# Behaviour risk factor and chronic disease surveillance systems in the 21 century – meeting the challenge

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Major surveys under the NSW Health Survey Program

|	
1997	– CATI Adult Health Survey
1998	– CATI Adult Health Survey
1999	– CATI Older Peoples' Health Survey
2001	– CATI Child Health Survey
2002 onwards	– CATI NSW Population Health Survey for children and adults
2005 onwards	– Self completed NSW School Students Health Behaviours Survey (SSHB)
2007 onwards	– CATI ACT General Health Survey for children and adults
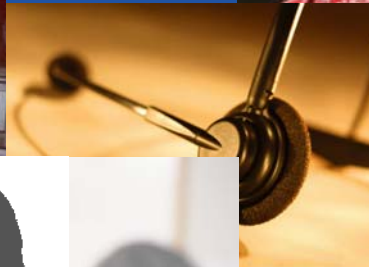
NSW Health Survey datasets

Year	Adults	Students	Children
1984		4,841	
1987		4,862	
1990		5,158	
1993		4,816	
1996		9,968	
1997	17,496		
1998	17,457		
1999		7,304	
2001			7,899
2002	12,616	6,106	
2003	13,002		
2004	9,535		6,701
2005	11,490	5,509	
2006	7,957		4,585
2007	10,500		
Total	104,561	48,564	19,185

Background

- In the 'now-information' environment it is expected that the latest behaviour risk factor and chronic disease information will always be available for policy makers to make informed decisions and to monitor public health interventions.

- In NSW Information is required:
  - **Immediately** for the Minister.
  - **Quarterly** information are required for the State Plan and State Health Plan on risk alcohol drinking, marijuana use, tobacco smoking, overweight and obesity.
  - **Annual** reporting of behaviour risk factors is required for: NSW Department of Health Annual Report; Area Health Service Performance Agreements;NSW Treasury and NSW Productivity Commission; Evaluation of the Australian Better Health Initiative; Families First Initiative and Chief Health Officers Report

- Although encouraging, that we are now in an evidence-based environment, it is an epidemiological challenge to meet the never-ending information needs.

- In this 'now-information' environment the processes of collecting, managing and analysing data are often assumed to occur instantaneously.

System Overview
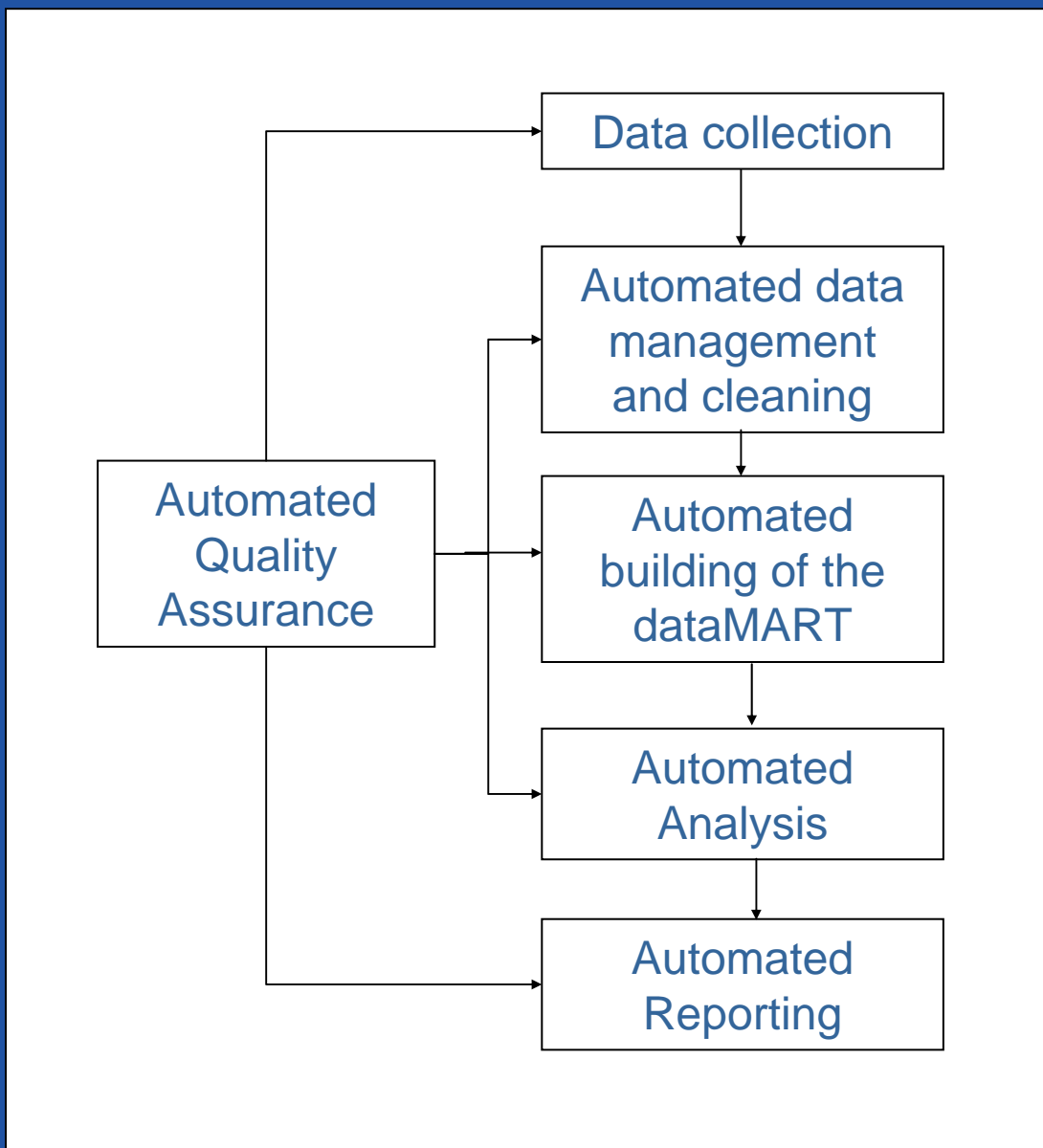
System overview

- To meet these epidemiological challenges the NSW Health Survey Program has implemented a surveillance system:

  - that has a continuous collection, analysis and reporting process

  - that can be used across different surveys, population groups and topic areas

  - to produce reports that include both actual, predicted and forecasted estimates

- This surveillance system:

  - maximises the use of metadata and seamlessly interacts between different IT platforms and software using SAS as the driver.

  - outputs the information in several useable file formats

  - produces the final hard copy report without the need for desk-topping, which can often impede the production of ongoing timely reports.

  - Includes an automated quality assurance process

Collection plan to 2012

- The planned collection, analysis and reporting of the data, for over 50 different question modules collected over different time periods and for different population groups to 2012, automatically occurs through the use of system drivers.

Collection plan to 2012

Modular Topic	Previously Collected	Age Groups	2006	2007	2008	2009	2010	2011	2012
Alcohol (Frequency and Consumption)	1997-1998, 2002-2005	16 plus							
Area Health Service Questions	1997-1998, 2002-2005	Various							
Asthma 1 (Prevalence and Service Use)	1997-1998, 2002-2005	2 plus							
Asthma 2 (Medications and Severity)	1997-1998, 1999, 2001, 2003	2 plus							
Breastfeeding	2001, 2003-2005	0-23 months							
Cancer Screening 1 (Breast and Cervical)	1997-1999, 2002, 2004	20-69 years							
Cancer Screening 2 (Prostate and Bowel)	1997, 1998, 2004	50 plus							
Cardiovascular Disease (Blood Pressure and Cholesterol)	1997-1998, 2002, 2005	16 plus							
Childcare, School Attendance and Reading to Child	1997-1998, 2002-2005	0-15 years							
Childhood Personal Health Record	2001, 2004	0-15 years							
Demographics 1 (Respondent)	1997-1998, 1999, 2001-2005	All							
Demographics 2 (Child Proxy)	2001-2005	0-15 years							
Diabetes 1 (Prevalence and Management)	1997-1998, 2002-2005	16 plus							
Diabetes 2 (Complications Screening)	1997-1998, 1999, 2004	16 plus							
Emergent Issues	2002-2005	Various							
Environmental Risks	2001, 2003-2005	Various							
Environmental Tobacco Smoke	1997-1998, 1999, 2001-2005	All							
Folate and Pregnancy	2001, 2003-2005	0-23 months							
Food Handling	2003	16 plus							
Food Security	1999, 2001-2005	All							
Family Functioning and Parental Support	2001, 2003-2005	0-15 years							
Health Services Access, Use and Satisfaction	1997-1998, 1999, 2001-2005	All							
Healthy Environments	2003-2005	Various							
Height and Weight (BMI)	1997-1998, 2002-2005	16 plus							
Hysterectomy Rate	1997-1998, 2002, 2004	20-69 years							
Incontinence	1999, 2003	40 plus							
Immunisation 1 (Influenza and Pneumococcal)	1997-1998, 1999, 2002-2005	50 plus							
Immunisation 2 (Access--Attitudes to Child Immunisation)	2001, 2004	0-15 years							
Injury 1 (Adult and/or Child Injury and Prevention)	1997-1998, 2002-2005	Various							
Injury 2 (Falls in Older People)	1999, 2003	60 plus							
Chronic Health Conditions		16 plus							
Mental Health 1 (Adult Psychological Distress)	1997-1998, 1999, 2002-2005	16 plus							
Mental Health 2 (Childhood Strengths and Difficulties)	2001, 2003-2005	5-15 years							
Nutrition 1 (Adult Dietary Guidelines)	1997-1998, 1999, 2002-2005	16 plus							
Nutrition 2 (Child Dietary Guidelines)	2001, 2003-2005	0-15 years							
Oral Health	1998, 1999, 2001-2005	All							
Physical Activity 1 (Leisure Time)	1997-1998, 1999, 2002-2005	16 plus							
Physical Activity 2 (Household Chores and Gardening)	1998, 1999, 2002, 2005	16 plus							
Physical Activity 3 (Child Activity and Inactivity)	2001, 2005	0-15 years							
Self Rated Health Status and Disability	1997-1998, 1999, 2001-2005	All							
Sexual Health Risk Behaviours	2004	16 plus							
Sight, Hearing and Speech	1999, 2001, 2004	All							
Smoking 1 (Prevalence)	1997-1998, 1999, 2002-2005	16 plus							
Smoking 2 (During Pregnancy)	2001, 2003-2005	0-23 months							
Smoking 3 (Policy)	1997, 2002-2005	Various							
Social Capital (Safety, Trust, Reciprocity and Participation)	1999, 2001-2003, 2005	All							

