



Centre for Rural and Remote Mental Health (CRRMH)



Establishing a Database to Support Mental Health Research in Rural and Remote Areas

Census Analysis Conference, July 2006





Rural Mental Health Database Project

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Centre for Rural and Remote Mental Health



A rural initiative of

- The NSW Department of Health – Centre for Mental Health
- The University of Newcastle, Faculty of Health
- Established 2001







THE UNIVERSITY OF NEWCASTLE
AUSTRALIA





Background to Project

“It is essential, within a population health approach, that interventions are supported by an appropriate evidence base, and informed by ongoing monitoring and evaluation. In order for this to occur, it is necessary to develop an overarching research and evaluation agenda and to build capacity in research and evaluation at a local level.” National Mental Health Plan Pg 9

Aim - To investigate the geographic distribution of mental health determinants and outcomes, and links with existing models of rurality.



Mental Health and Rurality

- Some research suggests that mental health is worse in rural areas – other research suggests no effect or even slight protective effect.
- We know rural areas have greater levels of socio-economic disadvantage, more limited access to health care, and are subject to significant social and economic changes.
- Important to determine any type of relationship between mental health (wellbeing, distress) and rurality (beyond a dichotomy of urban-rural).



A Database to investigate Mental Health and Rurality

- Database needs to link datasets in unique ways (Department of Health, ABS, Bureau of Meteorology, Dept of Primary Industries) to assess determinants and outcomes on mental health to reflect the multidimensional constructs under investigation
- Provide new ways of modeling relationship between rurality and mental health. E.g. multi-level modeling (individual<-> household <-> environment <-> community), and spatial modeling.



ABS Functions

Australian Bureau of Statistics Act 1975, Section 6(1), states that the function of the Australian Bureau of Statistics is:

- (a) to constitute the central statistical authority for the Australian Government and, by arrangements with the Governments of the States, provide statistical services for those Governments;
- (b) to collect, compile, analyse and disseminate statistics and related information;
- (c) to ensure co-ordination of the operations of official bodies in the collection, compilation and dissemination of statistics and related information, with particular regard to:
 - (i) the avoidance of duplication in the collection by official bodies of information for statistical purposes;
 - (ii) the attainment of compatibility between, and the integration of, statistics compiled by official bodies; and
 - (iii) the maximum possible utilisation, for statistical purposes, of information, and means of collection of information, available to official bodies;
- (d) to formulate, and ensure compliance with, standards for the carrying out by official bodies of operations for statistical purposes;
- (e) to provide advice and assistance to official bodies in relation to statistics; and
- (f) to provide liaison between Australia, on the one hand, and other countries and international organisations, on the other hand, in relation to statistical matters.

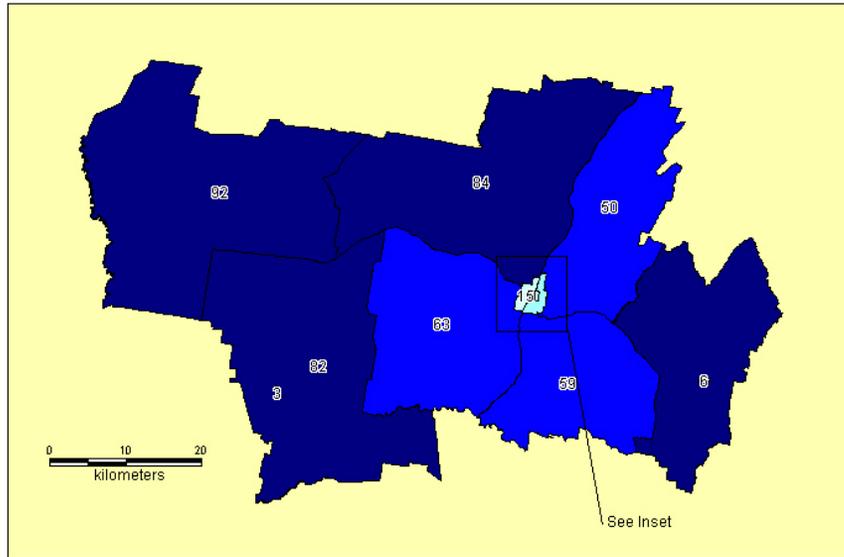


Use of Census Data for Database

- Downloaded directly from Census through CData / Map-Info program – e.g. data on Occupation and Industry by Age Group by Sex by Local Government Area for New South Wales.
- This data was used as an indirect measure for pesticide exposure in looking at possible link between pesticides and early onset of dementia
- Also download data at Census Collection District level to look at the distribution within a LGA of interest

