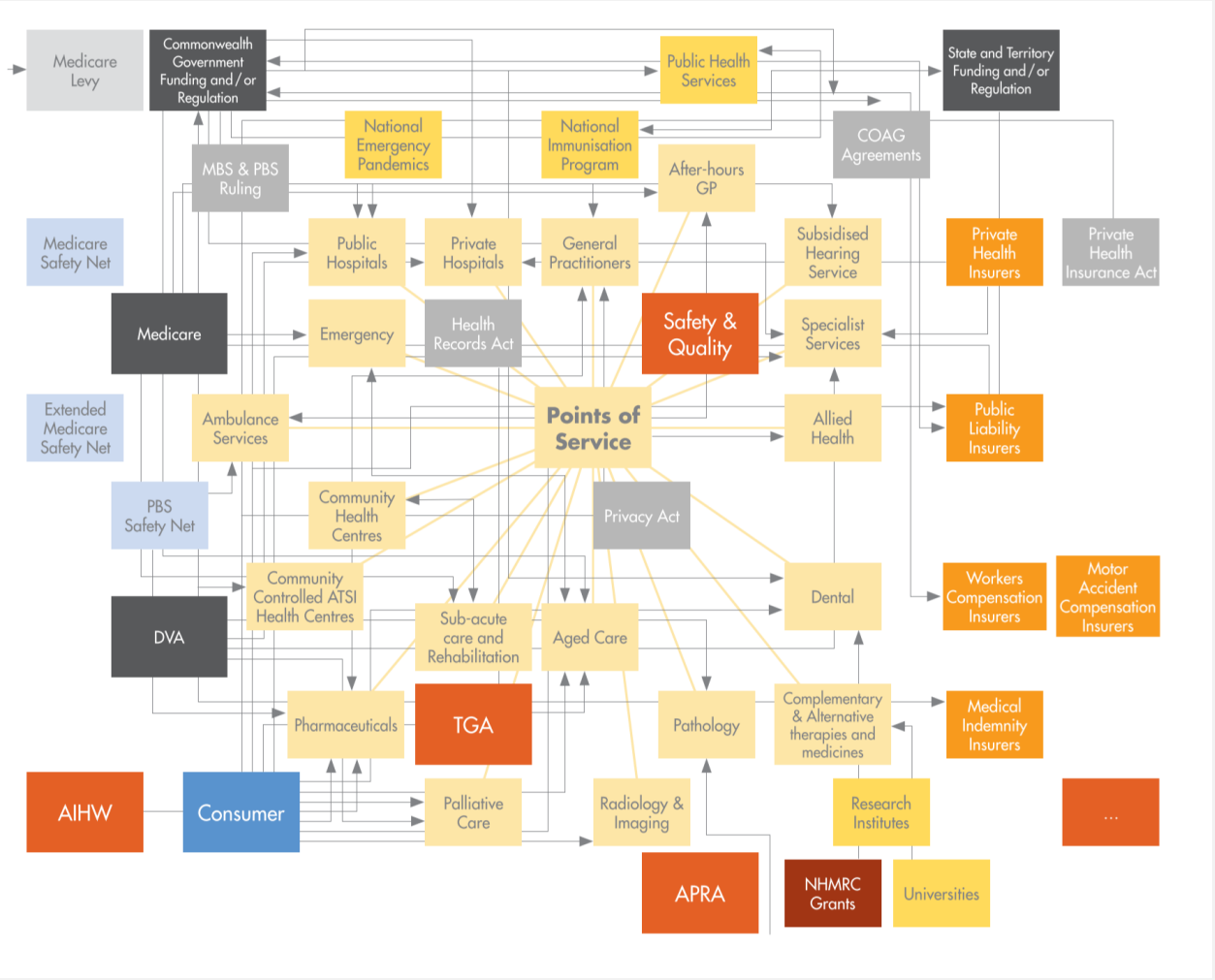


ceda
committee for economic development of australia

Canterbury District Health Board – Our Health System

Reorienting the system around the needs of the patient

Australia's Health System V's Canterbury District Health Board System Maybe we need to change our structure



More Waste

GPs could save the health budget $1.5 billion by stopping lower urgency cases flooding emergency

Lower urgency cases are filling up hospital emergency departments around the nation. Could GPs solve the problem?

Is there a better way to go for lower urgency cases?

Annual cost of ED presentations $4.9 billion

Lower urgency = no ambulance, assessed as semi-urgent or non-urgent care and discharged .

Australian Institute of Health and Welfare (AIHW) data

- 37% of 8 million ED presentations are considered 'lower urgency.'

The RACGP suggests that GPs are ideally placed to tackle lower-urgency cases

In -hours lower urgency ED presentation rates are rising and are markedly higher in regional areas

Continuity of care with a regular GP have lower rates of hospital and ED attendances, and lower risk of mortality.

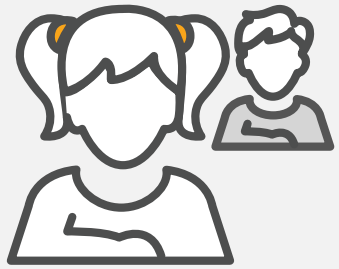
- Are patients misjudging their severity
- ? Out of pocket costs
- ? Demand management – no acute appointments
- Could the funding system be in conflict with the best mode of care?

committee for economic development of australia

Medicines safety

Current problems

- 250,000 hospital admissions annually are a result of medication-related issues.
- Annual cost $1.4 billion.
- 50% of this harm is preventable.
- 98% of residents in Aged Care have at least one medication-related problem.

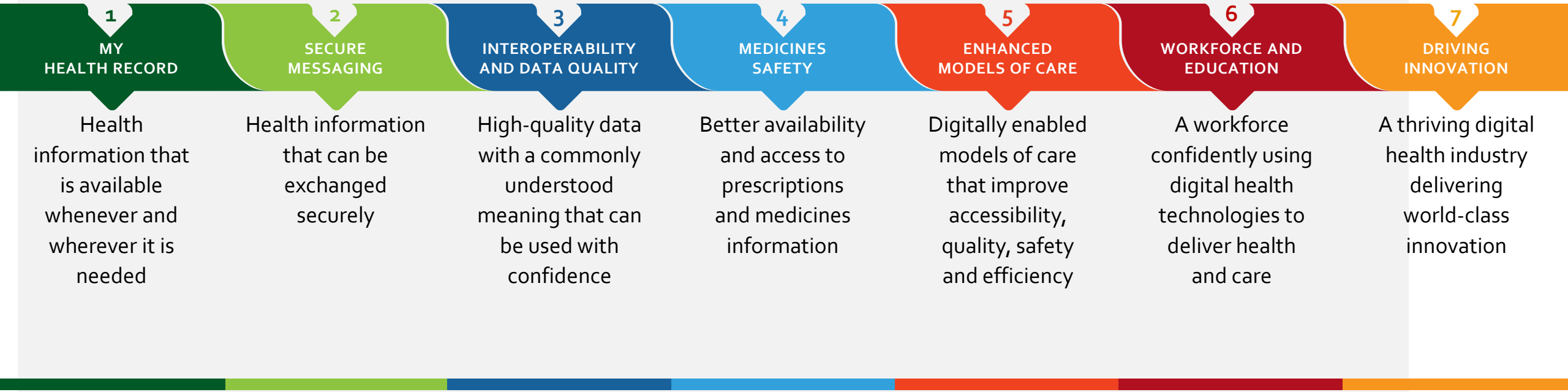


Pharmaceutical Society of Australia **2019**.*Medicine Safety: Take Care*. Canberra: PSA.

