



CAT Plus

GEOCODING

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Agenda



PAT CAT
GEOCODING

What is Geocoding

Privacy Concerns

ANU Project Study Cooperation

A brief history of General Practice Geocoding

What is Different with PENCS Geocoding

Demonstration & PAT CAT Recipes

New Provider Mappify

Free Offer till 30 June 2017

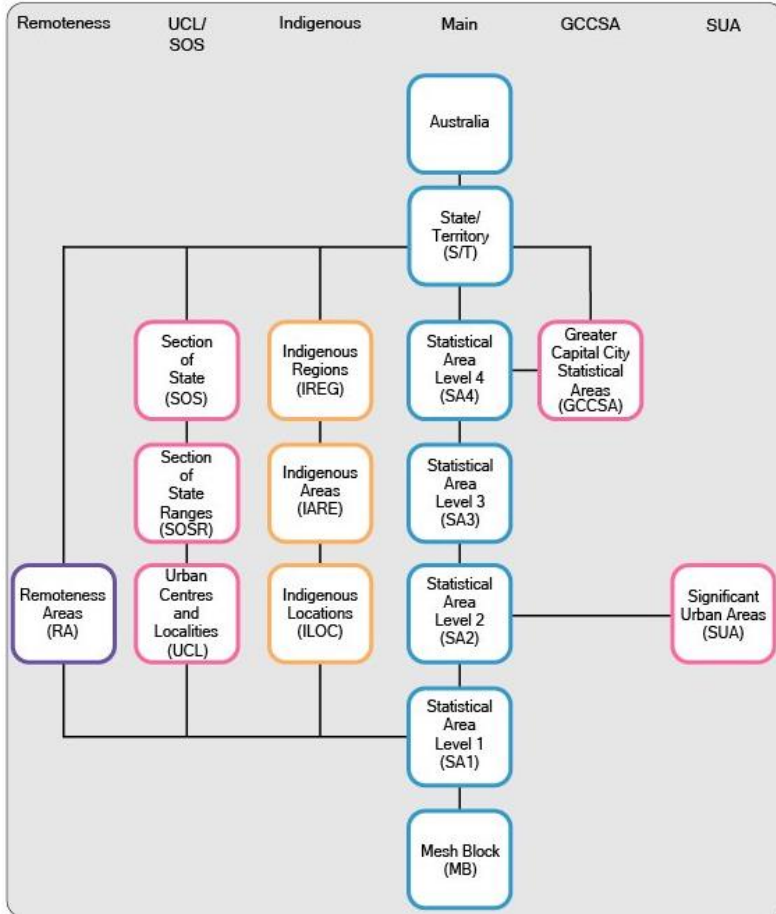
Questions & Answer Session

What is Geocoding

Also known as geo-attribution, geolinking, g-tags

Geocoding essentially solves the problem of working out where the patients are in the PHN's catchment!

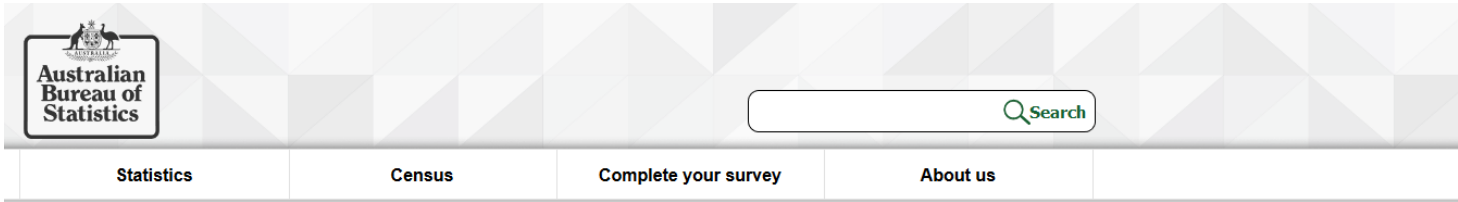
What is Geocoding – Australian Bureau of Statistics



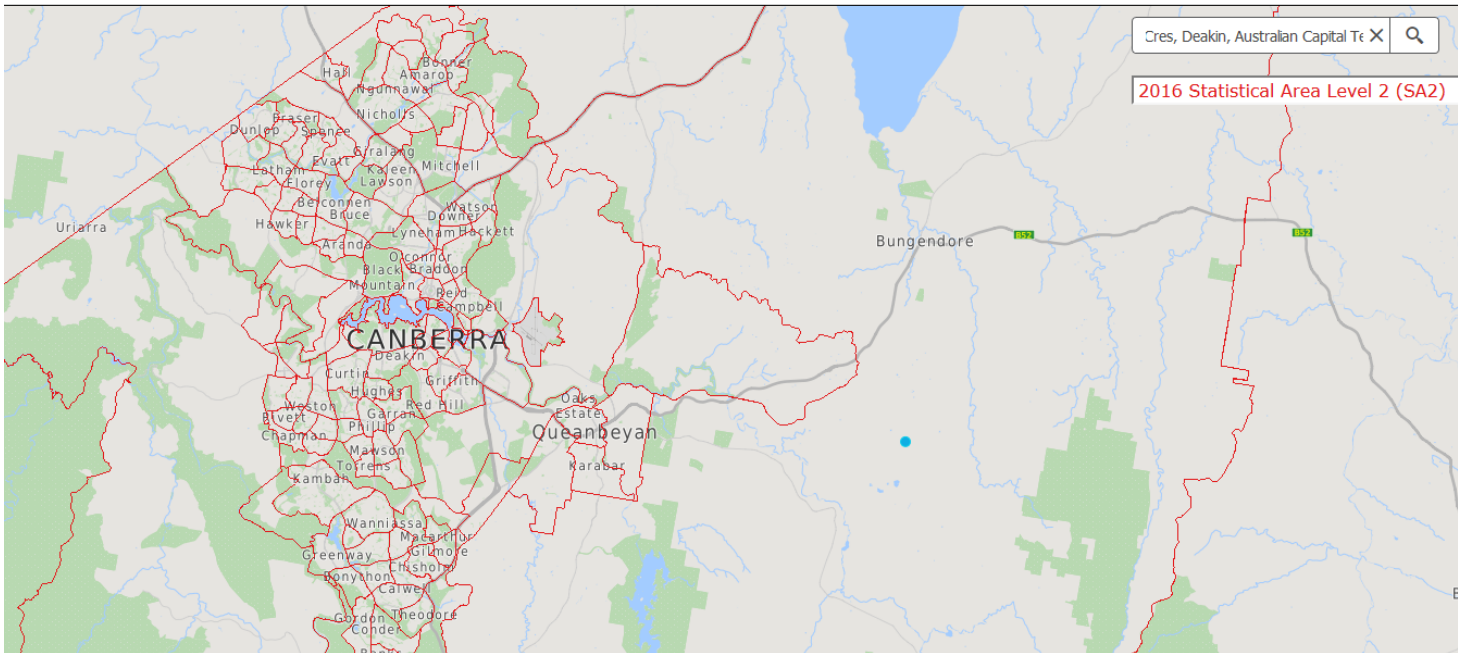
SA	Number	Approximate Population	Average Population
SA4	88	300,000-500,000	Regional 100,000-300,000 Metro 300,000-500,000
SA3	333	30,000-130,000	130,000
SA2	2,196	3,000-25,000	10,000
SA1	Approx 55,000	200-800	400

Postcodes are considered identifiable information.

