UNSW SYDNEY | Australia's Global University

Centre for Primary Health Care and Equity

Research Translation Webinar:

Predictors of service use among people aged over 75 years in Central and Eastern Sydney

In collaboration with: phn CENTRAL AND EASTERN SYDNEY | NSW Health

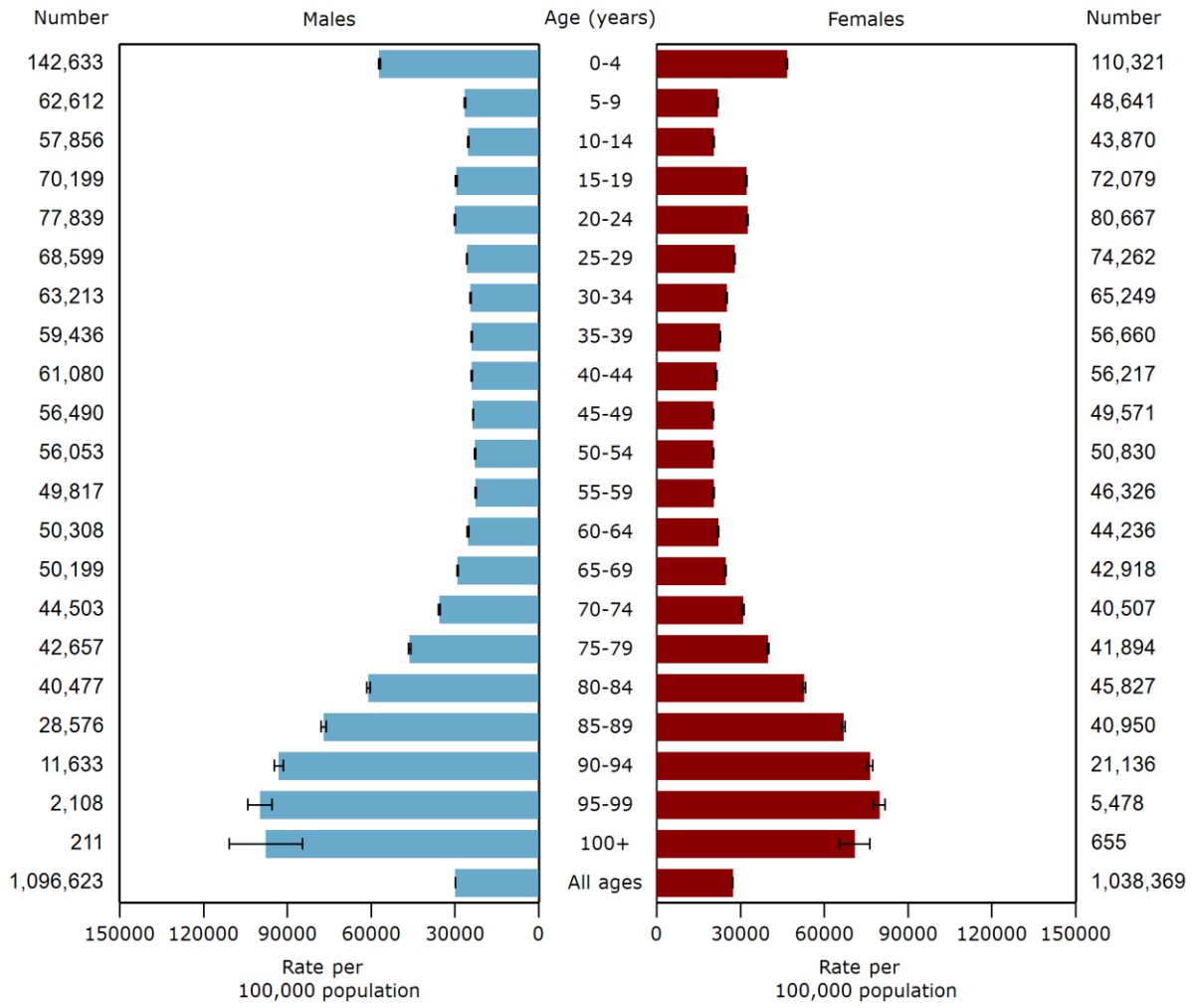
Wednesday 5 May 2021, 10.00-11.30am

Image source: Valenty, stock.adobe.com https://cdn.sanity.io/images/0vv8moc6/mhe/5db287ee1134afb30769d5f83b00e3f9e632f668-730x472.png?auto=format

Associate Professor Margo Barr

CES-P&CH Research translation

Unplanned presentations to 86 EDs by age, NSW, 2017-18



Source: Health Statistics New South Wales [Internet]. Sydney: NSW Ministry of Health, [cited 11/10/2018]. Available from: www.healthstats.nsw.gov.au.