System drivers

File Edit View Insert Format Tools Data Window Help

Reload Files UnLock Driver Files

F31 =

Indicator	Html Template File Name (no .htm)	Indicator Title	Reference indicator	Annual Chapter Number	Annual Topic Number	Annual Indic Number	Annual Chapter Label	Annual Topic Label	
	2_beh_01_introduction			7	0	0	Health behaviours		2002;2003;2004;2005;2
m_future3		Most important health issue today		7	0	1	Health behaviours		
m_future4		Most important health issue over the next 20 years		7	0	2	Health behaviours		
	2_beh_02_alcohol			7	1	0	Health behaviours	Alcohol	2002;2003;2004;2005;2
r_alcohol3		Alcohol drinking by risk	i_alcohol1	7	1	1	Health behaviours	Alcohol	2002;2003;2004;2005;2
i_alcohol1		Risk alcohol drinking		7	1	2	Health behaviours	Alcohol	1997;1998;2002;2003;20
i_alcohol2		High risk alcohol drinking		7	1	3	Health behaviours	Alcohol	2002;2003;2004;2005;2
i_cannabis		Current cannabis smoking		7	1	4	Health behaviours	Alcohol and Drug	2007;2008;2009;2010;2
r_drug3		Responsible for improving local drug problems (multiple response)		7	1	4	Health behaviours	Alcohol and Drug	
r_drug4		Responsible for improving local drug problems		7	1	5	Health behaviours	Alcohol and Drug	
r_drug2		Awareness of Drugs and Community Action Strategy		7	1	6	Health behaviours	Alcohol and Drug	
	2_beh_03_cancer_breast_cervical			7	2	0	Health behaviours	Cancer screening: breast and cervical	2002;2004;2006;2008;2
i_mamscrn1		Screening mammogram within the last 2 years		7	2	1	Health behaviours	Cancer screening: breast and cervical	1997;1998;2002;2004;20
i_cervscrn1		Pap test within the last 2 years		7	2	2	Health behaviours	Cancer screening: breast and cervical	1997;1998;2002;2004;20
i_hyst1		Hysterectomy		7	2	3	Health behaviours	Cancer screening: breast and cervical	1997;1998;2002;2004;20
	2_beh_04_cancer_prostate_bowel			7	3	0	Health behaviours	Cancer screening: colorectal and prostrate	2004;2007;2009;2011
i_bowel		Screening test for colorectal cancer in the last 5 years		7	3	1	Health behaviours	Cancer screening: colorectal and prostrate	2004;2007;2009;2011
i_fobt		Had a faecal occult blood test in the last 5 years		7	3	2	Health behaviours	Cancer screening: colorectal and prostrate	2004;2007;2009;2011
m_bowel1		Reasons for having faecal occult blood test to screen for colorectal cancer in last 5 years		7	3	3	Health behaviours	Cancer screening: colorectal and prostrate	2004;2007;2009;2011
i_sigcol		Had a sigmoidoscopy or colonoscopy in the last 5 years		7	3	4	Health behaviours	Cancer screening: colorectal and prostrate	2004;2007;2009;2011
m_bowel2		Reasons for having sigmoidoscopy or colonoscopy to screen for colorectal cancer in last 5 years		7	3	5	Health behaviours	Cancer screening: colorectal and prostrate	2004;2007;2009;2011
	2_beh_05_environmental_health			7	4	0	Health behaviours	Environmental health	2002;2003;2005;2006;2
r_h20use1		Usual source of drinking water	i_pubwater	7	4	1	Health behaviours	Environmental health	2002;2003;2005;2006;2
r_h20use3a		Type of water treatment		7	4	2	Health behaviours	Environmental health	2002;2003;2005;2006;2

Study Driver / Titles Driver

System drivers

- The system drivers are a 'master' spreadsheets in the format of an .xml file that defines the requirements for each type of study or report.

- The system driver spreadsheet lists: the indicators and reporting variables with their titles, footnotes, age bands, graph and table footnotes; when the data for the indicators has and will be collected; which indicators will be in which reports; and the order in which the indicators are included in reports.

- These system drivers have been designed so that new question modules, analysis methods and reporting outputs can easily be incorporated to meet the emerging and changing information needs of users.
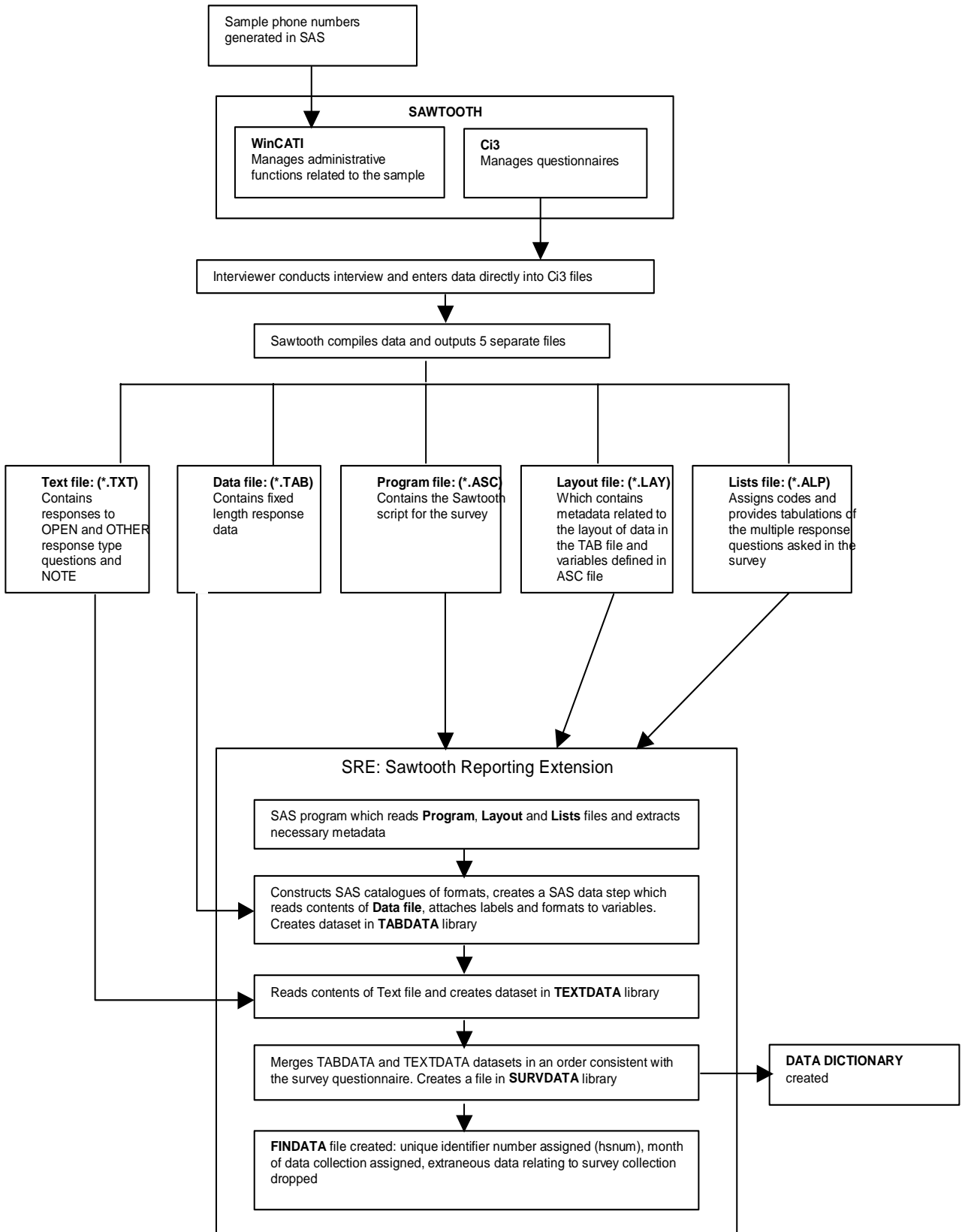
Automated data management and cleaning

