



National Drug Strategy Household Survey (NDSHS)

JANUARY 2008

METHODOLOGY REPORT FOR THE CATI SURVEY
DRAFT ONLY – NOT FOR CITATION OR CIRCULATION

PREPARED FOR

THE AUSTRALIAN INSTITUTE OF HEALTH AND WELFARE
26 THYNNE ST
FERN HILL PARK
BRUCE ACT 2601

AUTHOR

CONTACT: DARREN PENNAY
PHONE (03) 9382 0689
EMAIL: DARREN@SRCENTRE.COM.AU
RESEARCH TEAM: DARREN PENNAY, GRAHAM CHALLICE, JENNA BATEMAN

1. INTRODUCTION.....	1
1.1 OVERVIEW.....	1
1.2 SURVEY OVERVIEW.....	1
2. SAMPLE DESIGN AND CALL PROCEDURES	3
2.1 SAMPLE DESIGN	3
2.2 THE USE OF A RANDOM DIGIT DIALING (RDD) SAMPLE FRAME	4
2.3 LIST PREPARATION FOR APPROACH LETTER MAILING.....	5
2.4 CALL PROCEDURES	6
2.5 ACHIEVED SAMPLE COMPOSITION.....	7
3. QUESTIONNAIRE DESIGN AND TESTING.....	8
3.1 OVERVIEW	8
3.2 MAJOR CHANGES BETWEEN THE 2004 AND 2007 CATI SURVEYS.....	8
3.3 PILOT TESTING	9
4. DATA COLLECTION AND QUALITY CONTROL	10
4.1 ETHICAL CONSIDERATIONS	10
4.2 FIELD TEAM BRIEFING.....	10
4.3 FIELDWORK QUALITY CONTROL PROCEDURES	11
5. CALL RESULTS AND RESPONSE ANALYSIS.....	12
5.1 CALL RESULTS	12
5.2 RESPONSE RATE	14
5.3 ANALYSIS OF RESPONSE.....	15
5.4 ANALYSIS OF REASON FOR REFUSAL	20
5.5 REVIEW OF YIELD FROM INTERVIEWING IN LANGUAGES OTHER THAN ENGLISH	21
6. DATA QUALITY, DATA PROCESSING AND SURVEY OUTPUTS.....	22
6.1 DATA QUALITY.....	22
6.2 CODING.....	23
6.3 DATA PROCESSING.....	23
7. ISSUES FOR CONSIDERATION.....	24
APPENDIX 1: PRIMARY APPROACH LETTER	25
APPENDIX 2: SUMMARY OF PILOT TEST OUTCOMES.....	26
APPENDIX 3: BRIEFING NOTES AND SUPPORT MATERIAL.....	27
APPENDIX 4: CODE FRAMES.....	28
APPENDIX 5: LOGIC EDITS AND FORMATTING INSTRUCTIONS	29
APPENDIX 6: FINAL QUESTIONNAIRE.....	30

List of Tables

Table 1: Key project statistics..... 2

Table 2.1: Actual and achieved quotas..... 3

Table 2.3: Summary of match rates..... 5

Table 2.5: Achieved sample composition 7

Table 5.1a: Summary of all call attempts by call outcome 12

Table 5.1b: Summary of final call outcomes. 13

Table 5.2: Response analysis by location and sample type..... 15

Table 5.3a: Selected characteristics by sample type 16

Table 5.3b: Selected characteristics by number of calls to obtain an interview..... 17

Table 5.3c: Selected characteristics by number of calls to obtain an interview (Row percentages)... 18

Table 5.3d: Selected characteristics by interview type 19

Table 5.4: Reason for refusal by refusal type 20

Table 5.5: Language of interview..... 21

1. Introduction

1.1 Overview

This report summarizes the methodological aspects of the telephone survey component of the National Drug Strategy Household Survey (NDSHS) conducted by the Social Research Centre on behalf of the Australian Institute of Health and Welfare (AIHW) and the Australian Government Department of Health and Ageing. This report seeks to:

- provide a detailed account of the survey conduct and procedures
- analyse the efficacy of survey procedures
- consolidate assorted project information and materials, and
- provide suggestions regarding the conduct of future surveys of this nature.

The report is structured as follows:

- sampling and call procedures (Section 2)
- questionnaire design and pilot testing (Section 3)
- interviewer training and quality control (Section 4)
- call statistics, analysis of response and fieldwork performance (Section 5)
- data analysis and data deliverables (Section 6), and
- issues for consideration (Section 7).

Detailed reports, source documents and reference information are appended.

1.2 Survey overview

The 2007 NDSHS is the ninth survey in a series beginning in 1985.

The purpose of NDSHS is to collect data on attitudes towards and use of tobacco, alcohol and other drugs within the Australian community.

The in-scope population for NDSHS is persons aged 12 years of age or over in private households across Australia.

The 2007 survey used two collection modes. The bulk of the survey, approximately 20,000 respondents, was enumerated using a drop and collect self-completion mode of data collection, this aspect of the survey was undertaken by Roy Morgan Research. This was augmented by a smaller Computer Assisted Telephone Interviewing (CATI) survey (3,538 interviews) undertaken by the Social Research Centre. This report focus on the CATI survey only.

A list assisted Random Digit Dialling (RDD) sampling technique was used as the sampling frame (see Section 2.2). Within qualifying households, the next birthday method of respondent selection was used.

A stratified random sample design was used whereby the sample was stratified by state/territory and metropolitan / non-metropolitan location. All respondents answered a core set of questions with additional items being asked of respondents aged 15 years and over.

Table 1 provides a summary of key project statistics. Survey deliverables comprised the CATI survey data file and this report.

Table 1: Key project statistics

Component	
Completed interviews	3,538
Response rate	42%
Start date	5 Jul 07
Finish date	1 Oct 07
Average interview length (minutes)	29.3

2. Sample Design and Call Procedures

2.1 Sample Design

The in-scope population for the NDSHS was the residential population of Australia aged 12 years or over. As such the in-scope population excluded:

- Business and fax numbers
- Persons with no fixed address
- Persons incapable of undertaking the interview due to a health condition, temporary incapacity, or language difficulties.

