



**Centre for Primary Health Care and Equity**

# **Primary and Community Health Cohort/ Linkage Resource (P&CH)**

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# Project Consortium

## Chief Investigators & Other Investigators

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## Other Consortium Members

Dr Greg Stewart (SESLHD), Ms Lou-Anne Blunden (SLHD), Dr Michael Moore (CESPHN), Prof Fiona Blyth (USYD and SLHD), Prof Jean-Frederic Levesque (UNSW and ACI)

## Funding

The Central and Eastern Sydney Primary and Community Health Cohort/Data Linkage Resource (CES-P&CH) is jointly funded by NSW Health Sydney Local Health District, NSW Health South East Sydney Local Health District and the Central and Eastern Sydney Primary Health Network.

# Cover in the presentation

1. Primary and Community Health Cohort/Linkage Resource (P&CH):
  - a) milestones
  - b) current resource
  - c) phase 1 projects
  
2. Future opportunities using the resource
  - a) analysis framework and measures available
  - b) research priorities identified to date

Link to P&CH research project:

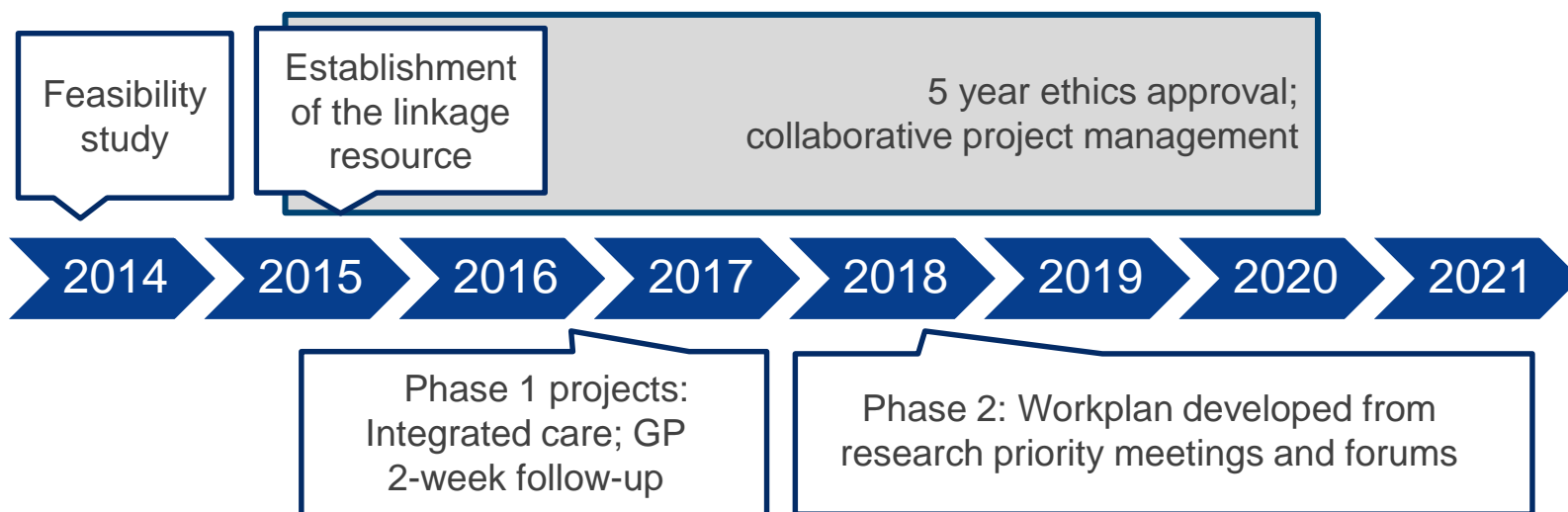
<https://cphce.unsw.edu.au/research/health-system-integration-and-primary-health-care-development/central-and-eastern-sydney>

# Part 1: Primary and Community Health Cohort/ Linkage Resource (P&CH)

## Aims

1. To establish/maintain a de-identified linked dataset which will support health services research and evaluation allowing decision makers to better understand their community's health care needs.
2. To undertake research and evaluation of particular interest to participating organisations in relation to access to primary and community health care and its impact on health service use.
3. To investigate the relationship between health service use and personal characteristics, health outcomes, and to examine how these relationships vary according to a range of sociodemographic, lifestyle and health related characteristics.

