



National Health
Funding Body

New frontiers in health system insights using data analytics

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Proudly assisting the Administrator of the National Health Funding Pool

Demonstrate how the deterministically integrated data sets are used for ‘data-matching’ to ensure funding integrity, and how the data brings new insights into the health system use and costs

- Created from National Health Reform Agreement , **independent of both Commonwealth and state/territory** governments
- Oversee Commonwealth and state funding and payments, contributing to *“the sustainability of funding for public hospitals”*
- Enable transparency through financial/payment insights and the use of **deterministically integrated hospital, MBS and PBS data holdings**
- Undertake analysis at the national, state, LHN, hospital campus and patient level, for all ABF in-scope services, MBS and PBS services, across all settings
- COAG *Heads of Agreement* on Public Hospital Funding reinstated the Administrator and NHFB and has extended activity based funding through to 2020

www.publichospitalfunding.gov.au

www.nhfb.gov.au

Administrator and National Health Funding Body

Our world in numbers...



77.9
BILLION

FUNDING AND PAYMENTS

TOTAL VALUE OF TRANSACTIONS PROCESSED THROUGH THE NATIONAL HEALTH FUNDING POOL AND STATE MANAGED FUNDS

38.2 **BILLION**

FUNDING PAID TO LOCAL HOSPITAL NETWORKS

4544

TRANSACTIONS PROCESSED

THROUGH THE NATIONAL HEALTH FUNDING POOL

15.5 **BILLION**

COMMONWEALTH CONTRIBUTION TO STATES AND TERRITORIES FOR PUBLIC HOSPITALS

1800 MONTHLY REPORTS PRODUCED

15,732 WEBSITE PAGE VIEWS

4.3 MILLION BUDGET APPROPRIATION

17 STAFF

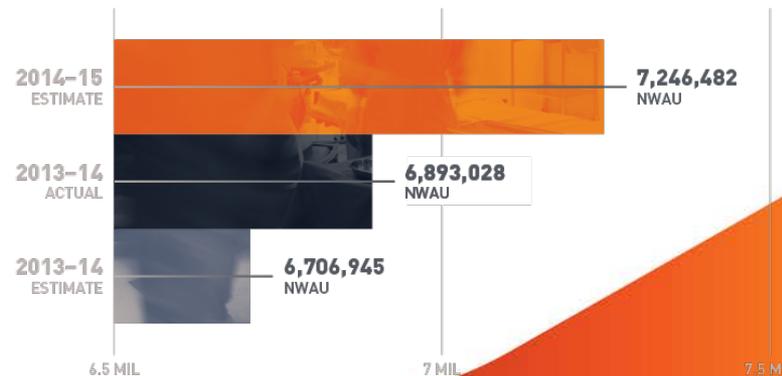
PAYMENTS TO LOCAL HOSPITAL NETWORKS

\$ 38.2 BILLION 2014-15 NATIONAL TOTAL

\$ 36.4 BILLION 2013-14 NATIONAL TOTAL

Data represents 2014-15 year

NUMBER OF PUBLIC HOSPITAL SERVICES FUNDED



Administrator/NHFB delivering hospital funding integrity & sustainability

- Responsibility to identify where the same hospital service has been funded more than once by the Commonwealth (e.g. NHR, MBS, PBS, DVA)
- Involves reviewing patient pathway through the hospital setting and relationship of primary and specialist care to the hospital episode (continuum of care)
- Identified over \$480M in Commonwealth NHR funding as potentially having received MBS claims totalling over \$68M (2013-14)