Where there was more than one in-scope person in the household, the “next birthday” method of respondent selection was used.

Fifteen geographic strata were identified as per Table 2.1 (below). The first requirement was to achieve 200 interviews per State/Territory (i.e. a sub-total of 1,600 interviews nationally). The remaining 1,900 interviews required to achieve the minimum sample of 3,500 were then distributed across the 5 most populous States (NSW, Vic, Qld, WA and SA) on a probability proportional to size basis. Within each state and territory representative targets were set in relation to the number of interviews to be achieved within and outside the capital cities.

The final distribution of achieved interviews against target is shown in Table 2.1. The target number of interviews was achieved in all strata, with the exception of Rest of NT (with additional interviews undertaken in Darwin to complete the overall NT quota).

Table 2.1: Actual and achieved quotas

Stratum	Target distribution		Achieved interviews		Difference
	n	%	n	%	n
Sydney	545	16%	546	15%	1
Rest of NSW	320	9%	327	9%	7
Melbourne	507	14%	509	14%	2
Rest of Vic	189	5%	189	5%	0
Brisbane	270	8%	273	8%	3
Rest of Qld.....	318	9%	320	9%	2
Adelaide	261	7%	267	8%	6
Rest of SA	92	3%	92	3%	0
Perth.....	295	8%	298	8%	3
Rest of WA	103	3%	103	3%	0
ACT	200	6%	214	6%	14
Hobart.....	84	2%	84	2%	0
Rest of Tas	116	3%	116	3%	0
Darwin	110	3%	115	3%	5
Rest of NT	90	3%	85	2%	-5
Total	3500	100%	3538	100%	38

2.2 The use of a Random Digit Dialing (RDD) Sample Frame

The CATI component of the 2004 NDSHS used Desktop Marketing Systems' (DtMS') version of the White Pages as a sample frame. At that time this commercially available listing was generally considered to be complete and unbiased for most survey research purposes.

Unfortunately, the July 2004 edition of the DtMS product was the last one produced and the consensus amongst the research community nowadays is that RDD sampling frames are methodologically superior to this dated listing. It is for this reason that the 2007 CATI survey was migrated to a RDD sampling methodology.

The principle advantage of RDD approaches is that they overcome the biases inherent in DtMS listing. These include:

- Non-coverage of households with unlisted numbers (i.e. silent numbers, which can be up to 20-25% in some metropolitan areas) and new listings / households in growth areas
- The age of the listings (some entries in the July 2004 release of DtMS would have been up to five years old by the commencement of data collection for the NDSHS), and
- The over-representation of groups such as middle-aged / older households and retirees.

The Random Digit Dialling (RDD) sampling methodology used for the 2007 NDSHS is known as the 'known blocks' or 'list assisted' version of RDD.

This involves:

- Undertaking a random selection of records from the July 2004 DtMS listing, to be used as "seed" numbers for random number generation (all selections from the DtMS are by definition from known blocks)
- Retaining the eight digit prefix of the listed number (for example 02628946) and randomly generating the last two digits, to create a new randomly generated 10 digit telephone number
- 'Washing' the resultant numbers against the latest electronic business listings to remove known business numbers, and
- 'Washing' against the July 2004 release of the DtMS to identify which randomly generated telephone numbers can be matched to a listing (the "matched" sample) and which randomly generated telephone numbers cannot be matched to a listing (the "unmatched" sample).

Table 5.3a (page 15) provides a profile of respondents with 'matched' and unmatched' numbers.

2.3 List preparation for approach letter mailing

In theory RDD records which match to the DtMS, where the match includes a full address, can be sent a pre-survey letter. However, due to the age of the DtMS listing, Sensis's Macro-Matching service were used to improve the efficiency of approach letter mailing.

This service confirms which selections remain current (with reference to the on-line version of the EWP, which is updated daily). It also provides the new address where the surname and the phone number remain the same, but the *address* has changed and a new phone number for those DtMS selections where the surname and address remain the same, but the *phone number* has changed.

The former were included as part of the letter sample for NDSHS (since the phone number, as the sampling unit, remains unchanged, and only the address has been updated), whilst for the latter, the original telephone number is retained, and the record is included as part of the non-letter sample (since the inclusion of records with a new phone number would compromise the sampling methodology).

Table 2.3 summarizes the outcomes of the list matching process. Of the 35,000 original selections, 11,909 were matched to the DtMS, giving an overall DtMS match rate of 34%.

Of the 11,909 DtMS-matched records, only 5,627 were confirmed as current through the Macro-Matching process, resulting in an effective match rate of 16.1% (that is, just over 1 in 6 selections could be sent an approach letter). There was some variation in the Macro-Match rate by location, ranging from 20% or more in Rest of Vic, Adelaide and Hobart, to 7.8% in Rest of NT.

Table 2.3: Summary of match rates

Location	Selections			DtMS matched	DtMS match rate	Macro- Matched	Macro- Match rate
	Total n	Initiated n	Unused n	n	%	n	%
Sydney.....	5,450	4,899	551	1,658	30.4	719	13.2
Rest of NSW...	3,200	2,551	649	1,059	33.1	498	15.6
Melbourne.....	5,070	4,574	496	1,879	37.1	938	18.5
Rest of Vic	1,890	974	916	767	40.6	388	20.5
Brisbane	2,700	2,140	560	944	35.0	460	17.0
Rest of Qld.....	3,180	2,531	649	1,110	34.9	454	14.3
Adelaide.....	2,610	2,000	610	972	37.2	527	20.2
Rest of SA	920	611	309	340	37.0	152	16.5
Perth	2,950	2,346	604	1,039	35.2	517	17.5
Rest of WA	1,030	934	96	236	22.9	105	10.2
ACT	2,000	1,516	484	618	30.9	309	15.5
Hobart.....	840	524	316	311	37.0	168	20.0
Rest of Tas	1,160	697	463	443	38.2	220	19.0
Darwin	1,100	966	134	300	27.3	102	9.3
Rest of NT	900	900	0	233	25.9	70	7.8
Total	35,000	28,163	6,837	11,909	34.0	5,627	16.1

Locations with a high Macro-Match rate could be said to have a “response rate advantage”, in that a higher proportion of selections in those locations could be sent an approach letter, and the response rate for approach letter sample, overall, is known to be higher than for the unmatched sample (refer Table 5.2 for further details).

