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National Survey for Wales Field Test Technical Report

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Views expressed in this report are those of the researcher and not necessarily the views of the Welsh Government.

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1 Survey overview

Background to the National Survey for Wales Field Test

1.1 The National Survey for Wales is a major study conducted by the Welsh Government. It is one of the main ways in which the Welsh Government seeks to gain detailed information on people's views and well-being.

1.2 The survey ran between January 2012 and April 2015. It involved conducting more than 14,000 interviews each year with a randomly selected sample of people aged 16 and over across Wales (approximately 660 interviews in each local authority). Interviews were carried out face-to-face and lasted around 25 minutes. Fieldwork was based on a probability sample design and conducted on a continuous basis. The survey questionnaire and all supporting materials were available as standard in both English and Welsh.

1.3 The information collected was used to inform the development of policy and the delivery of public services.

1.4 The survey asked respondents about a range of topics, including:

- use of, and views on, their local public services;
- experience of living in their local area;
- views on local and national government; and
- their well-being.

1.5 A new incarnation of the National Survey for Wales is due to start in early 2016. This new survey will integrate elements of several different surveys currently being conducted on behalf of the Welsh Government and its sponsored bodies. The intention is to meet the information needs of the Welsh Government more effectively and reduce burden on respondents. The surveys being brought together are:

- National Survey for Wales
- Welsh Health Survey
- Active Adults Survey
- Arts in Wales Survey
- Welsh Outdoor Recreation Survey

1.6 Ahead of the new survey going live in 2016, the Welsh Government commissioned TNS BMRB and Beaufort Research to carry out a large scale Field Test between May and September 2015. This report provides details of the Field Test.

Objectives

1.7 This Field Test provided an opportunity to test various aspects of the new survey content and design. While some questions were planned to be retained from the existing National Survey, a large number of questions were to be taken from other surveys (see Chapter 3 for more details). This constituted a substantial redesign of the questionnaire content. In addition, the average interview length was to be increased from 25 minutes to 45 minutes. These two factors (new content and increased interview length) drove the need for the new survey to be thoroughly tested prior to the start of fieldwork.

1.8 In light of the above, the key aims of the Field Test were to:

- provide a measure of the questionnaire timing, both overall and in terms of individual questions;
- identify any issues with the questionnaire / specific questions;
- gain additional feedback on respondents' understanding of questions;
- give an indication of likely response rates;
- conduct split-sample tests to assess the impact of specific design elements, such as the use of incentives and the introduction of a self-completion module;

- obtain quantitative data to inform analysis of any discontinuities between the previous surveys and the new survey (i.e. to assess and quantify the affect a change of survey mode would have on the survey results (e.g. for WHS moving from self-completion to a face to face survey);
- provide design effects to indicate likely precision of new survey estimates;
- test alternative wording for selected questions; and
- develop and test materials and basic processes to form a model for the new survey.

1.9 To meet these aims, all interviewers working on the Field Test were issued with feedback forms to be completed and returned to the research team at TNS BMRB at the end of their assignments (see Chapter 7). Interview data was also provided to the Welsh Government (see Chapter 5) allowing analysis to be carried out on interview length and on response variations among different sub-groups of respondents.

Differences between the Field Test and the 2016-17 National Survey

1.10 As noted above, the Field Test was intended to act as a large-scale pilot for the new National Survey (due to start in 2016-17). In some respects the design of the Field Test was identical to, or closely reflected, the proposed design for the new survey. However, in other respects the design of the Field Test differed from what is proposed for the new National Survey, for practical reasons. These similarities and differences are summarised in Table 1.1.

Table 1.1: Similarities and differences between 2012-15 National Survey, the Field Test, and the 2016-17 National Survey

Element	2012-15 National Survey	Field Test	2016-17 National Survey
Sample design	A wholly unclustered sample (on an annual basis)	A clustered sample – equivalent to the quarterly clustering that applied on the 2012-15 National Survey	A wholly unclustered sample (on an annual basis)
LA level sampling	Disproportionate sampling at LA level, with equal interview targets across all LAs	Disproportionate sampling at LA level, with equal interview targets across all LAs	Proportionate sampling, with boosts to ensure minimum sample sizes in some LAs
Questionnaire	25 minute average questionnaire length, with some use of sub-sampling	45 minute average questionnaire length, with extensive use of sub-sampling	45 minute average questionnaire length, with extensive use of sub-sampling (content to be reviewed following the Field Test)
Fieldwork preparation / briefing	All interviewers attended a 6 hour face-to-face briefing	All interviewers attended a 3 hour face-to-face briefing	All interviewers required to attend a full day face-to-face briefing
Interview and response rate targets	Target of 14,500 interviews annually at a 65% response rate	Target of 3,000 interviews in a 3 month period at a 60% response rate	Target of 12,000 annual interviews (3,000 per quarter) at a 64% response rate
Fieldwork period and management	Continuous fieldwork; sample issued in monthly batches; each assignment worked for up 10 weeks	c. 3 month fieldwork period; all sample issued from the start of the fieldwork period	Continuous fieldwork; sample issued in monthly batches; each assignment worked for up 10 weeks

Structure of the technical report

1.11 Following the introductory chapter, this report is divided into a further six chapters:

- Chapter 2 ('Sampling') describes the process of selecting addresses for the survey.
- Chapter 3 ('Questionnaire content and development') looks at both the process of developing questions to include in the survey and the testing that was conducted on the interviewing script.
- Chapter 4 ('Fieldwork') covers the process of preparing interviewers for fieldwork, the fieldwork procedures that were put in place, the interview numbers, response rates achieved, and interview timings.
- Chapter 5 ('Data processing and output') gives an overview of the process of producing a fully specified data set to provide to the Welsh Government.
- Chapter 6 ('Weighting and non-response') describes the weighting process, analysis of non-response and design effects.
- Chapter 7 ('Implications for 2016-22 National Survey') provides feedback on the questionnaire and survey processes, including results from the incentive and split sample experiments, to inform the methodology for the new survey.
- Chapter 8 ('Analysis of split-sample experiments') describes the results of the Field Test split-sample experiments

2 Sampling

2.1 This section of the report covers the sampling requirements, design and allocation process for the large-scale Field Test.

2.2 The requirement for the Field Test was to deliver an achieved sample of 3,000 interviews across Wales, with a roughly equal number of interviews achieved in each Local Authority (LA).

2.3 The sample design for the Field Test was based on the design employed for the 2012-15 National Survey for Wales. This chapter therefore begins with an overview of the National Survey sample design; further information on the 2012-15 survey is included in the technical reports produced for each year of the survey.

Overview of National Survey sampling

2.4 The specification for the National Survey stated that the survey should be representative of all adults aged 16 or over living in private households, with a roughly equal effective sample achieved each year in each LA.

2.5 The annual sample requirement was for a stratified, single-stage random selection of addresses across Wales drawn from the small user Postcode Address File (PAF), belonging to Royal Mail. Within each sampled household, an individual interview was attempted with one adult aged 16 or over. Where a household contained more than one adult, a single adult would be randomly selected to participate from all household members aged 16 or over.

2.6 In order to meet the sample requirements it was agreed that a wholly unclustered sample of addresses would be drawn. The full sample for each reporting year was drawn in one stage and allocated to each quarter first, and then each month within each quarter.

2.7 Within each LA the sample was selected systematically with a fixed interval. Apart from LA there was no further explicit sample stratification. Because addresses are ordered by postcode within LA, a systematic sample with a small sampling interval will be (implicitly) stratified by neighbourhood and always geographically representative. The practical consequence is that the sampling error is reduced (in comparison with a less controlled sample) for any measures that vary significantly between neighbourhoods.

2.8 The sample was drawn from the PAF by the Office for National Statistics (ONS) based on a specification agreed between TNS BMRB and the Welsh Government. TNS BMRB was then responsible for batching and allocating the sample in preparation for fieldwork.

2.9 TNS BMRB developed a bespoke area geography in Wales in which each area unit a) covered sufficient sampled addresses to (approximately) equal one fieldwork assignment, and b) was 'geographically sensible' as an assignment. Area units were constructed using Output Areas (OAs). Lower Layer Super Output Areas (LSOAs) were originally to be used but this would have resulted in too much variation in the number of addresses per assignment, especially in the smaller LAs.

2.10 Once the units had been created, they were sorted by area unit aggregate values[1]. Once stratified, they were systematically allocated to the four survey quarters of reporting year (Quarters 1-4)[2]. Any area units that had been allocated to Quarter 1 in the first year of the survey (2012-13) were also allocated to Quarter 1 in subsequent survey years (2013-14 and 2014-15). This approach ensured that any consecutive four quarters of data would be formally unclustered.

[1] The area unit values used were Welsh Index of Multiple Deprivation (WIMD) scores and Urbanisation.
[2] This involved taking all of the assignments within each LA, sorting by the average area unit aggregated values for each assignment and allocating to quarters.

Field Test sample requirements and design

2.11 As the Field Test fieldwork started during the first quarter of what would have been the 2015-16 National Survey reporting year, it was agreed to continue the sample design from the National Survey and treat the Field Test as representing Quarter 1 of a full survey year. Thus, the same area units were used for the Field Test as had been used for Quarter 1 of the three previous years of the National Survey. This meant that the Field Test replicated the clustering that was used within the National Survey. As noted above, while the National Survey sample was fully unclustered on an annual basis within LAs, a clustered design was adopted on quarterly basis.

2.12 The requirement was for a total achieved sample of 3,000 interviews with a roughly equal number (an average of 137 interviews) achieved in each LA. In determining the number of addresses to sample per LA, the following assumptions were made:

- The assumed eligibility rate per LA would be equal to the average eligibility rate over the first ten quarters of the National Survey (Q1-10)[3].
- A flat response rate of 60% would be assumed for all LAs. While some LAs achieved higher response rates than others on a quarterly basis on the National Survey, there was no clear and consistent pattern and levels varied substantially from quarter-to-quarter. It was also unclear what impact the changes to the survey from the previous National Survey (notably the longer questionnaire) would have on response, at both an overall and LA level.
- A 20% reserve sample would be drawn across all LAs. This would allow additional sample to be issued during fieldwork if it became clear that the response rate would fall short of expectations. In the event, no reserve sample was issued.