ceda
committee for economic development of australia

National Digital Health Strategy – roadmap for delivery

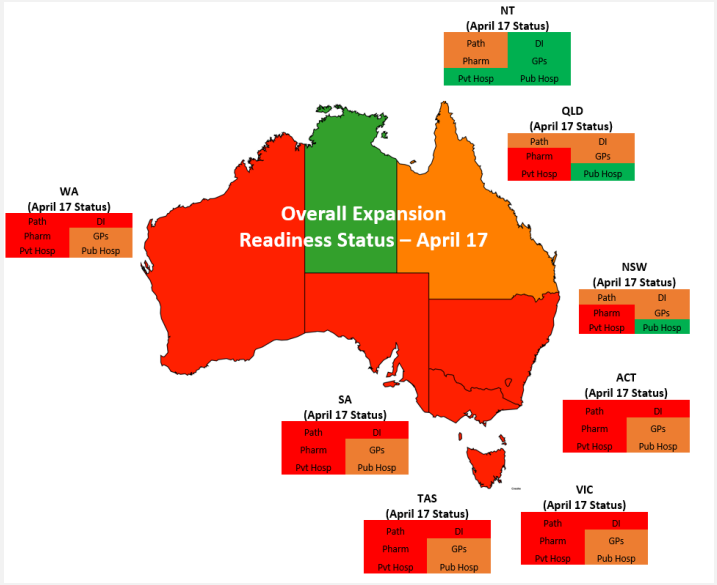
Co-designed with all states and territories and agreed by COAG Health Council



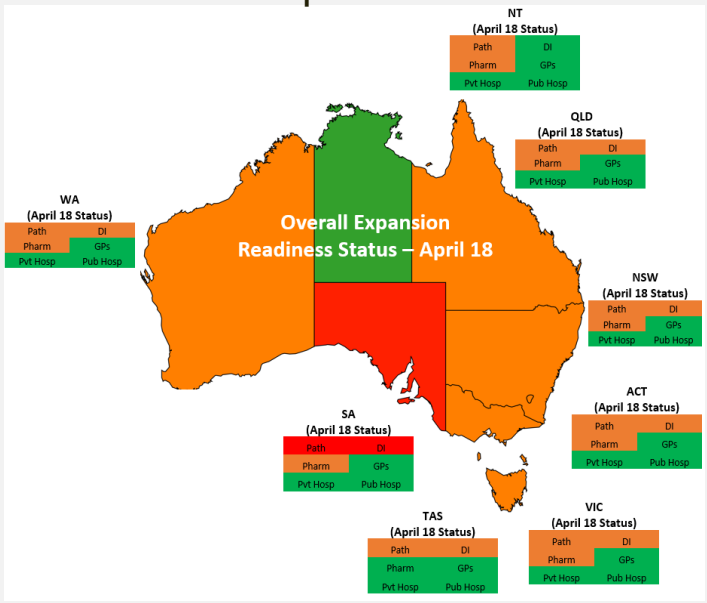
committee for economic development of australia

My Health Record / National IT Infrastructure is maturing

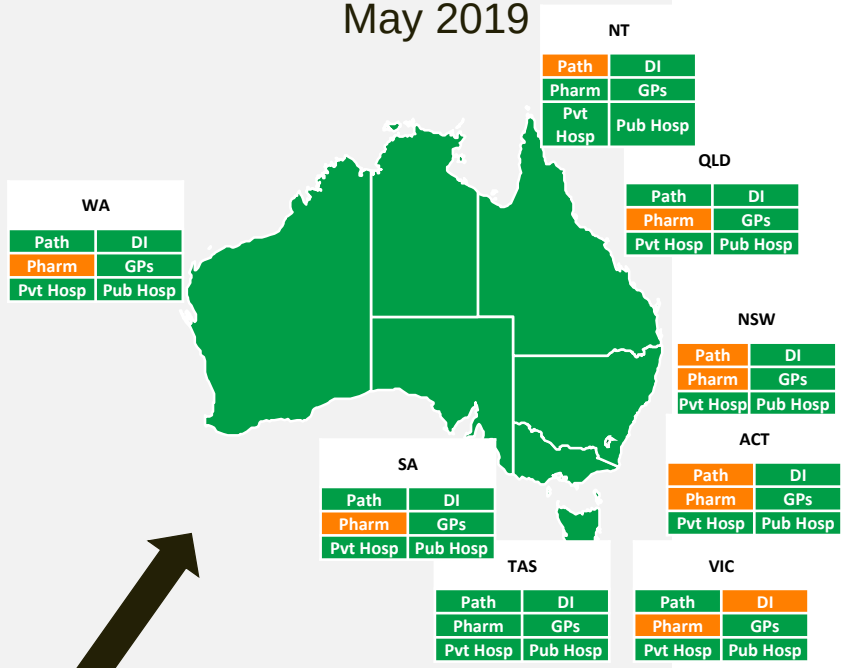
April 2017



April 2018



May 2019



As at 31 May 2019

- On Target
- In Progress
- Behind Target

- At the conclusion of record creation all jurisdictions had widespread public hospital connectivity to support uploading high value clinical content including discharge summaries, pathology reports and diagnostic imaging reports.

ceda
committee for economic development of australia

Medicare Benefits Schedule Review

- 70% of MBS 5700 items had not been reviewed in 30 years
- Ensure the MBS is contemporary and supports best practice
- Improve clinical value
- Improve the financial value
- Address overuse, misuse and underuse of services
- Identify services that are unnecessary, outdated or unsafe
- Provide recommendations to the Medical Services Advisory Committee (MSAC) on new and amended items

Progress to date

- **100%**
- MBS items reviewed or currently under review

- **70+**
- clinical committees and working groups established

- **700**
- Clinical clinicians, consumers and health system experts involved

- **178**
- Recommendations made to Government

- **145**
- Recommendations accepted

- **>8,000**
- Submissions received from stakeholders

committee for economic development of australia

Clinical Committee Recommendation

- The committee believes that clinical decision support will be assist providers to select the most appropriate diagnostic imaging or pathology investigation.