Dynamic Australian health system

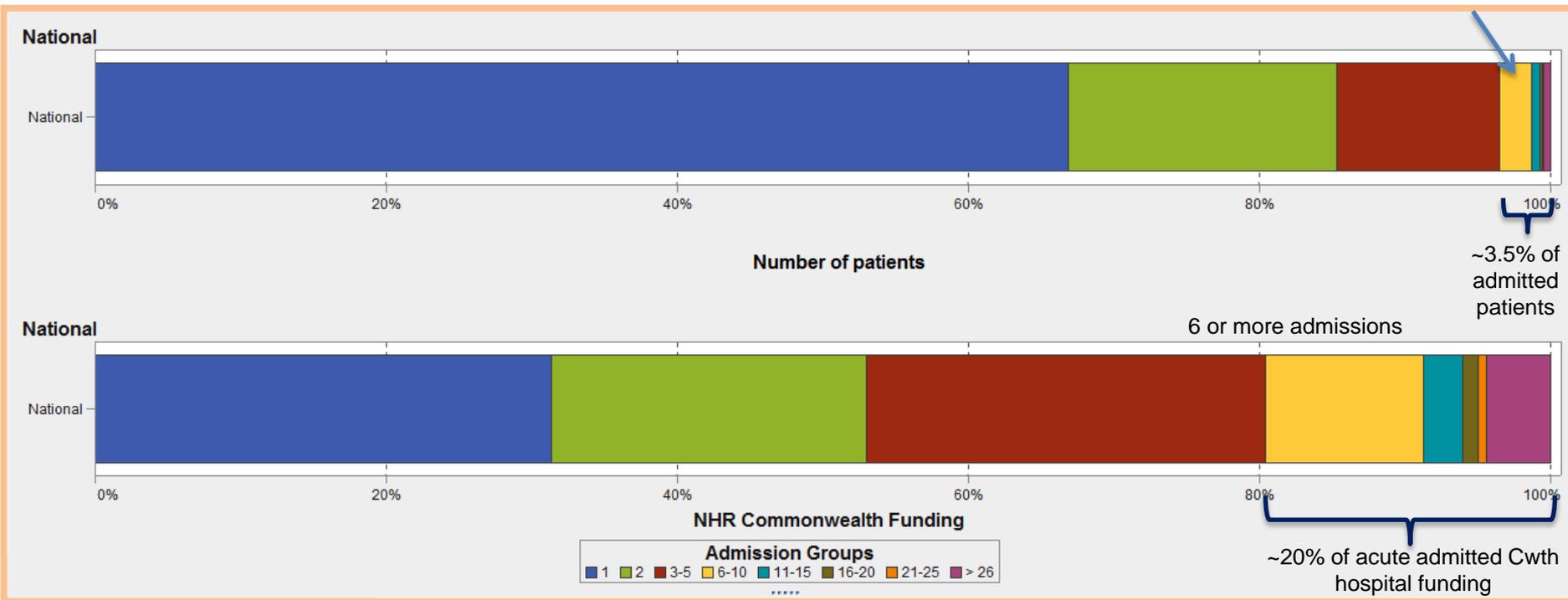
- Imperative for better use of existing data to inform and improve the efficiency and effectiveness of the health system services and clinical care
- Data analytics can be used to provide insights across four key domains*:
 - Finance and activity
 - Service access and patient flow
 - Safety and quality
 - People and culture
- Administrator/NHFB data analysis: cost, service use, geographic regions and health conditions