# a) Milestones



## b) Current Linkage Resource<sup>1</sup>

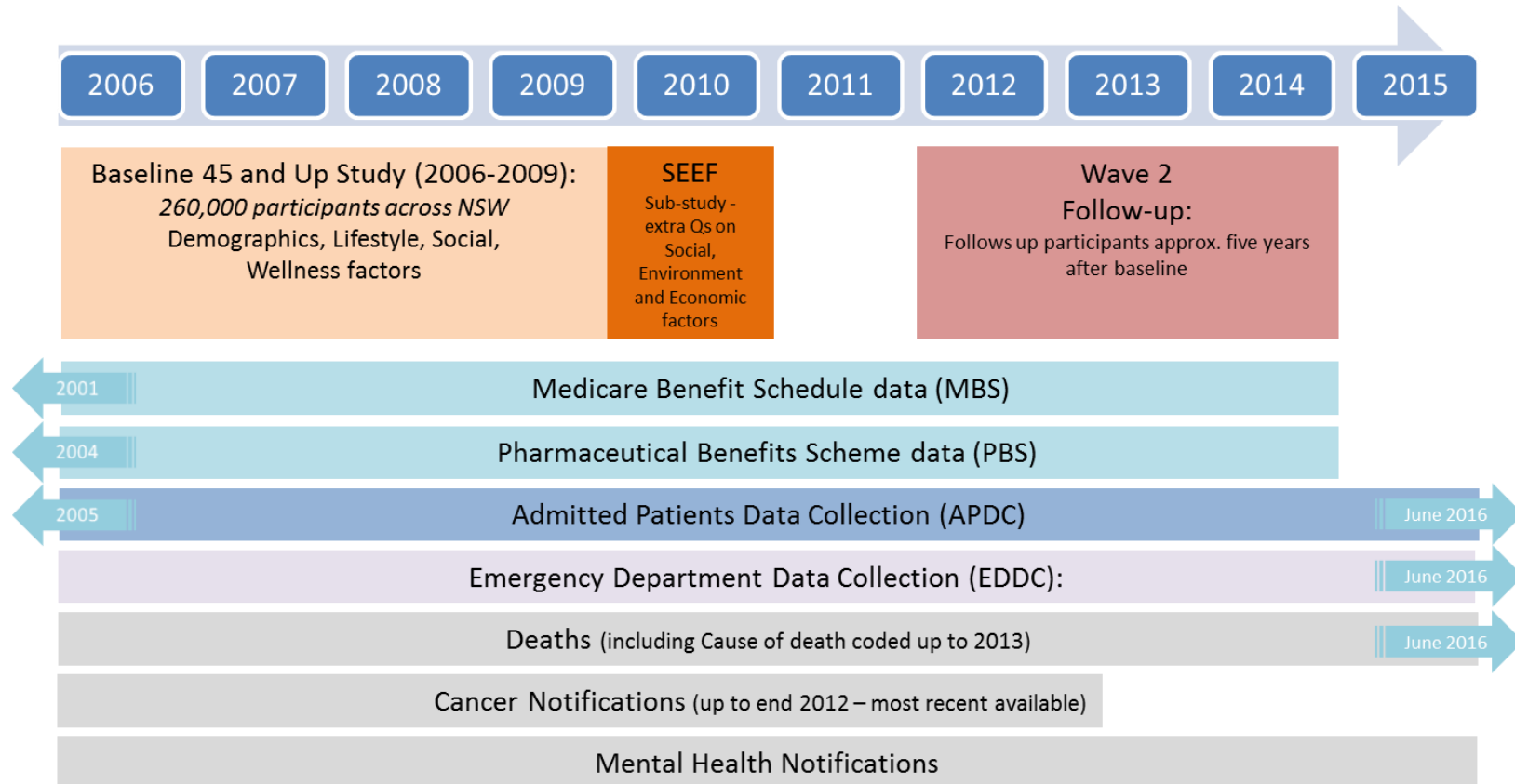


1. Modified from figure in Bureau of Health Information. Data Matters – Linking data to unlock information. The use of linked data in healthcare performance assessment. Sydney (NSW). 2015; BHI.