Sample was released in five batches so that:

- Calls to each batch could be exhausted, as far as was possible within the project schedule, prior to releasing new numbers, and
- Initial calls to sample members in receipt of letters could be place shortly after the receipt of the letter, with a view to maximising the impact of the approach letter.

2.4 Call procedures

Agreed call procedures for NDSHS included:

- Up to 10 calls to establish contact with and interview in-scope sample members, with additional calls (up to a maximum of 15) placed as required, in an attempt to obtain an interview with identified, in-scope sample members, and
- Controlling the spread of call attempts such that, subject to other outcomes being achieved, contact attempts were spread over weekdays late afternoon to early evening (4.00 pm to 6 pm), weekdays mid to late evening (after 6pm to 8.30 pm) and weekends (10.00 am to 5.00 pm). No calls were attempted outside these times, except by firm appointment
- Parental permission was sought and granted before any interviews with 12 to 15 year olds could be undertaken.

Other response maximisation procedures included:

- Offering to send a copy of the approach letter to householders requesting more information about the survey (refer Final Questionnaire - Appendix 6 INTRO2A)
- Hosting a web-page containing responses to frequently asked questions on the Social Research Centre website (refer Appendix 3 INTRO2B)
- Leaving a scripted message where an answering machine was encountered in an attempt to make contact with households (refer Appendix 3 ANSM1, ANSM2)
- Undertaking interviewing in selected languages other than English (refer Appendix 6 ALOTE for list of selected languages)
- Attempting to convert “soft refusal” outcomes (see Section 5.3), and
- Ensuring appropriately trained interviewers were used on the survey (see also Section 4.2).

The Social Research Centre operated an 1800 number throughout the study period to handle any questions about participation in the survey (setting an appointment time, seeking clarification about the survey, refusing to participate etc.).

2.5 Achieved sample composition

The achieved sample profile, relative to ABS population benchmarks¹ and the CATI component of the 2004 NDSHS, is summarised at Table 2.5.

As is generally the case for general community telephone surveys using the “next birthday” respondent selection method males and persons under 29 years of age were under-represented in the achieved sample, with a corresponding over-representation of females and older persons. This is consistent with other surveys conducted by the Social Research Centre.

Table 2.5: Achieved sample composition

	2007 NDSHS (n)	2007 NDSHS (%)	2004 NDSHS (%)	ABS (%)
Male				
12 to 19	151	4.3	4.3	6.7
20 to 29	142	4.0	5.8	7.9
30 to 39	222	6.3	7.2	8.4
40 to 49	255	7.2	7.4	8.6
50 to 59	274	7.7	7.4	7.6
60 plus	411	11.6	11.7	10.0
Total	1,455	41.1	43.8	49.0
Female				
12 to 19	160	4.5	5.6	6.3
20 to 29	259	7.3	8.8	7.8
30 to 39	377	10.7	10.7	8.8
40 to 49	341	9.6	9.5	8.9
50 to 59	381	10.8	9.0	7.7
60 plus	565	16.0	12.6	11.6
Total	2,083	58.9	56.2	51.0
Total sample				
12 to 19	311	8.8	9.9	13.0
20 to 29	401	11.3	14.6	15.7
30 to 39	599	16.9	17.9	17.1
40 to 49	596	16.8	16.9	17.4
50 to 59	655	18.5	16.4	15.2
60 plus	976	27.6	24.3	21.5
Total	3,538	100.0	100.0	100.0

¹ 2006 Census of Population and Housing

3. Questionnaire Design and Testing

3.1 Overview

The Social Research Centre was provided with a 'system-generated' version of the 2004 telephone survey instrument and a hard copy of the 2004 D&C questionnaire as a basis for developing the 2007 CATI questionnaire. This meant our initial task was to re-create a Microsoft Word version of the 2004 CATI questionnaire. Following this, AIHW provided a document entitled "Variations to the 2004 questionnaire" which was used as an initial basis for the creation of the 2007 survey instrument. The usual iterative process followed. For future rounds of the survey program it would be preferable if the CATI survey instrument was developed once the D&C questionnaire is finalised.

While the broad content of the CATI questionnaire remained relatively unchanged from previous years, there were a number of changes in module order and question placement. The final survey instrument was structured as follows.

Module label	Topic	Module label	Topic
	Introduction and Screening		
A	Perceptions	O	Cocaine
B	General Health	P	Hallucinogens
C	Opportunity	Q	Ecstasy
D	Tobacco	R	Ketamine
E	Alcohol	S	GHB
F	Pain-killers / Analgesics	T	Zanthanols
G	Tranquillisers / Sleeping pills	U	Inhalants
H	Steroids	V	Opiates / Opioids
I	N/A	W	Injectable Drugs
J	Barbiturates	X	Attitudes
K	Meth / amphetamine	Y	Harms
L	Marijuana / Cannabis	Z	Lifestyle
M	Heroin	YY	Policy Support
N	Methadone or Buprenorphine	ZZ	Demographics

3.2 Major changes between the 2004 and 2007 CATI surveys

The major changes between the 2004 and 2007 CATI questionnaires are summarised below. These include:

- several of the perceptions questions relating to drug-related concerns, deaths, and recall of health promotions messages were dropped
- Section B (2004) – Regulations relating to drug use – dropped
- terminology for common use / street names for various drugs was updated
- some questions in relation to passive smoking (A17 and A18 in 2004) were dropped

- Questions of hypothetical use \$100 to spend on reducing drug use were dropped
- the standard drinks questions were moved from the 'Perceptions' section of the questionnaire (2004) to the alcohol section (Section E, 2007)
- questions in relation to GP visits and hospital admissions (Section C – General Health in 2004) were dropped
- questions relating to the use of someone else's prescription medication (C4 and C5 in 2004) were deleted, and
- the number of policy support questions (Section YY in 2004) was reduced.