- **Decision-support plans would tie doctors' hands, warns AMA**

- The AMA has urged the MBS Review Taskforce to abandon its plans to add extra requirements to MBS items for scans deemed to be susceptible to overservicing, such as lower back imaging

- **Radiologists back compulsory decision-support software for GPs**

- **Physician viewpoint:** AI will reduce healthcare costs, improve physician wellbeing
  - Dr. Lin, a clinical assistant professor of medicine and vice chief for technology innovation in Stanford University's division of primary care and population health

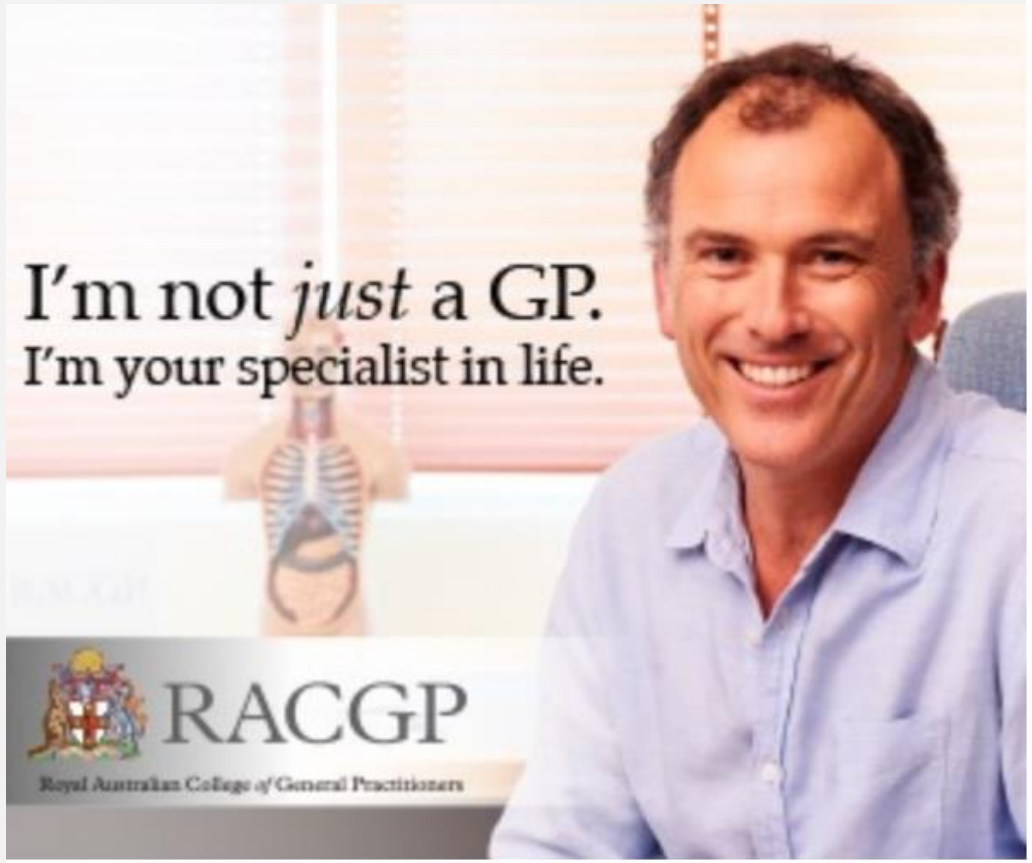
Clinical Committee Recommendation

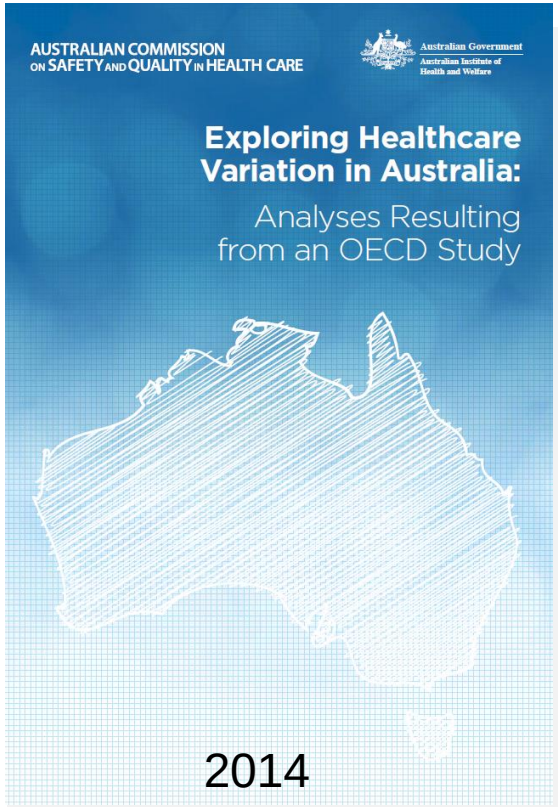
- **Anaesthesia MBS Review**

- The MBS Review Taskforce has just released the Report from the ACC.
- There has been nearly 2 years of advocacy by the ASA in order to safeguard the current Anaesthesia MBS.
- The ASA has responded to the ACC Report, and has provided exhaustive rebuttals to the proposed changes in the Anaesthesia MBS.
- As a result of our advocacy, the ASA expects that the Federal Government will adopt a small subset of ACC Report recommendations.

Recommendation Embraced

- New investment to better recognise and support non face-to-face services by GPs to their patients.
- Voluntary patient enrolment for all those over 70 years
- New Medicare arrangements will be used to support the patient enrolment processes and make quarterly payments to providers for enrolled patients.
- Enrolment will commence in mid-2020.
- Benefits include to include enhanced access
- Informed by an Expert Advisory Group including MBS Review Taskforce, AMA, RACGP, ACRRM and Consumers Health Forum.

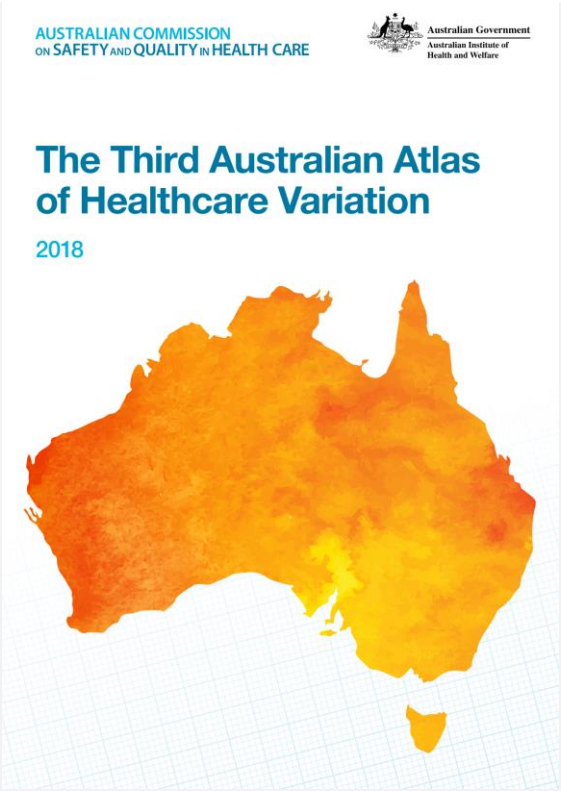




- caesarean section
- cardiac catheterisation
- revascularisation procedures (coronary bypass and coronary angioplasty)
- knee arthroscopy and replacement
- hip fracture, and
- hysterectomy

- Antimicrobial dispensing
- Diagnostic interventions
- Surgical interventions
- Interventions for mental health & psychotropic medicines
- Opioid dispensing
- Interventions for chronic diseases