# Longitudinal data within the resource

Deterministic: MBS/PBS based on Medicare ID

Probabilistic: all other datasets via CHeReL



**10 datasets: over 26 million records**

## c) Phase 1 projects

1. Examination of integrated care arrangements
2. Examination impact of GP 2-weeks follow-up after hospitalisation



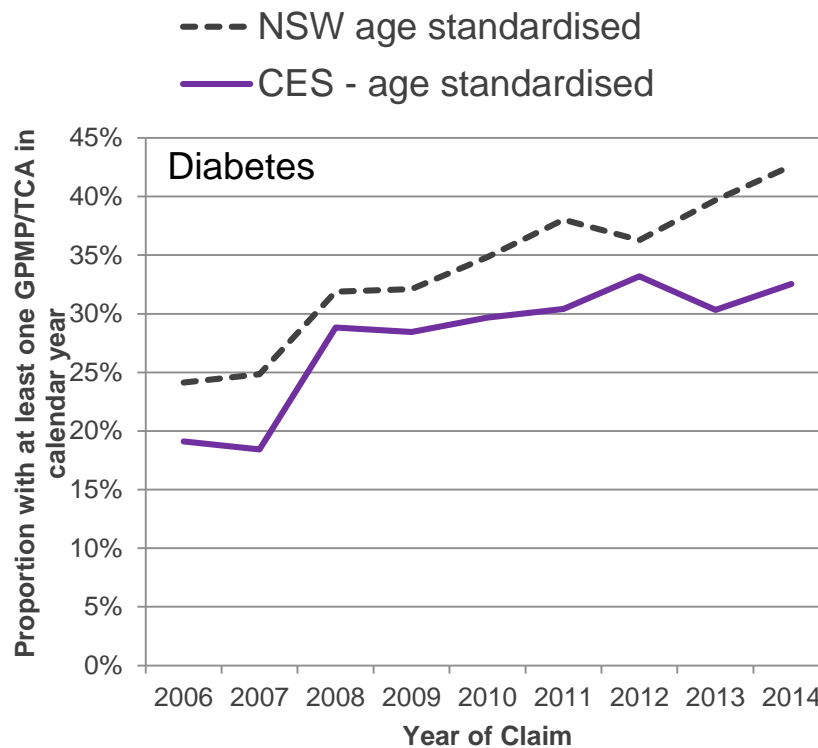
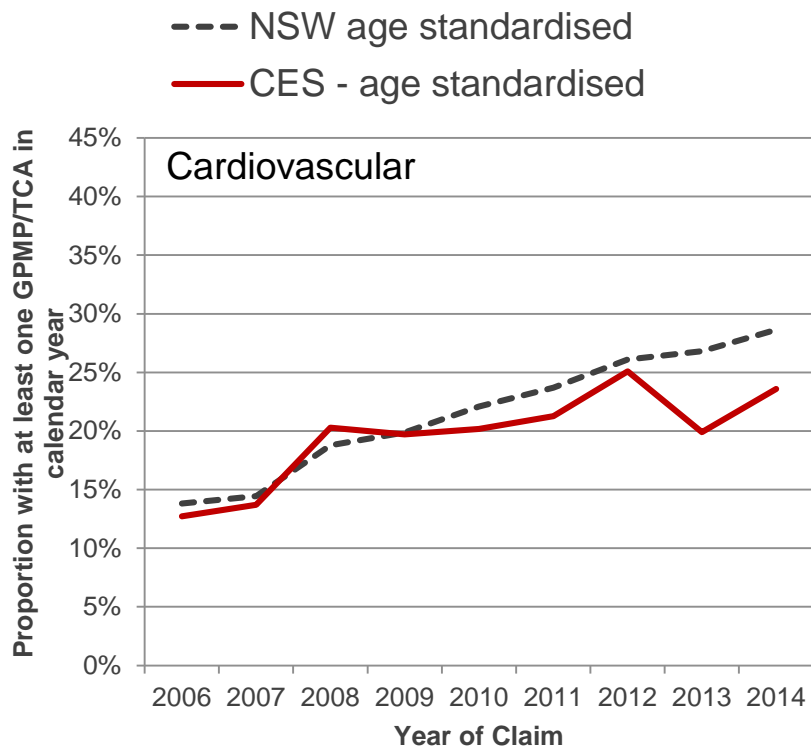
# Examination of integrated care arrangements

- Chronic health conditions and disability increasing in the Australian population
- The MBS Chronic Disease Management (CDM) provides a more structured approach to managing patients with complex care needs
- Could be considered a 'measure of multidisciplinary/integrated care'
- This supports GPs to claim for:
  - Annual general practice management plan (GPMP)
  - Annual team care arrangement (TCA) a
  - 3 monthly reviews
- Supports patients to claim for up to 5 private allied health services
- No one has examined how the use is changing over time and/or the impact on preventable hospitalisations

# Research objectives

1. Determine if access to multidisciplinary/integrated care has increased over time
2. Determine the characteristics of patients more likely to receive multidisciplinary/integrated care
3. Investigate whether increased access to multidisciplinary/integrated care is associated with reduced hospital admissions and emergency department visits