3.3 Pilot testing

The Social Research Centre conducted a two-stage pilot test, comprising an initial pilot test of 30 interviews (from 15 to 17 June), followed by revisions to the questionnaire and a re-test comprising 21 interviews from 25 June to 4 July.

Standard operational testing procedures were utilised to ensure the CATI program reflected the agreed questionnaire. These included:

- Reading the questionnaire directly into the CATI program to eliminate the possibility of typographical errors occurring in the set up process
- Programming the skips and sequence instructions as per the hard copy questionnaire
- Generating test frequency counts to check the structural integrity of the questionnaire, and
- Checking the questionnaire in "practice" mode to review on-screen presentation and sequencing.

One of the main issues arising from the pilot tests was questionnaire length (an average of 31.7 minutes for the first pilot and 33.2 minutes for the second). Refer to Appendix 2 for a detailed list of issues raised and resolutions reached as a result of questionnaire review and pilot testing process.

The final questionnaire is provided at Appendix 6. A detailed list of questionnaire issues for future consideration is provided as Appendix 7.

4. Data Collection and Quality Control

4.1 Ethical considerations

The Australian Institute of Health and Welfare Ethics committee approved the survey methodology and content.

Ethical considerations in undertaking the survey included:

- Ensuring informed consent
- Ensuring the voluntary nature of participation was clearly understood, and
- Protecting the privacy and confidentiality of respondent information.

A 1800 survey hotline number was available to sample members (and provided in the pre-survey letter) with a view to providing a point of reference for query resolution and /or for any survey-generated request for information relating to drug or alcohol support services.

The privacy and confidentiality of respondent information was also protected by the Social Research Centre's contract with the AIHW as well as our adherence to the appropriate privacy laws. All interviewers working on the survey were required to sign an undertaking of confidentiality, which was kept by the Project Manager until the survey's completion. In addition, the Social Research Centre is bound to adhere to ASMRO Privacy Principles and the AMSRS Code of Professional Behaviour.

The ethical considerations incumbent upon researchers when undertaking surveys of this nature were duly emphasised in the survey briefing materials and interviewer training provided by the Social Research Centre (see Section 4.2 and Appendix 4). In addition, interviewers were provided with appropriate referral numbers to provide to respondents upon request/as required. These included:

- The Social Research Centre 1800 number – for questions about who is conducting the study and how the respondent's telephone number was obtained
- The AIHW Survey hotline number for queries relating to the legitimacy of the survey or any concerns or queries about why the survey was being conducted.

No referral numbers for Drug and Alcohol services were made available to interviewers or respondents. This is an aspect of the survey that should be reviewed in the future.

4.2 Field team briefing

All interviewers and supervisors selected to work on the NDSHS attended a three hour briefing prior to commencing work on the project. The Social Research Centre project manager delivered the briefing to groups of about 12 interviewers at a time. The briefing covered:

- Project background and context
- Respondent selection procedures

- Strategies to gain cooperation, deal with reluctant respondents and minimise mid-survey terminations
- A detailed examination of the survey questions and pre-coded response lists, with a focus on ensuring the uniform interpretation of questions and responses
- Item-specific data quality issues
- An emphasis on the importance of adhering to sample management protocols designed to protect the privacy and confidentiality of respondents
- Response maximisation procedures relevant to the survey, and
- A comprehensive practice interviewing and role play module.

A total of 57 interviewers worked on the project with a core team of 20 interviews completing about two-thirds of all interviews. The active involvement of AIHW staff would be encouraged for any future surveys.

4.3 Fieldwork quality control procedures

The in-field quality monitoring techniques included:

- A total of 516 validations were undertaken, representing approximately 15% of each interviewer's work (thereby exceeding the 10% validation requirement necessary to comply with Interviewer Quality Control Australia standards)
- Field team de-briefing after the first shift, and thereafter, whenever there was important information to impart to the field team in relation to data quality, consistency of interview administration, techniques to avoid refusals, appointment making conventions or project performance
- Maintenance of an "interviewer handout" document addressing respondent liaison issues, tips for refusal avoidance, and "rulings" on issues relating to questionnaire administration that were not covered at the original briefing
- Use of an "Illicit drugs reference guide", with an alphabetised list of "street names" of drugs, and how they were to be coded, together with a handout with details of standard drinks
- Examination of verbatim responses to "other specify" questions, and
- Monitoring (listening in) by the Social Research Centre project managers.

5. Call Results and Response Analysis

5.1 Call results

A total of 105,591 calls were placed to the 28,163 sample records to which calls were initiated – an average of 3.7 calls per sample record. On average, an interview was achieved every 29.8 calls.

As can be seen at Table 5.1a, the most common call outcomes were no answer (41%), followed by appointments (16%), disconnected numbers (11%) and answering machines (12%). This call distribution is reasonably consistent with similar RDD surveys conducted by the Social Research Centre.

Table 5.1a: Summary of all call attempts by call outcome

Call outcome	n	%
Total calls.....	105,591	100
Completed interviews	3,538	3
No answer.....	43,296	41
Appointment made.....	17,119	16
Telstra message, number disconnected.....	12,120	11
Answering machine (no message left)	8,958	8
Engaged.....	5,583	5
Household refusal	3,890	4
Answering machine (left message 1)	2,541	2
Not a residential number.....	2,463	2
Fax/Modem.....	2,388	2
Respondent refusal.....	1,382	1
Answering machine (left message 2)	1,085	1
Too old/frail/deaf/unable to do survey	510	<1
LOTE - Not target language (No follow up)	203	<1
LOTE (Target Language) - Follow up.....	191	<1
Selected respondent away duration.....	144	<1
Adult refused permission for child	50	<1
Other non-interview reason	77	<1
LOTE Call Back to establish Language	31	<1
Refused prior.....	18	<1
Refused to provide age.....	4	<1
Total sample records	28,163	
Average call attempts per sample record	3.7	
Average call attempts per interview	29.8	

Table 5.1b shows the final call outcome for the 28,163 sample records to which calls were initiated. It uses the same call outcome category headings and response rate definitions as the NDSHS 2004.