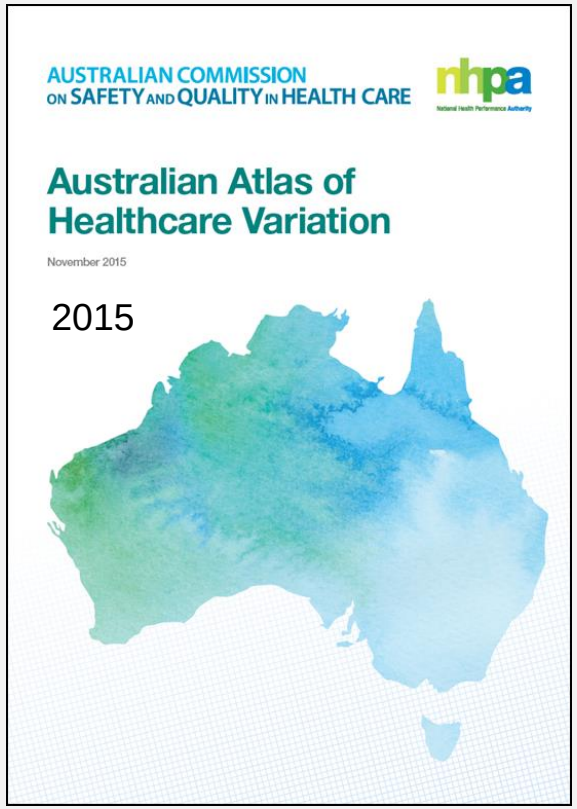
- Potentially preventable hospitalisation in diabetes, heart failure, COPD
- Cardiovascular conditions
- Women's Health
- Surgical Interventions
  - Lumbar Spinal Fusion



- Neonatal and paediatric health
- GI investigation and treatment
- Thyroid investigations and treatment
- Cardiac Tests
- Repeat Analysis

ceda
committee for economic development of australia

Healthcare use variation - is it warranted?



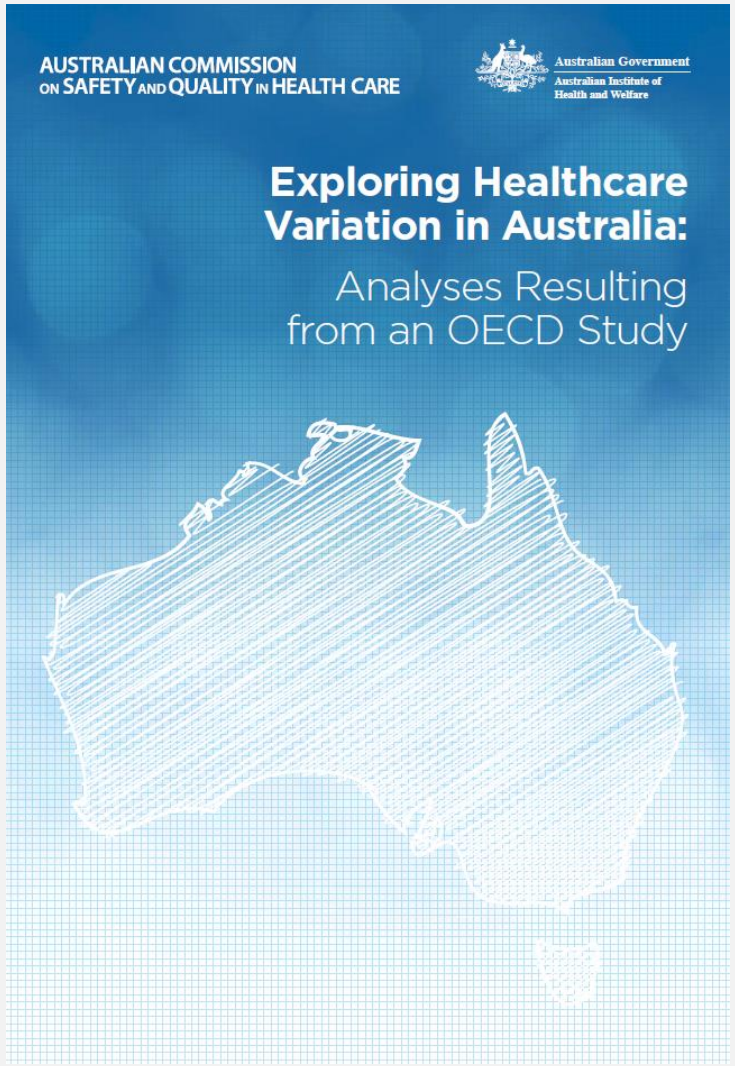
Very high overall rates of inappropriate **antibiotic prescribing**
High rates of **ct scans performed on the lumbar spine**

Multiples for highest rates Vs lowest rates

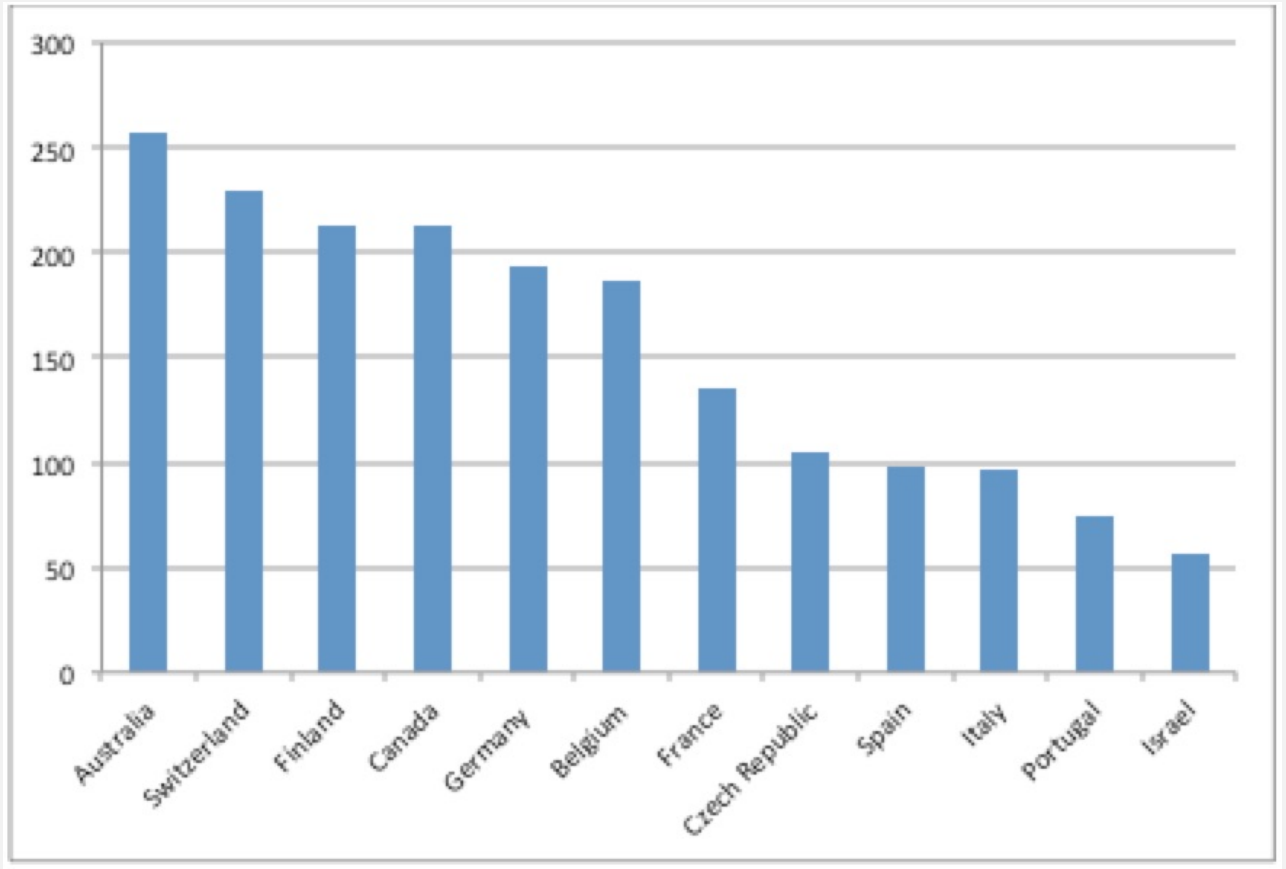
- **Colonoscopy** -30 times
- **Knee arthroscopy** in people aged 55 - 7 times (>33,000 operations)
- **Hysterectomy/ Endometrial Ablation**
  Women living in regional 5 times the city rates
- **Cataract Surgery** – 7 times (>160,000 operations)
- **Opioid medicines** prescription rates - 10 times
- **ADHD medicines** – 75 times

What has the atlas series taught us?