What is Geocoding- ABS Statistical Area Map

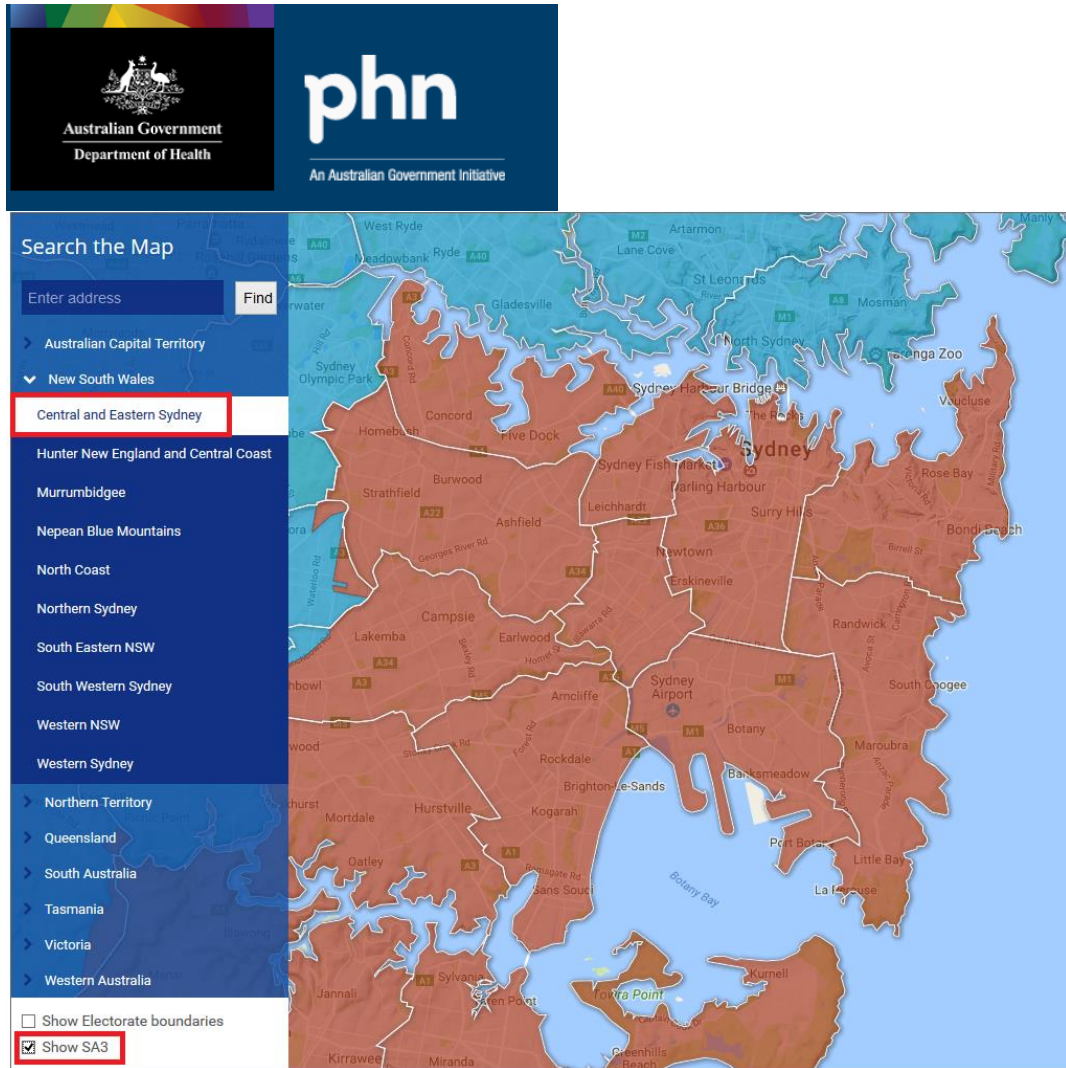


<http://stat.abs.gov.au/itt/r.jsp?ABSMAPS>



Change the Dropdown

What is Geocoding- Example PHN Locator Map



<http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-Locator>

Choose the PHN
Click Show SA3

What is Geocoding – Which SA Does Pat CAT Use

SA1 – Too small, would need ethics approval.

SA4 – Too Big for meaningful use

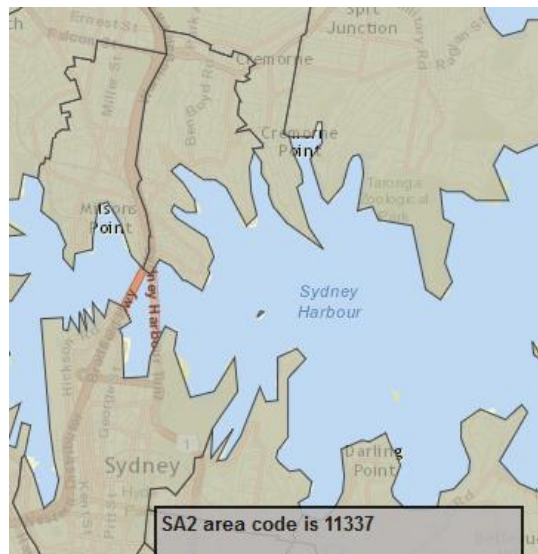
SA2 – PAT CAT will generally use these codes.

SA3 – As a backup if not enough data.

Will not display SA2/3 if less than 5 patients

State and Territory Codes and Names

Code	S/T
1	New South Wales
2	Victoria
3	Queensland
4	South Australia
5	Western Australia
6	Tasmania
7	Northern Territory
8	Australian Capital Territory
9	Other Territories



SA2 CODING STRUCTURE

An SA2 is identifiable either by a 9-digit fully hierarchical code, or by a truncated 5-digit code comprising the S/T and SA2 identifiers. The SA2 identifier is a 4-digit code, assigned in alphabetical order within an SA3. An SA2 code is only unique within an S/T if it is preceded by the S/T identifier.

9-digit Code

A 9-digit SA2 code is fully hierarchical, and comprises: S/T identifier, SA4 identifier, SA3 identifier, SA2 identifier.

Example:

503021041 Perth City

S/T	SA4	SA3	SA2	SA2 Name
5	03	02	1041	Perth City

5-digit Code

A 5-digit SA2 code is not hierarchical, and comprises only S/T identifier, SA2 identifier.

Example:

51041 Perth City

S/T	SA2	SA2 Name
5	1041	Perth City

Privacy Concerns

CAT4


- When CAT does a collect, 2 files are created.
- The files are encrypted, and password protected.
- They can only be viewed in PENCS software.

PAT CAT

- Less than 5 patients in a SA2 it wont display data.

ANU Cooperation - GRAPHC

EXPLORE ANU » A-Z INDEX »

 Australian National University

National Centre for Geographic Resources & Analysis
in Primary Health Care (GRAPHC)
ANU, Research School of Population Health

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Popular

GRAPHC Registration

- GRAPHC Registration / Login
- GRAPHC Wiki

Our purpose and vision

The National Centre for Geographic Resources & Analysis in Primary Health Care (GRAPHC) was created within the Australian Primary Health Care Research Institute (APHCRI) in 2011 to promote and facilitate the use of geographical information systems (GIS) to inform locally relevant and equitable solutions for targeting health resources and services in Australia.

Formally the vision of GRAPHC is:

To enhance the capacity of primary health care, by using geographically based tools, methods, data and web-based mapping platforms to support research into primary health care issues.