# 1. GPMP/TCA - change in use over time

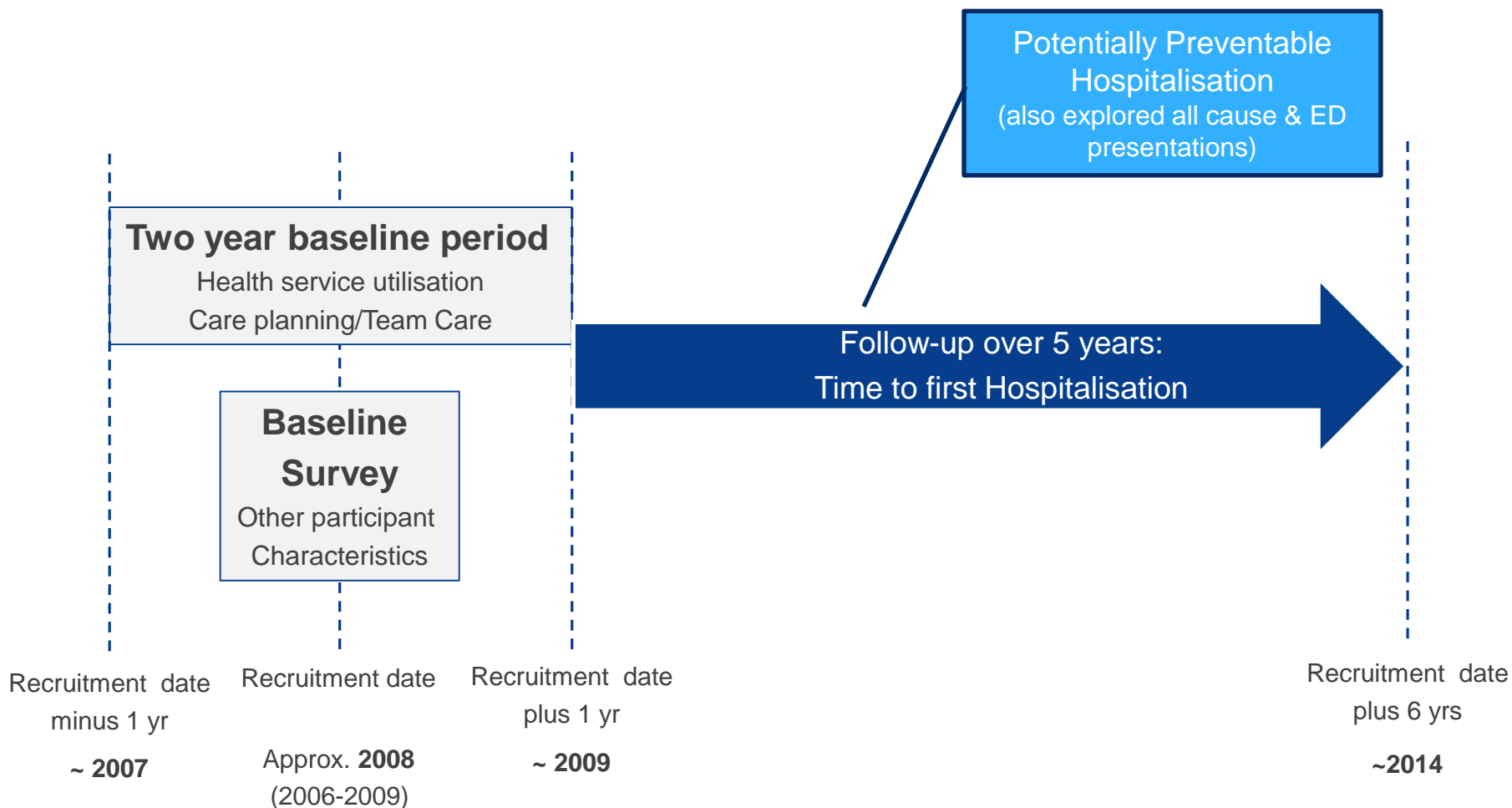


## 2. Relationship between participant characteristics and preparation of a GPMP/TCA

Domain	Characteristics of those using GPMP/TCA (significant associations highlighted)
Socio-demographic	Male, Older, Language other than English, Born overseas, Lower Education, Lower Household income, Not working, Housing type, No private health cover
Health risk factors	Current smoker, inadequate physical exercise, inadequate Fruit & Veg, High risk alcohol consumption, Overweight/Obese, Being treated for high BP, Being treated for high Cholesterol
Health status	More physical limitations (SF36), Higher psychological distress (K10), Self reported poorer health, Self reported lower quality of life, More chronic conditions*, Needs help for a disability, Self reported fall
Healthcare utilisation	More GP visits, continuity of care, hospitalisation, saw a specialist, bulk-billed most or all of the time (within the baseline period)

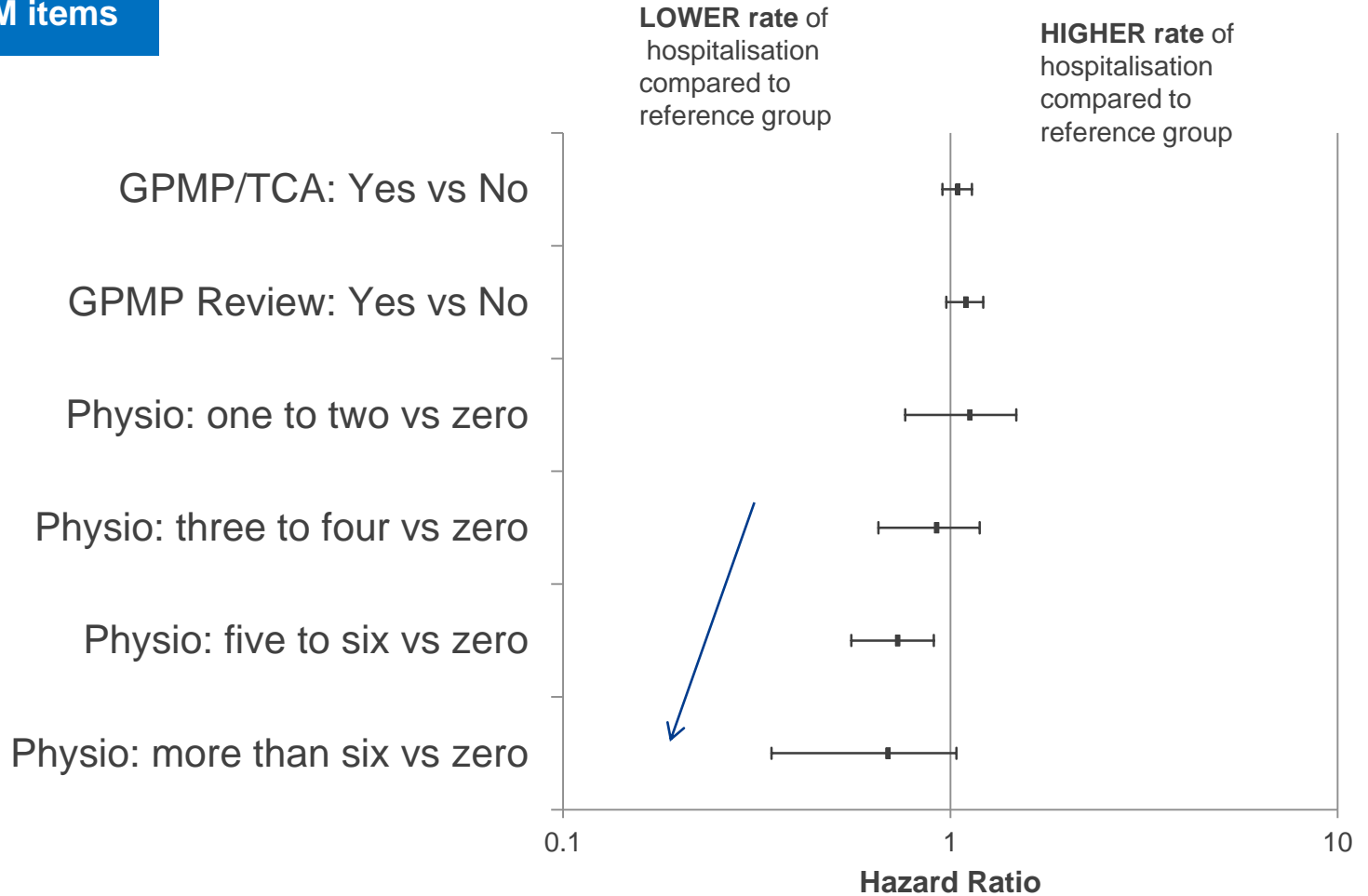
\*Maximum of 6: Diabetes, cardiovascular, cancer, mental health, respiratory (asthma), musculoskeletal