Using linked patient data from MBS, PBS and Hospitals

Analysis of patients with multiple admissions



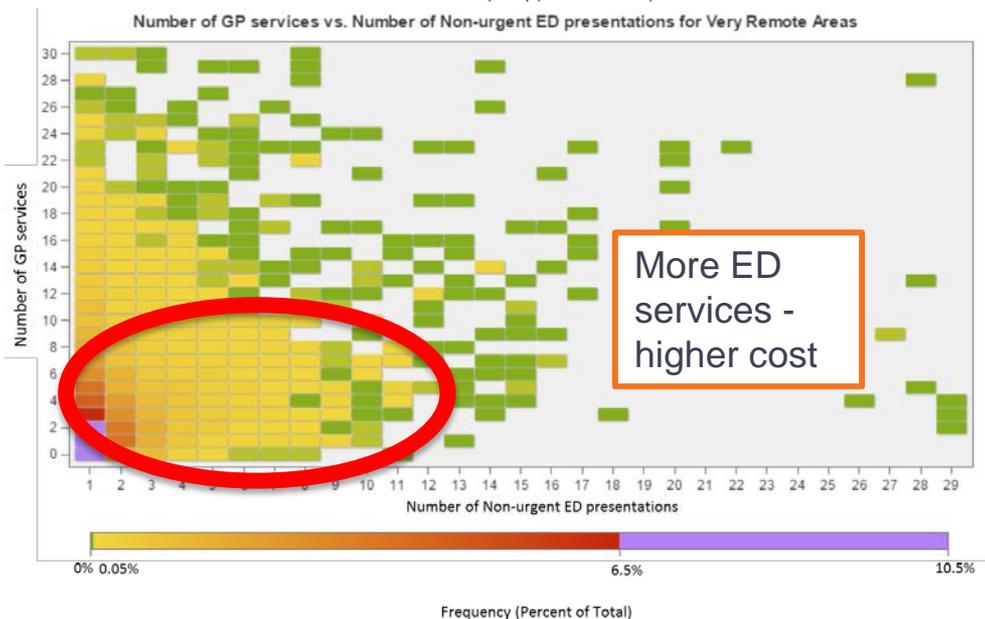
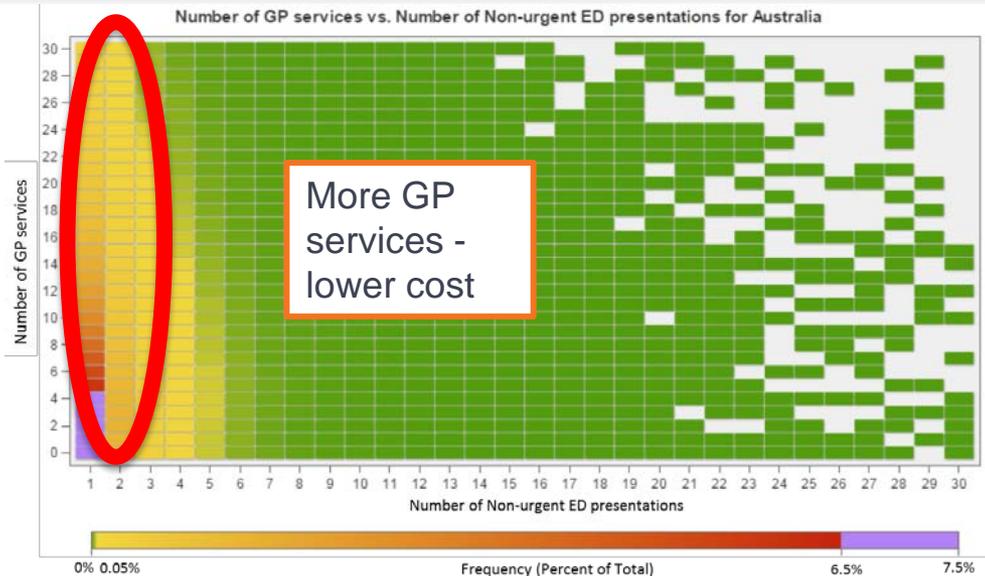
6 or more admissions



- Chart shows the percentage of patients by number of admissions (admission group), and the Commonwealth NHR funding associated with each group
- Demonstrates that a small number of patients generate large costs – i.e. ~30% users generating ~70% costs
- Costs can be shown as a total (National), by state investment and Commonwealth (as shown above)