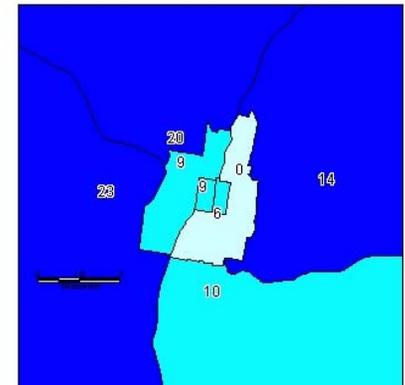
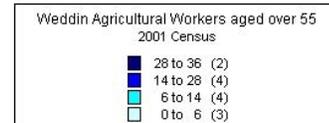
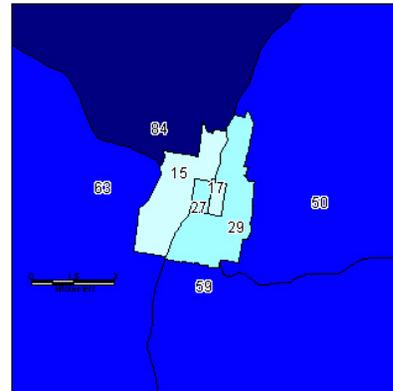
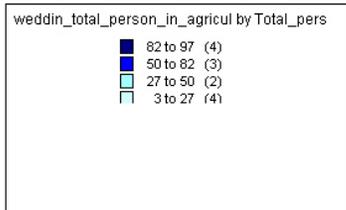
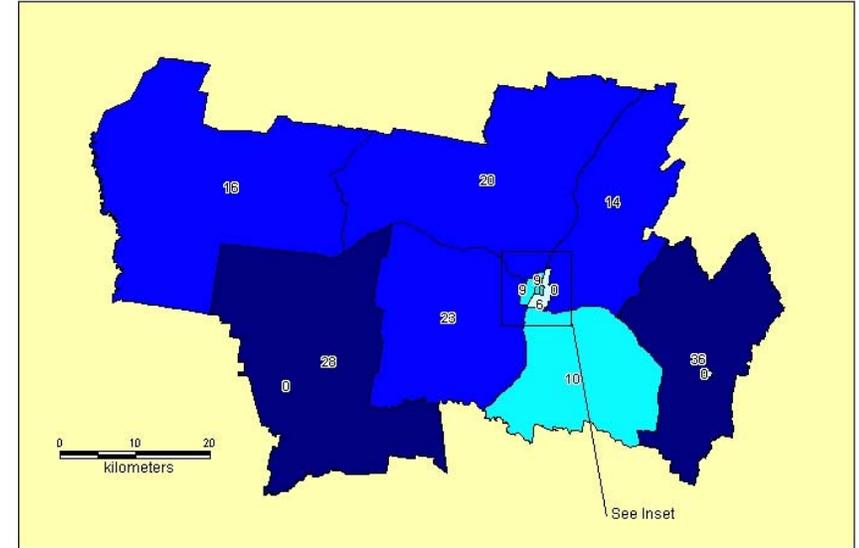
Weddin Local Government Area and CCDs

Total number of people in each CCD in Agriculture, Fishing or Forestry



Weddin Local Government Area and CCDs

Total number of people aged over 55 in Agriculture, Fishing or Forestry





Database Use of Census Products

- ABS releases Socio-Economic Indexes For Areas (SEIFA) after every Census,
- ABS also updates the Remoteness Categories for each area – Major City, Inner Regional, Outer Regional, Remote and Very Remote. (based on ARIA, 2006 to be based on ARIA Plus categorisation).
- Web based National Regional Profiles are also updated after the Census, although they can be updated within census periods e.g. change from publishing SEIFA score to SEIFA decile.