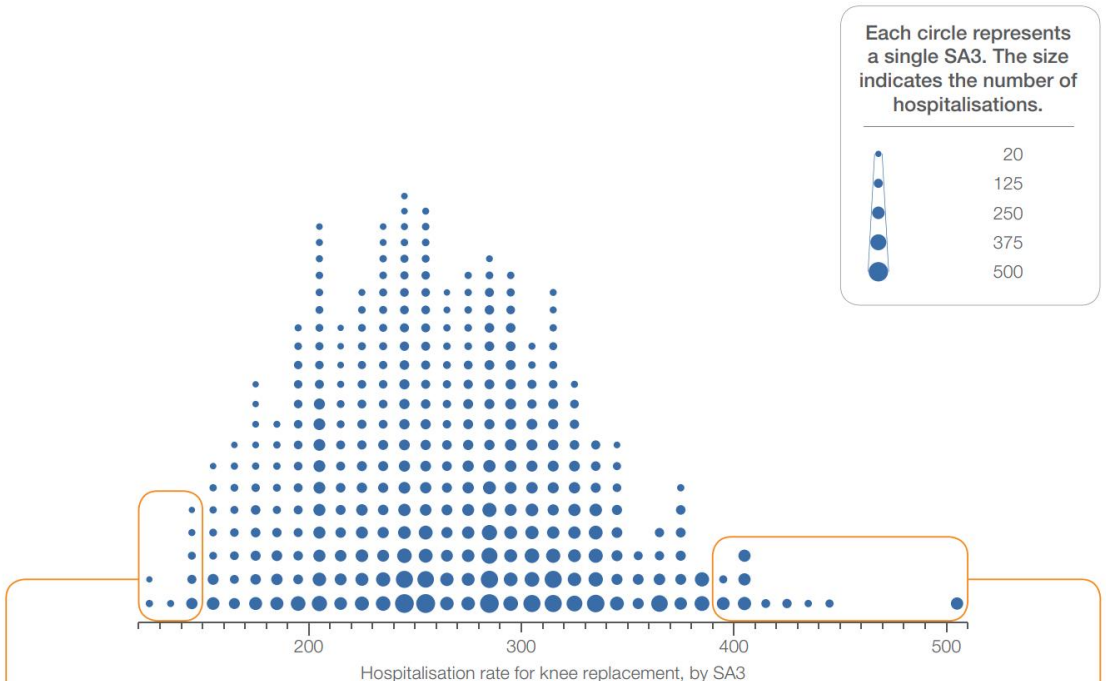
- There is significant variation
- Some groups with the highest burden of disease have the lowest rate of a related investigation or treatment suggesting barriers to appropriate access
- In some areas there are markedly higher rates of care, raising concern about low value care or the potential harms.
- Some things cannot yet be measured
  - Health Data is held in multiple places
  - Inconsistent admission policies
  - Inconsistent treatment pathways
  - Medicines supplied by Aboriginal Medical Services not counted
  - Lack of evidence on outcomes (Lumbar Spinal Fusion)



Knee replacement - OECD



Knee Replacement



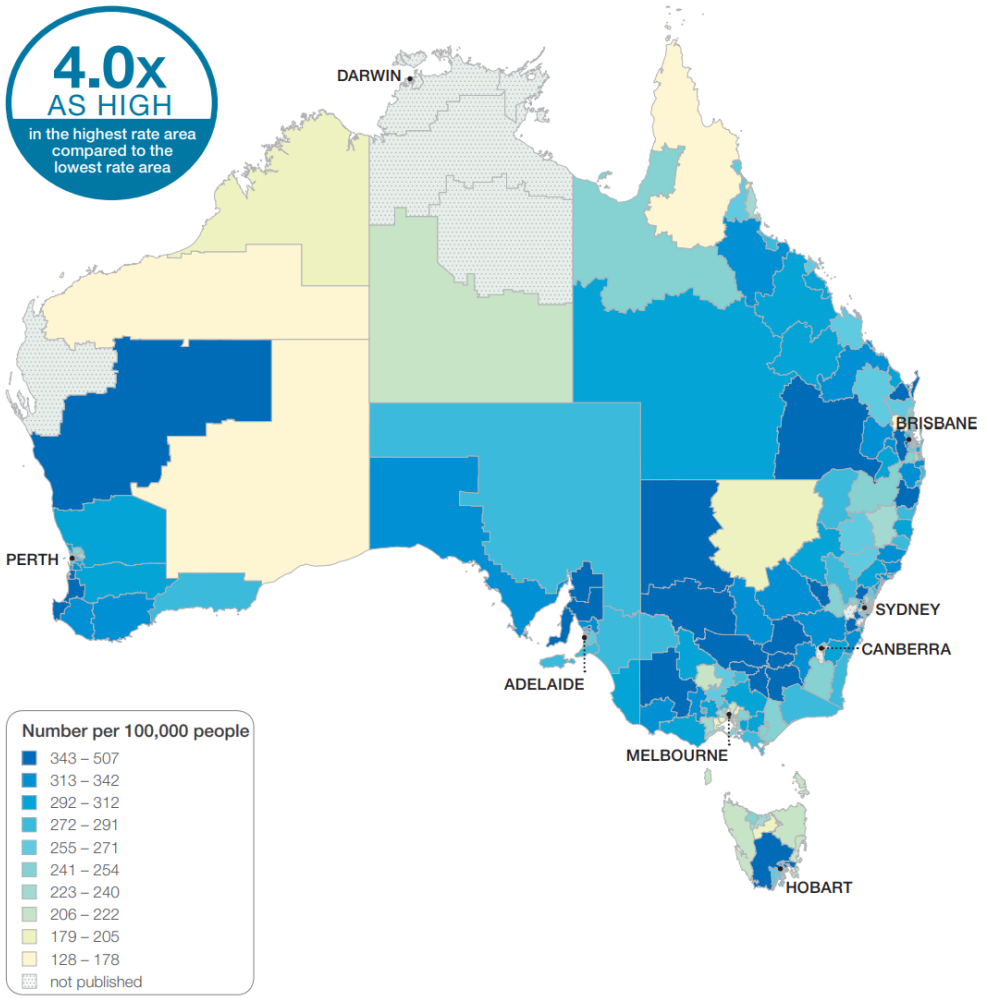
Lowest rate areas

SA3	State	Rate	Hospitalisations
Maribyrnong	Vic	128	60
Darwin City	NT	128	22
Darebin - South	Vic	133	52
Brimbank	Vic	141	207
Brunswick - Coburg	Vic	142	84
Chatswood - Lane Cove	NSW	146	125
Palmerston	NT	146	24
Sherwood - Indooroopilly	Qld	147	52