[3] Quarters 11 and 12 were not completed at the time the Field Test sample was drawn, hence being excluded from this analysis.

2.13 Table 2.1 shows the assumptions applied to each local authority and the number of addresses issued.

Table 2.1 - Sample assumptions and addresses issued

Local authority	Assumed response rate	Assumed eligibility rate	Interview target	Addresses issued
Blaenau Gwent	60%	87%	137	261
Bridgend	60%	89%	137	255
Caerphilly	60%	92%	137	249
Cardiff	60%	89%	137	257
Carmarthenshire	60%	85%	137	268
Ceredigion	60%	83%	137	275
Conwy	60%	84%	137	273
Denbighshire	60%	90%	137	254
Flintshire	60%	92%	137	248
Gwynedd	60%	77%	137	298
Isle of Anglesey	60%	82%	137	280
Merthyr Tydfil	60%	89%	137	256
Monmouthshire	60%	89%	137	257
Neath Port Talbot	60%	91%	137	251
Newport	60%	90%	137	254
Pembrokeshire	60%	76%	137	302
Powys	60%	82%	137	278
Rhondda Cynon Taf	60%	89%	137	255
Swansea	60%	87%	137	263
The Vale of Glamorgan	60%	91%	137	252
Torfaen	60%	90%	137	253
Wrexham	60%	92%	137	248
TOTAL	**60%**	**87%**	**3,014**	**5,791**

Selection of addresses

2.14 The sample was drawn from the Postcode Address File (PAF) by ONS based on a specification agreed between TNS BMRB and the Welsh Government[4].

2.15 The specification provided to ONS required first setting up a sample frame and then drawing the required number of addresses in each LA. The sample was selected as follows:

- **Stage 1: Setting-up the sample frame**
    1. Extract all addresses from PAF for the Output Areas (OAs) in each Sample Point (SP)[5].
    2. Remove all businesses from the PAF file (those with an organisation name) to set-up a residential address file.
    3. Code the Local Authority (LA) onto the residential address file.
    4. Sort the residential address file within LA by the full postcode.
    5. Within each LA number the addresses.
- **Stage 2: Drawing the addresses**
    1. From the residential address file get counts of Total Addresses by LA.
    2. For each LA calculate the Sampling Interval (Total Addresses/Sample Addresses[6]).
    3. Generate a Random Start for each LA. This is done by generating a random (real) number between 0 and the sampling interval for each LA.
    4. Within each LA the first address selected is the next address number above the Random Start number and the subsequent

[4] The sample was drawn by ONS using PAF and their Common User Address File, which ensured that no household would be selected for the field test that had previously been selected for any of a range of other large-scale ONS surveys within the last three years. This also ensured that the sampled addresses would not be selected for other major ONS surveys or waves of the National Survey for Wales for the next three years.
[5] A list of OAs was provided to ONS with the sample specification. This listed all OAs allocated to Quarter 1 in the National Survey sample.
[6] 'Sample addresses' was the number of addresses to be drawn in each SP (within each OA), as provided by TNS BMRB.

addresses are the next address number above Random Start + Sampling Interval.[7]

2.16 Once the addresses were drawn, ONS passed the full sample file to TNS BMRB via secure file transfer. TNS BMRB was then responsible for batching and allocating the sample in preparation for fieldwork.

Sample batching and allocation

2.17 Fieldwork for the Field Test was split between TNS BMRB and Beaufort Research. Two thirds of assignments were issued to TNS BMRB with the remaining third issued to Beaufort Research. All assignments were issued to interviewers from the start of fieldwork; therefore no further sample batching was required.

Sample assignments

2.18 Assignment sizes varied based on the bespoke sample geography developed by TNS BMRB. For the Field Test all assignments had between 18 and 30 addresses, with the mean assignment size being 23 addresses. A total of 248 assignments were issued for the Field Test.[8]

Selection of dwelling units, households and individuals

2.19 In cases where a sampled address was split into more than one dwelling unit, interviewers were required to make a **dwelling unit selection**. This most commonly occurs in cases where a house has been split into flats but where the PAF has not been updated to give a unique address to each dwelling unit. In these cases the process for selecting a dwelling unit was as follows:

- The number of dwelling units at the address was coded by the interviewer. They were required to include both occupied and unoccupied dwelling units;

[7] An additional stage, whereby addresses can be screened against the Value Office Agency's (VOA's) list of ineligible addresses, was not carried out. Analysis carried out during the 2012-13 survey found that supposedly 'ineligible' addresses (as indicated in the VOA list) were actually eligible and yielded interviews. For further details, see the 2012-13 Survey Technical Report.

[8] Issue and reissue processes are covered at paragraph 4.19.

- If there was one dwelling unit no selection was required; if there was more than one the interviewer was required to enter a unique identifier for each of the dwelling units in the electronic contact sheet[9];
- Once the dwelling units were entered one was selected at random using an algorithm built into the electronic contact sheet;
- The interviewer then needed to confirm that the selected dwelling unit was both residential and occupied as a main residence;
- Once a dwelling unit was selected, the selection was 'locked' into the contact sheet and could not be changed.

2.20 In cases where the selected dwelling unit was residential and occupied as a main residence the next step was to confirm the number of households living at the dwelling unit and, if necessary, to make a **household selection**[10]. Households were defined as:

*'a group of people (not necessarily related) living at the same address who share cooking facilities **and** share a living room or sitting room or dining area.'*

2.21 The process for selecting a household was exactly the same as that used for selecting a dwelling unit: in the event that there was more than one household the interviewer was required to list a unique identifier for each household in the contact sheet and one was then randomly selected (using an algorithm built into the electronic contact sheet) for inclusion in the survey. As with the dwelling unit selection, once a household was selected it could not be replaced.

2.22 The final stage of the process was to make a **person selection** in cases where this was required. For the Field Test all adults aged 16 or over who lived in a household as their main residence were eligible to take part. Interviewers were required to enter the number of adults aged 16 or over in the household into the electronic contact sheet. If there was only

[9] See chapter 5 for further details on the electronic contact sheet.
[10] In cases where the selected dwelling was non-residential or not occupied as a main residence the address was coded as ineligible.

one adult aged 16 or over in the household they were selected for interview; in cases where there was more than one adult aged 16 or over a person selection was required.

2.23 The person selection was conducted in the same way as the dwelling unit and household selections. Interviewers first needed to enter a name or unique identifier for each adult aged 16 or over in the household. One of these adults was then randomly selected for interview using an algorithm built into the electronic contact sheet. Once a selection was made it could not be changed and the selected person could not at any stage be replaced by a different adult in the household.

2.24 Chart 2.1 summarises the different geo-demographic units used during the sampling process, in decreasing order of size.

Chart 2.1 – Units used for sampling process

3 Questionnaire content and development

3.1 This chapter provides an overview of the structure and coverage of the questionnaire used in the Field Test, details of the CAPI programming and testing processes and an overview of the process used to translate the questionnaire into Welsh.

Questionnaire overview/ background

3.2 The survey consisted of a single questionnaire administered to one randomly selected adult aged 16 or over in each sampled household. The questionnaire content was developed by the Welsh Government and its sponsored bodies. An initial review was carried out by the National Centre for Social Research (NatCen) prior to the start of the Field Test[11]. The questionnaire covers a range of different topics, including public services, well-being, personal health, arts, sport and outdoor recreation. A full list of the modules included in the final questionnaire, and a brief description of the type of questions included in each is included later in this section.

3.3 A small scale pilot was conducted to provide input to questionnaire development as well as testing fieldwork processes. Further details are included in Chapter 4.

Final questionnaire and revisions

3.4 The final questionnaire for the Field Test was agreed and provided by the Welsh Government to TNS BMRB in May 2015. The questionnaire was divided into a total of 63 different modules, details of which are included in Table 3.1.[12] The 'Source' column refers to the survey from

[11] Full details of the NatCen review were compiled in a report which can be accessed via the Welsh Government website: http://gov.wales/docs/caecd/research/2015/150327-draft-questionnaire-review-national-survey-2016-onwards-en.pdf

[12] Prior to the start of the main questionnaire a number of questions were asked in the electronic contact sheet to enable a dwelling unit, household and individual to be selected for interview. Details of the electronic contact sheet are included in chapter 4.

which the module was taken: The abbreviations used to describe the 'source' surveys are as follows (survey sponsor shown in brackets):

- AAS – Active Adults Survey (Sport Wales)
- ASC – Adult Social Care User Survey (Health and Social Care Information Centre)
- Cen – Census (Office for National Statistics)
- CS – Citizenship Survey (Department for Communities and Local Government)
- CSE – Crime Survey for England and Wales (Office for National Statistics)
- EHS – English Housing Survey (Department for Communities and Local Government)
- ESS – European Social Survey (European Research Infrastructure Consortium)
- FRS – Family Resources Survey (Department for Work and Pensions)
- HCE – Scottish Health and Care Experience Survey (Scottish Government)
- HQ – Office for National Statistics harmonised question
- LiW – Living in Wales (Welsh Government)
- NS – 2012-2015 National Survey for Wales[13] (Welsh Government)
- SHS – Scottish Household Survey (Scottish Government)
- TP – Taking Part Survey (Department for Culture, Media and Sport)
- WEMWBS – Warwick-Edinburgh Mental Well-being Scale
- WHS – Welsh Health Survey (Welsh Government)
- WORS – Welsh Outdoor Recreation Survey (Natural Resources Wales)

[13] Some of these questions may also have been used in other surveys previously.