### 3. Relationship between GPMP/TCA and potentially preventable hospitalisations



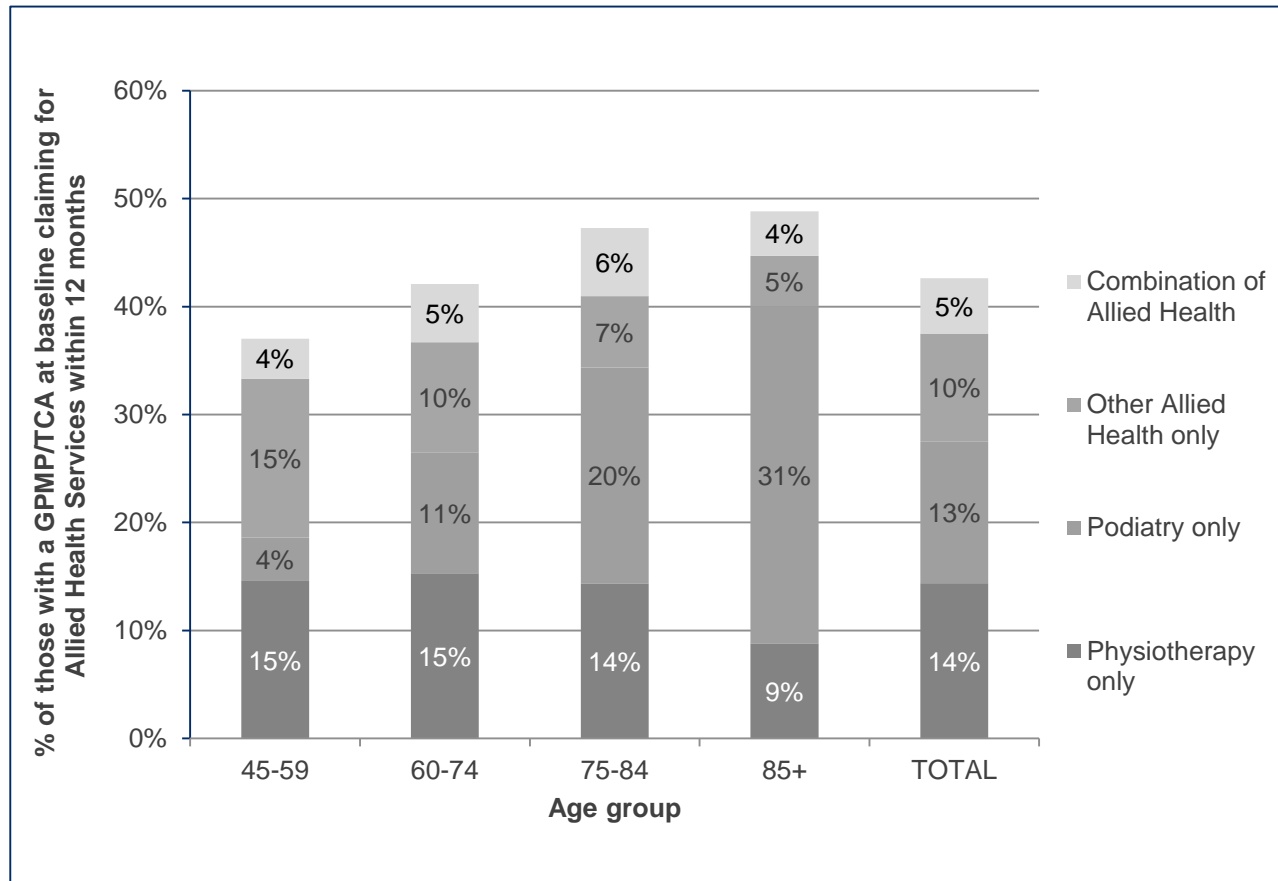
## CDM items

Physio  
only



Multivariable: controlling for all other socio-demographic, health risk, health status and healthcare utilization factors