Highest rate areas

SA3	State	Rate	Hospitalisations
Mid West	WA	507	243
Hawkesbury	NSW	443	92
Lower Murray	NSW	438	62
Mid North	SA	420	133
Richmond - Windsor	NSW	419	117
Grampians	Vic	400	278
Ipswich Hinterland	Qld	400	240
Albury	NSW	400	238
Wodonga - Alpine	Vic	391	262
Broken Hill and Far West	NSW	390	89

Figure 4.5: **Number of hospitalisations for knee replacement per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3), 2014–15: Australia map**



ceda
committee for economic development of australia

Measurement improves value for money

Feedback to clinicians is a powerful motivator

- What treatments/procedures do I conduct for which patients
- Am I an outlier
- **How much do others charge** for procedures

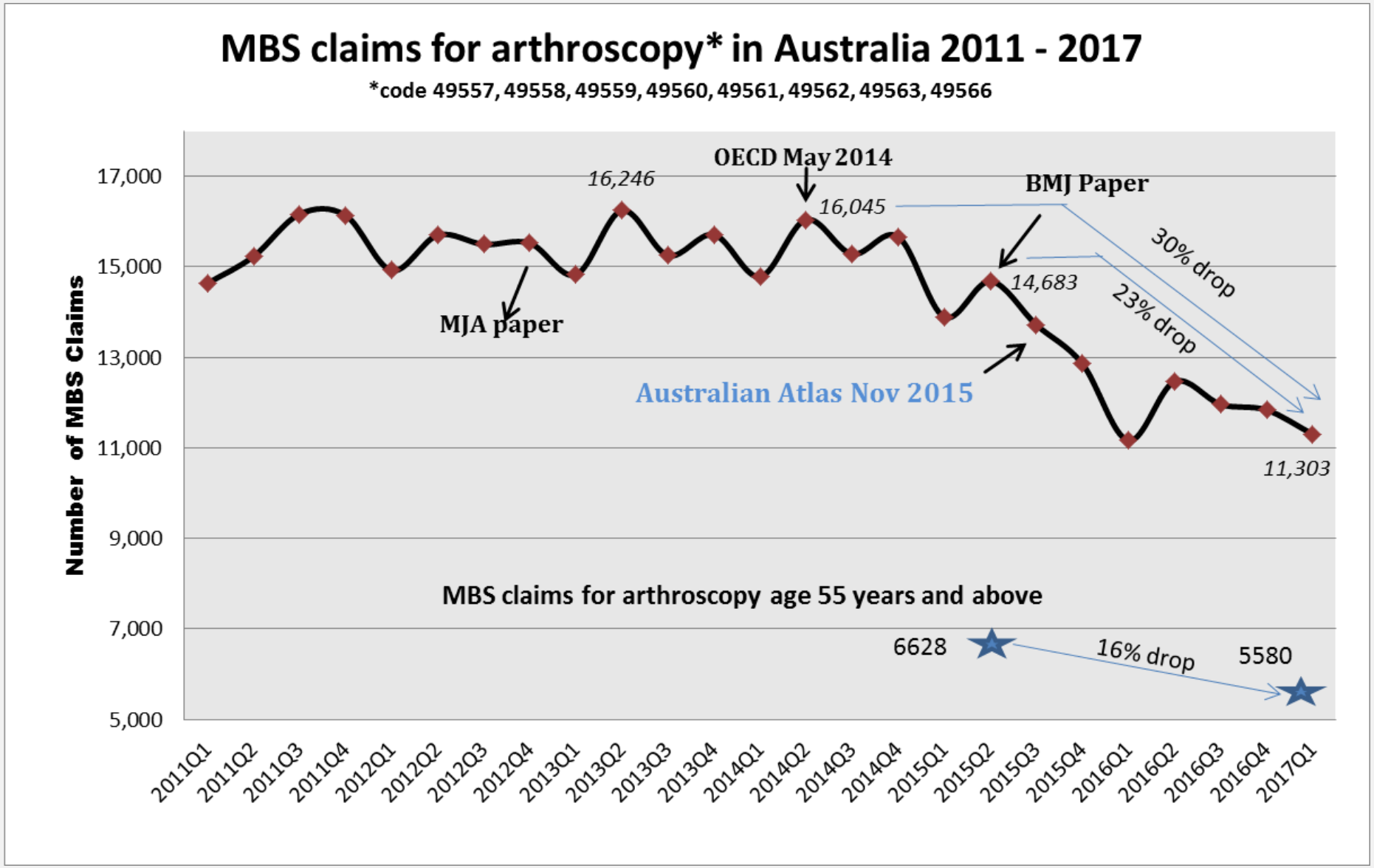
- **Information** to other parties (**patients, referrers**, policy makers) to facilitate better choices
  - Providers or procedures with poor results/outcomes
  - Outcomes for "patients like me" with different treatment options
  - Costs
  - **Informed referrals**

Do we need payment reform?

Eg Value based reimbursement

- Conventional fee for service methods coupled with rewards and penalties for outcomes
- Bundled Payments for whole-event outcomes some or all of the episode of care
- Payment for long term population outcomes

What is the impact of measurement?



Digital Hospital – Case Study
Princess Alexandra Hospital - Brisbane

- Structured clinical notes
- ED, Surgery, Theatres and Anaesthetics
- Integrated inpatient clinical information
- Pathology and Radiology orders and results
- Scheduling – Outpatients and Elective Surgery
- **Device integration and closed loop observations**
- **Managing deteriorating patients workflow**
- Positive person identification
- **Medication Management – closed loop**
- Clinical trials
- Reporting
- **Analytics and Data Warehouse**

Digital Hospital – Case Study
Princess Alexandra Hospital - Brisbane

- 35% of hospital **referrals** may be avoided with iEMR
- 10% of patients with a **drug allergy** are prescribed that drug during a hospital admission
- More people in hospital from
  - preventable **medication incidents** than
  - from asthma and breast cancer combined
- 30% of all radiology and pathology **investigations** are inappropriate or unnecessary

Digital Hospital – Case Study
Princess Alexandra Hospital - Brisbane

- Reduction in **pathology** turnaround time
  - 22% across hospital average
  - 5-21% ED across all types test (eg 4.3 mins FBC)
- Reductions certain tests (eg for urine)
- 15% reduction in reported **falls**
- 5% increase in reported **pressure injuries**
- 18% reduction in actual **infection rate**
- 25% reduction in **VTE per separations**
- **Length of Stay** trending down with increased activity
  - 10% increase in QWAU, with 5% ALOS reduction
  - 2.5% increase in episodes of care
  - 7% increase in Outpatients
- Reduced Emergency **Readmission** within 28 days of discharge