Use of metadata

- For the automated data management and cleaning system to work rules need to be followed during the programming of the questionnaire so that the metadata can be used from the programming files.

```
C:-------------------------------------
Q:SMK1 Personal Smoking Status

T:3 9 1
Which of the following best describes your smoking
status? [READ OUT]

T:10 9 1
1 I smoke daily
2 I smoke occasionally
3 I don't smoke now, but I used to
4 I've tried it a few times but never smoked regularly
5 I've never smoked
X Don't know
R Refused

I:
SHOW "SMK1" 1 72 8 94 L

KEY 1-5,X,R
STAT=ANS
C:-------------------------------------------
```

```
┌─────────────────────────────┐
│ Sample phone numbers        │
│ generated in SAS            │
└─────────────────────────────┘
              │
              ▼
┌──────────────────────────────────────────────────────┐
│                    SAWTOOTH                            │
│  ┌────────────────────────┐  ┌────────────────────┐   │
│  │ WinCATI                │  │ Ci3                │   │
│  │ Manages administrative │  │ Manages            │   │
│  │ functions related to   │  │ questionnaires     │   │
│  │ the sample             │  │                    │   │
│  └────────────────────────┘  └────────────────────┘   │
└──────────────────────────────────────────────────────┘
```

Interviewer conducts interview and enters data directly into Ci3 files

Sawtooth compiles data and outputs 5 separate files

Text file: (*.TXT) Contains responses to OPEN and OTHER response type questions and NOTE

Data file: (*.TAB) Contains fixed length response data

Program file: (*.ASC) Contains the Sawtooth script for the survey

Layout file: (*.LAY) Which contains metadata related to the layout of data in the TAB file and variables defined in ASC file

Lists file: (*.ALP) Assigns codes and provides tabulations of the multiple response questions asked in the survey

SRE: Sawtooth Reporting Extension

SAS program which reads **Program**, **Layout** and **Lists** files and extracts necessary metadata

Constructs SAS catalogues of formats, creates a SAS data step which reads contents of **Data file**, attaches labels and formats to variables. Creates dataset in **TABDATA** library

Reads contents of Text file and creates dataset in **TEXTDATA** library

Merges TABDATA and TEXTDATA datasets in an order consistent with the survey questionnaire. Creates a file in **SURVDATA** library

DATA DICTIONARY created

FINDATA file created: unique identifier number assigned (hsnum), month of data collection assigned, extraneous data relating to survey collection dropped

Automated data management and cleaning

- The CATI software compiles the data and outputs 5 separate files: DATA; TEXT; PROGRAM; LAYOUT; and LISTS.

- The automated data management and cleaning system then automatically reads the PROGRAM, LAYOUT and LISTS files created by the CATI sorfware and extracts the necessary metadata and SAS catalogues of formats are created.

- The program then reads the contents of the DATA file and attaches the labels and formats to each variable. This is then stored in a new dataset.

- Next a dataset is created from the the content of TEXT file ('open' and 'other' responses). This dataset is then merged with the DATA file which now has the labels and formats attached set to create a combined dataset.

- The final step in the automated program is the creation of the end dataset which includes the addition of a unique survey program identifier and the removal of any extraneous data relating to the survey collection.

Automated building of the DataMART

Automated building of the DataMART
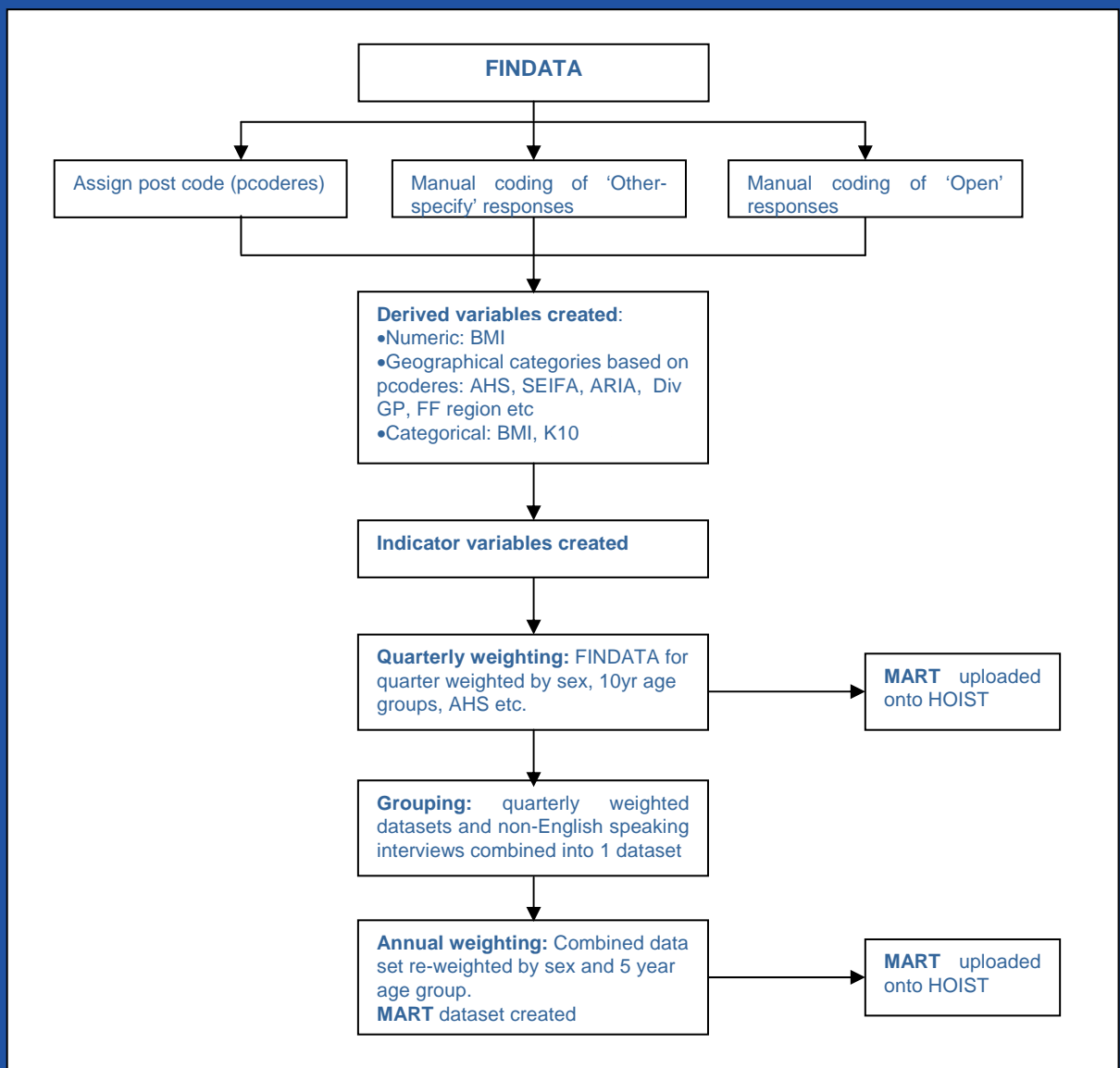
Automated building of the DataMART

- This process is fully automated using generic SAS programs and macros except for the coding of the 'other-specify' and 'open' responses.

- This automated process thus includes: allocation of geography to telephone numbers; weighting of the sample to adjust for differences in the probabilities of selection and to the population benchmarks, downloading and uploading the coded responses and the creation of derived variables.

- Finally the dataMART file is produced which is a combination of datasets that includes the raw data, the complete geographical variables, variables created from the coding of 'open' and 'other specify' responses, newly created derived variables and the weighting variables.

