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Boosting policy-relevant research using linked administrative data

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Summary

- Opportunities
  - Population Health Research Network
  - Secure Unified Research Environment
  - 45 and Up Study
- Example: smokers' use of GP services
- Getting more research going

Opportunities

- Australia has complete, population-based data on:
  - Medicare funded services (MBS)
  - dispensing of subsidised pharmaceuticals (PBS)
  - emergency department presentations
  - hospital admissions
  - aged care
  - deaths…..
- These can be linked together across datasets, and over time

Opportunities

- These linked data have huge potential for policy-relevant research
  - local
  - cost-effective
  - timely
  - “real world”
  - support a range of study designs
    - evaluating complex organisational interventions
    - cohort and case-control studies
    - lifecourse or social epidemiology

Opportunities

- Australia has well-developed capabilities in health data linkage and data linkage research
  - Western Australia
  - NSW
- And emerging capabilities in all jurisdictions….

Opportunities:
Population Health Research Network

- Building national infrastructure for research using linked data
- Jointly funded
  - Australian Government (DIISR) via National Collaborative Research Infrastructure Strategy (NCRIS)
  - State government co-contributions
- Total budget $A 51.4M to mid-2012
- Additional $10M capital funding to July 2013 from Education Investment Fund (EIF)

PHRN Population Health Research Network

Population Health Research Network

- Components
  - National Centre for Data Linkage (Curtin)
  - National Program Office (UWA)
  - six state-based nodes
  - AIHW joining with EIF funding

Opportunities: Secure Unified Research Environment (SURE)

- A secure remote computing environment for research using linked health data
- Operated by the NSW ACT PHRN node, based at the Sax Institute
- Will seek to be accredited as part of “integrating authorities” for Commonwealth data

SURE
Secure Unified Research Environment

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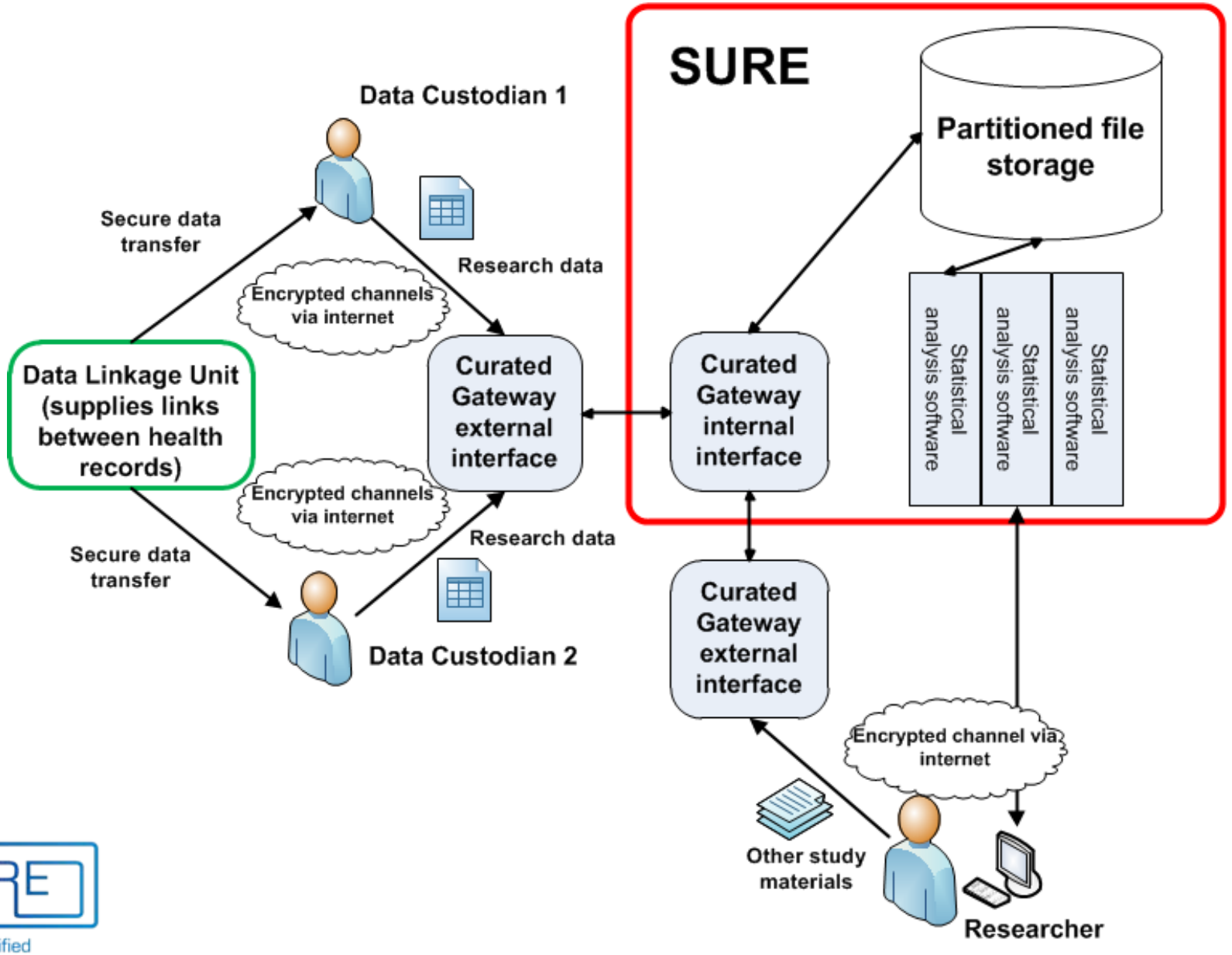
PHRN Population Health Research Network