Table 3.1 – Questionnaire coverage

Questionnaire module	Source	Areas covered
Household grid	NS	• Confirmation of number and names of adults aged 16 or over in household (based on information provided in the electronic contact sheet) • Names of all under 16s in household • Date of birth and gender of all household members • Marital status of respondent • Relationship of respondent to all other household members
Tenure and Accommodation	WHS/ EHS	• Housing tenure • Satisfaction with landlord/ accommodation
Community cohesion	NS	• Perception of belonging to local area • Perceptions of people in local area
Active Travel - primary[14]	NS	• Mode of travel and distance to school for children attending primary school
Primary education	NS	• Perceptions of primary school (if attended by child in household in last 12 months)
Active Travel - secondary	NS	• Mode of travel and distance to school for children attending secondary school
Secondary education	NS	• Perceptions of secondary school (if attended by child in household in last 12 months)
Play	NS	• Satisfaction with place for children to meet/ play/ get together
e-Safety	NS	• Child's use of internet enabled devices • Child's knowledge of internet safety measures
Health demographic questions	NS/ HQ/ WHS	• General health condition • Experience of physical or mental illness and impact on day-to-day activities

[14] Each sub-section of education questions was asked of the parent or guardian of one child in the household in the relevant age group. In cases where there were two or more children in the relevant age group one was automatically selected by the computer at random.

Questionnaire module	Source	Areas covered
Personal care plans	NS	• Whether has a personal care plan • Perceived impact of personal care plan on health and well-being
Vision, hearing and teeth	WHS	• Assessment of eyesight and hearing • Number of natural teeth and use of dentures
Local health services	NS	• Perceptions of the NHS and local health services
GP services	NS	• Whether seen a GP or family doctor about own health in last 12 months and, if yes, experience of this
Hospitals	NS	• Whether had an appointment at an NHS hospital in the last 12 months and, if yes, experience of this
Ambulance services	LiW	• Whether used ambulance services in the last 12 months • Experience of using ambulance services (e.g. satisfaction with time taken to respond)
Social care services	NS/ HCE/ ASC/ WHS	• Perception of local social care services • Whether use social care services
Satisfaction with local authority services	NS	• Perception of whether council provides high quality services • Perception of ability to make decisions with regard to local area
Democracy and understanding of local councils	NS	• Contact and satisfaction with / knowledge of local councillor
Future generations	NS	• Expectations for life in Wales in 25 years' time
Welsh Government	NS/ ESS	• Overall satisfaction with the way the Welsh Government is doing its job • How much respondent has seen or heard about work of Welsh Government in last 12 months
Satisfaction with education system	NS/ ESS	• Satisfaction with education system

Questionnaire module	Source	Areas covered
Satisfaction with health services	NS/ ESS	• Satisfaction with health services
Household material deprivation/ financial inclusion	FRS/ NS	• Whether have / can afford various items / activities for the household • How well respondent has been keeping up with bills and credit commitments
Child material deprivation	FRS/ NS	• Whether have/ can afford various items / activities for children in the household
Household pensioner material deprivation	FRS/ NS	• Whether engage in social/ financial inclusion activities • If not, reasons for not engaging in activities
Internet	NS	• Internet access and use
Welsh language	NS	• Ability of respondent to understand, speak, read and write Welsh • How regularly respondent speaks Welsh
Use of health and social care services in Welsh	NS	• Preferred language (English or Welsh) for communicating with health and social care staff
Museums	SHS/ TP/ NS	• Whether attended a museum in the last 12 months, and if so, satisfaction with visit
Attendance	TP	• Whether attend cultural activities/ events, and if so, reasons for attending
Participation	TP	• Whether take part in artistic/ creative activities and if so, reasons for taking part • Whether take part in leisure activities
Barriers	TP	• Reasons for not attending or taking part in arts events or activities
Attitudes to arts and culture	TP	• Whether agree or disagree with statements about arts and culture
Visits to the outdoors in the last 12 months	WORS	• Outdoor activities undertaken in the last 12 months • Outdoor places visited in the last 12 months

Questionnaire module	Source	Areas covered
Visits to the outdoors in the last 4 weeks	WORS	• Outdoor activities undertaken in the last 4 weeks
Most recent visit to the outdoors	WORS	• Main activity during most recent visit to the outdoors • Length spent doing main activity and amount of effort put in • Type of places visited during most recent visit • Name of place visited on most recent visit • Mode of transport used to reach place visited • Who accompanied respondent on most recent visit • Reasons for making visit • Amount of money spent during most recent visit
Visits to outdoors – general questions	WORS	• Reasons for not visiting outdoors in the last 4 weeks • Reasons for not visiting outdoors in the last 12 months
Biodiversity	WORS	• Perceived change in the variety of species in Wales • Anticipated change in the variety of species in Wales • Level of concern about variety of species in Wales • Activities done in the last 12 months to help protect the environment and nature
Current participation and latent demand	AAS	• Outdoor games/ activities taken part in in the last 4 weeks • Outdoor pursuits/ activities taken part in in the last 4 weeks • Indoor games/ activities taken part in in the last 4 weeks • Activities would like to do/ do more of • Outdoor pursuits • Coaching or instruction in Welsh

Questionnaire module	Source	Areas covered
Sports club membership	AAS	• Whether currently a member of any sports clubs or organisations • Sports covered by club/ organisation • Sports participated in • Whether receive coaching or instruction
Encouraging future participation	AAS	• Things that would encourage participation in activities or sport
School experiences	AAS	• Whether took part in / enjoyed taking in part in sport at school
Volunteering	TP/ AAS	• Whether done any volunteering in the last 12 months • Activities helped with • Amount of time spent volunteering in the last 12 months • Whether do any paid or unpaid coaching • Whether do any coaching in the Welsh language
Well-being (ONS)	NS/ HQ	• Satisfaction with various aspects of life • Estimation of positive and negative feelings
WEMWBS	WEMWBS	• Estimation of positive and negative feelings
Alcohol consumption	HSE	• Extent to which drink/ have drunk alcohol • Type and amount of alcohol drunk on most recent occasion
Smoking	WHS	• Whether smoke tobacco • Whether tried to give up smoking in the last 12 months • Reasons for wanting give up smoking • Whether use/ have used electronic cigarettes
Exercise	WHS	• Amount of time spent exercising, and intensity of exercise carried out in the last 7 days • Amount of time spent sitting in the last 7 days

Questionnaire module	Source	Areas covered
Fruit and vegetables	WHS	• Types and amount of fruit/ vegetables eaten yesterday
Illnesses and other health problems	WHS	• Whether ever been treated for various health problems
Pregnancy	WHS	• Whether currently pregnant
BMI	WHS	• Height and weight
Discrimination	NS	• Whether experienced discrimination in the last 12 months
Sexual orientation and religion	NS/ HQ	• Sexual orientation • Religion
Demographics – Nationality and ethnicity	NS/ HQ	• National identity and ethnicity
Demographics – Qualifications and economic status	CSE/ Cen	• Qualifications • Economic status / employment questions
Transport and Active travel	WORS/ NS	• Mode of transport used to get to specified destinations • Purpose of most recent 'active travel' • How frequently used a bike as a means of transport in last 3 months • Whether respondent walked more than 5 minutes as a means of transport in last 3 months
Recontact and data linkage	NS	• Whether happy for personal details to be passed to Welsh Government for the purpose of future research • Whether willing to have survey answers linked to information held by the NHS and other public service organisation[15]

3.5 The final questionnaire can be found on the Welsh Government website.

[15] More information on data linkage can be found on the Research pages of the Welsh Government website: http://gov.wales/nationalsurvey

Sub-sampling

3.6 In order to ensure that no respondents experienced an excessively long interview (which would increase the likelihood of partial and terminated interviews) a sub-sampling strategy was implemented. This involved setting conditions whereby certain modules were only asked of a sub-sample of respondents so that results were of the precision required (but not more precise than needed). As a result the full questionnaire would only be asked in a very small number of cases.

3.7 The following modules were asked of sub-samples of respondents:

Set	Topic(s)	Approx. no. of respondents
1	Future generations	1,500
2	Attendance	1,500
3	Barriers	250
4	Attitudes to arts and culture	250
5	Most recent visit to the outdoors	1,500
6	Outdoor visit – general questions/ Biodiversity	250
7	Encouraging future participation	250
8	School experiences	250
9	Discrimination	250

3.8 These modules were selected for sub-sampling as they included established questions and were piloted primarily to obtain timing data rather than to test the content. Topics were asked of larger samples where it was felt it would be most useful to know about discontinuities; the decisions on which topics to ask of larger / smaller samples were taken by WG in conjunction with the sponsored bodies.

3.9 In the cases where questions were only asked of 250 respondents, this sample size was selected not to obtain precise estimates but simply to provide reasonably robust timing data for those modules.

3.10 Variables were included in the sample to determine for each address which of the nine sub-sample blocks would be asked. Each sub-sampling variable was produced independently, meaning that a given address could be asked of anywhere between 0 and 9 sub-sample sets. The variables were populated according to the requirement that a minimum number of respondents should be asked each sub-sampled group.

3.11 For each sub-sample variable, the sample file was stratified by the Local Authority and Post Code and a '1 in n' selection carried to assign the required number of addresses to the sub-sample group.

3.12 The full sub-sampling specification can be found in Annex L.

Self-completion modules

3.13 A major difference from the previous National Survey was the introduction of self-completion modules. These are presented as computer assisted self-completion (CASI) modules to ensure respondent confidentiality in answering these questions.

3.14 Questions were selected for inclusion in the CASI modules due to their potentially sensitive nature, or to limit the influence of social desirability on respondents' answers. In addition, some had previously been asked as self-completion questions on other surveys (e.g. the Welsh Health Survey) and it was felt that retaining this mode would allow for greater comparability.

3.15 Respondents were asked to follow the instructions on the screen of the laptop and enter their answers accordingly. Practice questions were included before the start of the self-completion modules to give the interviewer an opportunity to show the respondent the different functions of the computer. If the respondent was unable or unwilling to complete the modules using the computer, the interviewer could administer the self-completion. Interviewers were briefed to encourage respondents to

complete the self-completion modules themselves, and only offer interviewer administration as a 'last resort', if the respondent firmly refused to use the computer.