# Further analysis



- Exploration of those with care plans by type of service provided and/or condition

# Examination impact of GP 2-weeks follow-up after hospitalisation

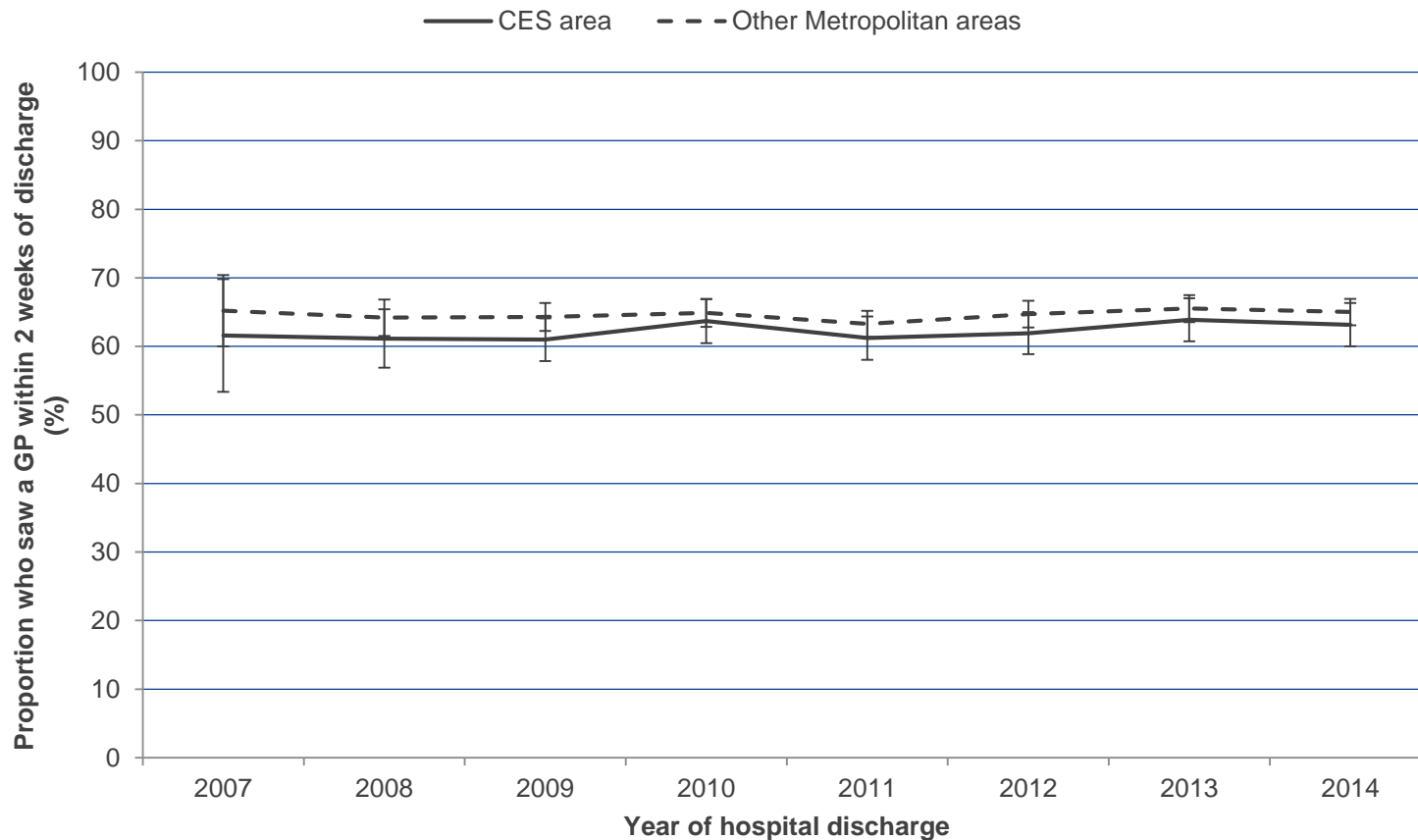
- Integration of health care and referral back to general practice are key goals of health care services
- Discharge planning aims to ensure a seamless transition of care from the hospital to community setting
- 10,994 participants identified with an Index hospitalisation



# Research objectives

1. Determine if GP 2-week follow-up after hospitalisation has increased over time
2. Determine the characteristics of patients more likely to receive GP follow-up 2-weeks after hospitalisation
3. Impact of GP 2-week follow-up after hospitalisation on subsequent hospitalisations