SURE
Secure Unified Research Environment

Opportunities: The 45 and Up Study

- Largest cohort study in the southern hemisphere
- 266,848 men and women aged 45 and over from NSW
- randomly sampled from Medicare Australia database
- joined the Study by completing a baseline questionnaire between January 2006 and April 2008
- gave consent for linkage of their information to routine health databases including MBS and PBS

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THE 45 AND UP STUDY
Research to improve health and wellbeing

Example: Smokers' use of GP services

(Jorm L, Shepherd L, Blyth F)

- Smokers are at increased risk of many conditions that are amenable to prevention and early intervention in primary care
  - hypertension, cardiovascular disease, diabetes
  - exacerbation of asthma
  - cervical cancer
- GP-based brief interventions are among the most effective interventions for smoking cessation
- And yet little is known about smokers' use of GP services

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THE 45 AND UP STUDY

Research to improve health and wellbeing

Objective

- To quantify the relationship between smoking status and use of GP services, including specific preventive services

Data sources

- 45 and Up Study baseline questionnaire
- Medicare claims data
  - date of the service
  - item number for the service
  - amount charged by the provider
  - Medicare benefit paid for the service
  - out-of-pocket cost = amount charged – benefit paid
- Death registration data from NSW Registry of Births, Deaths and Marriages
  - censoring

Data linkage

- 45 and Up Study linked to Medicare claims data using direct (deterministic) linkage
- 45 and Up Study linked to death registrations using probabilistic linkage by the Centre for Health Record Linkage (CHeReL)

Results: use of preventive services

Males		PSA test		Immunisation
	%	RR* (95% CI)	%	RR* (95% CI)
Never smoker	19.9	Reference	18.8	Reference
Previous smoker <5yrs	18.1	0.90 (0.85 - 0.96)	17.0	1.04 (0.98 - 1.11)
Previous smoker 5+yrs	19.6	1.00 (0.97 - 1.02)	23.3	1.08 (1.05 - 1.10)
Current smoker	16.7	0.83 (0.79 - 0.88)	12.1	0.78 (0.73 - 0.82)
Females		**Pap smear**		**Immunisation**
	%	RR* (95% CI)	%	RR* (95% CI)
Never smoker	18.2	Reference	20.9	Reference
Previous smoker <5yrs	18.6	0.94 (0.89 - 0.99)	18.1	1.02 (0.96 - 1.08)
Previous smoker 5+yrs	19.2	0.99 (0.97 - 1.02)	20.9	1.05 (1.03 - 1.08)
Current smoker	16.0	0.80 (0.76 - 0.83)	14.0	0.82 (0.78 - 0.86)

*Adjusted for age, income, education, remoteness, country of birth, language spoken, private health insurance, work status and alcohol use

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Results: summary 1

- After adjusting for multiple socio-demographic and access factors, likelihood of visiting a GP was similar for current smokers and never smokers
- But if they did visit a GP, current smokers
  - claimed more benefit
  - paid less out-of-pocket costs

Results: summary 2

- Current smokers were less likely than never smokers to
  - have PSA tests (males)
  - have pap smears (females)
  - be immunised
  - have health checks (males)
- But they were more likely to use MBS chronic disease management items

Implications

- Smokers do not “look after themselves”
  - “optimistic bias”
  - avoiding censure
- Smokers may not be benefitting from preventive services for conditions for which they are at higher risk
  - Pap smears (~23,500 annually in NSW foregone)
  - immunisations (~50,000 annually in NSW foregone)
- But most smokers (>90%) use GP services in a 12-month period, so there is the opportunity for intervention!

Getting more research going

- Streamline processes for access to Commonwealth data
  - Integrating authorities
- Build research-policy partnerships
- Build the skilled workforce
- Share methods and tools

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SUE GOSS reports.

Growing our own biostatisticians

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From top: Professor Andrew Forbes with Alfred Hospital researchers; biostatisticians consult with people at the Baker Heart Institute.

The Age,
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