3.16 For the Field Test, a split-sample experiment was conducted to explore whether any differences in response occurred as a result of answering questions via self-completion as opposed to interviewer administration. Each respondent was randomly assigned to one of three groups:

- Group A – Full CASI
- Group B – Reduced CASI
- Group C – No CASI

3.17 Respondents in Group A were asked to complete all self-completion modules themselves. Respondents in Group B were asked to complete only the most sensitive self-completion modules themselves, with the remaining self-completion modules being asked by the interviewer. For respondents in Group C, the interview was entirely interviewer administered.

3.18 Table 3.2 shows which questionnaire sections were included in the self-completion experiment, and how the modules were administered for each of the three groups.

Table 3.2 – Self-completion modules: Split-sample groups

Group A – Full CASI	Group B – Reduced CASI	Group C – No CASI
Well-being (ONS)	Well-being (ONS)	Well-being (ONS)
WEMWBS	WEMWBS	WEMWBS
Alcohol Consumption	Alcohol Consumption	Alcohol Consumption
Smoking	Smoking	Smoking
Exercise		Exercise
Fruit & Vegetables		Fruit & Vegetables
Illnesses and other health problems	Illnesses and other health problems	Illnesses and other health problems
BMI	BMI	BMI
Sexual orientation and Religion	Sexual orientation and Religion	Sexual orientation and Religion
Nationality and Ethnicity	Nationality and Ethnicity	Nationality and Ethnicity
	Exercise	
	Fruit & Vegetables	

Self-completion (CASI)

Interviewer administered (CAPI)

3.19 Findings from the split-sample experiment, and their implications for the new survey, are outlined in Chapter 7.

3.20 The field test was also used to carry out a number of split sample experiments to test question design for the 2016/17 National Survey. These were:

- Two different versions of the National Survey recontact question which asks respondents if they would be willing to be contacted by the Welsh Government to take part in further research.
- Two versions of the introduction to the Active Travel module
- Two versions of a question asking about respondents' general health

Details and findings of these experiments, including recommendations for the 2016/17 National Survey, are outlined in Chapter 8.

Interview timings

3.21 A number of timing points were included in the questionnaire to measure the length of each section. The median questionnaire length was 41 minutes. The mean length was 43 minutes. Table 3.3 shows the median and mean length of each section of the questionnaire. These figures represent the average timings for each section across the full sample. For any questions that were not asked (e.g. as a result of sub-sampling) respondents have been given a timing of zero.

Table 3.3 - Average interview timings

Section	Average length – Mean (mins)	Average length – Median (mins)
Start of respondent interview	1.6	0.9
Tenure	0.2	0.1
Accommodation	0.3	0.2
Community cohesion	0.8	0.6
Active travel – primary	0.1	0.0
Primary education	0.3	0.0
Active travel – secondary	0.1	0.0
Secondary education	0.2	0.0
Play	0.4	0.2
e-Safety	0.2	0.0
Health demographic questions	0.8	0.1
Personal care plan	0.1	0.0
Vision, hearing and teeth	0.7	0.5
Local health services	1.5	1.1
GP services	1.1	0.7
Hospitals	0.5	0.2
Ambulance services	0.4	0.2
Social care services	0.8	0.6
Carers	0.3	0.2
Satisfaction with local authority services	1.3	0.8
Democracy and understanding of local councils	0.3	0.2
Future generations	0.6	0.0
Welsh Government	0.9	0.6
Satisfaction with education system	0.5	0.3

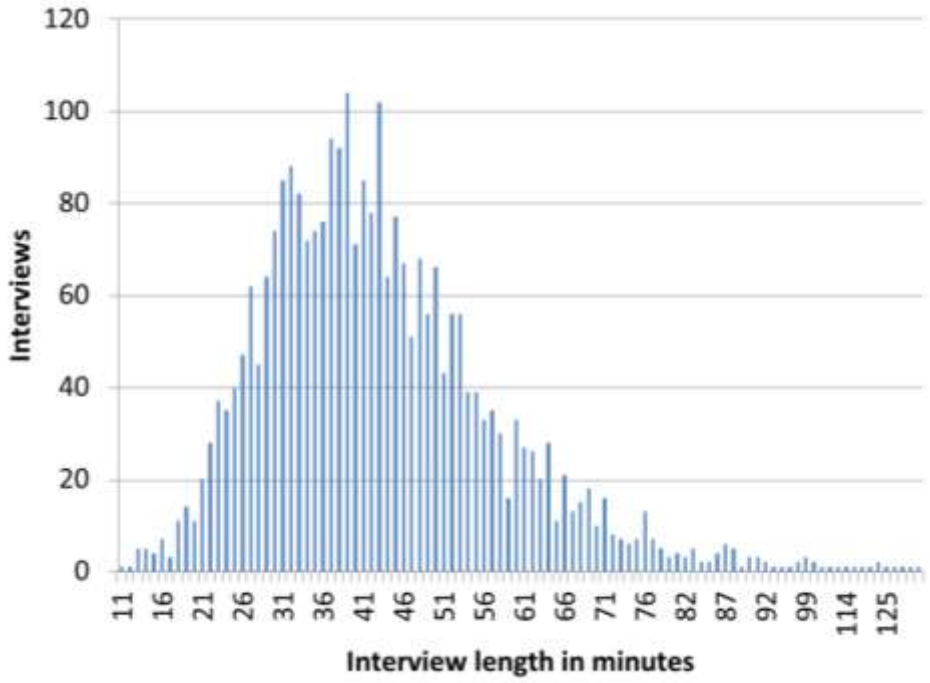
Section	Average length – Mean (mins)	Average length – Median (mins)
Satisfaction with health services	0.4	0.2
Household material deprivation/ financial inclusion	0.9	0.7
Child material deprivation	0.2	0.0
Household pensioner material deprivation/ financial inclusion	0.7	0.0
Internet	0.6	0.5
Welsh language	0.4	0.2
Use of health/ social care services in Welsh	0.1	0.0
Museums	0.5	0.3
Attendance	1.2	0.1
Participation	2.3	1.7
Barriers	0.0	0.0
Attitudes to arts and culture	0.3	0.0
Visits to the outdoors – Introduction	0.2	0.1
Visits to the outdoors in the last 12 months	1.1	1.0
Visits to the outdoors in the last 4 weeks	0.3	0.1
Most recent visit to the outdoors	1.0	0.0
Visits to the outdoors – general questions/ Biodiversity	0.2	0.0
Current participation	1.9	1.5
Latent demand	0.3	0.2
Sports club membership	0.3	0.1
Encouraging future participation	0.1	0.0
School experiences	0.5	0.0
Volunteering	0.0	0.3
Self-completion – Practice questions	0.7	0.0
Well-being (ONS)	0.9	0.7
WEMWBS	2.0	1.6
Alcohol consumption	1.3	0.7
Smoking	0.8	0.5
Exercise	2.6	1.9
Fruit & Vegetables	0.9	0.0
Illnesses and other health problems	1.5	1.1
Pregnancy and BMI	0.6	0.4
Discrimination	0.5	0.0
Sexual orientation and Religion	1.2	0.3

Section	Average length – Mean (mins)	Average length – Median (mins)
Demographics, qualifications, and employment	0.0	0.8
Transport and Active Travel	1.4	1.0
Recontact and Data Linkage	1.7	0.9
TOTAL (based on mean/median of all total interview lengths)	**43.4**	**40.9**

Interview length variability

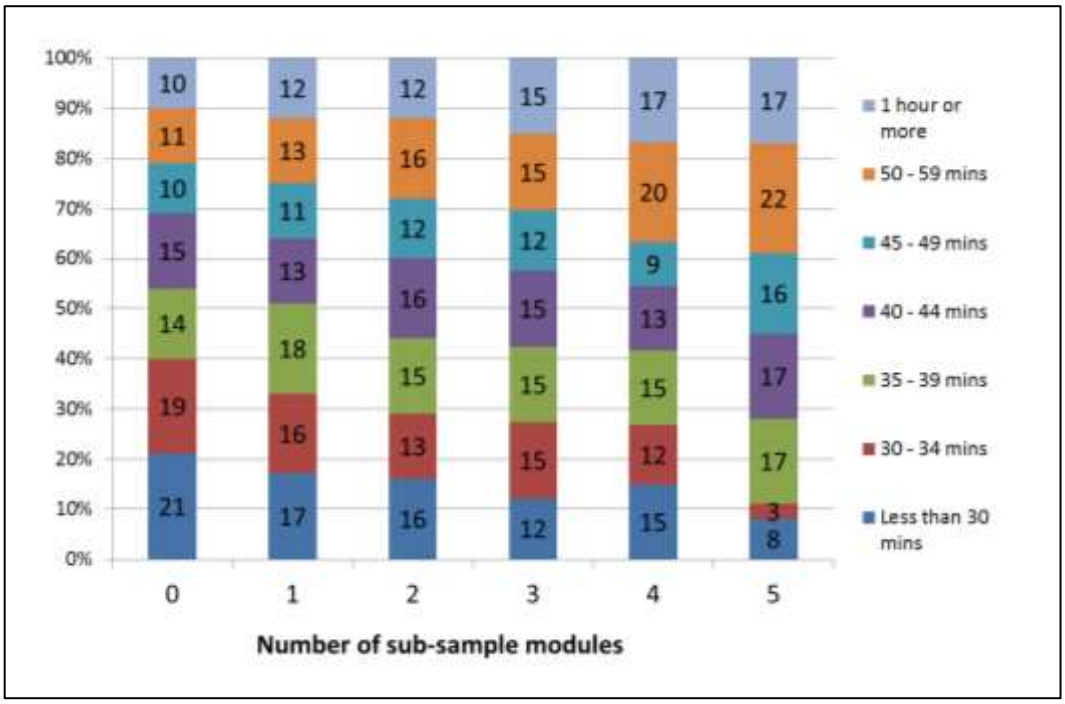
3.22 As explained above, a sub-sampling approach was applied to the survey, resulting in certain modules being asked of some respondents but not others. Analysis of the final timing data shows that, as might be expected, this led to a large degree of variability in the overall interview length. Variation in interview length is illustrated in Chart 3.1.