Automated Analysis

Automated Analysis

```
Study/titles driver

Html page template        MART_dataset from
                          current year

Infrastructure            Indic_datasets from
macros                    previous years

              Setup.sas

        Individual datasets
        created for each
        indicator/report variable

        Statistics tables created
        for each indicator/report        ABS population
        variable for each analysis       tables
        type (age, SES, trend,
        Area)

Graphs created   Tables output:      P-value tables
(gif file)       includes pop.       calculated
                 estimates (csv file)  (excel file)

        Graph and table output:
        excludes pop estimates
        (html file)

        Graph and table output
        (pdf file)
```

Setup.sas

```
/********************************************************************************
 Program :  _setup.sas
 Purpose :  Use this program to define the study
         :  Define the SASAUTOS to the macro library - when _runHealthSurveyReport is used the sudy level macros
            i.e.
                  L:\HEALTHSURVEY\hs_macros\hsa_macros <adults>
                  L:\HEALTHSURVEY\hs_macros\hsc_macros <child>
                  L:\HEALTHSURVEY\hs_macros\hss_macros <student>
            will be appended to the SASAUTOS= string based on the hsdir macro param SEE below.
 *********************************************************************************
 /********************************************************************************
 Call to program : _runHealthSurveyReport
 Params :                   :
         : hsdir            : The study directory - set to hss05, hss05_cob, hss05_ab, hss05_cob,hsa05_area, hsa05_div
         : rpt_status  : Set to dev|prog used for OUTPUT rediredtion only set to prod for final runs
         : hs_yr            : The year of the survey to be analysed - used in report programs to assign year
         : hs_yrs_used : Used in templates to for the titles in the outputs = 2001-2002, hs_yr default
         : hstitle          : Report Title in toc (may be used elsewhere mvar=hs_title
         : tmplt_date   : Run date displayed in the template - appears in output
         : tmplt_src    : Source that appears in the template i.e. New South Wales Population Health Survey 2006 (HOIST)....
         : person_type : Text that appears in the 2nd title in the templates in output files i.e. Persons, all persons etc


 ********************************************************************************
 /********************************************************************************/
options  sasautos = ("R:\HEALTHSURVEY\HS_Reports\hs_macros",SASAUTOS);
%_runHealthSurveyReport (
        hsdir        = hsa07,          /* "3 letter prefix" "years" "_suffix" i.e. hsa05_cob hss05_area hsc06*/
        rpt_status  = dev,             /* OUTPUT DIRCTED TO devout or prodout */
        hs_yr        = 2007,           /* year of reporting data used in graphs/survout i.e. bar ses hilo NOT trend */
        hs_yrs_used = ,                /* defaults to hs_yr */
        martlib     = hs_mart,
        martds      = hsa07_mart,
        hstitle     = %str(Report on Adult Health from the 2007 New South Wales Population Health Survey),
        tmplt_date  = %str(1 October 2007),
        tmplt_src   = %nrstr(New South Wales Population Health Survey 2007 (HOIST). Centre for Epidemiology and Research, N
        person_type = Persons);
/********************************************************************************
 *** Create indic_all from datamart plus current years local indic datasets   ***
 *** If using other years indications for trend graphs add to set statement   ***
 ********************************************************************************/
% _create_indic_all(hoistyn=y);


%macro create_indic_trend;
rsubmit;
/* Previous years */
        data indic_trendxy;
                set meyes.indic1997
```

Automated Analysis

```
Study/titles driver

Html page template                                    MART_dataset from
                                                      current year

Infrastructure                                        Indic_datasets from
macros                                                previous years

                          Setup.sas

                          Individual datasets
                          created for each
                          indicator/report variable

                          Statistics tables created        ABS population
                          for each indicator/report        tables
                          variable for each analysis
                          type (age, SES, trend,
                          Area)

        Graphs created      Tables output:           P-value tables
        (gif file)          includes pop.            calculated
                            estimates (csv file)     (excel file)

                    Graph and table output:
                    excludes pop estimates
                    (html file)

                    Graph and table output
                    (pdf file)
```

Automated Analysis

- The analysis system is run through a master program called set-up.sas. This program pulls in a generic html template and the infrastructural macros which include: file and system set up macros; datasets creation macros; statistical macros; graph and table macros; output macros; reporting and analysis management macros and validation macros.

- The setup.sas program can be used for any population group, year or report type depending on the specifications entered into the system setup macro within the file.

- Once defined setup.sas sets up the folder structure and reads the system driver - which specifies which indicators are to be included for this population or report type and the types of graphs to be produced.

- Then using the infrastructure macros setup.sas outputs a dataset for each indicator or report variable. Then statistical analysis occurs on each dataset and statistics table datasets are produced for each indicator or report variable. These tables include prevalence estimates, standard error calculations and 95% confidence intervals.

- Finally using the infrastructure macros setup.sas creates the graphs as gif files and the tables as CSV files for each indicator or reporting variable from the statistics tables and inserts them into html and pdf files.

Automated Reporting

Automated production of the html report

:TH

| A-Z Health Topics | Consumer Info | Health Professionals |
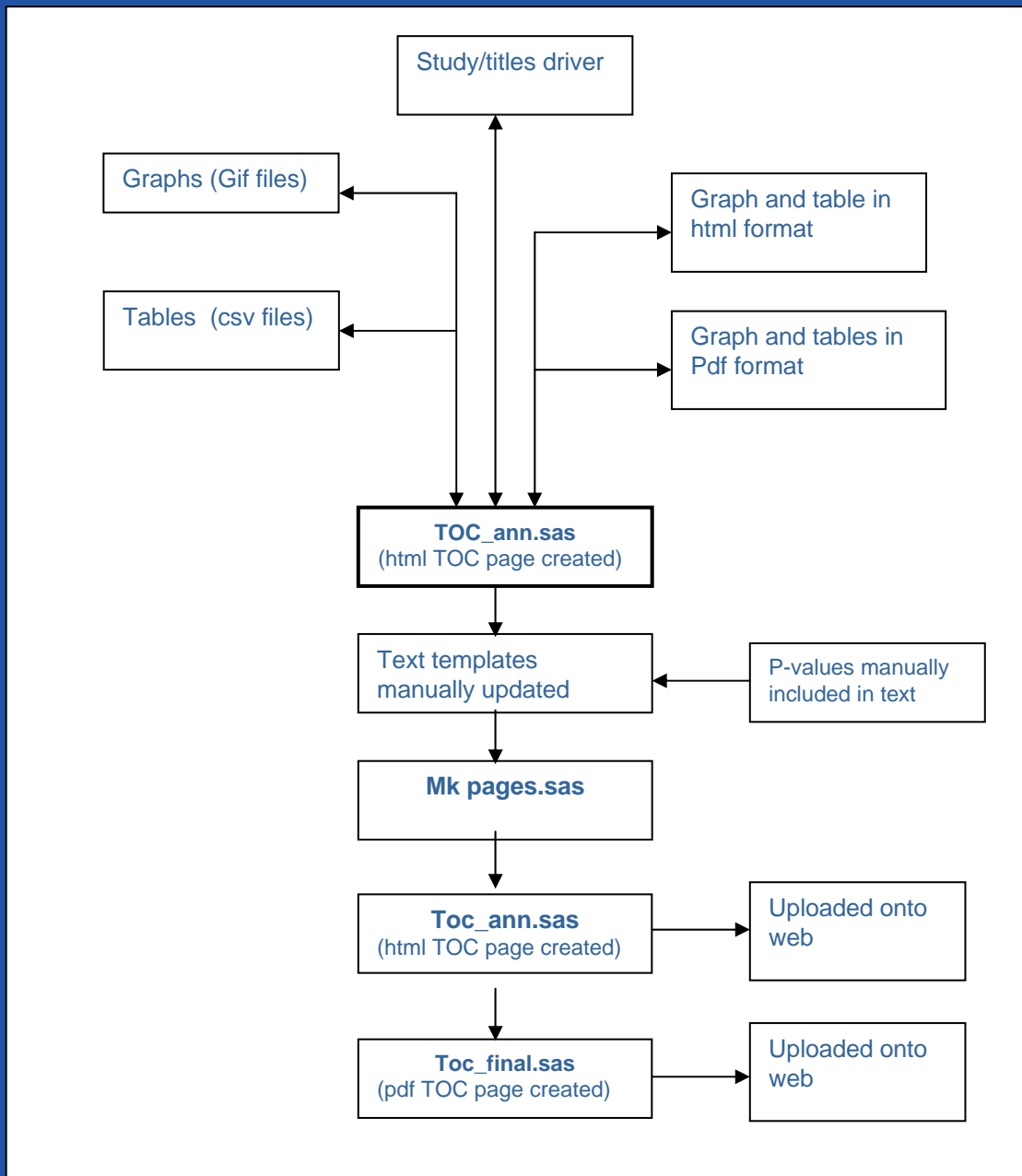
Report on Adult Health from the 2006 New South Wales Population Health Survey

Foreword

Acknowledgements

Executive Summary

Snapshot

Methods

- Outcomes of telephone calls
- Completed interviews and response rates by area health service
- Completed interviews by language

Representativeness of sample

- Survey sample size and NSW population by age group and sex
- Age distribution of unweighted survey sample versus NSW population: Females
- Age distribution of unweighted survey sample versus NSW population: Males
- Socioeconomic Index (SEIFA) quintile
- Accessibility-Remoteness Index of Australia Plus (ARIA+)
- Survey conducted in languages other than English
- Aboriginal or Torres Strait Islander origin
- Country of birth
- Languages other than English spoken at home
- Current employment status
- Main job held last week
- Currently receive a pension or benefit, persons aged 65 and over
- Highest level of school completed
- Household structure
- Formal marital status
- Household income
- Number of children aged 0-5 years in the household
- Number of children under 16 years of age in the household
- Number of people aged 65 years and over in the household

Health behaviours

Alcohol

- Alcohol drinking by risk
- Risk alcohol drinking by age
- Risk alcohol drinking by socioeconomic disadvantage
- Risk alcohol drinking by health area
- Risk alcohol drinking by year
- High risk alcohol drinking by age
- High risk alcohol drinking by socioeconomic disadvantage
- High risk alcohol drinking by health area
- High risk alcohol drinking by year

Automated production of the html report

- The %_tocann (table of contents annual report) SAS macro creates the table of contents page in html format. The macro reads the system driver to determine the format of the table of contents and the order of the indicator and report variables. Links are then made to graphs and tables previously created.