In reviewing these results please note that the final call outcome result will differ from the 'total calls' result as it is Social Research Centre practice to re-serve 'soft' refusals, fax/modems and disconnected numbers.

The final call disposition shows:

- Just over half of all 2007 sample records (52%) were unusable (disconnected, fax/modem numbers, non-residential numbers)

- No contact could be established at just under one fifth (18%) of 2007 selections
- Contact was established with a confirmed household at approximately 3 in 10 (30%) of 2007 selections
- An interview was achieved for approximately 1 in 8 (13%) of sample records.

Overall, the proportion of “households not contacted” and “out of scope households attempted” for the NDSHS is consistent with other surveys conducted by the Social Research Centre using an RDD sample frame and similar call procedures.

The variation in the distribution of final call outcomes between 2007 and 2004 stems from the move to a RDD sample frame in 2007. Our consistent experience with RDD sample frames is that they produce, for example, a much higher proportion of disconnected numbers and non-contacts than EWP samples.

Table 5.1b: Summary of final call outcomes.

Final call outcome	2007			2004		
	n	%	in scope h'hlds.	n	%	% in scope h'hlds.
Total households attempted	28,163	100		36,312	100	
In-scope households contacted						
Total interviewed.....	3,538			5,347	15	38
Interviews failed internal checks	0			11	0	0
Useable interviews	3,538			5,336	15	38
Unresolved appointments	534			114	0	1
Refusals.....	4,316			6,339	17	45
Terminations.....	72			2,171	6	15
Other out of scope households ^(a)	482					
Language difficulties ^(b)	64			130	0	1
Other	0			1	0	0
<i>Sub total</i>	<i>9,006</i>			<i>14,102</i>	<i>39</i>	<i>100</i>
Households not contacted						
10 or more unsuccessful attempts ²	3,080			1,477	4	
No reply / engaged	1,952			1,841	5	
<i>Sub total</i>	<i>5,032</i>			<i>3,318</i>	<i>9</i>	
Total in scope households attempted....	14,038			17,420	48	
Out of scope households attempted						
Disconnected / unobtainable numbers ...	9,801			6,692	18	
Fax / modem.....	1,863			459	1	
Business number	2,390			780	2	
Other ineligible ³	71			10,961	30	
Total out of scope	14,125			18,892	52	

Comment [d1]: Incapable

a) This includes too old / frail / deaf and other incapable (i.e. drunk, unreliable, etc.). Arguably these records could be regarded as out of scope
 b) This category comprises records where the language spoken was other the 6 prescribed languages for non-English language interviewing. Again, arguably, these records should be considered out of scope. Particularly in terms of comparing response rates between the D&C and CATI surveys as no provision was made for non-English language completion of the D&C questionnaire.

² 6 or more in 2004
³ No one fitting age criteria (12-17) in 2004

5.2 Response rate

The response rate for the CATI component of the 2007 NDSHS, calculated as prescribed by the AIHW with a view to replicating, as far as possible, the method used in 2004, is 39%. This is a pleasing result relative to 2004 (38%) considering the well documented decline in telephone response rates in recent years, the establishment of the Do Not Call Register in the lead up to the 2007 survey and the lower proportion of sample that could be sent an approach letter (16% in 2007 compared with all households in 2004 - refer Table 2)⁴. To illustrate the impact that continued reliance on the ageing DtMS listing has on the primary approach letter penetration, and ultimately response rates, it is interesting to note that had all households been sent an approach letter in 2007 an estimated response rate of 44% would have been achieved⁵.

Table 5.2 shows some variation in response rate by location and sample type, ranging from 50% in Rest of Vic, to 35% in Melbourne. The response rate for the letter sample (44%) was some 8 percentage points higher than for the non-letter sample (36%)

⁴ All households other than those approached as the boosted sample of 12 to 17 year olds were sent a primary approach letter.

⁵ Based on the response rate achieved amongst those who were sent a primary approach letter.

Table 5.2: Response analysis by location and sample type

	Total households attempted (base) n	Response rate %	Interviews completed %	In-scope households contacted %	Households not contacted %	Total in scope households attempted %	Total out of scope households attempted %
Overall project	28,163	39%	13%	32%	18%	50%	50%
Sydney	4,899	41%	11%	27%	18%	45%	55%
Rest of NSW	2,551	36%	13%	36%	14%	50%	50%
Melbourne	4,574	35%	11%	32%	19%	51%	49%
Rest of Vic	974	50%	19%	39%	23%	62%	38%
Brisbane	2,140	38%	13%	34%	20%	54%	46%
Rest of Qld	2,531	36%	13%	35%	16%	51%	49%
Adelaide	2,000	38%	13%	35%	18%	53%	47%
Rest of SA	611	41%	15%	37%	20%	57%	43%
Perth	2,346	40%	13%	32%	18%	50%	50%
Rest of WA	934	46%	11%	24%	13%	37%	63%
ACT	1,516	42%	14%	33%	16%	49%	51%
Hobart	524	42%	16%	38%	19%	57%	43%
Rest of Tas	697	41%	17%	40%	16%	57%	43%
Darwin	967	45%	12%	26%	19%	45%	55%
Rest of NT	899	42%	9%	22%	22%	44%	56%
State capital location	18,966	39%	12%	31%	18%	49%	51%
Rest of state location....	9,197	40%	13%	34%	17%	51%	49%
Letter (Macro-Matched)	5,155	44%	30%	70%	18%	88%	12%
Failed Macro-Match.....	5097	36%	14%	39%	16%	55%	45%
Unmatched	17911	37%	7%	19%	18%	37%	63%
Subtotal no letter	23008	36%	9%	24%	18%	41%	59%

5.3 Analysis of response

Analysis of response by sample type

Table 5.3a provides a brief analysis comparing the characteristics of respondents whose telephone number could be matched back to the DtMS (matched sample, refer section 2.2) with those of respondents obtained from unmatched sample.