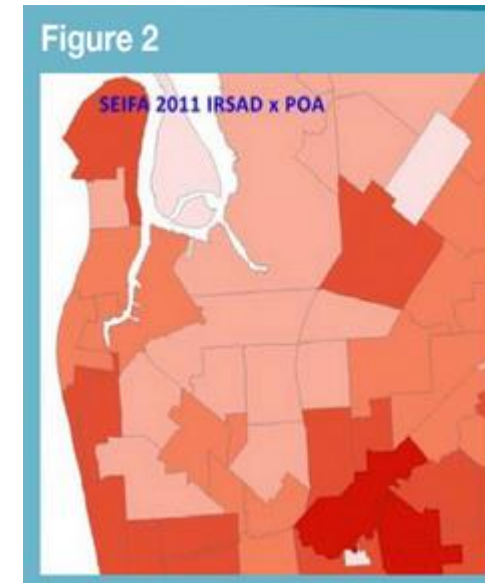
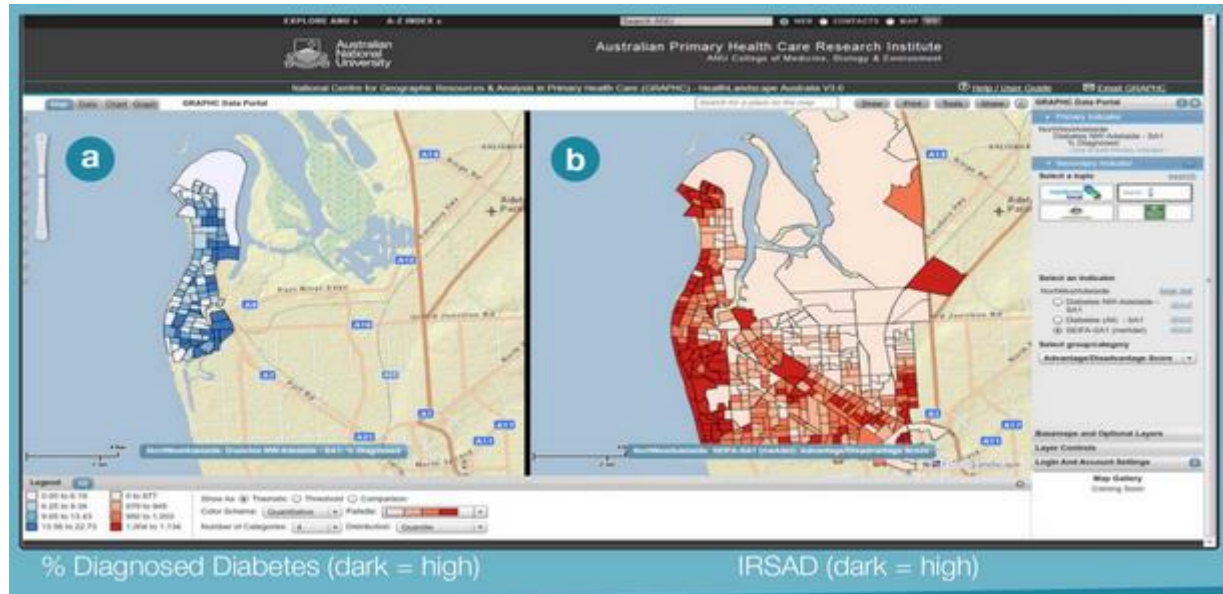
How we will achieve our vision

GRAPHC undertakes its own research, supports other researchers in applying geographic and spatial tools, and participates in capacity building of both human and information technology resources to further support this research.

Central to GRAPHC's capacity building is:

- facilitating the inclusion of location identifiers into researchers' own data,
- enabling access to spatially based demographic and health data,
- supporting spatial analysis tools and methods and
- providing a range of map-based visualisations, directly and through the [GRAPHC on-line portal](#).

ANU - Brief History of General Practice Geocoding



- GP Practice data in North West Adelaide.
- 10,000 Patients geolinked with Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD) scores.
- Economically better off seaside residents have lower rates of diagnosed diabetes.
- Figure 1b – SA2 Socioeconomic Data - Dark Red = Well off
- Figure 1a – SA2 % Diagnosed – Dark Blue = High.
- Figure 2 – POA – Statistical approximations of postcodes

"Had the diabetes research project used POA based aggregations, no relationship would have been established. This example also helps to see that demographic variations within regions are as important as, even more important than, variations between regions."

<http://graphc.anu.edu.au/graphc2017/mapping-gtagsys.html>

What is different with PENCS Geocoding - Process

The Practice creates an extract in CAT4

CAT4 Creates an address list

CAT4 Turns the address list into an "A code"

CAT4 Sends the "A code's" to Mapify

Mapify create a unique code using the "A code"

Mapify send the "A codes" and unique code back to CAT4.

CAT4 sends the deidentified extract and unique code to PAT CAT

PAT CAT processes the extract, recognises its geocoded.

PAT CAT gets uses the unique code, and gets it from Mapify

At no point do the clinical, and address information travel together!

PAT CAT Geocoding – Check an Extract has been Geocoded

The screenshot shows a web application window titled "Import" with a close button (X) in the top right corner. Below the title bar, there are four tabs: "New Extracts", "Imported Extracts", "Request Queue", and "Request History". A "Download All" button is located in the top right of the main content area. The main content area displays a list of six medical microdata extracts. Each extract name contains the word "GTAGGED" in a red box, indicating that the extract has been geocoded. The extracts are listed as follows:

<input type="checkbox"/>	MedicalMicrodata-DEIDENTIFIED_GTAGGED_BPS000000-201701301938-1431-v1_19-data.xml	lr
<input type="checkbox"/>	MedicalMicrodata-DEIDENTIFIED_GTAGGED_SERVER-201701301425-1742-v1_19-data.xml	lr
<input type="checkbox"/>	MedicalMicrodata-DEIDENTIFIED_GTAGGED_SERVER-201611010110-1783-v1_19-data.xml	lr
<input type="checkbox"/>	MedicalMicrodata-DEIDENTIFIED_GTAGGED_SERVER-201610020315-1764-v1_19-data.xml	lr
<input type="checkbox"/>	MedicalMicrodata-DEIDENTIFIED_GTAGGED_BPS015311-201701272300-3891-v1_19-data.xml	lr
<input type="checkbox"/>	MedicalMicrodata-DEIDENTIFIED_GTAGGED_BPS000000-201701271400-9505-v1_19-data.xml	lr

At the bottom of the list, there is a pagination control with buttons for "1", "2", "3", "4", "5", "6", "7", "8", "9", "10", "...", and "Last". The "7" button is currently selected. A "Close" button is located in the bottom right corner of the window.

Extracts will have "GTAGGED" in the extract name.