Using linked patient data from MBS, PBS and Hospitals

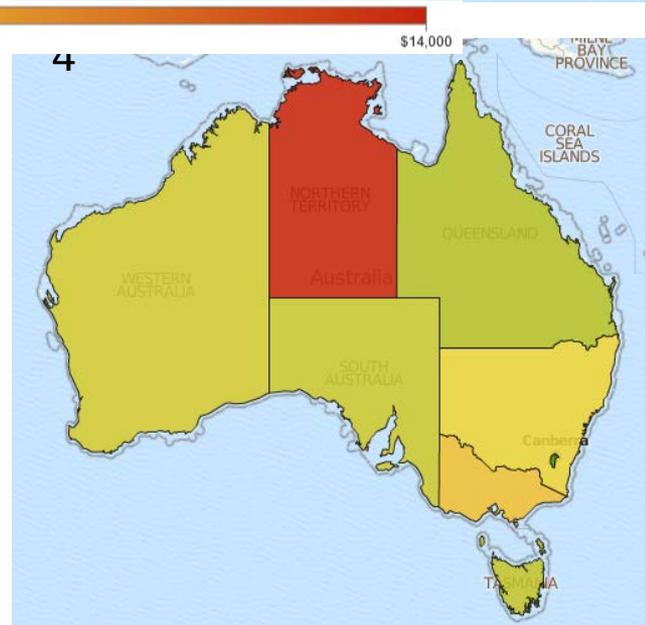
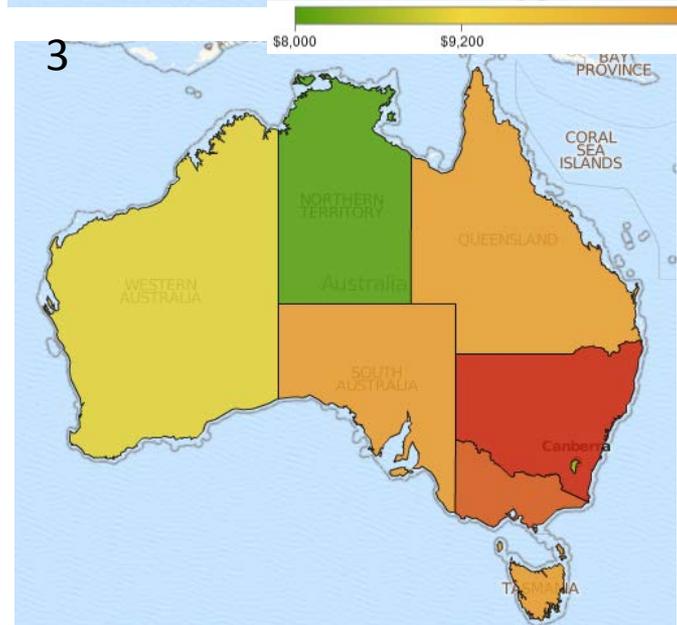
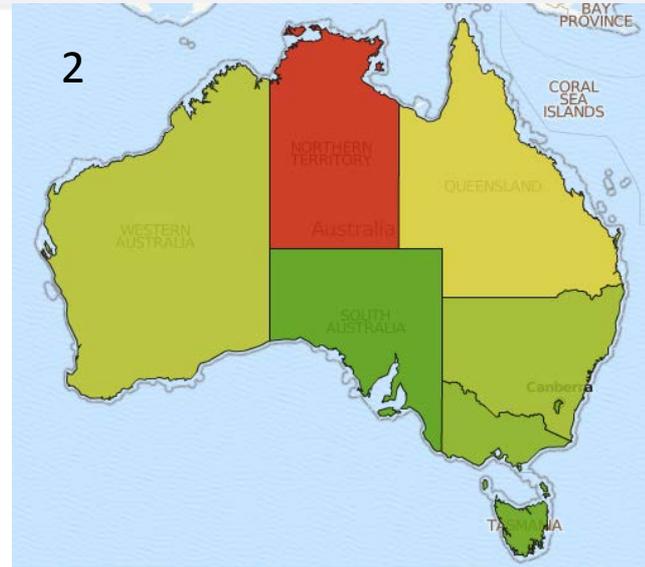
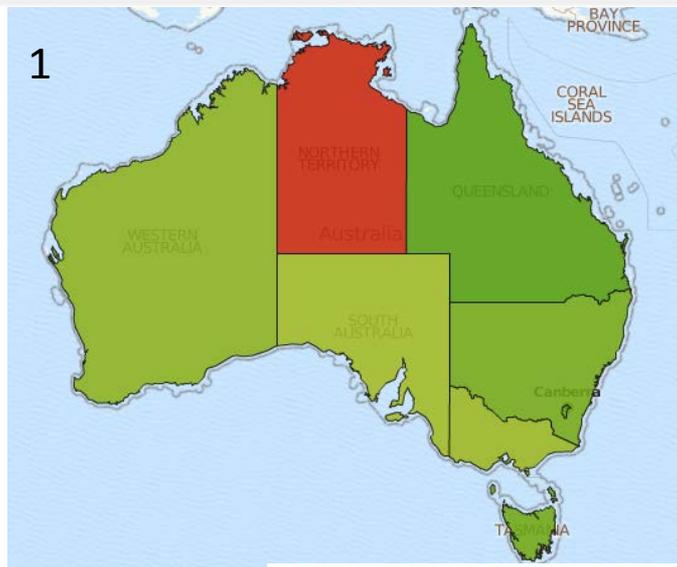
Utilisation of emergency department services for high users and their interaction with primary care