Predictors/Gaps

Patients aged over 75 years: 12.4% of all ED presentations, 6.7% of the population

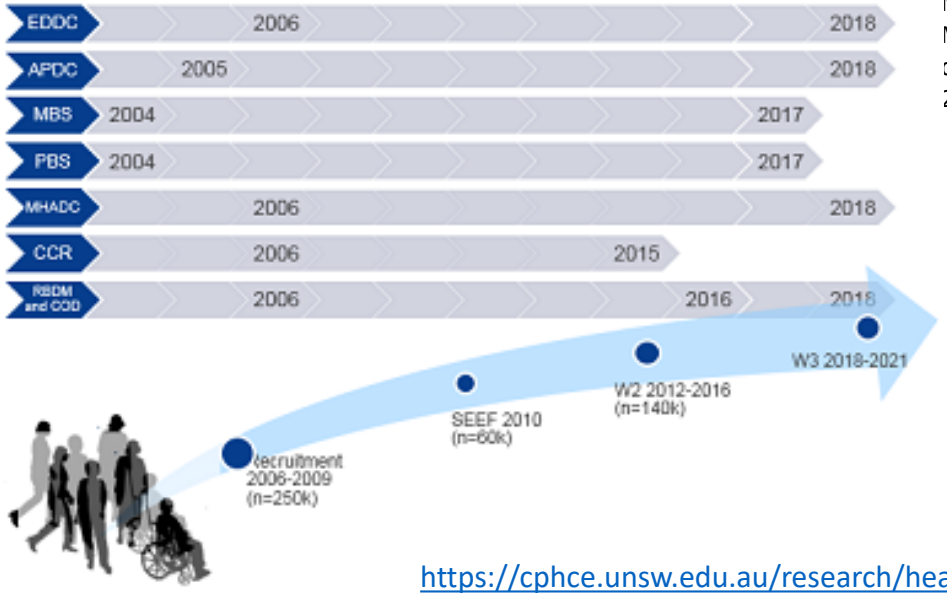
Explore predictors of service to inform planning and the provision of quality cost effective care

Primary and Community Health Linkage Resource

- ***Cohort***: over 250k NSW residents (45 and Up Study); 30,645 in CES (20,337 in SES and 10,308 in Sydney)
- ***Resource***: 10 datasets; over 172.7 mil records in NSW and 20.7 mil recodes for CES; 2006 onwards.

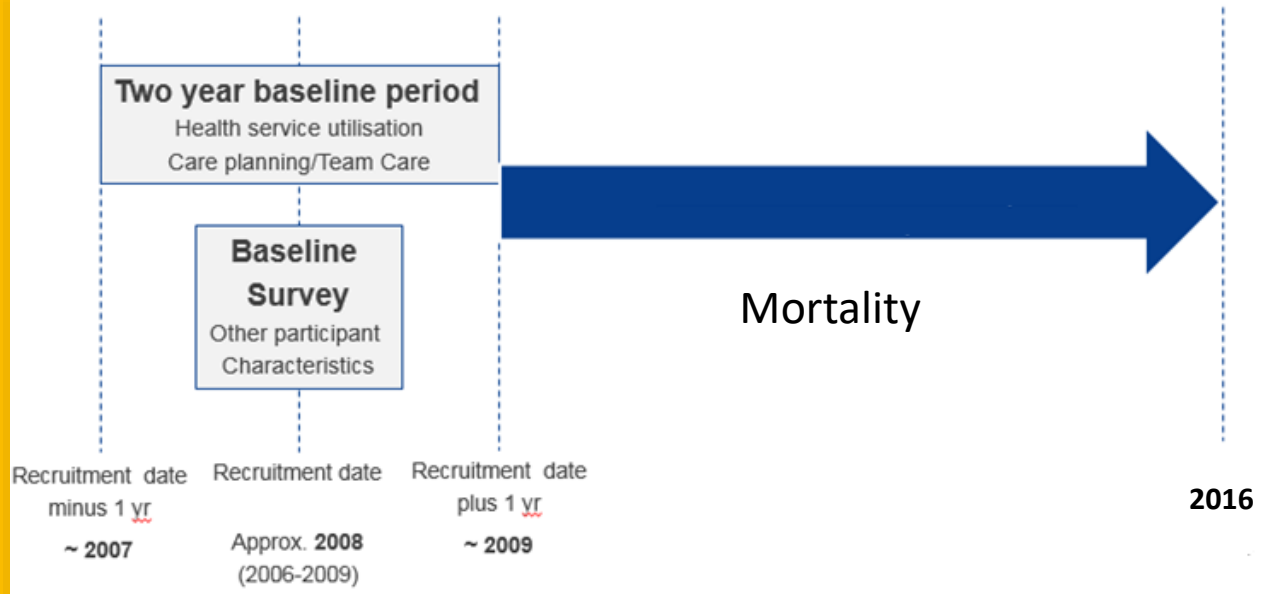
Modified from figure in Bureau of Health Information. Data Matters – Linking data to unlock information. The use of linked data in healthcare performance assessment. Sydney (NSW). 2015; BHI