# 1. GP 2-week follow-up after hospitalisation over time



## 2. Characteristics of patients more likely to receive GP follow-up 2-weeks after hospitalisation

Domain	Characteristics of those seeing GP/specialist (significant associations highlighted)
Socio-demographic	<b>Male, Older</b> , Language other than English, Born overseas, Lower Education, <b>Lower Household income</b> , <b>Full-time work</b> , Housing type, <b>No private health cover</b>
Health risk factors	<b>Current smoker</b> , Inadequate physical exercise, inadequate Fruit & Veg, High risk alcohol consumption, Overweight/Obese, Being treated for high BP, Being treated for high Cholesterol
Health status	More physical limitations (SF36), Higher psychological distress (K10), Self reported poorer health, Self reported lower quality of life, Needs help for a disability, Self reported CVD, <b>No self-reported depression/anxiety</b>
Healthcare utilisation	<b>More GP/specialist visits</b> , continuity of care, saw a specialist, bulk-billed most or all of the time

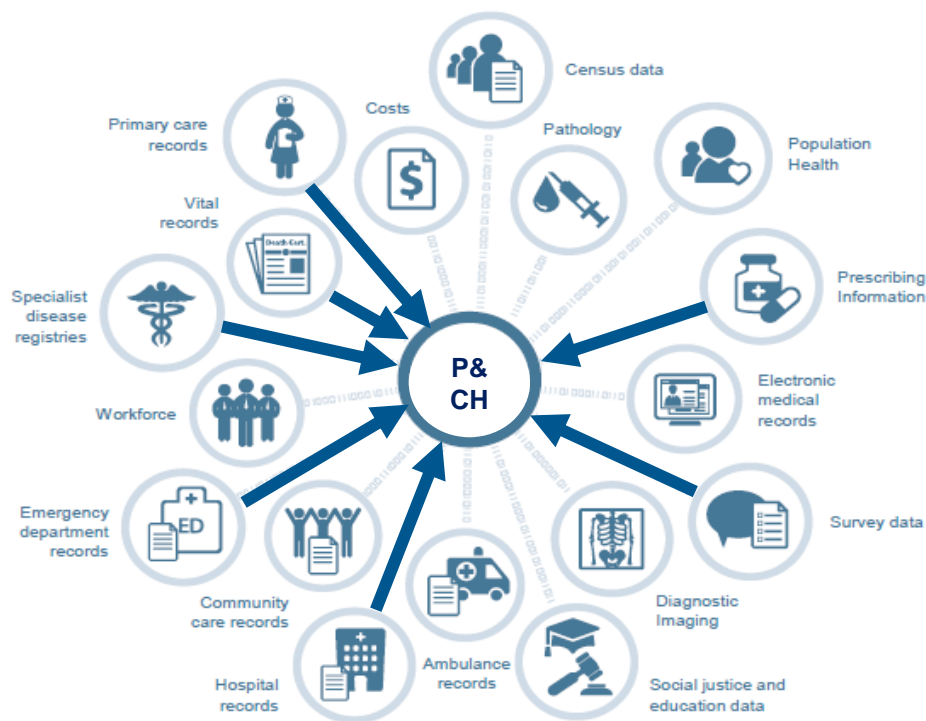
### 3) Impact on subsequent hospitalisations

	Within an 12 month period		
	Hospitalised	Not hospitalised	Died
Saw a GP within 2 weeks of index hospitalisation	3617 (55%)	2924	46
Did not see a GP within 2 weeks of index hospitalisation	1828 (50%)	1810	16

