

# Health Data Linkage Interest Group

'Home care and aged care data for health service and adverse health outcomes analysis'

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# About the project

'Exploring the relationship between social care, primary & secondary health service use and adverse health outcomes'

- Lead by Central Coast Local Health District. SLHD & UNSW Centre for Big Data Research in Health collaborating
- 'NSW Integrated Care Strategy' - Demonstrator Site
- Aim: develop predictive models of impending emergency admission, RAC admission, significant change in health state etc; red flags  $\Rightarrow$  pre-emptive intervention

# Accessing the datasets

- Datasets
  - 45 and Up Study
  - APDC
  - EDDC
  - PBS
  - MBS
  - RBDM – Deaths
  
  - Home and Community Care (HACC)
  - Aged Care Assessment Program
  - Home Care packages Levels 2 and 4 (formerly Community Aged Care Packages, Extended Aged Care at Home (EACH), and EACH Dementia)
  - Transition Care Program
  - Residential Aged Care (permanent and respite)
  - Veterans' Home Care (VHC)
  - DVA Community Nursing Program

# Accessing the datasets

- AIHW - National Aged Care Data Clearinghouse

W: <https://www.aihw.gov.au/about-our-data/our-data-collections/national-aged-care-data-clearinghouse>

E: [agedcaredataclearinghouse@aihw.gov.au](mailto:agedcaredataclearinghouse@aihw.gov.au)

- NSW FACS Analysis and Research (FAC SAR)

E: [facsar@facs.nsw.gov.au](mailto:facsar@facs.nsw.gov.au)

- AIHW - Data Linkage

E: [linkage@aihw.gov.au](mailto:linkage@aihw.gov.au)

- Home and Community Care (HACC)
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# Accessing the datasets

## Ethics Approval

- AIHW Ethics Committee

W: <https://www.aihw.gov.au/our-services/committees/aihw-ethics-committee>

E: [ethicssec@aihw.gov.au](mailto:ethicssec@aihw.gov.au)

# Accessing the datasets

- Department of Veteran's Affairs

W: <https://www.dva.gov.au/health-and-wellbeing/research-and-development/dva-data-research>

E: [research@dva.gov.au](mailto:research@dva.gov.au)

- AIHW - Data Linkage

E: [linkage@aihw.gov.au](mailto:linkage@aihw.gov.au)

- Veterans' Home Care (VHC)
- DVA Community Nursing Program



## Ethics Approval

- The Departments of Defence and Veterans' Affairs Human Research Ethics Committee (DDVA HREC)

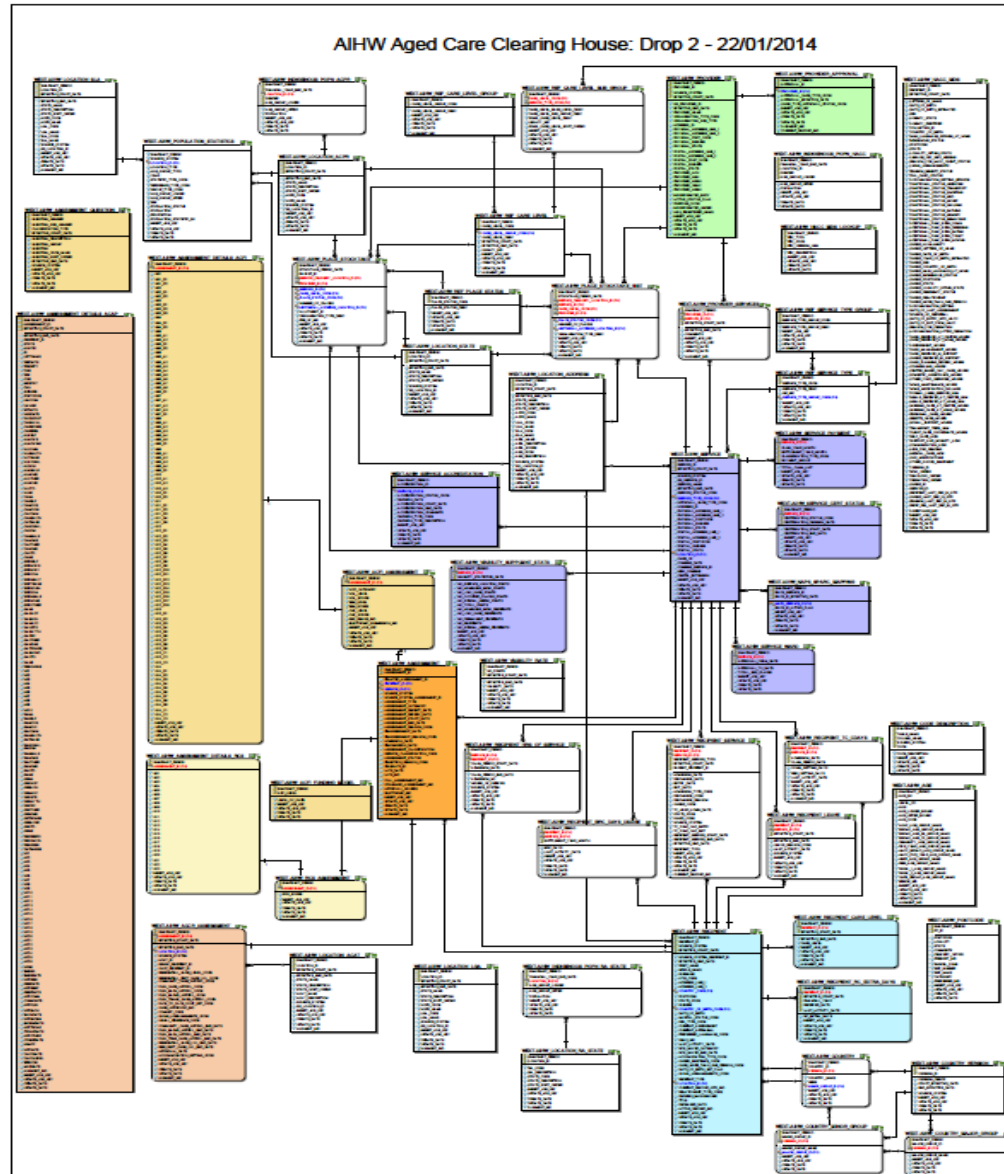
W: <http://www.defence.gov.au/Health/HREC/>

# Linkage

- AIHW - Data Linkage
  - 45 and Up Study linked by AIHW for several projects
  - no MLK



# Data preparation and analysis





# Data preparation and analysis

- Data preparation
  - Tips and pitfalls
- Analysis
  - Planned:
    - Logistic regression to predict the dichotomous outcome & modified to create Risk Score<sup>1,2</sup> and model performance tested on range of risk scores thresholds
    - Survival analysis - joint frailty model<sup>3</sup>
    - Latent Class Analysis
  - Underway:
    - Preliminary Predictive Modelling

1. Sullivan et al, Presentation of multivariate data for clinical use: the Framingham study risk score functions. Stat Med, 2004. 23: p. 1631-60.

2. van Walraven, et al. Derivation and validation of an index to predict early death or unplanned readmission after discharge from hospital to the community. CMAJ, 2010

3. Rondeau, V., et al., Joint frailty models for recurring events and death using maximum penalized likelihood estimation: application on cancer events. Biostatistics, 2007. 8(4): p. 708-721.

**Thank you**