PAT CAT Geocoding – Accessing the MAP

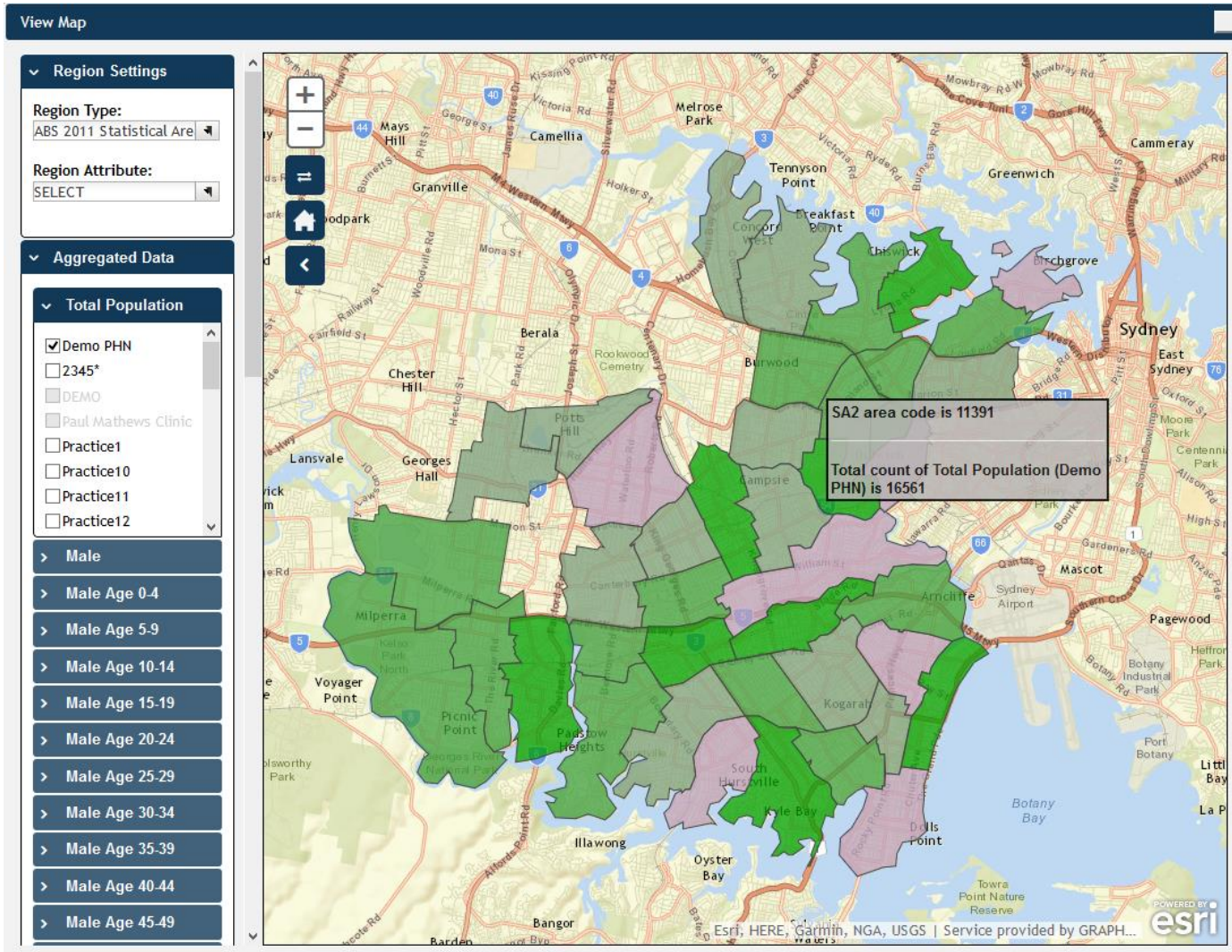
The screenshot displays the PAT CAT PHN interface. At the top, there are navigation links for PAT CAT, PRACTICES, CUSTOM DATA, SUPPORT, and LOG OUT. Below this is a toolbar with icons for Import, Hide Extracts, Hide Filters, Reports, Population, PAT CAT Reports, and Cleansing PAT. On the right side of the toolbar are Clear Filters and Recalculate buttons.

The main content area is divided into several sections. On the left, there is a sidebar titled 'EXTRACTS BY MONTH' with a list of months from July 2016 to September 2015. The main area is titled 'General' and contains filter options for Gender, DVA, Age, Last Visit, and Activity. Below this is a secondary navigation bar with tabs for Demographics, Ethnicity, Allergies, Smoking, Alcohol, Measures, Pathology, Disease, Screening, Co-morbidities, Medication, Diabetes (H1A), (H1B), Musculoskeletal, CVI vent (risk), and Immunisations. Below the navigation bar are links for MBS Items, Visits, After Hours, Practice Data Quality Benchmark Report, Diabetes Indicators, Standard Reports, and Digital Health.

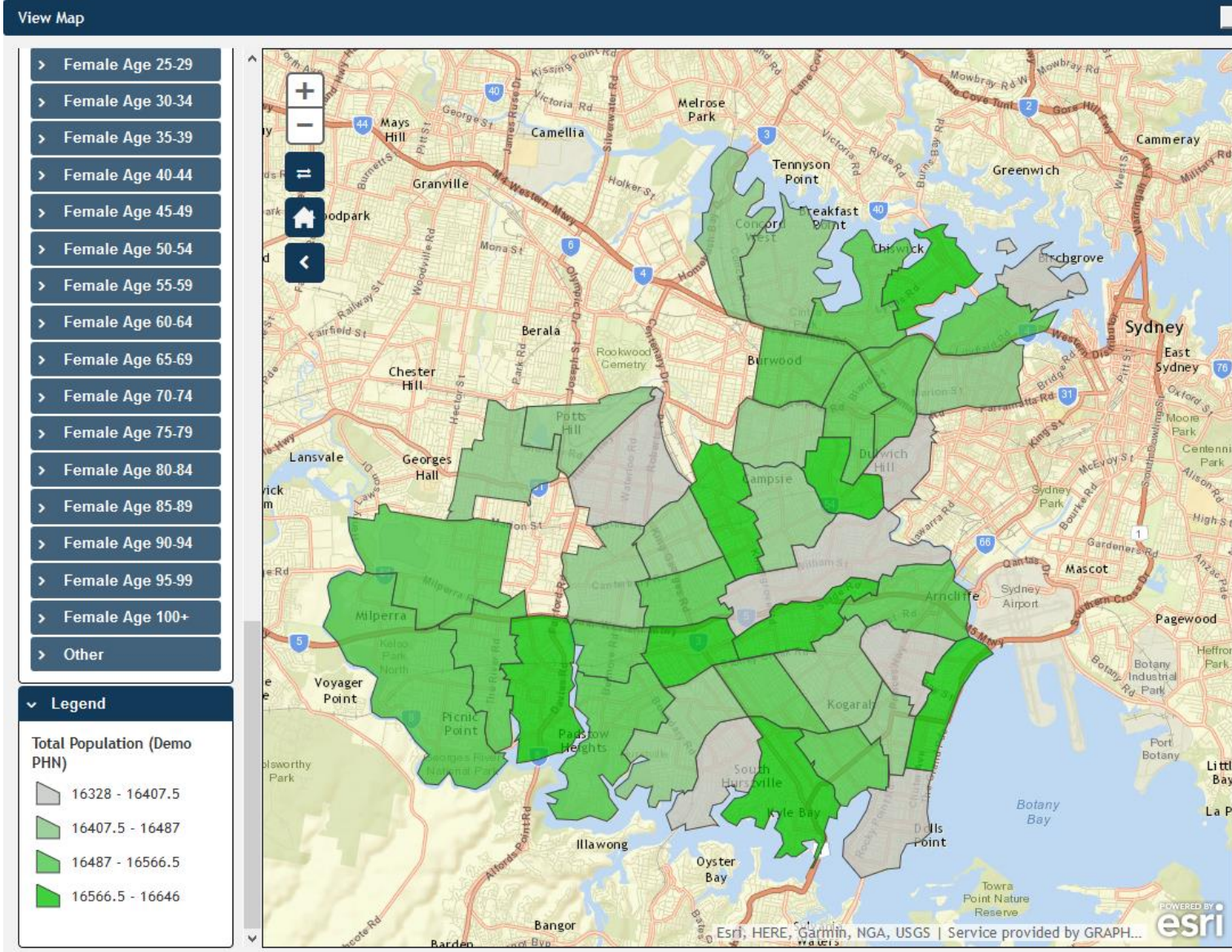
The 'Demographics' section is currently active and shows a 'View Map' button highlighted with a red box. Below the buttons is a bar chart titled 'Demographics' with the subtitle 'No filters applied for December 2015 and 1 month. Generated on: 29 March 2017 11:58 AM'. The chart compares the number of Female (yellow) and Male (green) patients across various age groups.

