A Spatial Dashboard for Alzheimer's Disease in New South Wales

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Introduction

• Combination of my doctoral work and with colleagues over the past five years (ongoing – see paper)

• Focus on systemic complexities – connecting data about people, conditions (epi.), services, workforce, facilities, costs etc.

• Emphasis on two key elements; (1) spatialisation (analysis) of health information and ; (2) visualisation for inclusive audience communication

• Secondary potential value in fields such as policy analysis and democratisation of an increasingly privatised aged care system

• Why this data viz approach? Geography still a difficult ‘sell’ in healthcare but integral in other industries
Scenario Builder in Excel – Linking Inputs and Outputs
Dementia Modelling with AIHW Rates

Dementia Sub-Type Projections

- Alzheimer's Disease Sub-Total
- Vascular Dementia Sub-Total
- Other Dementias Sub-Total
Outputs for Every SA2 in NSW: Local Profiles

Alzheimer's in Tweed Heads
2012-2027

Bar chart showing the number of cases of Alzheimer's disease in Tweed Heads from 2012 to 2027. The number of cases increases each year, with a predicted significant increase in 2027.
Health Services and Projected Scenarios: NSW
Ambulance Stations (current) x Scenario 1 in 2027
NSW Ambulance Stations (current) x Scenario 1 in 2027 – Sydney Metro
Service Providers Types Included in Modelling

• Public hospitals
• ACATs
• Ambulance stations
• GPs
• Pharmacists
• Residential care facilities
• Meals on Wheels (HACC provider example)
• *Entirely extensible and updateable – manual or dynamic data feeds,*
Tableau Dashboarding Ageing Demography and Dementias
Dashboarding Aged Care Service Providers by Location and Type
Mapping of Three Projected Formal Care Costs Scenarios by SA2
Heat Mapping Option
Discussion

• Complexities of ageing require new, innovative approaches
• Support multiple audiences with varying data/informatics literacy needs
• Spatial dimension increasingly popular in data viz packages and more data than ever is georeferenced (RFID, GPS, LiDAR etc.)
• GIS software moving to visually engaging and dynamic dashboard environments (e.g. ESRI)
• Same data accessible in different formats to engage different audiences
• Geographic approach central to all aspects of the ageing equation and yet still peripheral
• Limitations – population-level studies and dynamic demography, Tableau map analysis capability vs Maptitude dashboard capability
• Updating and refining to reflect 2016 census outputs and emerging research
Conclusion

• A fast-moving and developmental technological area – multi-industry
• Population ageing is becoming geographically complex and dynamic – global to local variations
• Population ageing will continue to diversify – still far too monolithic a construct
• Epidemiology of ageing is already diversifying – acute, chronic disease, disability conditions, intersectionalities etc.
• Big data concept gaining ground in healthcare (bit mixed and variable)
• Space and place foundational to environmental and societal complexities
• Spatial data viz supports engagement with real-life locational complexities