Data Products derived from Census



2004 NSW REGIONAL PROFILE

Available now for \$295 (incl. GST)

All data is the latest available at the time of production

A CD-ROM containing:

- Data for all NSW LGAs
- Over 100 tables of ABS and non-ABS data (see the end of this flyer for a full list)
- Easy to use Internet browser interface
- Excel spreadsheets
- Printable formatted output
- Explanatory notes, concordances and maps

For more information please contact Katy White,
Ph: 02 9268 4436, katy.white@abs.gov.au

To purchase a Profile fax your order to Katy White,
Fax: (02) 9268 4805

Diverse range of information

The 2004 NSW Regional Profile provides economic and social statistics for all NSW Local Government Areas (LGAs) in one, easy to use, CD ROM.

The Profile contains 111 tables of data from the ABS and other government agencies in eleven chapters:

- Population
- Social Characteristics
- Families
- Health
- Education
- Labour Force
- Income
- Economy
- Crime
- Transport and
- Housing



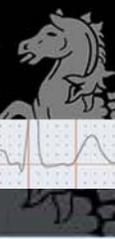
NSW Health data

- ❖ Morbidity and Mortality data for NSW
- ❖ Looking at utilising Mental Health – Outcomes Assessment Tool (MH-OAT) as a data source
- ❖ Continuous Health Survey data through NSW Health
- ❖ NSW Health Chief Health Officer Report, particularly for the Rural /Remote populations.



Other (non-ABS) Data Sources

- ❖ Agricultural statistics – tracked down to Australian Natural Resources Atlas and National Land and Water Resources Audit. Agricultural Census a late discovery.
- ❖ Bureau of Meteorology for rainfall and temperature data
- ❖ NSW Department of Primary Industries data – Areas drought declared within Rural Lands Protection Boards.
- ❖ Data freely available on the web, such as NSW Crime Data from Bureau of Crime Statistics and Research, and population projections from NSW Department of Planning



Database Project Resources

- The actual data (currently in Excel / flat file structure),
- Draft manual documenting the decisions made in establishing the database and how these decisions affected the database product,
- Linkages with other centers interested in NSW Rural Health, and
- Scoping Spreadsheets to assist new / existing users in how to use the data.



Faculty of Health

	A	B	C	D	E	F	G	H
1	data definition / Name of the data	Possible Sources	Link	Frequency of Collection	Limitations of the Data / Comments	Cost	Suggested use of the data / interpretation	Geographic Level available at
26	Where are the people? - Direct measures of rurality							
27	Important to identify the various accepted direct measures of 'rurality' for comparison over a range of mental health outcomes and determinants							
28	ASGC	ABS national regional profile	http://www.abs.gov.au	every census	note this gives the % of the population classified in ASGC area, not the % of the area.	free	Useful because it gives % of LGA in the 5 categories of ASGC in remoteness (based on ARIA index) - metro, inner regional, outer regional, remote and very remote	LGAs
29	ASGC	abs	abs cat	updated yearly	provides latest classification guide to australia's areas. Useful to find changes / merges over time	\$85	Used as concordance to transfer data from SLA - LGA, gives outline of the hierarchy	various
30	RRMA	DoHA paper on ARIA	http://www.health.gov.au		RRMA based on 1991 areas, very weak methodology, best to avoid if possible. SEE occasional paper for discussion of RRMA	free	Does use the categories of remote, rural and metropolitan. Better than nothing as a measure of 'rurality', and if departments / organisations are still using RRMA for funding / research purposes	1996 SLAs
31	ARIA	DoHA paper on ARIA	http://www.health.gov.au		better than RRMA as geographic measure of rurality - not just straight line distance from centroid of LGA.	free	Note that ARIA has been updated and refined since 1999. As well as using 'average' value for LGA, also consider minimum and maximum values.	1999 SLAs
32	Population Density	ABS national regional profile	http://www.abs.gov.au	unknown	Rurality is intrinsically tied up with population and area, so using population density (pop/area) makes sense	free	Very crude measure, and average over the whole area. Useful as a co-predictor of rurality	LGAs
33	Families by Remoteness Area	nsw regional profile from ABS on disk		unknown			useful if interested in families as opposed to people for studying effects of remoteness.	LGAs
34	What are the characteristics of rurality? - Indirect measures							
35	In addition to the direct measures of rurality, there are also a variety of indirect, or characteristics of rural areas that could also be useful for analysis							
36	A&TSI population	ABS using Census material	http://www.abs.gov.au	every census	Not a direct measure of rurality	\$300 in NSW regional profile	The link between % of indigenous and rurality is well made, and therefore it may be possible to use the % of indigenous people as a proxy / co-indicator of rurality	