Age Group	Female	Male
100+	582	263
95-99	764	351
90-94	1272	1834
85-89	4953	3417
80-84	6179	4921
75-79	7672	6936
70-74	12745	10254
65-69	15262	13520
60-64	20563	15451

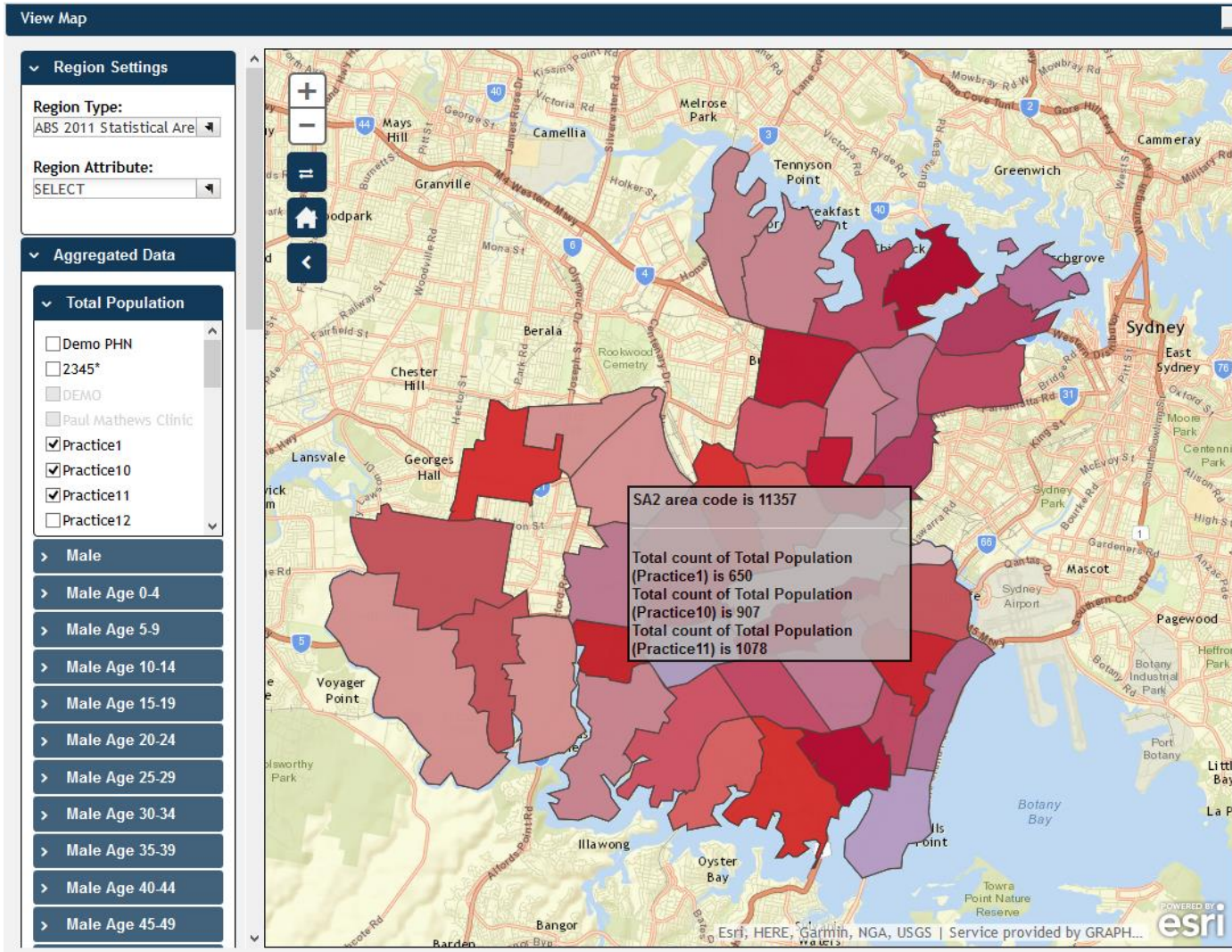
PAT CAT Geocoding – Checkboxes – PHN DATA