- The text templates are updated manually using the statistical outputs.

- The make pages program using the %_mkpages macro reads the system driver and pulls in the relevant text templates required for the particular report being produced adds headers and footers and converts the templates into both html and pdf files.

- The html report is loaded onto the NSW Health Department internet and is publicly available at www.health.nsw.gov.au/public-health/survey/hsurvey.

- Within the html format the data contained in the tables can be down loaded as CSV file. This file includes person estimates.

Automated production of the hard copy report (pdf)
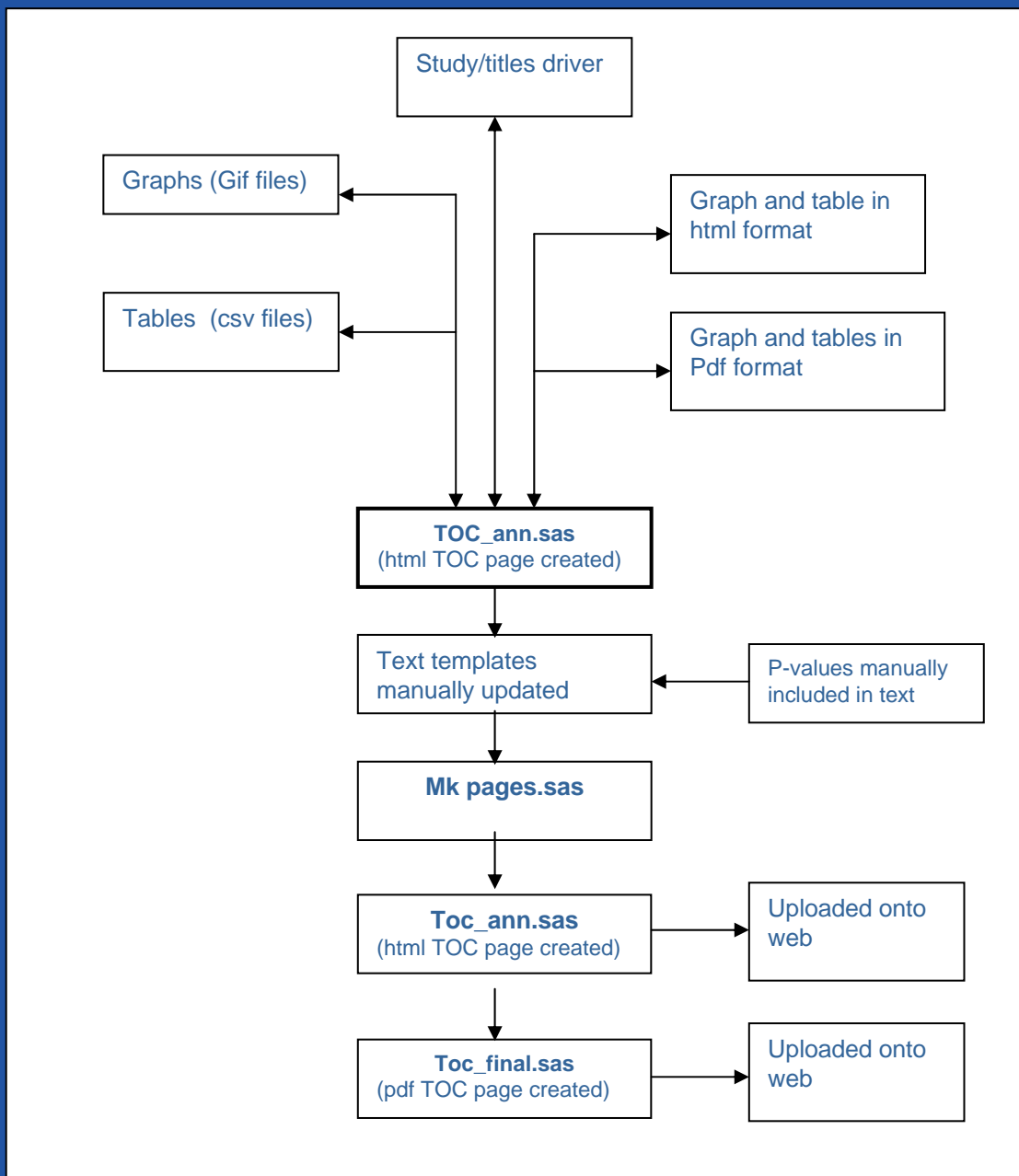
Study/titles driver

Graphs (Gif files)

Graph and table in html format

Tables (csv files)

Graph and tables in Pdf format

TOC_ann.sas
(html TOC page created)

Text templates manually updated

P-values manually included in text

Mk pages.sas

Toc_ann.sas
(html TOC page created)

Uploaded onto web

Toc_final.sas
(pdf TOC page created)

Uploaded onto web

Automated production of the hard copy report (pdf)

NSW◆HEALTH

rites   Tools   Help

Search   Favorites

health.nsw.gov.au/public-health/survey/hsurvey.html

ALTH

A-Z Health Topics   **Consumer Info**   **Health Professionals**

New South Wales Health Survey Program

Reports

Annual reports on adult health for the whole state

2006 Report on Adult Health in New South Wales
2005 Report on Adult Health in New South Wales
2004 Report on Adult Health in New South Wales
2003 Report on Adult Health in New South Wales
2002 Report on Adult Health in New South Wales
1997–1998 Report on Adult Health in New South Wales

Monthly reports on adult health for the whole state

Monthly Report on Adult Health in New South Wales

Annual reports on adult health for each health area

2006 Annual Report on Adult Health by Area Health Service
2005 Annual Report on Adult Health by Area Health Service
2004 Annual Report on Adult Health by Area Health Service
2003 Annual Report on Adult Health by Area Health Service

Biennial reports on child health for the whole state

2003–2004 Biennial Report on Child Health in New South Wales
2001 Biennial Report on Child Health in New South Wales

Triennial reports on adult health for the divisions of general practice

2004 Triennial Report on Adult Health by Division of General Practice

Occasional reports on the health of specific populations

2002–2005 Report on Adult Aboriginal Health from the New South Wales Population Health Survey
2002–2005 Report on Adult Health by Country of Birth from the New South Wales Population Health Survey
1999 Report on Older People's Health in New South Wales

Contact us :: Terms & conditions :: Privacy
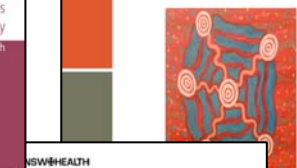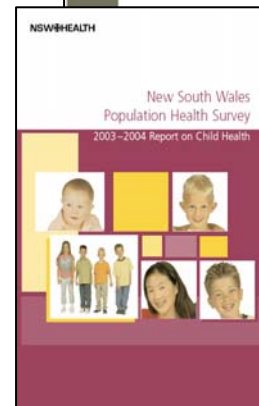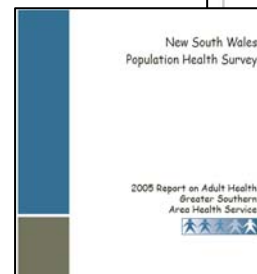
Automated production of the hard copy report (pdf)

- The %_tocfinal macro has been designed to remove the need for desktop publishing of the final report.

- The macro adds together all of the individual text and graphical pdf files in the order specified in the system driver. It then numbers the pages and adds the page numbers to the table of contents. Finally the cover and imprint pages are added.

- The pdf version of each report is also available on the NSW Health Department website and can be downloaded.

- Limited print runs of each report are also done, and copies disseminated to interested Area Health Service staff, interstate counterparts and on request.