Thirty six percent of interviews were obtained from unmatched sample records, that is from households that would otherwise have been excluded from the survey population had the 2004 DtMS listing been used.

Accessing unmatched sample records substantially increases the representation of groups such as younger persons, employed persons, persons who have never married and daily smokers.

Table 5.3a: Selected characteristics by sample type

Sample type	DtMS Matched	DtMS Unmatched	Total
Base	2,268	1,261	3,529 ^(a)
	%	%	%
Gender			
Male.....	41.9	39.6	41.1
Female	58.1	60.4	58.9
Age			
12 to 19	8.3	9.5	8.8
20 to 29	7.8	17.5 [#]	11.3
30 to 39	13.4	23.4 [#]	17.0
40 to 49	16.7	17.3	16.9
50 to 59	19.8	16.1 [#]	18.5
60 plus.....	33.9	16.2 [#]	27.6
Employment status			
Working	53.6	61.8 [#]	56.5
Retired.....	30.2	15.0 [#]	24.8
Studying	6.5	8.3	7.1
Marital status			
Married	58.5	50.8 [#]	55.7
Divorced / separated	11.5	14.0 [#]	12.4
Never married.....	20.6	29.2 [#]	23.7
Country of birth			
Australia	76.3	72.4 [#]	74.9
Educational attainment (zz15)			
No post school qualifications	39.4	36.6	38.4
Bachelor degree or higher	22.9	27.4 [#]	24.5
Health status (B1)			
Fair, poor	13.8	13.0	13.5
Smoking status (D7b)			
Currently smoke on a daily basis.....	13.3	17.4 [#]	14.8
Number of drinks on day that has alcoholic drink (e13)			
5 or more.....	11.6	12.1	11.8
Household internet connection status (zz20b)			
None.....	27.8	21.5 [#]	25.5
Dial up	16.1	16.6	16.3
Broadband.....	55.1	60.4 [#]	57.0

Denotes significant at the 95% confidence level

a) 9 records unallocated

Analysis of response by call attempt

Table 5.3b shows that 18% of interviews were achieved on the 7th or subsequent call attempt (that is, beyond the six call cycle used in 2004).

A brief analysis was undertaken to compare the characteristics of respondents interviewed early in the call cycle (that is, interviewed on the first to third call attempt, with those of respondents interviewed later in the call cycle.

The analysis presented at Table 5.3b illustrates how interviews achieved later in the call cycle improve the representation of persons aged 20 to 29 and employed persons in particular.

Table 5.3b: Selected characteristics by number of calls to obtain an interview.

Number of calls to obtain interview	1 to 3 %	4 to 6 %	7 to 9 %	10 or more %	Total %
Base	2,107	797	373	252	3,529 ^(a)
%	60%	23%	11%	7%	100%
Gender					
Male	40.1	42.9	41.8	42.5	41.1
Female	59.9	57.1	58.2	57.5	58.9
Age					
12 to 19	8.1	10.3	9.7	8.3	8.8
20 to 29	9.3	13.0 [#]	15.5 [#]	16.3 [#]	11.3 [#]
30 to 39	15.9	15.8	20.6 [#]	24.2 [#]	17.0
40 to 49	16.3	16.6	17.7	21.4	16.9
50 to 59	19.6	17.9	16.1	14.3 [#]	18.5
60 plus	30.8	26.3	20.4 [#]	15.5 [#]	27.6 [#]
Employment status					
Working	53.0	58.3 [#]	63.9 [#]	69.1 [#]	56.5 [#]
Retired	29.2	21.1 [#]	15.7 [#]	12.6 [#]	24.8 [#]
Studying	6.6	7.3	8.3	9.3	7.1
Marital status					
Married	55.7	55.3	55.2	57.9	55.7
Divorced / separated	12.3	11.9	13.1	13.1	12.4
Never married	22.8	25.1	25.2	24.2	23.7
Country of birth					
Australia	76.5	73.4	75.9	65.5 [#]	74.9
Educational attainment (zz15)					
No post school qualifications	39.4	38.8	37.3	30.6 [#]	38.4
Bachelor degree or higher	23.3	26.1	25.2	29.0	24.5
Health status (B1)					
Fair, poor	14.0	13.7	13.4	9.9 [#]	13.5
Smoking status (D7b)					
Currently smoke on a daily basis	15.3	11.5	15.8	18.7	14.8
Number of drinks on day that has alcoholic drink (e13)					
5 or more	11.1	11.0	15.0	15.5	11.8
Household internet connection status (zz20b)					
None	27.6	24.8	22.8 [#]	14.3 [#]	25.5
Dial up	15.5	16.3	17.4	21.0 [#]	16.3
Broadband	55.9	57.2	58.2	63.9 [#]	57.0

Denotes significantly different from the 1-3 call result at the 95% confidence level.
a) 9 records unallocated

These same results are shown as row percentages in Table 5.3c.

Table 5.3c: Selected characteristics by number of calls to obtain an interview (Row percentages).