Chart 3.1 – Variability in interview length



3.23 A given respondent could be selected for up to six of the sub-sample modules. As shown in Chart 3.2, there is a clear correlation between the numbers of modules answered and interview length.[16]

Chart 3.2 – Interview length by number of sub-sample modules answered



3.24 Naturally there are various interlinking elements that could affect interview length, making it problematic to identify where the greatest influence lies. In addition to the sub-sample modules, interview content could vary depending on respondent and household characteristics. The answers given to certain questions could lead to follow-ups being asked, thus increasing the length of the interview.

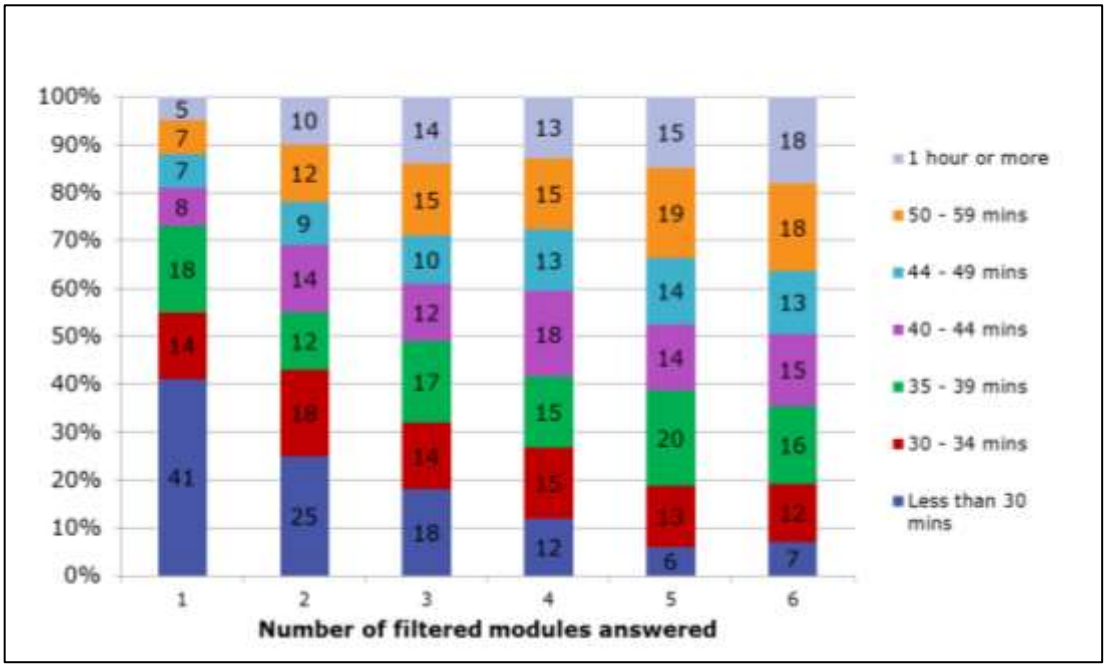
3.25 To illustrate this point, Chart 3.3 shows the variation in interview length for different respondents, grouped according to the number of filtered

[16] Due to the low base size (17 interviews) timings have not been included for respondents who were asked 6 sub-sample modules.

modules they were asked. Question filtering within the questionnaire was quite extensive. As such, this analysis has been limited to those filtered modules with the largest number of additional questions. The chart shows timings for respondents who fulfilled up to six of the following conditions:

- Household contain children aged under 16
- Respondent has seen a GP in the last 12 months
- Respondent has been to the hospital in the last 12 months
- Respondent drinks alcohol
- Respondent has internet access at home
- Respondent has taken part in a game or pursuit in the last 4 weeks.[17]

Chart 3.3 – Interview length by number of filtered modules answered

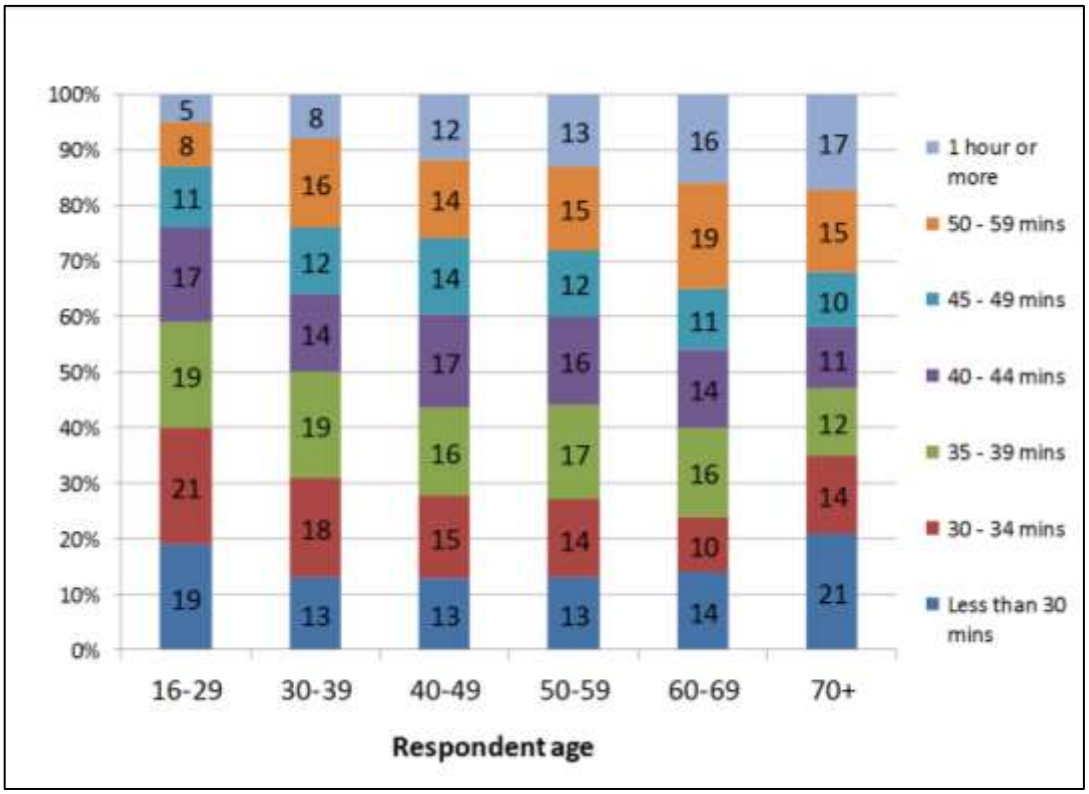


[17] This is a composite measure that includes any responses selected at questions S1, S4, or S10.

3.26 Another factor influencing length variability was the age of the respondent. Surveys of this kind regularly show a correlation between the age of the respondent and interview length, with older respondents likely to take more time over their answers, resulting in longer interviews. This is shown in Chart 3.4.

3.27 While the three factors mentioned above (sub-sampling, questionnaire filtering and age) all clearly have an impact on interview length, on balance the number of filtered modules answered appears to be the main cause of interview length variability.

Chart 3.4 – Interview length by respondent age



3.28 The main implication arising from the level of length variability is the uncertainty, for interviewers and respondents, around how long a given interview will take. Since sub-sample selection was set automatically within the script, interviewers did not know in advance how many modules an interview would include. While some assumptions could be

made based on respondent characteristics and household composition, interviewers could not accurately gauge the expected length. This made it difficult for interviewers to inform respondents of the expected interview length and to plan their assignments efficiently,

CAPI programming and testing

3.29 The questionnaire was scripted by TNS BMRB and administered using the IBM SPSS Data Collection Family Suite of interviewing software, previously marketed as SPSS Dimensions. Both TNS BMRB and Beaufort Research support this software and so a single version of the questionnaire was used by both companies[18].

3.30 The following checks were made to the script prior to its release:

- **Question text** – that this matched the paper questionnaire throughout.
- **Question routing** – that the script had been programmed in accordance with the routing specified in the questionnaire and that this made sense when subjected to a number of different scenarios.
- **Question numbers / names** – that these matched the numbers/names in the paper questionnaire, except in cases where this was not possible (e.g. based on question type).
- **Screen display** – that questions were displayed clearly throughout and there was no unnecessary scrolling for interviewers.
- **Response lists** – that these matched the paper questionnaire, all responses appeared clearly on the screen and that 'spontaneous' responses were hidden from the initial screen.
- **Interviewer instructions** – that these were clear and matched the questionnaire.
- **Showcard references** – that the numbers matched both the paper questionnaire and the set of showcards.

[18] The software used for programming the electronic contact sheet differed between the two companies, with TNS BMRB using the same IBM SPSS software as was used for the main questionnaire and Beaufort Research using NIPO software. This was due to differences in the field management systems used by the two companies. See chapter 5 for further details.

- **Sample dependent variables** – that any questions or text dependent upon sample data were being displayed correctly.
- **CAPI checks** – that all soft and hard checks in the CAPI were being triggered when applicable.
- **Script movement / reliability** – that the script allowed users to move forwards and back without loss of data or other errors.

3.31 In addition to the above checks, TNS BMRB also ran 'auto-topline' data prior to the release of the main stage script. This allowed dummy interview data to be generated and acted as a final check that all questionnaire routing was set-up as specified.

3.32 After around a week of fieldwork TNS BMRB ran a topline check using live interview data. A raw SPSS data set based on the first c. 100 interviews was also provided to the Welsh Government to check the frequencies at each question. These stages of checking revealed no problems with the CAPI script.