Automatic inclusion of reported, predicted and forecasted estimates

- In the the monthly and the local health service area reports actual, predicted and forecast estimates are provided in order to set targets and to provide current figures (ie as of today).

- The predicted and forecast prevalence estimates values are calculated using the FORECAST procedure in SAS v9. The underlying model used in this procedure is the Holt exponential smoothing model.

- This model is designed to use all of the observed annual prevalence estimates and takes into account the increasing (or decreasing) trend in the prevalence estimates over time. In this way, the model uses past data as a basis for estimating annual prevalence estimates into the future.

Current smoking by year, persons aged 16 years and over, NSW, 2002-2007
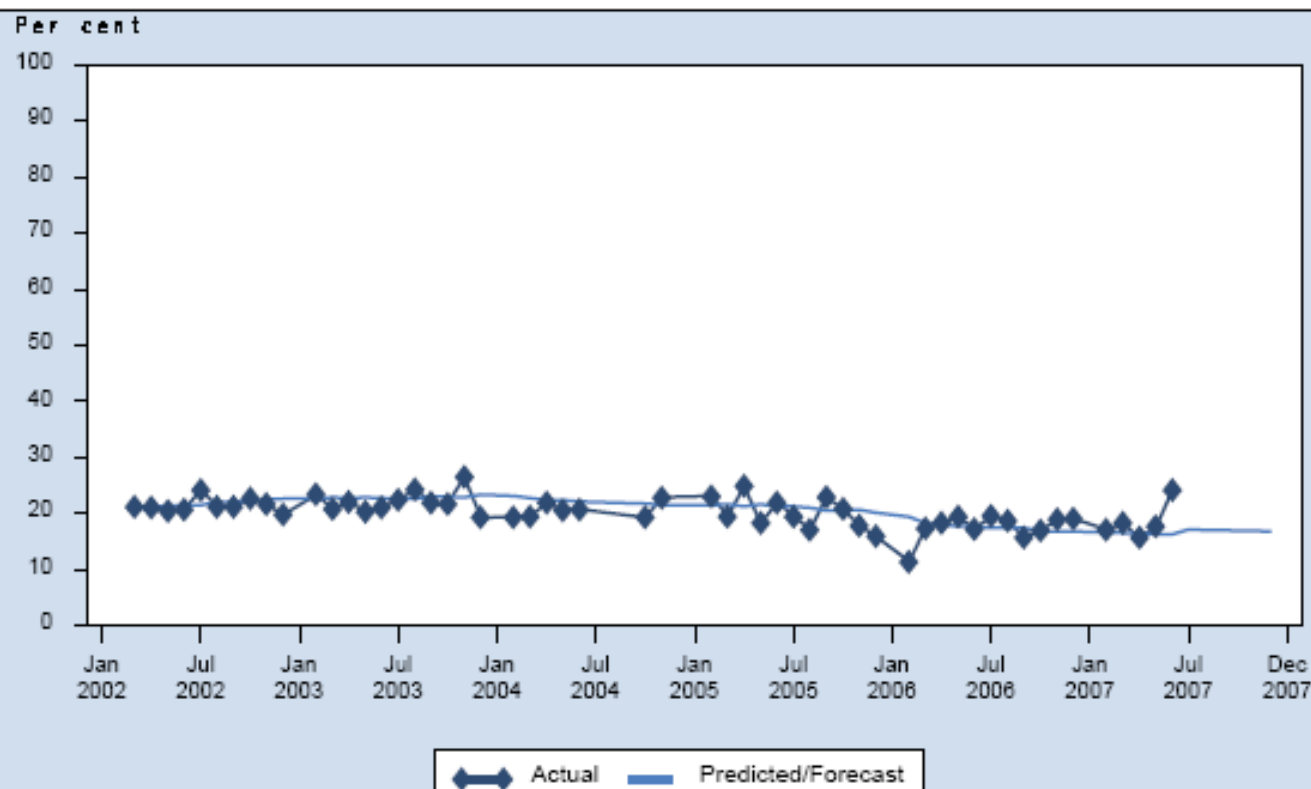
			New South Wales			
Month	2002 % (95% CI)	2003 % (95% CI)	2004 % (95% CI)	2005 % (95% CI)	2006 % (95% CI)	2007 % (95% CI)
January	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
February	- (-)	23.4 (20.0-26.7)	19.4 (15.7-23.0)	23.1 (19.9-26.2)	11.4 (6.2-16.7)	17.1 (13.5-20.7)
March	21.2 (17.2-25.1)	20.9 (17.6-24.1)	19.5 (16.3-22.7)	19.5 (16.3-22.6)	17.4 (13.9-20.9)	18.3 (14.5-22.1)
April	21.1 (17.9-24.3)	22.0 (18.8-25.3)	21.9 (18.7-25.1)	24.9 (18.6-31.2)	18.4 (14.4-22.3)	15.7 (12.0-19.4)
May	20.5 (17.4-23.5)	20.3 (17.5-23.2)	20.5 (16.6-24.4)	18.3 (15.5-21.1)	19.4 (15.3-23.6)	17.7 (14.3-21.1)
June	20.8 (16.5-25.0)	21.0 (17.7-24.4)	20.7 (16.4-25.0)	22.0 (18.5-25.4)	17.3 (13.5-21.0)	24.1 (18.3-30.0)
July	24.2 (20.5-27.8)	22.4 (19.1-25.6)	- (-)	19.5 (16.3-22.6)	19.5 (14.3-24.8)	forecast: 17.1
August	21.2 (18.6-23.9)	24.3 (20.8-27.8)	- (-)	17.1 (14.2-20.0)	18.8 (15.2-22.3)	forecast: 17.0
September	21.1 (15.5-26.8)	21.9 (18.5-25.4)	- (-)	22.9 (19.3-26.6)	15.7 (12.6-18.8)	forecast: 17.0
October	22.7 (19.6-25.7)	21.7 (17.3-26.2)	19.3 (16.8-21.9)	20.8 (16.6-25.1)	16.9 (14.0-19.8)	forecast: 16.9
November	21.7 (18.8-24.6)	26.5 (21.6-31.4)	22.9 (20.0-25.7)	17.8 (14.3-21.4)	18.9 (14.9-23.0)	forecast: 16.9
December	19.8 (16.4-23.2)	19.3 (14.8-23.8)	- (-)	16.0 (11.9-20.0)	19.0 (12.2-25.9)	forecast: 16.8