- Demonstrates the utilisation of ED services for non-urgent care (i.e. category 4 and 5) and GP services by individuals
- Charts show GP vs non-urgent ED for:
 - all Australia (upper)
 - Very Remote Areas (lower)
- Greater use of lower cost GP services and less use of higher cost ED across Australia
- In comparison, higher use of ED in Very Remote Areas

Using linked patient data from MBS, PBS and Hospitals

Potentially Preventable Hospitalisation – Cost per Capita



1 - APC
lowest \$7,180
highest \$12,336

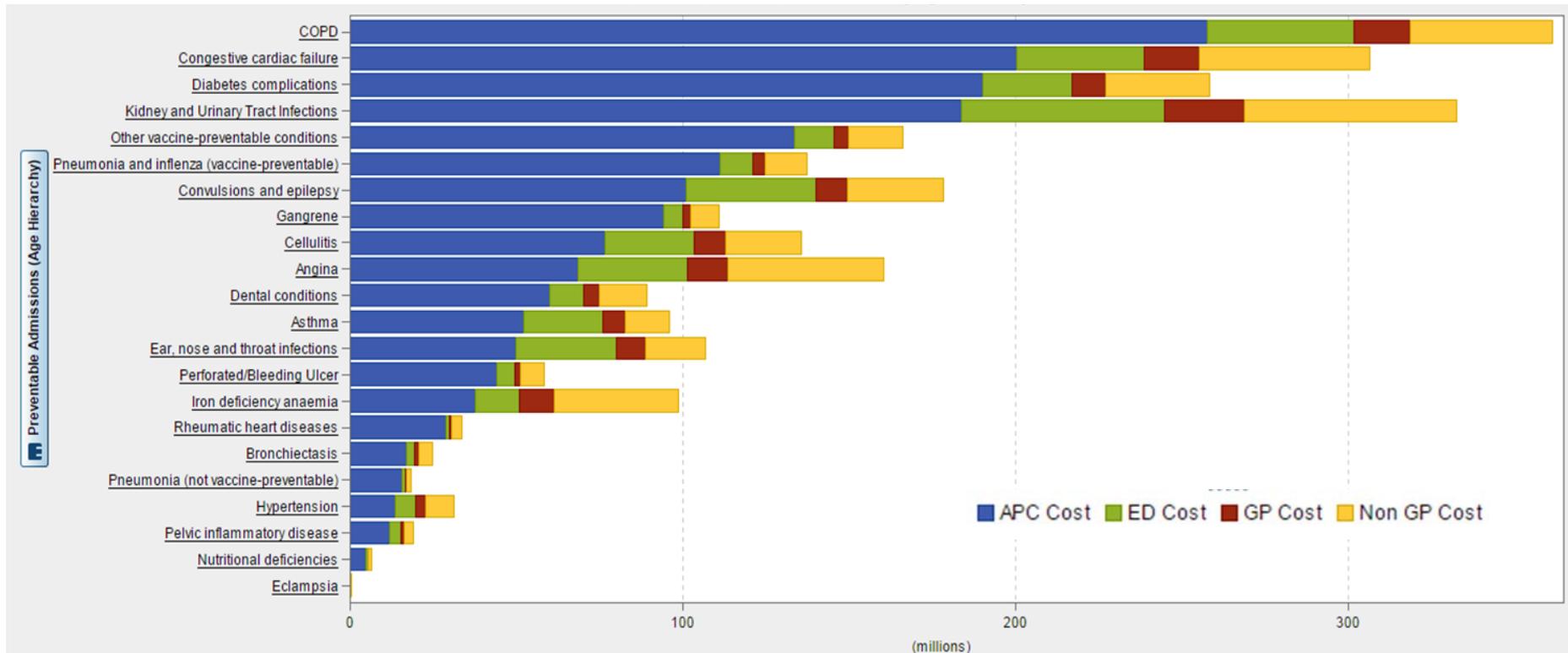