Digital Hospital – Case Study
Princess Alexandra Hospital - Brisbane

Between 2015 and 2018

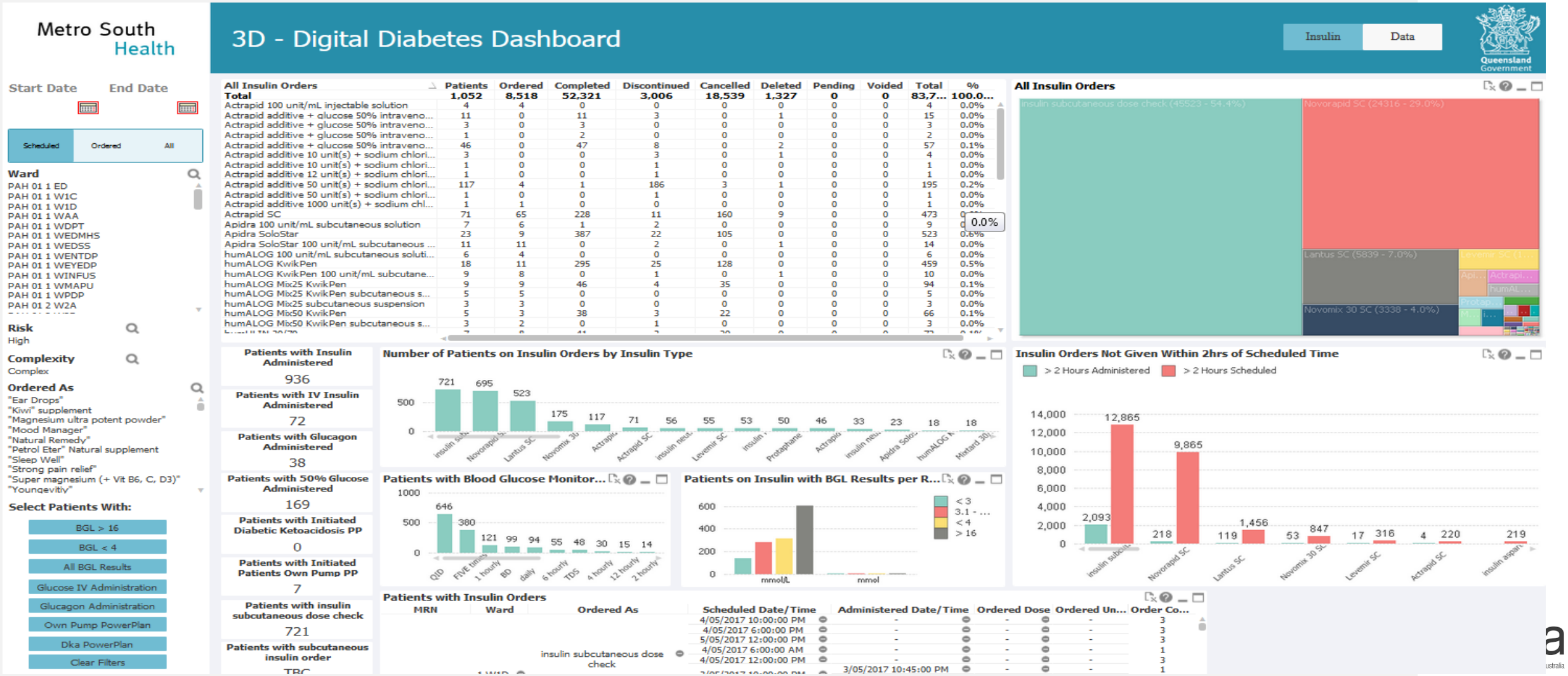
- **45%increase** in the early identification of deteriorating patients by the hospital rapid response team

Between 2014 and 2016

- **4% reduction** in readmission rates and
- **6% reduction** in inpatient length of stay