3.33 When programming the questionnaire, TNS BMRB included a number of soft and hard checks so that interviewers would be alerted to cases where a combination of answers would be unlikely or unfeasible. Where a combination of answers was unlikely, a soft check alerted the interviewer to the answers provided and asked them to double check this before proceeding - but allowed them to proceed if this information was confirmed to be correct. A hard check was triggered when it was apparent that the combination of answers provided was not possible (for example a son/daughter had been coded as being older than their mother/father). In these cases the interviewer could not proceed through the rest of the questionnaire until this information had been corrected.[19]

[19] An example of a soft check could be found in the household grid. Where a stated relationship between household members was uncommon, but possible (for example, a respondent living with more than one partner) a soft check appeared.

Showcards

3.34 The showcards used for the survey comprised a main set included in an A5 booklet and an A4 'core showcard'[20] which included two common lists that were included throughout the questionnaire.

Welsh translation

3.35 As with all research commissioned by the Welsh Government there was a need to translate all survey materials, including the questionnaire, into Welsh. The questionnaire was translated by the Welsh Government and provided in a Word document to TNS BMRB. Where possible, established translations of questions were used to ensure consistency with previous research. Where new questions were developed, or established questions were amended, translations were provided by a Welsh Government translator and checked for contextual suitability by a Welsh-speaking member of the Welsh Government research team. The questionnaire as a whole was then checked for consistency.

3.36 TNS BMRB was responsible for programming the Welsh language questionnaire based on a Word questionnaire provided by the Welsh Government[21]. Full details of the process used for producing the Welsh language script are given in the National Survey Quarter 0 technical report[22].

3.37 A question was included at the start of the script to set the language. At this stage the interviewer could state whether the interview should be conducted in English, Welsh or another language. If English or Welsh

[20] All showcards can be found at http://gov.wales/statistics-and-research/national-survey/content-materials/materials-2014-15/?lang=en.
[21] While the questionnaire was programmed in both English and Welsh, there was only one version of the CAPI script. This included versions of each question in both English and Welsh, and the version (language) to be displayed was set based on a question at the start of the script. Having only one version of the CAPI script meant that checks on the Welsh language questions were limited to the question and response text, and further rigorous checking of the Welsh version based on question routing was not required.
[22] Please see the Technical information pages on the National Survey for Wales website for the Quarter 0 technical report: http://gov.wales/statistics-and-research/national-survey/design-methodology/technical-information/?lang=en

were selected then this language was used for the full script[23]. If another language was selected then the CAPI script would appear in English but the interview would be conducted with the assistance of a household translator. This would be someone aged 14 or over who lived in the same household as the respondent and spoke both English and the language spoken by the respondent. In these cases the script would omit certain sensitive questions that would not be appropriate to ask in the presence of another household member.

[23] It was not possible to toggle between the English and Welsh language questions once the interview had been started. If it became evident that a respondent was unable to complete the interview in Welsh early in the interview, the interviewer could go back to the language question at the start and reset the language. There were other mechanisms in place to ensure that the Welsh language questions were accessible (e.g. dual language showcards and the translation of a small number of potentially problematic terms into English).

4 Fieldwork

4.1 This chapter documents all aspects of the data collection process, focusing on fieldwork procedures, the management of fieldwork, quality control procedures, and response rates and sample outcomes.

Mini-pilot

4.2 Prior to the start of the Field Test, a small-scale 'mini-pilot' was carried out, focussed primarily on testing the questionnaire content so that this could be refined for the large-scale Field Test.

4.3 The mini-pilot was conducted using random location sampling. Firstly, a set of areas was selected across Wales, to include a mixture of urban and rural areas. The following areas were selected:

- Caernarfon
- Carmarthen
- Neath
- Porthcawl
- Rhyl

4.4 Each interviewer was provided with a list of addresses within their selected area and given a target number of interviews to achieve within a set time frame.[24] The target number was broken down into quotas to be achieved for each socio-demographic group, to ensure interviews were achieved with a full range of respondents.

4.5 All interviewers attended a briefing on 13 April 2015. Fieldwork took place between 14 and 19 April, with 38 interviews being conducted across all areas. A telephone debrief was held on 20 April, allowing interviewers to provide feedback.

[24] In total, 1,443 addresses were selected across all areas.

4.6 Feedback provided by interviewers allowed the research team at TNS BMRB to identify aspects of the survey that needed to be changed, or for which further clarity was required[25]:

- When answering the 'Participation' module, one respondent mistakenly included activities that she took part in as part of her job. In order to stress that these kinds of activities should be excluded, a line was added to the section introduction: 'Please do not include anything you do as part of your job or in full time education.'

- In the 'Barriers' module, respondents were asked why they had not taken part in arts or cultural activities. Some respondents said that they were simply not interested in doing these things, but the response list did not include an option to cover this. A new code was added: 'I'm not interested in doing these things'.

- Respondents were asked about visits to the outdoors, but some were unsure whether to include places outside Wales. The Welsh Government confirmed that the questions should only cover places in Wales. As such, a line was added to the introduction: 'We are only interested in visits to places in Wales'.

- When asked about their most recent visit to the outdoors, some respondents struggled to recall the exact place they had visited. In an effort to ensure that some information was recorded, additional interviewer instructions were added to the question, directing them to probe for as much detail as possible.

Briefing of interviewers

4.7 All interviewers working on the Field test received a half-day briefing from members of the research teams at TNS BMRB and Beaufort Research.

[25] The questionnaire modules referred to here are explained in more detail in Chapter 3.

4.8 In total, four half-day briefings were held before the start of the Field Test.

4.9 The briefings for the Field Test were approximately three hours in duration and covered the following:

- **Background to the survey** – This explained about plans for the new survey and covered the main aims of the Field Test. Interviewers were also given a brief introduction to the survey design and methodology.
- **Call requirements and documents** – This made interviewers aware of the fieldwork procedures and the requirements of their assignments. This section also included an overview of the survey fieldwork materials.
- **Incentive experiment** – This section explained about the incentive experiment, and provided interviewers with instructions for how to administer the incentives.
- **Questionnaire content** – In this section interviewers were given an overview of the areas covered in the questionnaire. This section also included the sub-sampling approach and the split-sample self-completion experiment.
- **Practice interview** – All interviewers were instructed to bring their CAPI machines to the briefings to allow them to run through the questionnaire. This involved them taking it in turns to ask questions and code responses to better familiarise them with the questionnaire.
- **Field administration** – In the final section of the briefing interviewers were informed about a number of technical points around the fieldwork operation (e.g. fieldwork dates and CAPI names).

4.10 All interviewers working on the Field Test had previously worked on the National Survey, so were already familiar with standard fieldwork procedures.

Supervision and quality control

4.11 Several methods were used to ensure the quality and validity of data collection.

4.12 Firstly, a number of assignments (2%) were supervised. Supervised assignments tended to be those assigned to less experienced interviewers. Interviewers who were new to random probability surveys were also accompanied on the first day of their assignment by a supervisor.

4.13 Six per cent of addresses where an interview was achieved were re-contacted, to verify that the interviewer had contacted someone at the address and whether or not an interview had taken place. All of these addresses were verified as valid interviews.

4.14 Addresses for this 'back-checking' process were selected on the basis of the standard field quality procedures employed by TNS BMRB and Beaufort Research. Addresses are selected for validation at an assignment level and selected systematically based on the interviewer who has been allocated to each point. This rotating approach ensures that all interviewers have their work validated on a regular basis.

4.15 Validation was carried out mainly by telephone. Where no telephone number was available a short postal questionnaire was sent to the address to collect the same information. All validation of TNS BMRB interviews is carried out by a dedicated validation team based in their Warwick office. The Beaufort Research Field department has overall responsibility for back-checking. Contacting of respondents by telephone is undertaken by their CATI[26] supervisor, deputy supervisor or senior interviewers. Any postal back-checking is organised from the Beaufort Research head office.

[26] Computer-Assisted Telephone Interviewing.

Fieldwork dates, management and procedures

4.16 The fieldwork dates for the Field Test were 18 May to 6 September 2015. All interviews conducted in this period were included in the final data sets.

4.17 Fieldwork was originally scheduled to run until 23 August. However, towards the end of this fieldwork period (early August) projections produced by TNS BMRB indicated a likely shortfall against the overall target of 3,000 interviews.

4.18 On 20 August, in an effort to maximise both the total number of interviews achieved and the overall response rate TNS BMRB and the Welsh Government agreed to extend fieldwork by two weeks.

4.19 Interviewers were responsible for sending out advance letters and leaflets to the addresses in their assignments. This ensured that delivery of the materials could be timed to coincide closely with when they planned to make their calls. Interviewers were encouraged to start their assignments as soon as possible in the month of issue and were given around six weeks to cover each assignment and send back their final outcomes[27]. The remainder of the fieldwork period was set aside for re-issues, which involved passing a proportion of unproductive addresses (e.g. those that were coded as non-contacts or refusals on the original contact) to more experienced interviewers to try again. Re-issued addresses are worked until the interviewer has made at least 3 further visits.

4.20 Interviewers were required to make a minimum of six calls to an address before it could be coded as a non-contact. The calls needed to be spread over a number of different days and times of day. At least two calls needed to be made on a weekday evening (after 6pm) or at the weekend. There was no maximum limit on the number of calls with

[27] The exact fieldwork period set for an interviewer to work each assignment varied depending on the number of addresses in an assignment.

interviewers being instructed to continue to call at addresses while they felt there was still a chance of making contact.

4.21 Fieldwork was managed on a daily basis by a team of regional supervisors working with an overall Field Project Manager. Interviewers were required to send through their intended working days each week and were encouraged to stick to these.

4.22 Members of the TNS BMRB and Beaufort Research teams oversaw fieldwork and monitored the rate of progress on a daily basis. Weekly updates were sent to the Welsh Government. These updates included the overall rate of progress against targets and a breakdown of the figures at a local authority level.