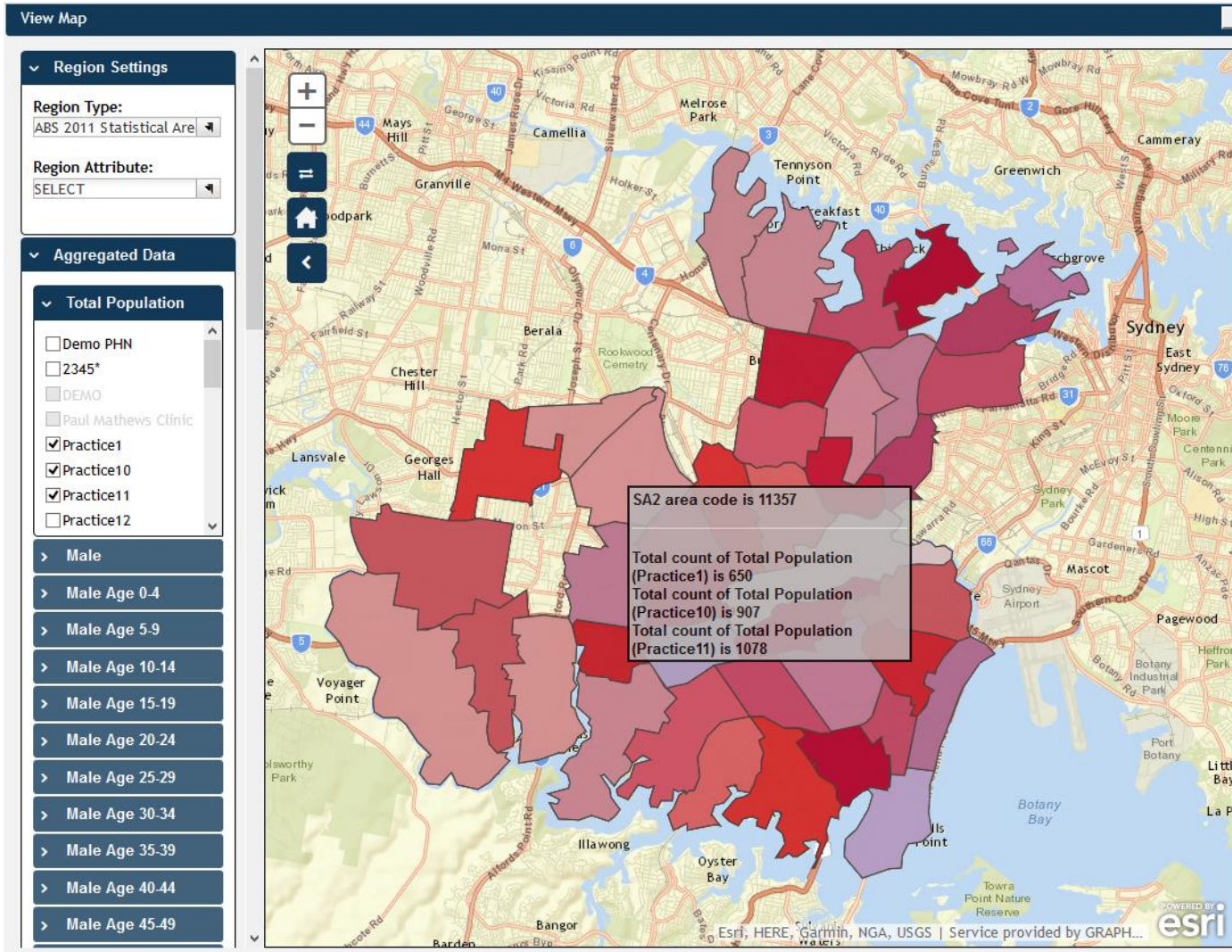
PAT CAT Geocoding – Checkboxes – Legend



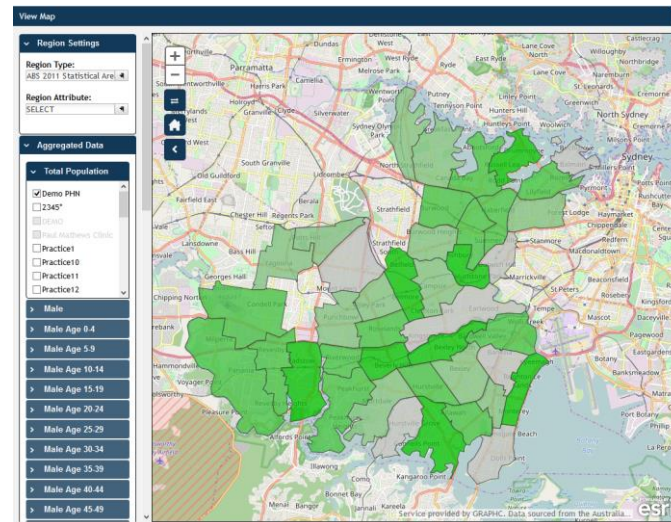
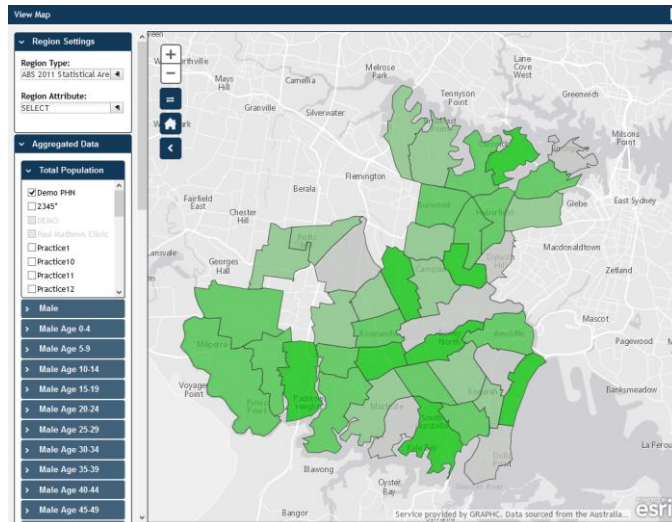
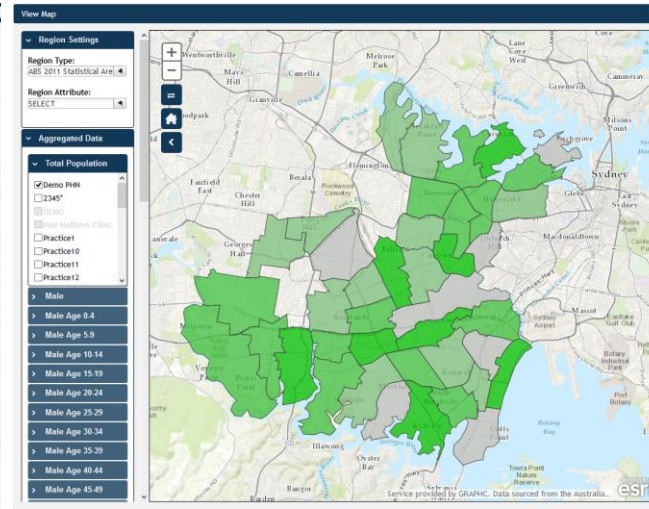
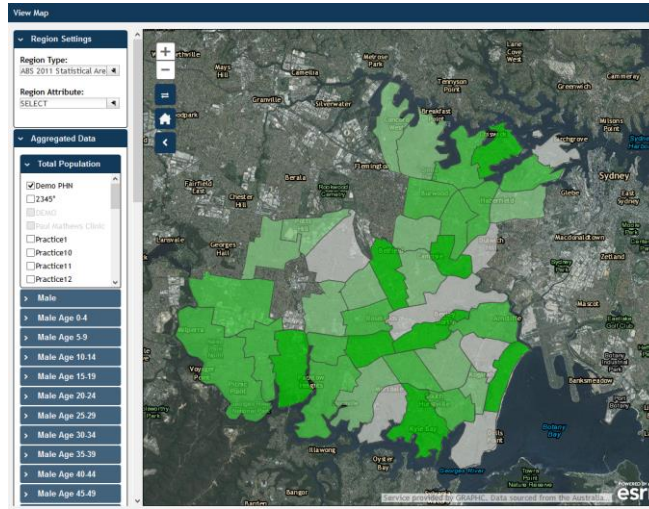
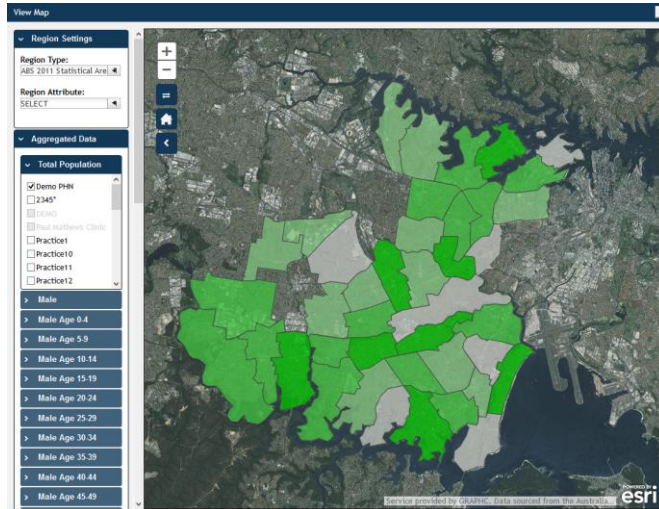
PAT CAT Geocoding – Checkboxes – Practice Data



PAT CAT Geocoding – Checkboxes – Practice Data



PAT CAT Geocoding – Terrain Map Views



PAT CAT Geocoding – ABS Data – Selecting Attributes

View Map

Region Settings

Region Type:
ABS 2011 Statistical Area

Region Attribute:
People with a profound d

SELECT

- IRSAD Maximum SA1 Score (N)
- IRSAD % URP with No Score (N)
- Usual Resident Population
- IRSD Score (N)
- IRSD National Rank (N)
- IRSD National Decile (N)
- IRSD National Percentile (N)
- IRSD State Rank (N)
- IRSD State Decile (N)
- IRSD State Percentile (N)
- IRSD Minimum SA1 Score (N)
- IRSD Maximum SA1 Score (N)
- IEO Maximum SA1 Score (N)
- IEO % URP with No Score (N)
- Usual Resident Population
- IER Score (N)
- IER National Rank (N)
- IER National Decile (N)
- IER National Percentile (N)
- Usual Resident Population
- IEO Score (N)
- IEO National Rank (N)
- IEO National Decile (N)
- IEO National Percentile (N)
- IEO State Rank (N)
- IEO State Decile (N)
- IEO State Percentile (N)
- IEO Minimum SA1 Score (N)
- IER State Rank (N)
- IER State Decile (N)
- IER State Percentile (N)
- IER Minimum SA1 Score (N)
- IER Maximum SA1 Score (N)
- IER % URP with No Score (N)
- Usual Resident Population
- IRSAD Score (N)

PAT CAT Geocoding – ABS Data – Reference

View Map

Region Settings

Region Type: ABS 2011 Statistical Area

Region Attribute: People with a profound disability

Aggregated Data

- Total Population
- Diabetes Type II
- Diabetes Type I
- Undefined Diabetes
- Asthma
- COPD
- CHD
- Heart Failure
- Hypertension
- Stroke
- Anxiety
- Depression
- Schizophrenia
- Bipolar
- ADHD
- Autism
- Dementia
- Postnatal Depression