2 - ED
lowest \$1,774
highest \$2,650

3 - MBS
lowest \$989
highest \$2,550

4 - Total
lowest \$8,095
highest \$14,167

Using linked patient data from MBS, PBS and Hospitals

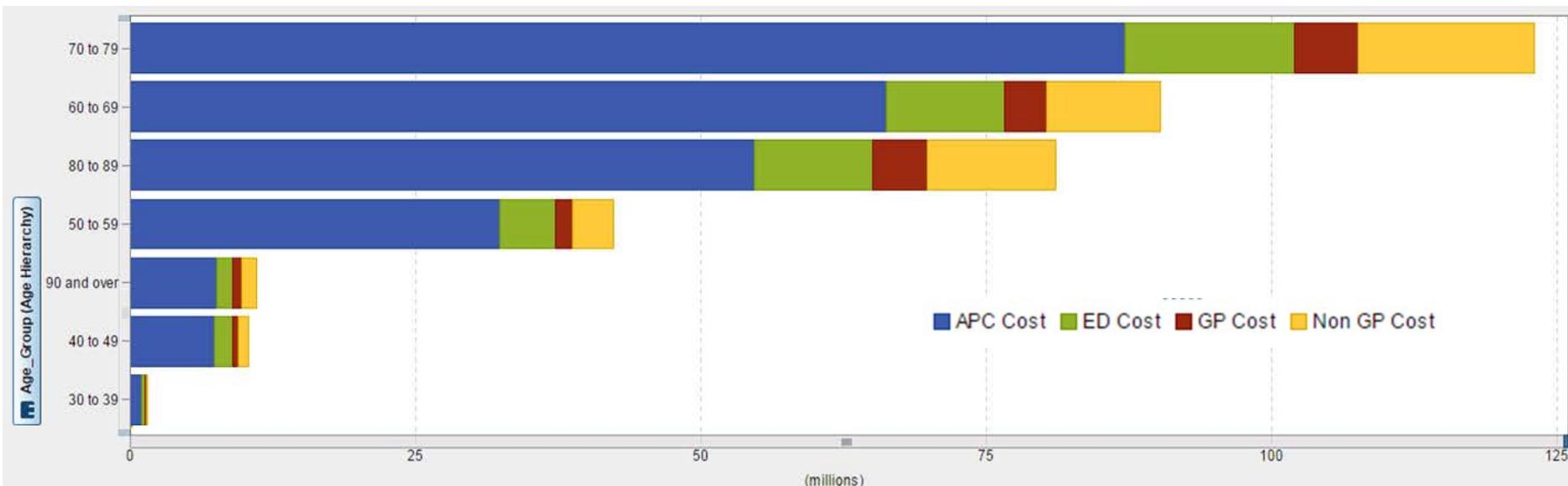
Cost by PPH conditions by hospital and MBS category



- Chart shows the in-hospital (APC and ED) and out-of-hospital (GP and non-GP) cost for each PPH condition
- Demonstrates that costs associated with chronic diseases, such as COPD, are the major drivers of costs for potentially preventable hospitalisations