Fieldwork documents

4.23 Interviewers were provided with a range of documents to enable them to work their assignments.

4.24 The full set of documents provided to interviewers for Field Test assignments is shown in Table 4.1, along with a brief description of each document.

Table 4.1 – Field Test survey documents

Document	Description
Advance letter (see Annex B)	• Sent in advance to all sampled addresses • Informs household that address had been selected to take part in the survey • Includes basic information about the survey • Two different versions – one mentioned the incentive, the other did not. • Dual language
Leaflet (see Annex C)	• Sent with the advance letter • Includes more detail on points covered in the letter and other information (e.g. 'Can I be interviewed in Welsh?') • Dual language
Incentives	• In the form of a £10 redeemable gift voucher • Provided to interviewers to be issued to respondents • The number of incentives provided depended on the number of addresses in each assignment
Survey envelope	• Used for posting advance letters/leaflets • Includes the Welsh Government logo on the front
Introduction card (see Annex D)	• Includes a short standard introduction to the survey that the interviewers can use on the doorstep
Core showcard	• Single laminated A4 card showing the four common lists that were included throughout the questionnaire • This meant that these response lists could be excluded from the main pack of showcards (see below) • Dual language

Document	Description
Main showcards	• This included all prompted response lists aside from those included in the core showcard • The showcards were produced as an A5 booklet and were dual language
Questionnaire	• All interviewers were provided with a paper copy of the questionnaire • Welsh-speaking interviewers were also provided with a Welsh language version of the questionnaire
Interviewer instructions (see Annex E)	• A set of instructions was provided to interviewers • This included further detail on the survey requirements / procedures to follow
Police letter	• Before starting their assignments all interviewers needed to register with the local police station • They were provided with a copy of a police letter which included details of the survey and which they needed to get signed by someone at the police station before starting work
Calling cards	• Interviewers were provided with copies of the calling card, which they could leave at addresses where there was no answer to say they had called
Appointment cards	• This was similar in format to the calling card and was used to leave with respondents to confirm details of an interview appointment
Data linkage documents (see Annexes F and G)	• Interviewers were provided with a number of documents relating to the data linkage process, to help familiarise themselves with this and for providing to respondents • The documents provided were: a data linkage showcard, a leaflet, a flowchart, a set of frequently asked questions and a worked example of the process • Dual language

Document	Description
Thank You leaflets	• At the end of the interview respondents were provided with a standard 'Thank You' leaflet
Map of addresses	• To help them plan their assignments all interviewers were provided with a map of their addresses
Assignment sheet	• A complete list of all addresses in the interviewer's assignment • The assignment sheet indicated which addresses were being offered an incentive

Electronic contact sheet

4.25 An electronic contact sheet (ECS) was used. This allows interviewers to enter the household details and go through the respondent selection process on their CAPI machines. The ECS has a number of advantages over the paper-based contact sheets that have been more commonly used on surveys of this nature in the past. These advantages include:

- a substantial reduction in paperwork;
- increased ability to obtain and monitor 'live' contact data during fieldwork;
- improved data security; and
- the ability to link the contact sheet with the main interview data and avoid repetition of questions.

4.26 Interviewers needed to go through the following steps when completing the electronic contact sheet:

- **Confirming the address**: The first task for interviewers was to confirm that they were calling at the correct address. There were two questions to establish this – first to confirm themselves before

making contact at the household and then to confirm this with someone living at the address when introducing the survey[28].

- **Confirming address eligibility**: For each address interviewers needed to confirm that it was traceable, residential and occupied as a main residence.
- **Recording number of dwelling units**: Interviewers needed to code the number of dwelling units at the address. In most cases this was one; if it was more than one (most commonly when an address had been split into flats) they needed to enter the number and list the number/names of the dwelling units. The CAPI machine would then select one of the dwelling units at random. In cases where there was more than one dwelling unit a follow-up question was asked to confirm the eligibility of the selected dwelling unit (i.e. that it was residential and occupied as a main residence)[29].
- **Recording the number of households**: In a small number of cases it may be possible that more than one household lives in a single dwelling unit[30]. A household is defined as:
  *'a group of people (not necessarily related) living at the same address who share cooking facilities **and** share a living room or sitting room or dining area'.*
  In cases where there was more than one household, one household was randomly selected for the survey by the CAPI machine.
- **Recording the number of adults aged 16 or over**: Following the dwelling unit and household selection, the interviewer then needed to enter the names of all adults aged 16 or over living in the household. Once this was done one person was selected at random by the CAPI machine to be the respondent. In households where

[28] The second confirmation question was introduced following feedback from interviewers at the field test stage. It was felt that showing the address to the person on the doorstep confirmed that their address was pre-selected and could not be replaced.
[29] Interviewers were instructed to include both eligible and ineligible dwelling units in the selection. If an ineligible dwelling unit was selected they then needed to code this using the appropriate outcome code.
[30] For example, certain types of student flats, where residents live in a single dwelling unit (using the same front door) but live separately, share a kitchen but don't share dining/lounge facilities.

there was only one adult aged 16 or over, no person selection was required.

- **Gaining parental permission**: In cases where the selected respondent was aged 16 or 17 and living with a parent/guardian, the interviewer needed to gain parental permission before undertaking an interview. To do this they needed to enter the name of the person giving permission and their relationship to the respondent. No signature was required to support this.
- **Recording the respondent's chosen interview language**: At this point the interviewer was asked to confirm which language the selected respondent would like to be interviewed in (if the selected respondent was not present the person completing the ECS would provide what they felt to be the most likely answer). This allowed the interviewer to establish if a Welsh language interview was required, in which case the address would be passed to a Welsh-speaking interviewer (if the original interviewer did not speak Welsh).

4.27 At appropriate points in the ECS interviewers were provided with a filtered set of outcome codes to record an outcome for each call made to their addresses.

4.28 In cases where an interview was conducted, the number of adults in the household aged 16 or over and their names were fed through from the ECS to the main interview script. This meant that interviewers simply needed to double-check these details rather than entering them in full again. It also allowed for any errors to be corrected – for example in cases where the composition of the household had changed following completion of the contact sheet.

4.29 Due to differences in the field management systems used by TNS BMRB and Beaufort Research the software used to programme the ECS differed between the two companies. TNS BMRB used the same IBM SPSS software that was used for the main interview script and Beaufort

Research used the NIPO software package. Despite the differences in software, the content of the ECS was identical between the two companies and extensive checks were made to ensure consistency.

4.30 Interviewers were permitted to re-select a respondent only in the following circumstances:

- If, upon returning to an address to carry out an interview, the interviewer discovered that the selected respondent did not live in the household (for example, if someone living outside of the household for more than 6 months of the year had been included in the selection by mistake).
- If the whole household had changed (e.g. one family had moved out and another moved in).
- If it was discovered that the original selection had been carried out at the wrong address.
- If an interviewer working on a re-issued address found that the original interviewer had failed to provide sufficient information to establish the correct respondent.

Administration of incentives

4.31 As explained above, half of respondents were offered an incentive in return for taking part in the survey, in the form of a £10 giftcard. Households were randomly allocated to the 'incentive' or 'no incentive' group in the sample. Randomisation was within assignments; therefore in each assignment around half of households were eligible for the incentive and half were not. Interviewers were permitted, but not required to mention the incentive to the respondent on the doorstep as a means of encouraging participation. For households in the incentive group, the advance letter also mentioned that they would be offered a £10 giftcard for their participation in the survey.

4.32 At the end of the interview, interviewers were presented with a screen instructing them to present the incentive to the respondent. The giftcards

did not have any value at the time they were handed, and needed to be activated before they could be used. Respondents were advised to wait three days before attempting to use the giftcard.

4.33 The front of each giftcard featured a 19 digit serial number and an expiry date, which interviewers entered into the relevant screen in their interview script.

4.34 At the beginning of each day, the Field Management team at TNS BMRB processed and activated any serial numbers entered during the previous day's interviewing.

4.35 The results from the incentive experiment are included in chapter 7.

Welsh language interviews

4.36 All respondents were offered the opportunity to complete the interview in English or Welsh. To ensure that the survey was accessible in Welsh, all respondent-facing survey documents were provided in both languages and a number of the interviewers were Welsh speakers. The survey leaflet provided a Freephone number that respondents could call to arrange for a Welsh-speaking interviewer to visit.

4.37 Both TNS BMRB and Beaufort Research made an effort to allocate assignments with an expected high prevalence of Welsh speakers (based on Census estimates) to Welsh-speaking interviewers, to maximise the chance of any requests for Welsh language interviews to be covered by the original interviewer.

4.38 In cases where the original interviewer was a Welsh speaker they could conduct any Welsh language interviews in the same way as they would an English language interview, because they had already been provided with a full set of translated documents. If a Welsh language interview was requested in cases where the original interviewer was not a Welsh speaker, the interviewer was requested to contact the Field office to log the request. The record was then passed to a Welsh-speaking

interviewer who could contact the respondent directly and arrange to conduct the interview.

4.39 During the Field Test, a total of 50 interviews were conducted in Welsh, equating to 2% of the overall interview total.

Other language interviews

4.40 In a small number of cases respondents may not be able to complete the interview in English or Welsh. In these cases the interview could be conducted with the help of a household translator, who would translate the questions into the respondent's chosen language and then pass their answers back to the interviewer in English.

4.41 Anyone used as a household translator needed to be aged 14 or over. In such situations, the CAPI script automatically routed out a number of sensitive questions in these interviews. These were questions that were felt to be inappropriate to ask in the presence of other household members (experience of discrimination, sexual identity and financial hardship). No interviews were conducted in a language other than English or Welsh.