	N=	Number of calls to obtain interview			
		1 to 3 (%)	4 to 6 (%)	7 to 9 (%)	10 or more (%)
Total	3,529 ^(a)	59.7	22.6	10.6	7.1
Gender					
Male	1,450	58.3	23.6	10.8	7.4
Female	2,079	60.7	21.9	10.4	7.0
Age					
12 to 19	309	55.0	26.5	11.7	6.8
20 to 29	399	49.1	26.1	14.5	10.3 [#]
30 to 39	599	55.9	21.0	12.9	10.2 [#]
40 to 49	596	57.7	22.1	11.1	9.1
50 to 59	653	63.4	21.9	9.2	5.5
60 plus	973	66.6 [#]	21.6	7.8 [#]	4.0 [#]
Employment status					
Working	1,955	56.2 [#]	23.2	11.9	8.7
Retired	858	70.6 [#]	19.1	6.6 [#]	3.6
Studying	66	55.3	23.2	12.2	9.3
Marital status					
Married	1,174	59.7	22.4	10.5	7.4
Divorced / separated	436	59.4	21.8	11.2	7.6
Never married	481	59.7	22.4	10.5	7.4
Country of birth					
Australia	2,644	60.9	22.1	10.7	6.2
Educational attainment (zz15)					
No post school qualifications ..	1,355	61.3	22.8	10.3	5.7
Bachelor degree or higher	543	55.2 [#]	24.1	11.4	9.2
Health status (B1)					
Fair, poor	478	61.5	22.8	10.5	5.2
Smoking status (D7b)					
Currently smoke on a daily basis	521	62.0	17.7 [#]	11.3	9.0
Number of drinks on day that has alcoholic drink (e13)					
5 or more	417	56.1	21.1	13.4	9.4
Household internet connection status (zz20b)					
None	901	64.6 [#]	22.0	9.4	4.0 [#]
Dial up	574	56.8	22.6	11.3	9.2
Broadband	2,011	58.5	22.7	10.8	8.0

Denotes significantly different from total at the 95% confidence level.

a) 9 records unallocated

Analysis by type of interview

Table 5.3d shows that 214 interviews refusal conversion interviews and 54 interviews (1.5% of all achieved interviews) were conducted in language other than English (see Section 5.5).⁶

An analysis of the comparative profile of the interviews achieved by these means suggests that the soft refusal conversion process serves to improve the representation of age groups that are already well represented, such as those aged 60 plus.

As could be expected, persons interviewed in a language other than English include a high proportion of older, overseas born persons with no post-school qualifications.

Table 5.3d: Selected characteristics by interview type

Interview type	Normal	Refusal conversion	LOTE	Total
Base	3,270	214	54	3,538
%	92%	6%	2%	100%
Gender				
Male	41.1	41.1	38.9	41.1
Female	58.9	58.9	61.1	58.9
Age				
12 to 19	8.8	9.3	5.6	8.8
20 to 29	11.4	10.3	11.1	11.3
30 to 39	17.0	15.9	20.4	17.0
40 to 49	17.3	12.6	7.4	16.9
50 to 59	18.7	18.7	7.4	18.5
60 plus	26.9	33.2	48.1 [#]	27.6
Employment status				
Working	57.3	52.4	25.0 [#]	56.5
Retired	24.3	26.7	48.1 [#]	24.8
Studying	7.0	9.0	7.7	7.1
Marital status				
Married	55.6	52.8	75.9 [#]	55.7
Divorced / separated	12.6	10.7	3.7 [#]	12.4
Never married	23.8	24.8	11.1 [#]	23.7
Country of birth				
Australia	76.1	75.2	3.7 [#]	74.9
Educational attainment (zz15)				
No post school qualifications	37.7	43.0	61.1 [#]	38.4
Bachelor degree or higher	24.6	22.9	24.1	24.5
Health status (B1)				
Fair, poor	13.4	12.1	25.9 [#]	13.5
Smoking status (D7b)				
Currently smoke on a daily basis	15.1	11.7	7.4	14.8
Number of drinks on day that has alcoholic drink				
5 or more	11.8	15.0	0.0 [#]	11.8
Household internet connection status				
None	25.4	22.0	46.3	25.5
Dial up	16.2	18.2	14.8	16.3
Broadband	57.3	57.9	33.3	57.0

⁶ The corresponding percentage in 2004 was 0.75%.

5.4 Analysis of reason for refusal

An attempt was made to collect reason for refusal from all sample members irrespective of where in the screening or selection process they refused.

Table 5.4 identifies the reason for refusal for records where the final call outcome was “household refusal” or “personal refusal”.

Lack of salience / interest was the most commonly cited reason for refusing to participate (45%), followed by “no comment / just hung up” (16%) and “too busy” (11%).

As could be expected, interview length also contributed substantially to respondent reluctance to participate (one in five selected sample members giving this as their reason for refusing).

Table 5.4: Reason for refusal by refusal type

Reason for refusal	Household	Personal	Total
Base	2,934	443	3,377
	87%	13%	100%
No comment / Just hung up	18.3	3.4	16.3
Too busy.....	10.5	16.5	11.3
Not interested	45.4	42.4	45.0
Too personal / intrusive	1.3	0.9	1.3
Don't like subject matter.....	0.9	1.4	0.9
Letter put me off.....	0.2	0.0	0.2
Don't believe surveys are confidential /privacy concerns..	1.0	0.5	0.9
Silent number	4.0	0.7	3.6
Don't trust surveys / government	1.0	0.2	0.9
Never do surveys.....	3.8	3.2	3.7
Too long.....	3.7	19.6	5.8
Get too many calls for surveys / telemarketing	1.5	1.4	1.5
Other reasons for refusal	6.4	9.5	6.8
Asked to be taken off list /Never called again	2.1	0.5	1.9
Total	100.0	100.0	100.0

Note: Excludes 'too old/frail/deaf, language difficulty, away duration, no-one in scope and respondent unreliable.

5.5 Review of yield from interviewing in languages other than English

Bilingual interviewing was limited to the six main languages other than English spoken in Australia. The procedure adopted included:

- A specialist bi-lingual interviewer briefing, focusing on translation of key words, phrases and concepts, the appropriate “language pitch”, and potential cultural sensitivities. The product of this briefing is an annotated questionnaire per target language group, to ensure consistency of delivery within language group, and
- Routing requests for interview in a target language to the appropriate bi-lingual interviewer, using the feature of our CATI software.