Using linked patient data from MBS, PBS and Hospitals

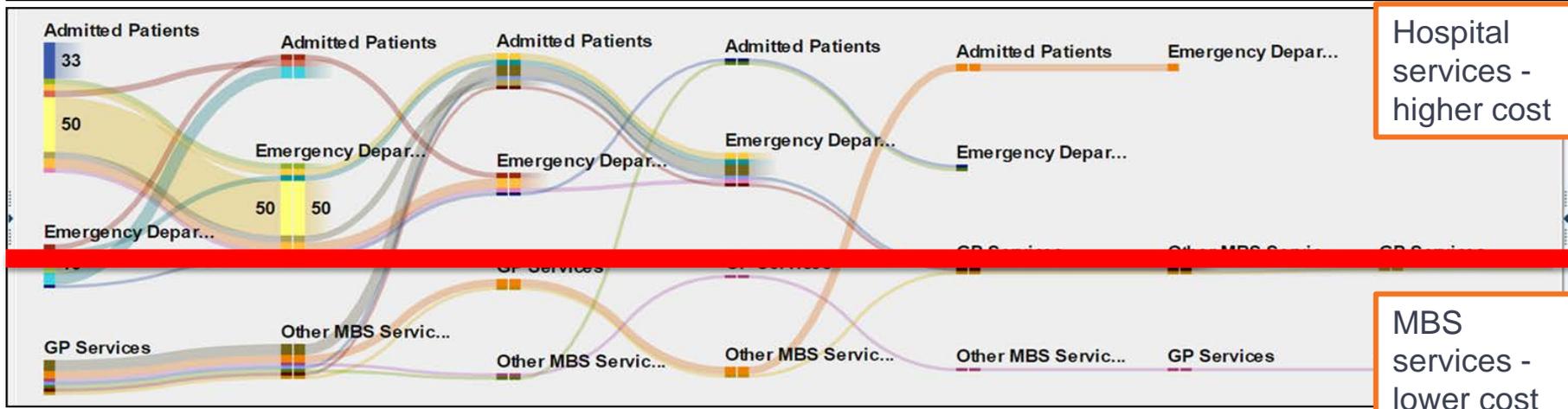
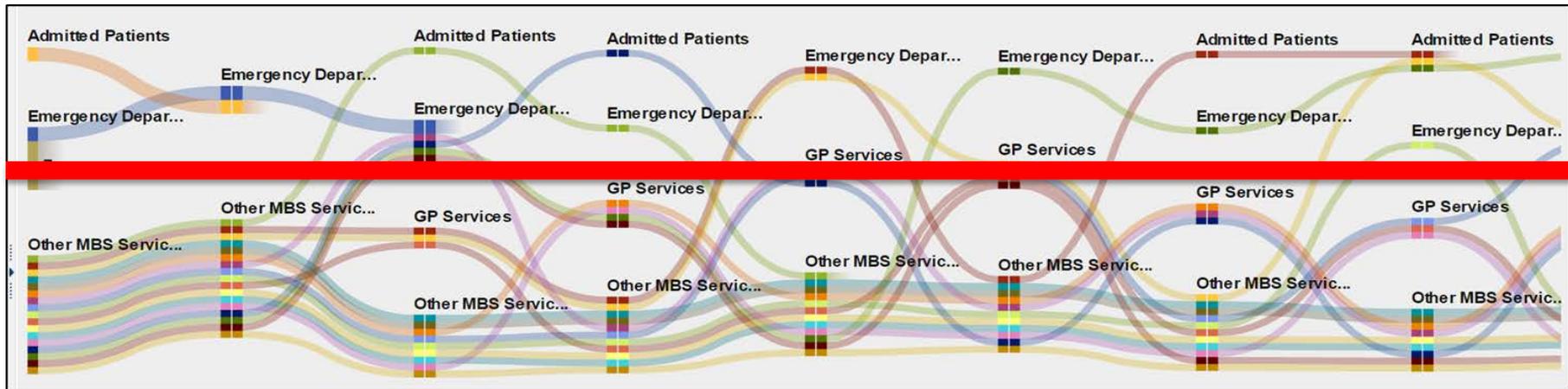
Cost by age cohort for COPD conditions



- Chart shows the in-hospital (APC and ED) and out-of-hospital (GP and non-GP) cost for COPD condition by age cohort
- Demonstrates that costs for the 70-79 age group are higher across all service types for COPD than any other age group
- The individual age cohorts can be further analysed to identify differences in the cost and use of services