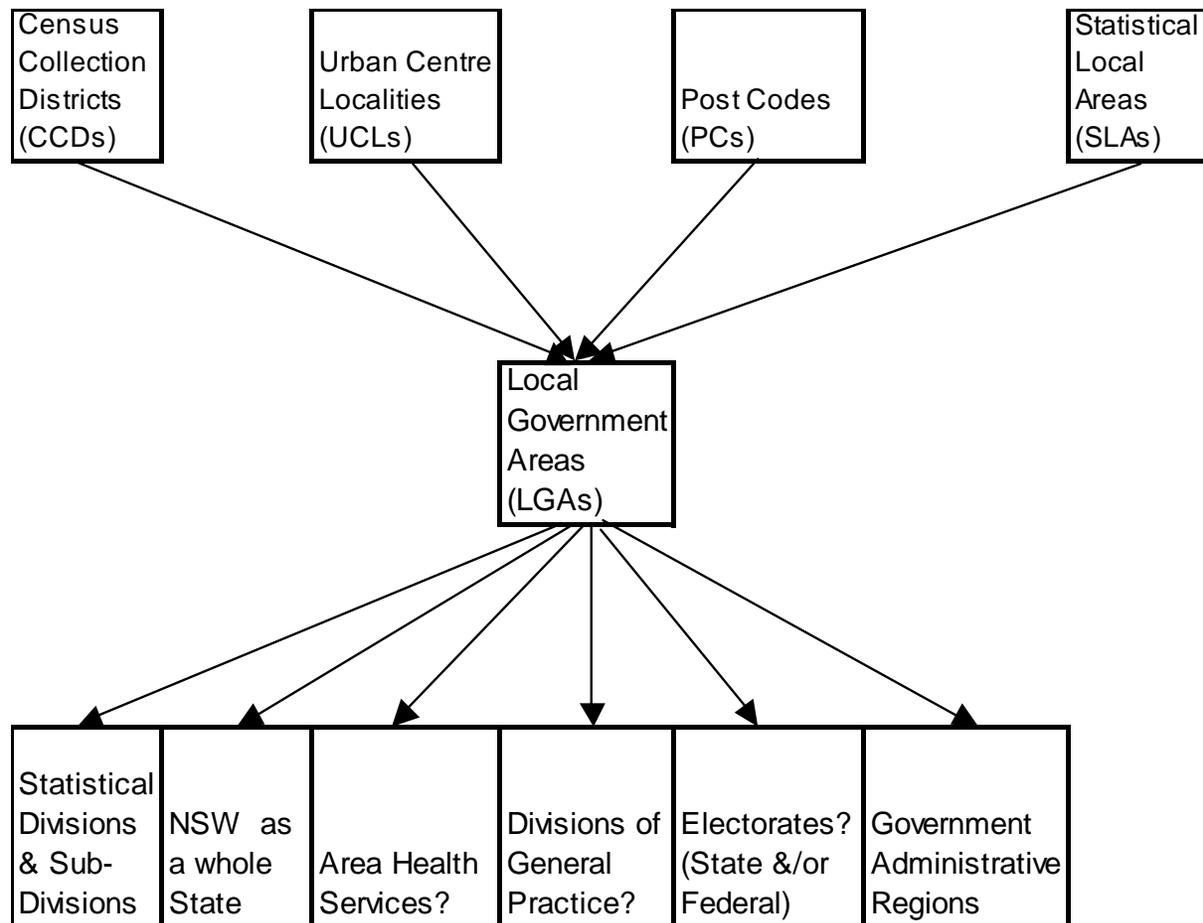


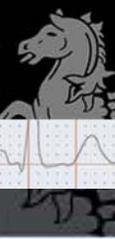
Metadata - Fields in Scoping Spreadsheet