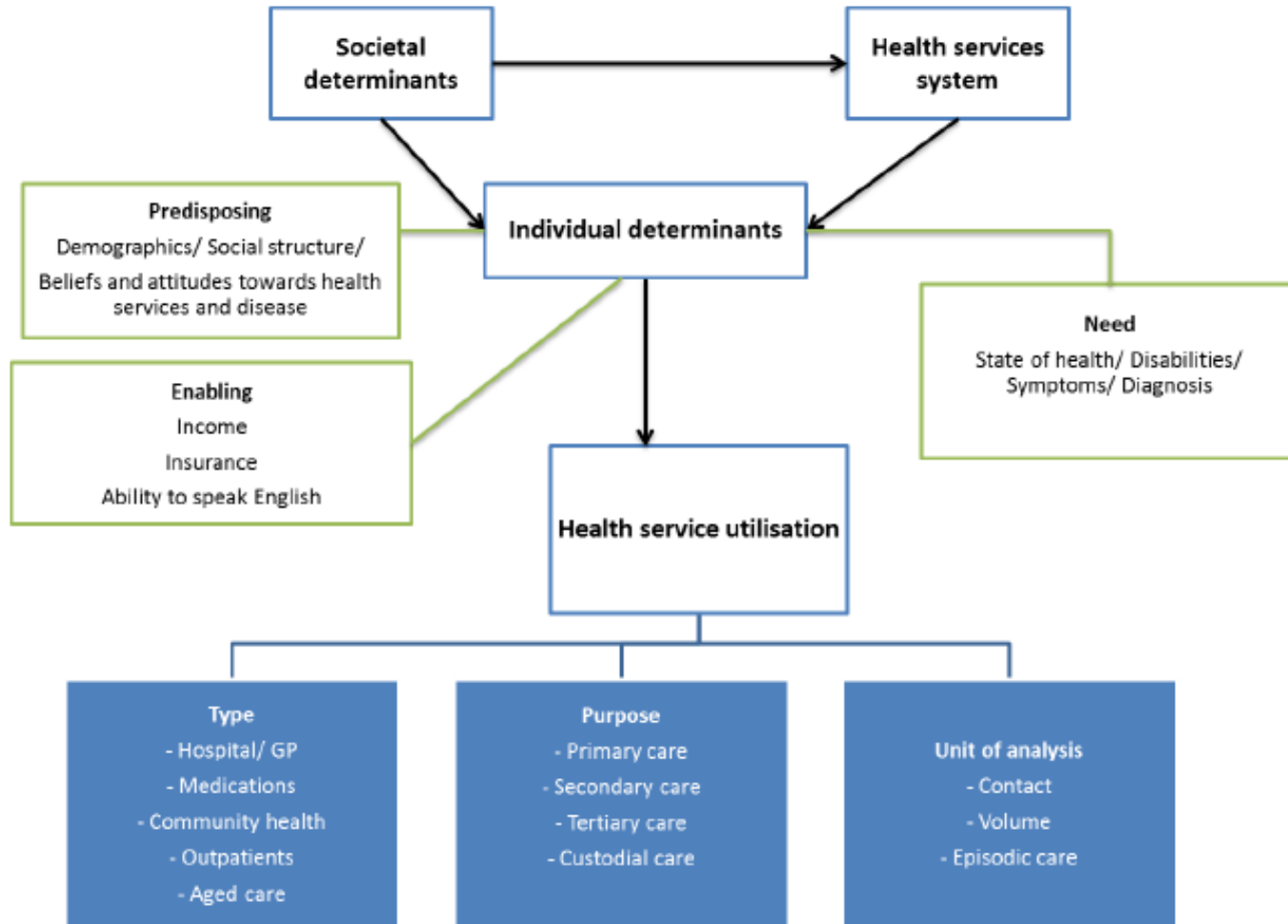
Further research: Exploration by time to hospitalisation and/or condition

# Part 2. Future Opportunities

- **Longitudinal data strengths:** repeated measures; time to a key clinical event; ability to explore causal relationships
- **Wealth of information** in existing and updated questionnaire and linked administrative data
- **Potential for linking to new datasets** eg Non-Admitted Patient Data (when feasible)



# a) Analysis framework



# Types of measures available

Risk/protective factors	Primary care	Secondary Care	Integration of care
<ul style="list-style-type: none"> <li>• Smoking</li> <li>• Physical activity</li> <li>• Fruit &amp; Veg</li> <li>• Alcohol</li> <li>• Overweight/Obese</li> <li>• Treated for high BP</li> <li>• Treated for high Cholesterol</li> <li>• Cared for/carer</li> <li>• Functional ability</li> <li>• Social capital</li> <li>• High Psychological Distress</li> </ul>	<ul style="list-style-type: none"> <li>• GP attendance</li> <li>• Continuity of primary care provider</li> <li>• Use of primary care/ diagnostic services</li> <li>• Medication use</li> </ul>	<ul style="list-style-type: none"> <li>• First admission to hospital</li> <li>• Number of ED visits and hospital admissions</li> <li>• Total days in hospital</li> <li>• Cause-specific hospitalisation-including falls, stroke, heart failure, diabetes</li> <li>• Hospital readmission</li> </ul>	<ul style="list-style-type: none"> <li>• Access to integrated care</li> <li>• Time to follow up by GP following discharge from hospital</li> <li>• Continuity and coordination of care</li> </ul>

## b) Research priorities identified to date

Broad Themes	SLHD (Dec 2017)	SESLHD (Feb 2018)	CESPHN (Feb 2018)	2016 Research Forum
Care systems	NDIS; public and private mix; trans to res care.	Predictors of service use; before and after care plans	Evaluation of Health Pathways	Managing care and care systems
Medications	Polypharmacy, multiple prescribing, hosp	Patterns of use before presentation	Polypharmacy	Polypharmacy
Chronic disease care	Connectedness vs isolation			Care services; Do GP visits reduce hosp.
Demographics Environment	Ageing in the urban environment			
Mental health	Accessing specialist services		Mental health	
Hospitalisation		Frequent users		
Carers		Service use		
Immunization			Practice Nurses	
Falls				Protective factors



# Research Priority example: Polypharmacy

Broad Research Theme	Medications
Research Priority as Identified	Polypharmacy
Specific Research Priority	Does at-risk polypharmacy impact on health services in CES
<b>Possible Research Objectives:</b> <ul style="list-style-type: none"><li>• Define At-risk Polypharmacy (5 or more?; measures of potentially inappropriate medications)</li><li>• Determine if At-risk polypharmacy has increased over time in CES</li><li>• Determine the characteristics of patients more likely to be <b>at risk</b> from polypharmacy</li><li>• Investigate whether at-risk polypharmacy is associated with increased hospital admissions and emergency department visits</li><li>• Investigate possible interventions to minimise hospital admissions and emergency department visits due to at-risk polypharmacy</li></ul>	

**Thank you - Questions**