Statistical Data Information

Region Attribute Details:

http://www.publichealth.gov.au/data_online/2012/notes/notes_data_online_aust_2012_option1.pdf

Name: PHIDU2012_SA2_DISABILITY_P_DSBL_CMTY_2011_N

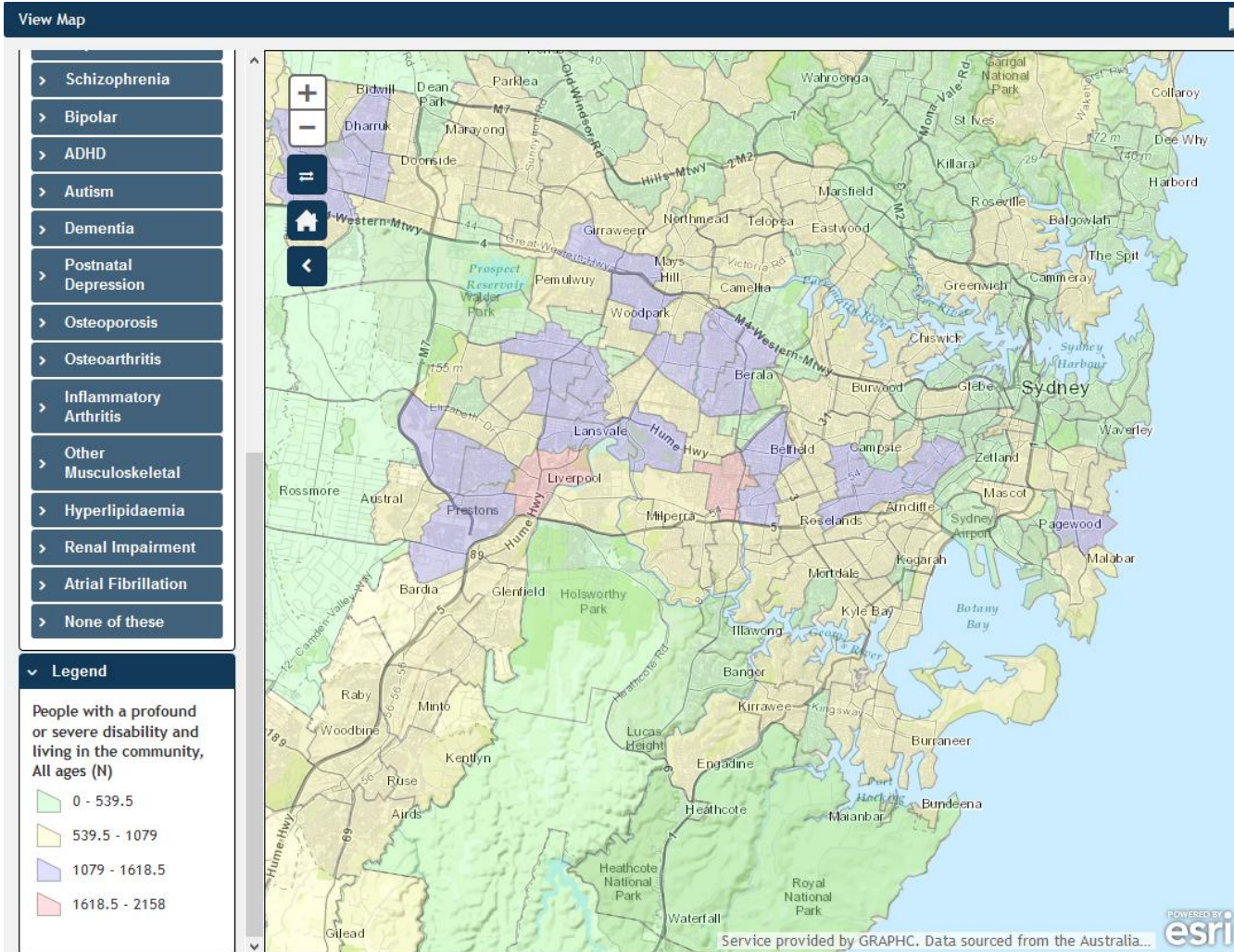
Description: People with a profound or severe disability and living in the community, All ages (N)

Usage Restrictions:

Close

Service provided by GRAPHIC. Data sourced from the Australia...

PAT CAT Geocoding – ABS Data – Legend



PAT CAT Geocoding – Demonstration & Recipes

The screenshot shows a web browser window with the URL `help.pencs.com.au/display/ds/PAT+CAT+Mapping+Recipes`. The browser's address bar and tabs are visible at the top. The main navigation bar is dark blue with the PenCS logo and several menu items: Home, CAT Plus, PAT CAT (highlighted), Topbar, CAT4, and Resources. Below the navigation bar, the breadcrumb trail reads 'USER GUIDE PAT CAT'. A left-hand sidebar contains a tree view of the user guide, with 'PAT CAT Mapping Recipes' expanded to show four sub-items: 'View Daily Smokers Aged 18-29 in your PHN catchment', 'Use ABS data to map People with disability living in the co...', 'Diabetes Prevalence', and 'Influenza Immunisation for Patients aged 65 years and over'. At the bottom of the sidebar is a link to 'DOWNLOAD ALL PAT CAT USER GUIDES AS PDF'. The main content area on the right shows the page title 'PAT CAT Mapping Recipes' and a list of four bullet points corresponding to the sub-items in the sidebar.

help.pencs.com.au/display/ds/PAT+CAT+Mapping+Recipes

visited help.pencs.com.au Licence Database Acuity Scheduling CAT Installation View Daily Smokers A... Scheduler Installation Orga

PenCS | Help Home CAT Plus PAT CAT Topbar CAT4 Resources

USER GUIDE PAT CAT

> PATCAT USER GUIDE

> QUICK REFERENCE GUIDES

▼ PAT CAT Recipes

▼ **PAT CAT Mapping Recipes**

- View Daily Smokers Aged 18-29 in your PHN catchment
- Use ABS data to map People with disability living in the co...
- Diabetes Prevalence
- Influenza Immunisation for Patients aged 65 years and over

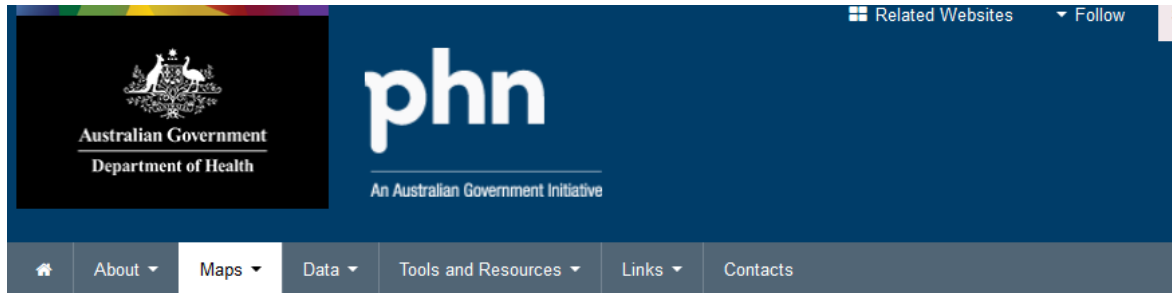
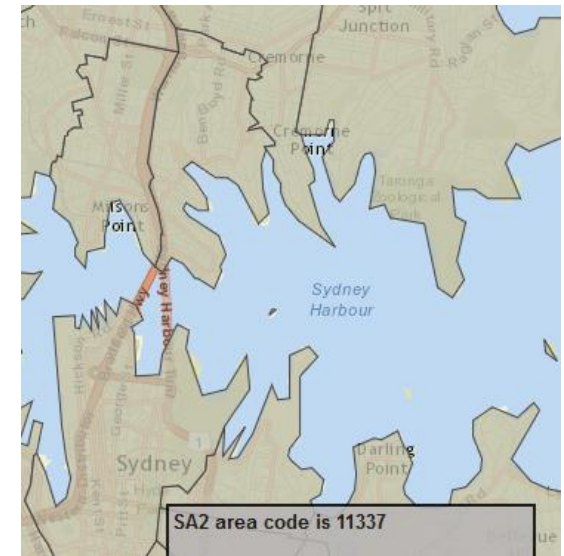
DOWNLOAD ALL PAT CAT USER GUIDES AS PDF