- Name of data,
- Possible sources,
- Limitations of Data
- Suggested Use
- Cost,
- Geographic Level Available,
- Frequency of collection and
- Link / Contact Details



Structure





Database uses LGAs as a building block

- Pragmatic – data available at LGA level
- Privacy – unlikely to have privacy and confidentiality problems in that identifiable data unlikely to be at LGA level
- Identifiable – people know what an LGA or Shire Council is, as well as what shire they live in.
- Pragmatic pt2 – contiguous boundaries (unlike postcodes) to complete the state.
- Approximately 174 LGAs in NSW – good number of regions to analyse (regions vary from year to year)



What can the database do?

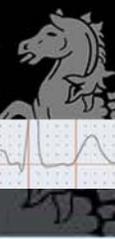
- ✓ Create profiles of an LGA, or larger bodies based on LGAS e.g. Area Health Services
- ✓ Generate research ideas and applications to investigate mental health in rural areas, as well as assist existing / future projects in other areas
- ✓ Supply information used for stratification of sampling for projects
- ✓ Create Composite Indices to allow comparison of mental health determinants and outcomes across the state
- ✓ Use data in other applications e.g. mapping



Examples of Composite Indices

Demographics	Variable Name
	Female Age Dependent Ratio
	Total Dependent Ratio
	Male Childhood Dependency Ratio
	% of LGA who did not move in year prior to 2001
	Total population of LGA
Rurality	Variable Name
	Total value of agriculture for year ended 30/06/2001
	Land Area
	ASGC Index
	RRMA Index
	Aria Index
Social Capital	Variable Name
	% of LGA earning \$1-\$199 per week
	% of LGA earning \$1500+ week
	Rate of AVO's issued
	% of people in LGA with no religious belief
	% of LGA speaks LOTE
SES	Variable Name
	SEIFA 2001 index of disadvantage
	% of LGA highest level of education yr 8 or below
	% of LGA highest level of education yr 12
	% of newstart customers are long term
	% of LGA earning \$1-\$199 per week