Digital Diabetes Dashboard

Digital Hospital – Case Study
Princess Alexandra Hospital - Brisbane

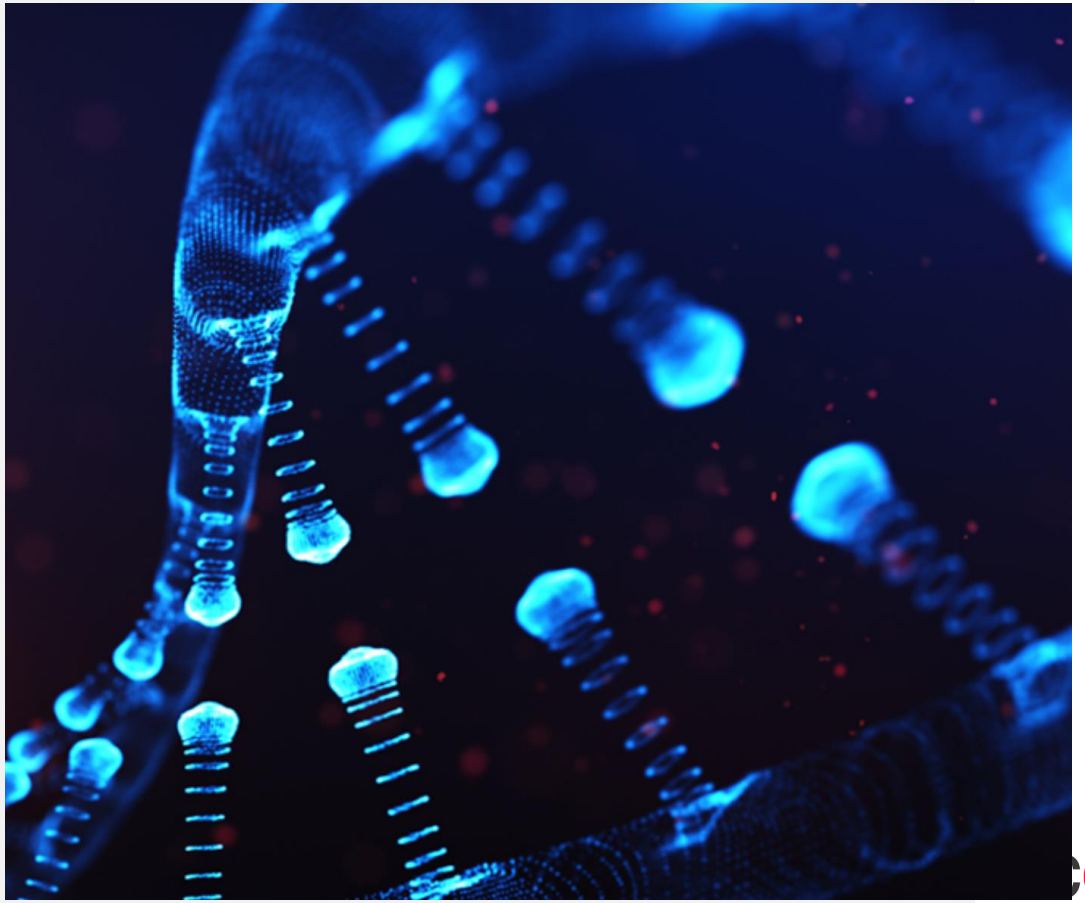


All Insulin Orders	Patients	Ordered	Completed	Discontinued	Cancelled	Deleted	Pending	Voided	Total	%
Total	**1,052**	**8,518**	**52,321**	**3,006**	**18,539**	**1,327**	**0**	**0**	**83,7...**	**100.0...**
Actrapid 100 unit/mL injectable solution	4	4	0	0	0	0	0	0	4	0.0%
Actrapid additive + glucose 50% intraveno...	11	0	11	3	0	1	0	0	15	0.0%
Actrapid additive + glucose 50% intraveno...	3	0	3	0	0	0	0	0	3	0.0%
Actrapid additive + glucose 50% intraveno...	1	0	2	0	0	0	0	0	2	0.0%
Actrapid additive + glucose 50% intraveno...	46	0	47	8	0	2	0	0	57	0.1%
Actrapid additive 10 unit(s) + sodium chlori...	3	0	0	3	0	1	0	0	4	0.0%
Actrapid additive 10 unit(s) + sodium chlori...	1	0	0	1	0	0	0	0	1	0.0%
Actrapid additive 12 unit(s) + sodium chlori...	1	0	0	1	0	0	0	0	1	0.0%
Actrapid additive 50 unit(s) + sodium chlori...	117	4	1	186	3	1	0	0	195	0.2%
Actrapid additive 50 unit(s) + sodium chlori...	1	0	0	1	0	0	0	0	1	0.0%
Actrapid additive 1000 unit(s) + sodium chl...	1	1	0	0	0	0	0	0	1	0.0%
Actrapid SC	71	65	228	11	160	9	0	0	473	0.6%
Apidra 100 unit/mL subcutaneous solution	7	6	1	2	0	0	0	0	9	0.0%
Apidra SoloStar	23	9	387	22	105	0	0	0	523	0.6%
Apidra SoloStar 100 unit/mL subcutaneous ...	11	11	0	2	0	1	0	0	14	0.0%
humALOG 100 unit/mL subcutaneous soluti...	6	4	0	0	0	0	0	0	6	0.0%
humALOG KwikPen	18	11	295	25	128	0	0	0	459	0.5%
humALOG KwikPen 100 unit/mL subcutane...	9	8	0	1	0	1	0	0	10	0.0%
humALOG Mix25 KwikPen	9	9	46	4	35	0	0	0	94	0.1%
humALOG Mix25 KwikPen subcutaneous s...	5	5	0	0	0	0	0	0	5	0.0%
humALOG Mix25 subcutaneous suspension	3	3	0	0	0	0	0	0	3	0.0%
humALOG Mix50 KwikPen	5	3	38	3	22	0	0	0	66	0.1%
humALOG Mix50 KwikPen subcutaneous s...	3	2	0	1	0	0	0	0	3	0.0%

Scheduled Date/Time	Administered Date/Time	Ordered Dose	Ordered Un...	Order Co...
4/05/2017 10:00:00 PM	-	-	-	3
4/05/2017 6:00:00 PM	-	-	-	3
5/05/2017 12:00:00 PM	-	-	-	3
4/05/2017 6:00:00 AM	-	-	-	1
4/05/2017 12:00:00 PM	-	-	-	3
3/05/2017 10:45:00 PM	-	-	-	1

Precision Medicine
Average Care – needs to become – Personalised Care

- "We know that every human is a one-off result of their genes and their life experiences,"
  - Chief Scientist Dr Alan Finkel
- Massive data sets can now be mined for insights into the relationships between genes, environmental factors and health
- We can connect up electronic medical records and provide doctors with comprehensive individual health profiles.
- Artificial Intelligence can overcome the cost and human capacity barriers to delivering precision medicine population-wide.
- We will be able to pinpoint the treatment most likely to succeed
- Finally we will shift focus from Precision Treatment to Personalised Prevention



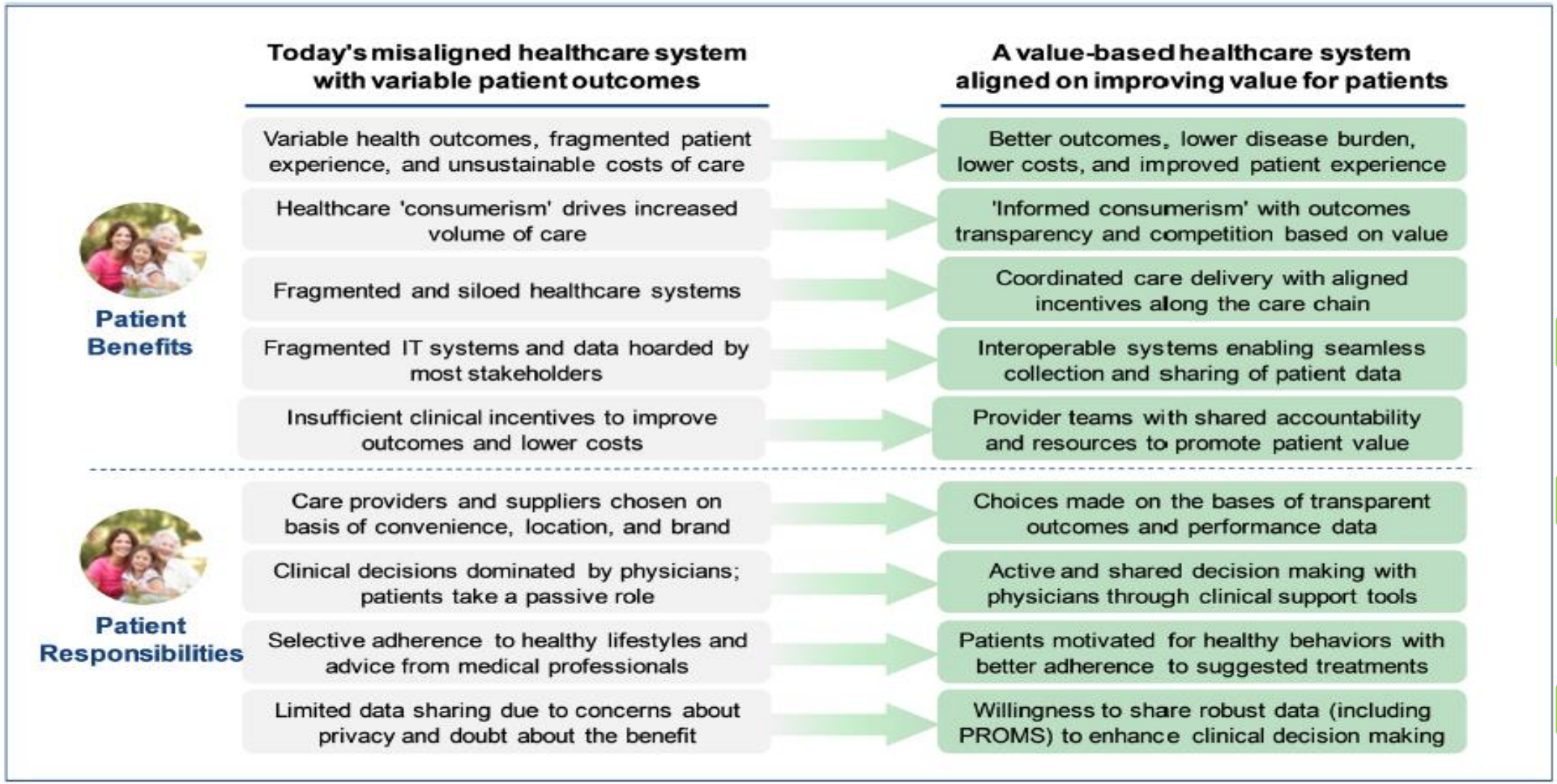
Todays' young people (digital natives) are tomorrow's patients

- Will they trust a machine that
  - sees patients
  - can analyse a genome
  - store clinical knowledge
  - assimilate patterns of behaviour
  - confer with other machines
  - and draw from a far broader range of data than any individual doctor

ceda
committee for economic development of australia

Health system transformation

Figure 7: Value-Based Healthcare Will Deliver New Benefits – and New Responsibilities



Note: PROMS = patient reported outcome measures
Source: BCG analysis

http://www3.weforum.org/docs/WEF_Insight_Report_Value_Healthcare_Laying_Foundation.pdf

ceda
committee for economic development of australia

Thank You

Steve Hambleton

+61 418 731 570

stevejhambleton@gmail.com

committee for economic development of australia