Longitudinal data within the resource



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

Methods



- 6237 participants were eligible in CES (ie over 75 years at recruitment)
- Descriptive analysis calculated proportion service use (within +/- 1 year of baseline survey)
- PR and 95% CI calculated using generalised linear model with Poisson family and log link function
- PRs were adjusted for the potential confounders which were found to be associated with all other variables
- Mortality calculated over 8-year period

Service Use during baseline period	Associations (adjusted models)	
	More likely	Less likely
High GP use (Over 20) **27.0%**	speaking language other than English at home private health insurance, health care concession being an ex-smoker treated for high blood pressure ever had cardiovascular disease	educational qualification university or higher household income $20k-39k and ≥ $70k consuming alcohol 1 or more drinks reporting good quality of life
High Specialist use (10 plus) **28.1%**	private health insurance (2x) being an ex-smoker at least one fall in 12 months Ever had osteoporosis, cardiovascular disease, diabetes, cancer	aged over 90 years adequate physical activity reporting good quality of life
ED use (2 or more) **12.5%**	aged over 85 years at least one fall in last 12 months ever had cardiovascular disease	female private health insurance adequate physical activity reporting good quality of life consuming 1-13 drinks of alcohol
Hosp use (2 or more) **10.0%**	aged over 85 years being an ex-smoker at least one fall in 12 months ever had cardiovascular disease, diabetes or cancer	female speaking language other than English at home health care concession adequate physical activity consuming alcohol 1-13 drinks reporting good quality of life

Service Use during baseline period	Associations (adjusted models)	
	More likely	**Less likely**
High GP use (Over 20) **27.0%**	speaking language other than English at home private health insurance, health care concession being an ex-smoker treated for high blood pressure ever had cardiovascular disease	educational qualification university or higher household income $20k-39k and ≥ $70k consuming alcohol 1 or more drinks reporting good quality of life
High Specialist use (10 plus) **28.1%**	private health insurance (2x) being an ex-smoker at least one fall in 12 months ever had osteoporosis, cardiovascular disease, diabetes, cancer	aged over 90 years adequate physical activity reporting good quality of life
ED use (2 or more) **12.5%**	aged over 85 years at least one fall in last 12 months ever had cardiovascular disease	female private health insurance adequate physical activity reporting good quality of life consuming 1-13 drinks of alcohol
Hosp use (2 or more) **10.0%**	aged over 85 years being an ex-smoker at least one fall in 12 months ever had cardiovascular disease, diabetes or cancer	female, married speaking language other than English at home health care concession adequate physical activity consuming alcohol 1-13 drinks reporting good quality of life

Results - Mortality

GP (20 plus)

GP	N	Death <=8 years of recruitment	Mortality per 1000 PY	Crude HR (95% CI)	Adj. HR (95% CI)
<=13	2726	825	42.5	1	1
14-20	1609	551	45.1	**1.16 (1.05, 1.30)**	**1.17 (1.03, 1.32)**
>20	1645	727	62.3	**1.64 (1.49, 1.81)**	**1.47 (1.30, 1.64)**

Specialist (10 plus)

Specialist	N	Death <=8 years of recruitment	Mortality per 1000 PY	Crude HR (95% CI)	Adj. HR (95% CI)
No	4302	1398	46.1	1	1
Yes	1678	705	58.6	**1.41 (1.29, 1.54)**	**1.47 (1.32, 1.63)**

ED (2 or more)

ED	N	Death <=8 years of recruitment	Mortality per 1000 PY	Crude HR (95% CI)	Adj. HR (95% CI)
No	4176	1260	42.3	**1**	
Yes	982	553	93.0	**2.38 (2.16, 2.64)**	**1.95 (1.73, 2.19)**

Hospital (2 or more)

Hospital	N	Death up to 8 years after recruitment	Mortality per 1000 PY	Crude HR (95% CI)	Adj. HR (95% CI)
No	4692	1435	42.8	1	1
Yes	1288	668	83.8	**2.09 (1.91, 2.29)**	**1.67 (1.50, 1.86)**

Summary

- The main predictors for high service use in over 75 years in CES included self reported CVD, being an ex-smoker, and recent fall.
- Analysis shows high health service use is appropriately occurring for people with CVD.
- However, high services use (for GPs and specialists) is also being predicted based on the persons ability to pay (i.e. participants with PHI).
- Frequent health service use adjusted for all of the predictor of service use, is predictive of high mortality (ED 95% higher).