Pages / PAT CAT Recipes

PAT CAT Mapping Recipes

- View Daily Smokers Aged 18-29 in your PHN catchment
- Use ABS data to map People with disability living in the community
- Diabetes Prevalence
- Influenza Immunisation for Patients aged 65 years and over

PAT CAT Geocoding – Concordances



Primary Health Networks / Maps / PHN Concordances /

PHN Concordances

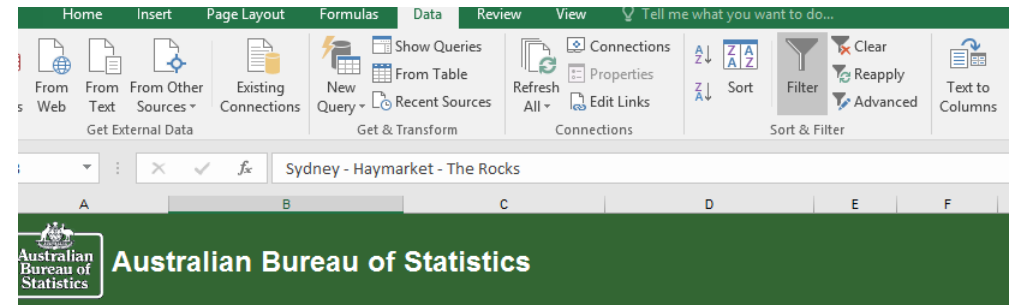
Page last updated: 31 August 2016

Accessibility

The documents on this page may not be accessible. If you need help please contact us using the [enquiries form](#).

The following concordance files are provided for people undertaking geospatial and data analysis and have been updated to reflect boundary changes announced in April 2015 and PHN name changes announced in September 2015.

- [PHN 2015 - ASGS SA1 2011 - concordance](#) - Excel 5707 KB
- [PHN 2015 - ASGS SA2 2011 - concordance](#) - Excel 358 KB
- [PHN 2015 - ASGS SA3 2011 - concordance](#) - Excel 135 KB
- [PHN 2015 - LGA 2011 - concordance](#) - Excel 164 KB
- [PHN 2015 - POA 2011 - concordance](#) - Excel 341 KB



Statistical Area Level 2 2011 to Primary Health Networks 2015

Table 3 Correspondence

117031335	Redfern - Chippendale	PHN101	Central and Eastern Sydney	1	100
117031336	Surry Hills	PHN101	Central and Eastern Sydney	1	100
117031337	Sydney - Haymarket - The Rocks	PHN101	Central and Eastern Sydney	1	100
117031338	Waterloo - Beaconsfield	PHN101	Central and Eastern Sydney	1	100
118011339	Bondi - Tamarama - Bronte	PHN101	Central and Eastern Sydney	1	100
118011340	Bondi Beach - North Bondi	PHN101	Central and Eastern Sydney	1	100
118011341	Bondi Junction - Waverly	PHN101	Central and Eastern Sydney	1	100
118011342	Centennial Park	PHN101	Central and Eastern Sydney	1	100
118011343	Double Bay - Bellevue Hill	PHN101	Central and Eastern Sydney	1	100
118011344	Dover Heights	PHN101	Central and Eastern Sydney	1	100
118011345	Paddington - Moore Park	PHN101	Central and Eastern Sydney	1	100
118011346	Rose Bay - Vaucluse - Watsons Bay	PHN101	Central and Eastern Sydney	1	100
118011347	Woolahra	PHN101	Central and Eastern Sydney	1	100
118021348	Coogee - Clovelly	PHN101	Central and Eastern Sydney	1	100
118021349	Kensington - Kingsford	PHN101	Central and Eastern Sydney	1	100
118021350	Malabar - La Perouse - Chifley	PHN101	Central and Eastern Sydney	1	100
118021351	Maroubra	PHN101	Central and Eastern Sydney	1	100
118021352	Randwick	PHN101	Central and Eastern Sydney	1	100
119011355	Chullora	PHN101	Central and Eastern Sydney	0.0009947	0.0994695

PAT CAT Geocoding – New Provider Mappify

The screenshot shows the data.gov.au website interface. At the top, there is a navigation bar with the Australian Government logo, the data.gov.au logo, and links for Datasets, Organisations, About, Site Statistics, Request Data, Use Cases, National Map, and Toolkit. A search box is also present. Below the navigation bar, the breadcrumb trail reads "/ Use Cases / Mappify.io".

The main content area is titled "Mappify.io" and features a "Launch website" button. Below this, there is a section for "Datasets in Showcase" with a link to "PSMA Geocoded National Address File (G-NAF)". A "Social" section includes links for Google+, Twitter, and Facebook.

The central part of the page displays a preview of the Mappify.io website, which includes a map and a table of geocoded data. The table has columns for Postal Address, City, State, Post Code, Name, Phone Number, and URL. Below the preview, there is a description: "Free geocoding, reverse geocoding and coordinate classification service". At the bottom of the page, there are two buttons: "Launch website" and "Launch PSMA Geocoded National Address File (G-NAF) dataset".

Postal Address	City	State	Post Code	Name	Phone Number	URL
100 George St	Burton	QLD	4800	Shelton	0754 847 0200	www.shelton.com.au
100 George St	Burton	QLD	4800	100 George St	0754 847 0200	www.shelton.com.au
100 George St	Burton	QLD	4800	100 George St	0754 847 0200	www.shelton.com.au
100 George St	Burton	QLD	4800	100 George St	0754 847 0200	www.shelton.com.au

As of 1 January 2017 there was a change in the funding of ANU GRAPHIC, and to support existing projects a new provider had to be sourced.

Key Criteria that they were Australian based, and able to do Statistical Area Lookups.

PAT CAT Geocoding – Cost - Existing



500,000 Patients in PAT CAT

250,000 Addresses (families)

$250,000 \times \$0.07 = \$35,000$

PAT CAT Geocoding – Cost - NEW



As a rule of thumb there are about 2.6 patients per address, so divide the number of patients in PAT CAT by 2.6, then times by \$150 to get an estimate of the annual storage fee.

Free till 30th of June 2017

Unlimited Use

July 2017 – June 2018 - Subscription
\$6,000 + GST If taken up with contract renewal.
\$12,000 + GST If taken up after contract renewal

+ \$150 + GST Per 10,000 patients stored.
e.g. 250,000 pts = \$6,000 + \$3,750 + GST.

Questions and Answers



CATPlus

www.pencs.com.au

SYDNEY | MELBOURNE



Support

- Account Managers
 - NSW/ACT James Alcorn
 - QLD/NT Matthias
 - VIC/SA/WA/TAS Manfred
- Pen CS Support Line
1800 762 993
- Email
support@pencs.com.au

Web

- Help.pencs.com.au



www.pencs.com.au

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Thank You





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