Table 1: Variables for the hypothesised mental health determinants



Example of Composite Indices

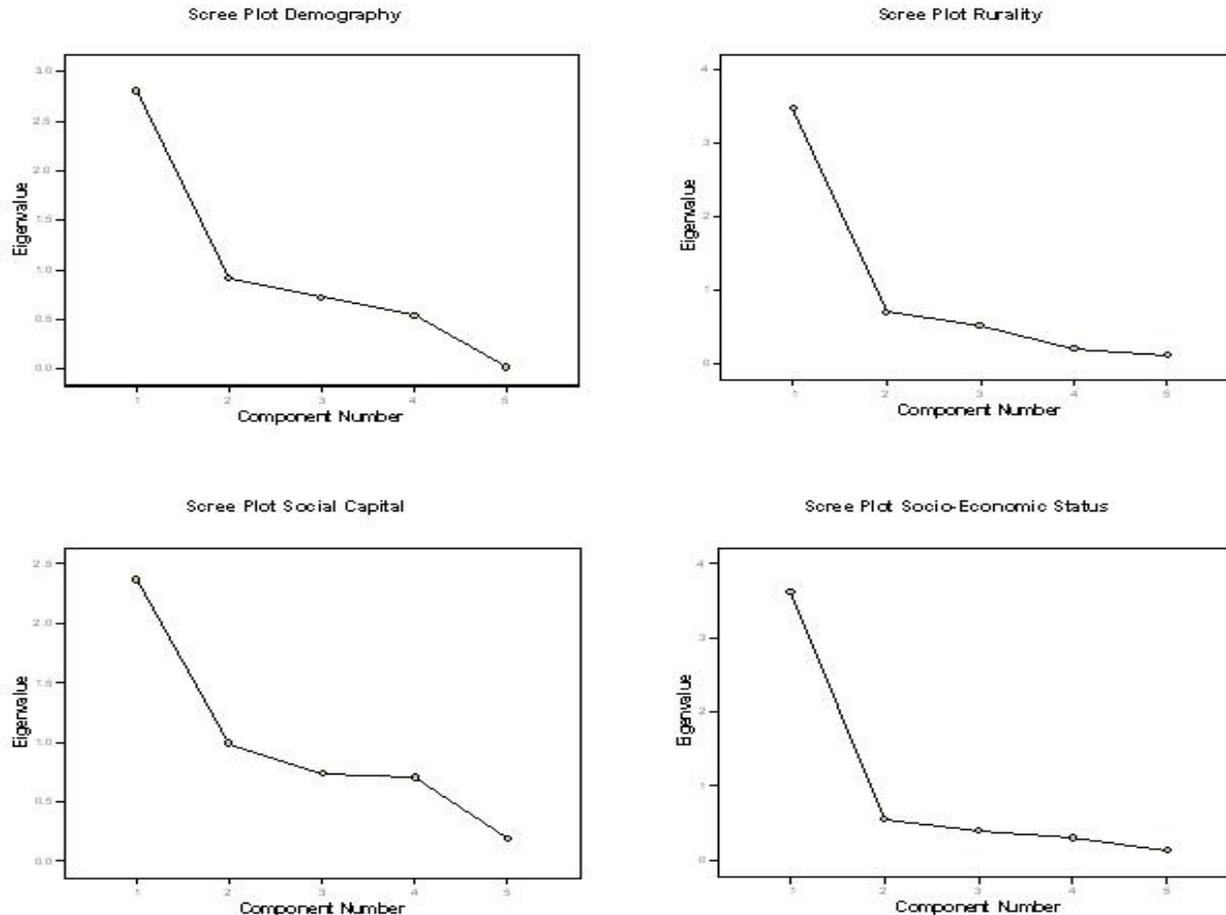
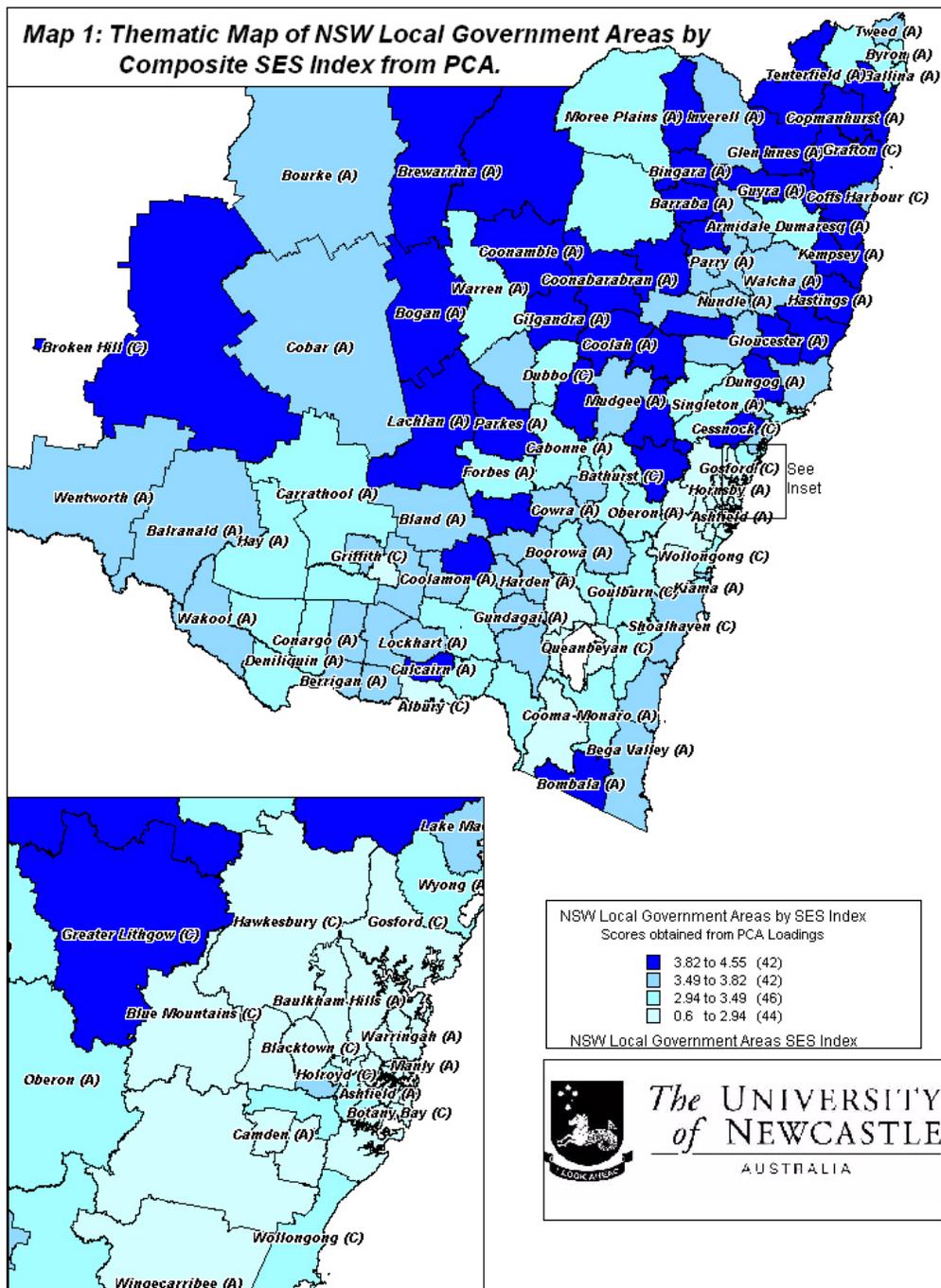