Using linked patient data from MBS, PBS and Hospitals

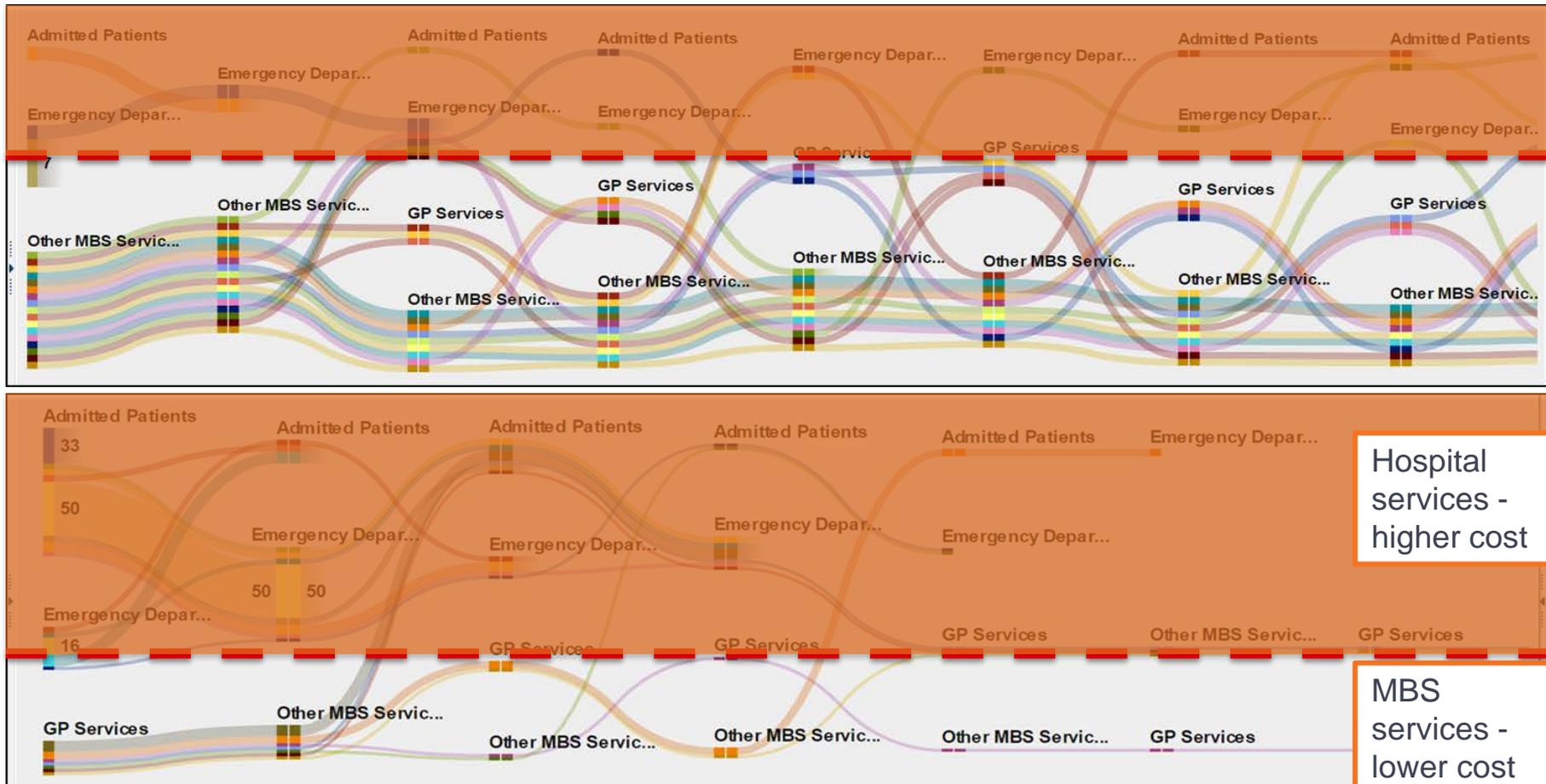
COPD patient sequence of events (top 20 pathways) for patients in 30-39 and 70-79 age cohort



- Top chart shows COPD patients in 30-39 age cohort – greater use of MBS.
- Bottom chart shows COPD patients in 70-79 age cohort – more interactions with hospital system (higher cost).

Using linked patient data from MBS, PBS and Hospitals

COPD patient sequence of events (top 20 pathways) for patients in 30-39 and 70-79 age cohort



- Shading shows the differences in utilisation of hospital-based services between 30-39 cohort (top) and 70-79 cohort (bottom)
- Highlights that 70-79 cohort has much greater usage of hospital services than 30-39 cohort

Insights for the Australian health system: where to from here?

- More work to be done to further understand the capability and broaden the utilisation of the existing integrated dataset across stakeholders
- The Administrator and NHFB will continue to use data matching and data analytics to ensure funding integrity (e.g. double dips)
- Insights for each level of governance (Commonwealth, states/territories, LHNs, PHNs, GPs, hospital managers, allied health, Colleges)
- Utilisation of data analytics from ABF data can assist with:
 - Ensuring resource maximisation
 - Service planning at the state and LHN levels
 - Developing integrated governance models and ‘whole of system’ planning
 - Safety and quality of services
- Key enabler for the Heads of Agreement goals and reforms