Greater Southern
Risk alcohol drinking by year, persons aged 16 years and over, NSW, 1997-2007
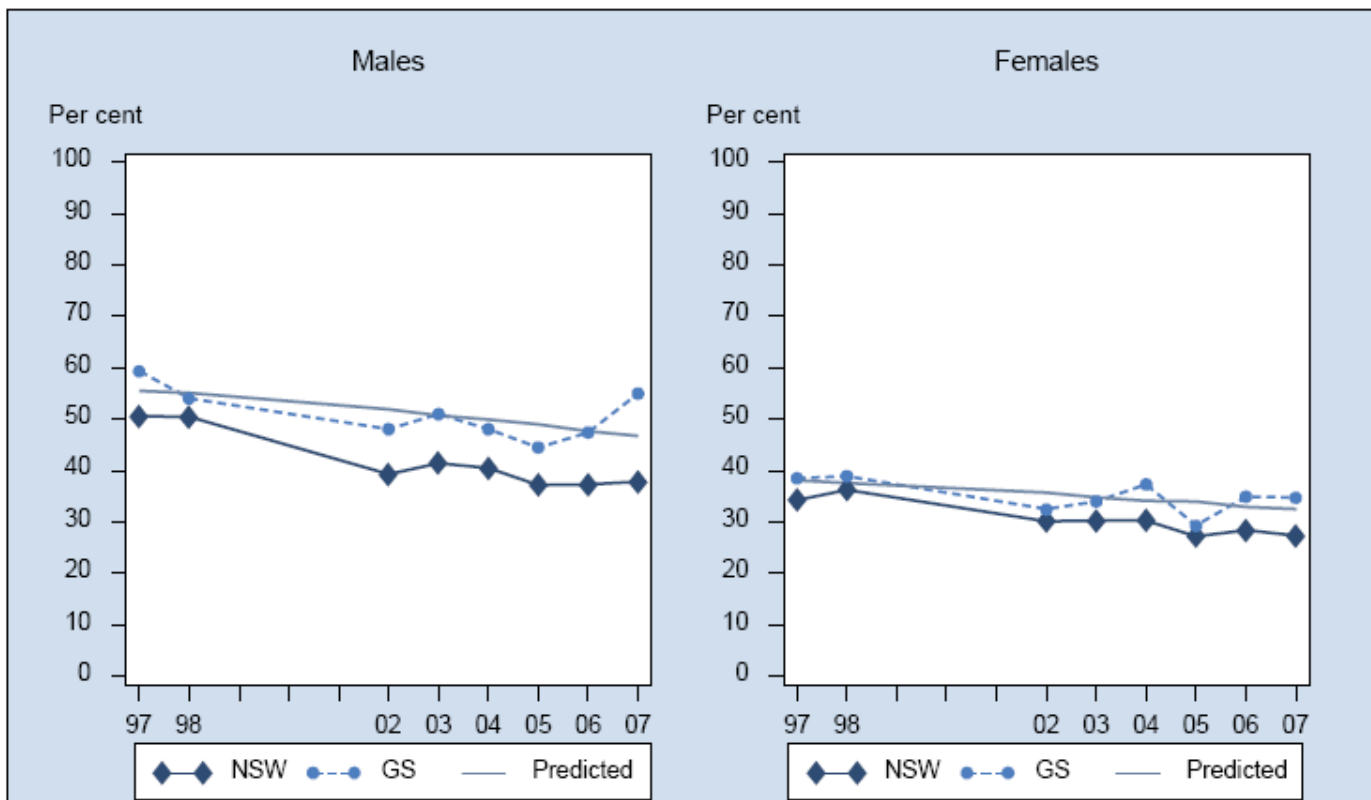
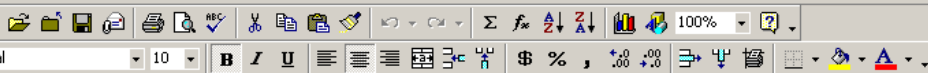|	Greater Southern							NSW		
	Males		Females		Persons			Males	Females	Persons
Year	% (95% CI)	Pred %	% (95% CI)	Pred %	% (95% CI)	Pred %		% (95% CI)	% (95% CI)	% (95% CI)
1997	59.4 (55.7-63.1)	56	38.6 (35.3-41.8)	38	49.0 (46.4-51.5)	47		50.6 (49.1-52.0)	34.3 (33.1-35.6)	42.3 (41.3-43.3)
1998	54.0 (50.1-58.0)	55	39.0 (35.7-42.2)	38	46.4 (43.8-48.9)	46		50.4 (48.8-52.0)	36.3 (35.0-37.6)	43.2 (42.2-44.2)
2002	48.1 (42.9-53.3)	52	32.5 (28.7-36.3)	36	40.3 (37.0-43.6)	44		39.3 (37.3-41.2)	30.2 (28.6-31.8)	34.7 (33.4-35.9)
2003	51.0 (46.3-55.8)	51	34.0 (30.2-37.9)	35	42.4 (39.3-45.5)	43		41.5 (39.5-43.4)	30.2 (28.8-31.7)	35.6 (34.4-36.8)
2004	48.1 (42.5-53.7)	50	37.3 (32.3-42.3)	34	42.7 (38.9-46.5)	42		40.5 (38.1-42.8)	30.3 (28.5-32.1)	35.3 (33.8-36.8)
2005	44.6 (39.5-49.7)	49	29.3 (25.5-33.1)	34	36.8 (33.6-40.0)	41		37.2 (35.3-39.2)	27.3 (25.8-28.7)	32.1 (30.9-33.3)
2006	47.5 (41.3-53.6)	48	35.0 (30.0-39.9)	33	41.3 (37.3-45.3)	40		37.3 (35.0-39.6)	28.4 (26.7-30.2)	32.8 (31.4-34.2)
2007	55.0 (43.7-66.3)	47	34.8 (25.7-43.8)	33	44.8 (37.3-52.3)	40		37.8 (33.1-42.5)	27.3 (23.8-30.9)	32.4 (29.5-35.3)
2008 Forecast	-	47	-	32	-	39		34	26	30

Automated
Quality Assurance

Automated Quality Assurance

- The consequence of an automated process is that if it does not work then it may not be obvious so it is important to have inbuilt checks which draw it to your attention.

- The automated quality assurance system includes:

  - Storage of log files when batch jobs are done and programs that read them

  - Automated production of data dictionaries which use the CATI metadata

  - Analysis validation reports ie denominators and analysis both within and outside of the system

  - Comparisons of related graphs.

  - Comparison of the information in the study drivers and on the produced graphs.

  - Production management functions (lists errors in toc).

Automated production of data dictionaries

File Edit View Insert Format Tools Data Window Help

IDX   = Name

Name Box

Name	Length	Format	Label	Q_text	Q type	F
A3	$1	$CA3F	Asthma interfere with daily life	During the past 4 weeks, did asthma interfere with ability to manage day to day activities?	Single Response	1. Yes 2. No R. Re
A4	$1	$CA4F	Severity of asthma interference	Did it interfere with these activities:	Single Response [Read Out]	1. A little bit 2. Mod Extremely R. Refus
AGE	8		AGE IN YEARS - 0-11 months=0yrs 12-23 months=1yr (CALN)			
AIC0	$1		Introduction to Incontinence (intro only)	Now we have a question on incontinence..	Single Response	
AIC2	$1	$CAIC2F	Frequency of Incontinence in last 4 weeks	In the last 4 weeks how often have you had a urine leak when you were physically active, exerted yourself, coughed or sneezed during the day or night?	Single Response [Read Out]	1. Most of the time None of the time R.
ALC	$1		Alcohol introduction	Now I would like to ask you some questions about alcohol.	Single Response	
ALC1	$1	$CALC1F	How often do you have an alcoholic drink	How often do you usually drink alcohol?	Single Response [PROMPT]	1. Record in days p once per week 3. I Refused X. Don't kr
ALC1a	8		How often do you have an alcoholic drink (Days per week) (NUM)	Days per week		
ALC2	$1	$CALC2F	Usual number of standard drinks per day	Alcoholic drinks are measured in terms of a "standard drink". A standard drink is equal to 1 middy of full-strength beer, 1 schooner of light beer, 1 small glass of wine or 1 pub-sized nip of spirits. On a day when you drink alcohol, how many standard drinks do you usually have?	Single Response [PROMPT]	1. Record number o Don't know
ALC2a	8		Usual number of standard drinks per day (Drinks per day) (NUM)	Number of drinks		
ALC3	$1	$CALC3F	More than 4 male/2 female drinks in a day in past 4 weeks	In the past four weeks have you had more than drinks in a day?	Single Response	1. Yes 2. No R. Re
ALC4	$1	$CALC4F	More than 11 male/7 female drinks in a day in past 4 weeks	In the past 4 weeks how often have you had drinks in a day?	Single Response	1. Record number o Refused X. Don't kr
ALC4a	8		More than 11 male/7 female drinks in a day in past 4 weeks (No. of times (NUM)	number of times		
ALC5	$1	$CALC5F	7-10 male/5-6 female drinks in a day in the past 4 weeks	In the past 4 weeks how often have you had drinks in a day?	Single Response	1. Record number o Refused X. Don't kr
ALC5a	8		7-10 male/5-6 female drinks in a day in the past 4 weeks (No. of times) (NUM)	Times		
AMH1	$1	$CAMH1F	K10 - Tired for no good reason in past 4 weeks	In the past 4 weeks, about how often did you feel tired out for no good reason?	Single Response [Read Out]	1. All of the time 2. Some of the time 4 None of the time R.
AMH10	$1	$CAMH10F	K10 - Feel worthless in past 4 weeks	In the past 4 weeks, about how often did you feel worthless?	Single Response [Read Out]	1. All of the time 2. Some of the time 4 None of the time R.
AMH2	$1	$CAMH2F	K10 - Feel nervous in past 4 weeks	In the past 4 weeks, about how often did	Single Response [Read Out]	1. All of the time 2.

codingmanual_all06_coded_m

dy

Analysis validation reports

File Edit View Insert Format Tools Data Window Help

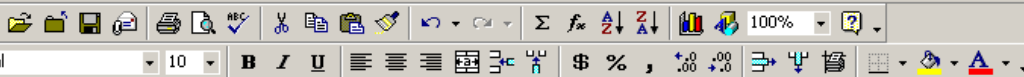IDX = Output of weighted % checks using indic_all (proc freq v survassist)