Table 5.5 shows that distribution of interviews in languages other than English. The ultimate yield of LOTE interviews (1.5%) was exactly in line with the Social Research Centre’s projections as per our proposal.⁷

Table 5.5: Language of interview

Target language	Total n	Interviews n	Other outcomes n	Interviews/Total %
Mandarin	51	12	39	24
Cantonese	21	5	16	24
Vietnamese	22	5	17	23
Italian	34	4	30	12
Greek	34	19	15	56
Arabic	29	9	20	31
Total	191	54	137	28

⁷ The proportion of interviews undertaken in languages other than English in 2004 was 0.75%.

6. Data Quality, Data Processing and Survey Outputs

6.1 Data Quality

Overall, based on interviewer feedback and supervisor and researcher observations, the questionnaire is considered to have worked well. On-the-whole, few problems were reported in questionnaire administration.

From a respondent perspective, apart from the interview length, the most 'negative' aspect of the survey was the repetitive nature of some of the questioning. The *perceived* 'irrelevance' of many questions relating to drinking consequences and drinking behaviours for very light drinkers was also raised by interviewers. Both of these issues, on occasion, were a source of annoyance for respondents and led to a number of mid survey terminations.

Factual questions with high item-level non-response (>5%) are shown below. On this basis the accuracy of respondent knowledge with respect to the C3 series of questions (drug use behaviour of friends) seems a little dubious.

Label	Question	Non-response %
L15	How much did you pay the last time you purchased MARIJUANA or CANNABIS?	13.6
L16	How much MARIJUANA or CANNABIS did you purchase on this occasion?	41.5
L17	What type of MARIJUANA or CANNABIS did you purchase on this occasion?	21.9
C3	What proportion of your friends use ... Pain Killers/ Analgesics non-medical purposes	11.2
	What proportion of your friends use ... Tranquillisers or Sleeping Pills for non-medical purposes	9.8
	What proportion of your friends use ... Steroids for non medical purposes	7.4
	What proportion of your friends use ... Methadone or Buprenorphine for non medical purposes	6.4
	What proportion of your friends use ... Barbiturates for non medical purposes	7.3
	What proportion of your friends use ... What proportion of your friends use ... GHB	6.2
	What proportion of your friends use ... Ketamine	6.8
	What proportion of your friends use ... Zanthanols	7.5
D20A:	Are you planning on giving up smoking?	9.1
ZZ16	Personal income	18.5
ZZ17	Household income	25.1

6.2 Coding

Details of code frame extensions and approved back coding rules are provided at Appendix 4.

Code frame extensions were required for the following questions:

- D21 – Reasons given for not intending to quit smoking
- D22 – Factors that would motivate a quit attempt
- X3 – Factors influencing decision to first try illicit drugs
- X4 – Factors influencing decision to never try illicit drugs
- ZZ6A – Country of birth
- ZZ7 – Main language spoken at home
- ZZ8 – Other languages spoken at home
- ZZ11 – Industry, and
- ZZ12 – Occupation

6.3 Data processing

The Social Research Centre's task was to provide a clean unit record file to RMR to enable the creation of a consolidated D&C / CATI unit record file.

In order to expedite the timely provision of the final file, an interim, uncoded and unweighted data file containing 3,293 records was sent to the AIHW and RMH for comment and checking prior to the completion of data collection.

Comments were provided by RMR and AIHW and incorporated into the final (unweighted) CATI survey data file provided by the Social Research Centre on 17 October 2007.

The known errors contained in this file are:

- 1993 ANZSIC codes being used for question ZZ11 instead of 2006 ANZSIC, and
- 36 cases missing from the D12 to D22 series of questions (details of smoking behaviour) as a result of a sequencing error detected and corrected as part of routine checking of the top-line data early in the data collection cycle.

A patch file containing a state/territory variable for each record was provided separately.

The most time consuming aspect of data processing and the aspect which generated a lot of queries from RMR and AIHW arose from the application of a complex series of logic edits to the CATI survey data file. These edits were of a nature (see Appendix 6 – Logic edits and formatting instructions) that would usually be applied to a self-completion survey. While this meant that the D&C and CATI surveys were edited in the same fashion, it also meant, as a result of back-editing, that the internal logic of the CATI data set was compromised. This made checking the integrity of the data file difficult and generated a number of time consuming queries.

7. Issues for consideration

Sample coverage

- an estimated 8% of households do not have a land-line (e.g. mobile only).
- current RDD methodologies exclude locations with new exchange listings
 - the Association of Market and Social Research Organisations' (AMSRO's) Pilot RDD sample does not overcome this
 - the Integrated Public Number Database (IPND) is not available and is likely to remain so
- Continued exploration of alternative modes of data collection are warranted should the budget for the survey come under scrutiny (the 2007 RFT included an invitation to tenderers to consider alternatives). In this light it is interesting to note that 25.5% of CATI respondents did not have internet access, 57% had broadband and 16.3% dial up).

Questionnaire issues

- The questionnaire needs to be shorter and needs to be reviewed in light of other data sources and the uses being made of the findings
- Include a question enabling the identification of 'mobile phone' only households in the D&C survey.
- Review question content in light of those questions with a high item-level non-response
- Refer Appendix 7 for further details arising from the interviewer de-briefing process.

Questionnaire development and data processing

- Develop the CATI survey instrument once the D&C questionnaire has been finalised so as to be able to better ensure consistency
- Review the data processing procedures for the CATI survey
- If the two-supplier model is to be retained there needs to be more opportunity for a collegial approach to be developed with joint participation in pre-survey meetings and at key junctures in relation to questionnaire design and data processing.

The 2007 NDSHS survey was a challenging survey to work on but one that ultimately was successfully executed. The current survey continues a very high quality and important time series. Hopefully, the findings presented in this report contribute to the development and continuous improvement of the survey program over time.

Appendix 1: Primary Approach Letter

Appendix 2: Summary of Pilot Test Outcomes

Appendix 3: Briefing Notes and Support Material

Appendix 4: Code Frames

Appendix 5: Logic Edits and Formatting Instructions

Appendix 6: Final Questionnaire