Figure 1. Scree Plot of Principal Components Analysis on mental health determinants.

Example of mapping Composite Index Socio-Economic Status Index

Figure 2. Thematic Map of Index of socio-economic status created from Loading of variables from Principal Components Analysis on mental health determinants





Future Areas for the Database Project

- CRRMH to conduct large NH&MRC funded study on mental health in rural and remote NSW.
- Benefits of possible link between this survey and the ABS National Survey of Mental Health and Wellbeing (which deliberately under-samples in rural and remote areas)
- Also keen to utilise the census data with other sources (e.g. survey data) to explore some issues through multi-level modelling (how much variance in mental health is due to individual / household / community factors).



Future Areas for the Database Project II

- Further Analysis – e.g. extension of indices, to see how they relate to mental health outcomes
- Possible change of database from excel to SAS, or at least partly to obtain information from NSW Health Epidemiology and Research
- Identify areas that are going to be important and develop indicators e.g. mental health literacy
- Develop both database and expertise to enable using the database for evaluation – probably indicator as opposed to process and outcome evaluation
- Linkages and Collaboration – given confidentiality and copyright.



Conclusions and Recommendations

- ABS change in policy to allow free access is greatly appreciated
- Census information accessed in a range of ways – directly from Census, indirectly from Census products, and also indirectly from ABS products such as NSW Regional Profile – the latter is useful for allowing small research / business groups a relatively inexpensive way to start profiling / collecting information
- Revisit ABS function from ABS Act 1975 – collect, compile, analyse, disseminate, avoid duplication, provide assistance, and ‘maximum utilisation of statistics’
- Consider providing concordances for free (currently charging for this service), as well as previous ASGC structures in Mappable format.



Conclusions and Recommendations II

- Metadata is always a trade-off between ease of usage and comprehensiveness
- Looking forward to working with MESH tracts – how deal with Privacy and Confidentiality issues.
- Dealing with ABS Copyright restrictions particularly on purchased items when collaborating with others.
- Reliability of Indigenous Population Estimates – too “flaky” for National Regional Profiles, but age by sex breakdowns by LGA for purchased product.



Changes between Census years

For inter-censal periods, changes in the structure of the Australian Standards Geographic Classification (ASGC) are provided in ABS Catalogue Number 1216.0

In Appendix 2 of that document, it provides the approximate change in area – it would be very helpful to also give an approximate change in percentage of population

Perhaps also consider providing concordances free of charge.



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Thank you



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