Output of weighted % checks using indic_all (proc freq v survassis

Counts from frequencies using individual i_

Indic	Title1	Title2	Totals	Denom	Notapps	(%) Notapps	Cumulative (%)	Trend wgt	(n)
i_asthma1	Ever diagnosed with asthma	children 2 to 15 years	3955	3944	11	0.28	100	22.7	9
i_asthma2	Current asthma	children 2 to 15 years	3495	3494	1	0.03	100	7.7	2
i_asthma5	Written asthma management plan	Children who currently have asthma aged 2 to 15 years	539	536	3	0.56	100	55.6	2
i_asthma9	Moderate to extreme interference with daily activities	Children who currently have asthma aged 2 to 15 years	539	536	3	0.56	100	12.5	
i_asthmap	Asthma preventer used in the last 12 months	Children who currently have asthma aged 2 to 15 years	539	527	12	2.23	100	24.3	1
i_asthmar	Asthma reliever used in the last 12 months	Children who currently have asthma aged 2 to 15 years	539	527	12	2.23	100	41.4	2
i_breast	Ever breastfed	children 0 to 23 months	770	770	0	0	100	* 91.3	6
i_canteen	Ever heard about healthy school canteen strategy	children 5 to 15 years	1606	1606	0	0	100	77.4	12
i_ccare1	Ever been to childcare	children 0 to 5 years	1691	1686	5	0.3	100	46.9	8
i_ccare2	Currently go to childcare	children 0 to 5 years	1691	1686	5	0.3	100	34.7	6
i_comhth1	Community health centre attendance in the previous 12 months	children 0 to 15 years	4585	4571	14	0.31	100	12.1	6
i_comhth2	Community health centre care rated as excellent, very good or good	children who attended a community health centre in the previous 12 months children 0 to 15 years	408	400	8	1.96	100	91.1	3
i_dairy	Recommended daily dairy intake	children 2 to 15 years	3955	3836	119	3.01	100	71.1	27
i_dem13a	Private health insurance	children 0 to 15 years	4585	4574	11	0.24	100	54.3	23
i_det_ff	Healthy family functioning	children 0 to 15 years	2160	2040	120	5.56	100	94.8	19
i_ecact1	Ever participated in early childhood activities	children 0 to 5 years	1691	1686	5	0.3	100	61.1	10
i_ecact2	Currently participate in early childhood activities	children 0 to 5 years	1691	1684	7	0.41	100	38.4	6
i_ecc1	Attended early childhood centre in previous 12 months	children 0 to 4 years	1452	1450	2	0.14	100	40.4	6
i_ecc2	Early childhood centre care rated as excellent, very good or good	children 0 to 4 years	166	165	1	0.6	100	100	1
i_ecc5	Currently seeing baby health or early childhood centre nurse	children 0 to 4 years	1029	1029	0	0	100	33.2	3
i_ed1	Emergency department attendance in the past 12 months	children 0 to 15 years	4585	4571	14	0.31	100	21.7	10
i_ed2	Emergency department rated as excellent, very good or good	children who attended an emergency department in the previous 12 months 0 to 15 years	1062	1050	12	1.13	100	85	8
i_fired1	Participation in fire education program	children 5 to 12 years	2217	1820	397	17.91	100	79.2	14
i_fired3	Action taken following fire education program	children who participated in fire education program 5 to 12 years	1307	1286	21	1.61	100	63.8	8

val_indic_i_02OCT07

Comparisons of related graphs.

M24

Check on indications with reference indications - using _stats

Error	Survey year	Indicator	Indic - Title	Indic - Title2	Indic - Demom	Indic - Notapps	Indic - %	Ref - Indicator	Ref - Demom	Ref - Notapps	Re
Yes	2006	r_folate2	Folate supplements month before or during early	mothers of infants 0 to 11 months	264	3	1.12	i_folate1	263	3	
Yes	2006	r_milk2	Cups of milk per day	children 2 to 15 years	3898	19	0.49	i_milk	3893	18	
Yes	2006	r_oral2	Time since last dental visit	children 5 to 15 years	1493	37	2.42	i_oral7	1900	36	
Yes	2006	r_oral6r	Reason for not visiting a dental professional in the last 12 months	children 5 to 15 years	766	37	4.61	i_oral7	1900	36	
Yes	2006	r_hstat1	Health status	children 5 to 15 years	3132	1	0.03	i_hstat	3128	1	
Yes	2006	r_comhth3	Community health centre care ratings	children who attended community health centre in past 12 months 0 to 15 years	400	8	1.96	i_comhth2	398	8	
Yes	2006	r_ecc3	Early childhood centre care ratings	children who attend early childhood centre in the previous 12 months 0 to 4 years	165	1	0.6	i_ecc2	163	1	
Yes	2006	r_hosp3	Hospital care ratings	children who attended hospital in the previous 12 months 0 to 15 years	472	4	0.84	i_hosp2	471	4	
Yes	2006	r_pubdent3	Public dental service attendance ratings	children who attended a public dental service in the previous 12 months 0 to 15	312	14	4.29	i_pubdent2	311	14	
Yes	2006	r_read2	Frequency of reading to child	children 0 to 5 years	1563	3	0.19	i_read1	1653	3	

Comparison of the information in the study drivers and on the produced graphs.

Microsoft Excel - _val_titles_rpt_02OCT07.xls

File Edit View Insert Format Tools Data Window Help

Arial   24

IDX   = Check on titles in all html files with the titles_driver file

Check on titles in all html files with the titles_driver file

Checks whether i_ r_ and m_files have been run correctly

ERROR	PDF?	Indication	Title in driver	Title in graph	Second Title	Overall	Age	Footnote in graph	File name	2001	2004
No	Yes	i_asthma1	Ever diagnosed with asthma	Ever diagnosed with asthma by mothers' characteristics	children 2 to 15 years	2 to 15	No	The indicator includes those respondents who have ever been told by a doctor or hospital that child has asthma. The question used to define the indicator was: Has child ever been told by a	i_asthma1_barmum.htm	2~12	2~15
No	Yes	i_asthma1	Ever diagnosed with asthma	Ever diagnosed with asthma by socioeconomic disadvantage	children 2 to 15 years	2 to 15	No	The indicator includes those respondents who have ever been told by a doctor or hospital that child has asthma. The question used to define the indicator was: Has child ever been told by a	i_asthma1_barqt.htm	2~12	2~15
No	Yes	i_asthma1	Ever diagnosed with asthma	Ever diagnosed with asthma by health area	children 2 to 15 years	2 to 15	No	The indicator includes those respondents who have ever been told by a doctor or hospital that child has asthma. The question used to define the indicator was: Has child ever been told by a	i_asthma1_hilo.htm	2~12	2~15
No	Yes	i_asthma1	Ever diagnosed with asthma	Ever diagnosed with asthma by year	children 2 to 15 years	2 to 15	No	The indicator includes those respondents who have ever been told by a doctor or hospital that child has asthma. The question used to define the indicator was: Has child ever been told by a	i_asthma1_trend.htm	2~12	2~15
No	Yes	i_asthma2	Current asthma	Current asthma by mothers' characteristics	children 2 to 15 years	2 to 15	No	respondents who had children with symptoms of asthma or had taken treatment for asthma in the last 12 months. The questions used to define the indicator were: Has child ever been told by a doctor or hospital he/she has asthma? and Has child had symptoms of asthma	i_asthma2_barmum.htm	2~12	2~15
				Current asthma by socioeconomic	children 2 to			respondents who had children with symptoms of asthma or had taken treatment for asthma in the last 12 months. The questions used to define the indicator were: Has child ever been told by a doctor or hospital he/she has asthma? and Has	i_asthma2_ba		

Production management functions (lists errors in toc).

w South Wales Health Survey Program - Microsoft Internet Explorer provided by NSW Dept of Health

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SW⊕HEALTH

Home   **A-Z Health Topics**   **Consumer Info**   **Health Professionals**

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2003-2004 Report on Child Health from the New South Wales Population Health Survey

Foreword

Acknowledgements

Executive summary

Snapshot of child health

Methods

- Outcomes of telephone calls
- Completed interviews and response rates by health area
- Completed interviews by language
- Survey sample size and NSW population: by age and sex
- Age distribution of unweighted survey sample vs NSW population: Males
- Age distribution of unweighted survey sample vs NSW population: Females
- Percentage of weighted sample children aged 0 to 15 years in each SEIFA Quintile

Representativeness of sample

- Aboriginal and Torres Strait Islander origin by age
- Country of birth of child by age
- Country of birth of parents by age
- Language spoken at home by age
- Highest qualification of mother by age
- Highest qualification of father by age
- Formal marital status by age
- ERROR:- Indication 'L:\HEALTHSURVEY\hsChild0304\\devout\r_dem14 ' does not exist. Check that the name of indicator 'r_dem14 ' is correct,
- check that the output exits, or check that the name in _toc.sas is correct, or remove from _toc.sas

Health behaviours

Breastfeeding

- Ever breastfed by socioeconomic disadvantage
- Ever breastfed by health area
- Ever breastfed by Families First regions
- Ever breastfed by mothers' characteristics
- Ever breastfed by year
- Breastfed to 12 months by socioeconomic disadvantage
- Breastfed to 12 months by health area
- Breastfed to 12 months by Families First regions
- Breastfed to 12 months by mothers' characteristics
- Breastfed to 12 months by year
- Fully breastfed to 6 months by socioeconomic disadvantage
- Fully breastfed to 6 months by health area
- Fully breastfed to 6 months by Families First regions
- Fully breastfed to 6 months by mothers' characteristics
- Fully breastfed to 6 months by year
- Exclusively breastfed to 6 months by socioeconomic disadvantage
- Exclusively breastfed to 6 months by health area
- Exclusively breastfed to 6 months by Families First regions

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