Final achieved overall sample

4.42 In total, 2,823 interviews were achieved between 18 May and 6th September 2015.

Field test response rates and survey outcomes

4.43 The response rate expresses the proportion of eligible addresses that yielded an interview, and is defined as:

$$\frac{\text{Completed interviews}}{\text{(Total sample – ineligible addresses)}}$$

4.44 Ineligible addresses are those that would not be eligible to take part in the survey. This only includes addresses that were vacant, non-residential or not occupied as a main residence (e.g. holiday homes) and

those coded by interviewers as inaccessible or that they were unable to locate. It does not include addresses that have been attempted a number of times by interviewers but where no contact has been made, unless there is clear evidence that the address is vacant or not occupied as a main residence (e.g. by confirming this with neighbours). The overall level of ineligible addresses was 14%, which is typical for a survey of this nature[31].

4.45 The overall response rate achieved was 56.5%.

4.46 Table 4.2 shows the number of interviews achieved in each Local Authority. The table also includes the response rate for each LA.

[31] Addresses where eligibility is unknown are assumed to be eligible when calculating response rates.

Table 4.2 – LA level interviews achieved and response rates

Local Authority	Interview target	Interviews	Response rate (%)
Blaenau Gwent	137	132	60.0
Bridgend	137	133	55.4
Caerphilly	137	141	62.4
Cardiff	137	127	52.7
Carmarthenshire	137	126	57.0
Ceredigion	137	133	61.0
Conwy	137	140	59.3
Denbighshire	137	132	57.6
Flintshire	137	147	64.8
Gwynedd	137	131	62.7
Isle of Anglesey	137	134	56.0
Merthyr Tydfil	137	134	58.3
Monmouthshire	137	113	50.5
Neath Port Talbot	137	141	62.1
Newport	137	127	56.7
Pembrokeshire	137	141	59.5
Powys	137	111	49.8
Rhondda Cynon Taf	137	128	56.4
Swansea	137	107	45.7
The Vale of Glamorgan	137	106	47.5
Torfaen	137	119	54.3
Wrexham	137	120	52.9
TOTAL	**3,014**	**2,823**	**56.5**

4.47 There was a degree of variation in response rates achieved across LAs, from a low of 46% in Swansea to a high of 65% in Flintshire. However, the majority of LAs (14 out of 22) were within five percentage points of the overall level achieved (i.e. between 51.5% and 61.5%). Of the rest, a higher response rate than 61.5% was achieved in four LAs (Flintshire, Gwynedd, Caerphilly and Neath Port Talbot) and a lower response rate than 51.5% was achieved in four LAs (Monmouthshire, Powys, Vale of Glamorgan and Swansea).

4.48 As a comparison, the number of LAs falling five or more percentage points outside the overall response rate on the three full years of the National Survey was one in 2012-13, and three in each of 2013-14 and 2014-15. A higher level of variation should be expected for the Field Test compared with a full fieldwork year of the National Survey for a number of reasons:

- The average number of assignments per LA in the Field Test was only 11, meaning that overall response could be highly influenced by a small number of particularly productive or unproductive assignments.
- The combination of the scale of the field test and the limited fieldwork time available meant that interviewers needed to manage multiple assignments at the same time. While efforts were made to ensure even coverage across LAs, there were variations in progress levels across interviewers (and so LAs) that partly resulted in the differences in response rates observed.
- The short fieldwork period allowed limited time for reissues, which meant there was limited scope for boosting response levels in LAs where performance was poorer.

4.49 Under the 2012-15 National Survey design, each assignment was worked over a longer period of time (4-6 months, compared with around three for the field test), providing more scope for repeat calls and reissues to maximise response in LAs where performance was poorer. Furthermore, a number of the differences between LAs 'even out' over an annual sample, allowing for greater consistency over a full fieldwork year.

Sample outcomes

4.50 Table 4.3 shows the sample outcomes for all 5,795 addresses sampled.

Table 4.3 – Field Test sample outcomes

Outcome code	Addresses	% of issued sample	% of eligible sample
Ineligible			
Not yet built/ under construction	13	0.2	
Derelict/ demolished	19	0.3	
Vacant/ empty housing unit	448	7.7	
Non-residential address	87	1.5	
Communal establishment/ institution	9	0.2	
Not main residence	137	2.4	
Inaccessible	39	0.7	
Unable to locate address	42	0.7	
TOTAL – INELIGIBLE	794	13.7	
Eligible			
Interview completed	2,823	48.7	56.4
No contact at address	205	3.5	4.1
No contact with selected respondent	49	0.8	1.0
Unknown whether address is residential	339	5.8	6.8
Contact made, but not with a responsible resident	14	0.2	0.3
Parental permission required – no contact with parent/ guardian	0	0	0
Parental permission required – permission refused	4	0	0.1
Office refusal	127	2.2	2.5
Refused all information	576	9.9	11.5
Refusal by selected respondent	305	5.3	6.1
Refusal by proxy	69	1.2	1.4
Refusal during interview	11	0.2	0.2
Contact but no specific appointment	115	2.0	2.3
Broken appointment	138	2.4	2.8
Ill/ away during survey period	63	1.1	1.3
Physical or learning disability/ difficulty	42	0.7	0.8
Language difficulties	14	0.2	0.3
Other unsuccessful	79	1.4	1.6
Interview achieved but file corrupted/ lost	28	0.5	0.6
Interview achieved but respondent requested data to be deleted	0	0	0
TOTAL - ELIGIBLE	5,001	86.2	100
TOTAL	**5,795**	**100**	

4.51 The individual sample outcomes were banded into summary outcomes. Table 4.4 shows the summary outcomes broken down by local authority.

Table 4.4 – LA level sample outcomes

Local Authority	Interview (%)	Refused (%)	No contact (%)	Ineligible (%)	Other (%)	Total (%)
Blaenau Gwent	50.6	21.5	3.4	15.7	8.8	100
Bridgend	52.0	22.3	8.6	6.3	10.9	100
Caerphilly	56.6	19.3	8.8	9.2	6.0	100
Cardiff	49.4	25.7	9.7	6.2	8.9	100
Carmarthenshire	47.0	18.3	8.2	17.5	9.0	100
Ceredigion	48.4	22.9	4.4	20.7	3.6	100
Conwy	51.3	21.6	5.1	13.6	8.4	100
Denbighshire	51.8	23.9	9.4	10.2	4.7	100
Flintshire	59.3	19.0	4.0	8.5	9.3	100
Gwynedd	43.8	15.1	5.7	30.1	5.4	100
Isle of Anglesey	47.9	19.3	6.8	14.6	11.4	100
Merthyr Tydfil	52.3	19.1	10.9	10.2	7.4	100
Monmouthshire	43.8	20.5	13.2	13.2	9.3	100
Neath Port Talbot	56.0	17.5	7.9	9.9	8.7	100
Newport	50.0	23.6	5.9	11.8	8.7	100
Pembrokeshire	46.5	19.8	3.6	21.8	8.3	100
Powys	39.8	24.4	9.0	20.1	6.8	100
Rhondda Cynon Taf	50.0	17.2	8.6	11.3	12.9	100
Swansea	40.7	28.5	9.1	11.0	10.6	100
The Vale of Glamorgan	47.2	17.5	11.1	13.1	11.1	100
Torfaen	42.1	29.4	7.1	11.5	9.9	100
Wrexham	48.2	25.7	9.6	8.8	7.6	100
TOTAL	48.7	21.4	7.7	13.7	8.5	100

5 Data processing and outputs

5.1 This chapter covers the data processing and delivery aspects of the survey. This includes the data coding and editing processes, production of derived variables, the data checking process and details of the outputs provided to the Welsh Government.

Data coding and editing

5.2 Where relevant, logic checks and interviewer prompts were incorporated into the CAPI script in order to ensure that answers provided were consistent and sensible. In some instances these were 'hard checks', i.e. checks used in cases where the data entered could not possibly be correct based on other information entered. For example, if a household member was coded as the respondent's child and given an age older than that of the respondent. In these instances the incorrect data had to be changed in order to proceed with the interview. Others were 'soft checks', i.e. for responses that seemed unlikely but could be correct, for example, if a child was less than 16 years younger than a parent. In these instances a prompt appeared on screen asking the interviewer to confirm that this response was correct.

5.3 In addition to the CAPI checks, a small amount of post-fieldwork editing was conducted on the data to account for any inconsistencies in response not covered by the checks built into the questionnaire. For example, the question asking respondents to select the ethnic group to which they belong contained several 'Other (specify)' codes, divided according to different ethnic groups (e.g. 'Any other Asian background'). If the verbatim response provided at this question suggested that the respondent belonged a different 'Other' category, they were re-coded accordingly.

5.4 Post-interview coding of open-text responses was undertaken by members of the TNS BMRB and Beaufort Research coding

departments, using identical codeframes. The coding departments coded verbatim responses recorded at ‘other – please specify’ questions.

Derived variables

5.5 A list of required derived variables was provided to TNS BMRB by the Welsh Government. These are variables that are produced from other data, either collected during the interview or obtained from other sources.

5.6 The full list of derived variables can be found in Annex H.

Data outputs

5.7 The main outputs provided to the Welsh Government were SPSS data files. Two data files were provided:

- An 'All people' file, based on responses to the enumeration grid and basic demographic information on the whole household; and
- A Respondent level file, based on responses to the questionnaire and containing interview data for all respondents.

5.8 The Welsh Government provided TNS BMRB with detailed specifications for each of the data sets. These specified the required format and labelling for each variable included in each dataset.

5.9 Weighting variables were produced by TNS BMRB for the individual and enumeration files. Details on the weighting process can be found in chapter 6.

5.10 Each data set provided to the Welsh Government was first checked by a member of TNS BMRB's data processing team and then by members of the core research team. Further checking on the content and format of the data sets was carried out by the Welsh Government before they were signed off.

5.11 In addition to the survey data described above, the Welsh Government also received:

- a sample data file, containing outcome information and geo-demographic data for all issued addresses; and

- a recontact database, containing contact information for all respondents who had given permission for the Welsh Government to recontact them to take part in further research.

6 Weighting, non-response and analysis

6.1 The following weights have been included with the Field test datasets:

All people file

- An enumerated individual weight (used to ensure the sample matches the population profile of all individuals in Wales). This weight variable is named 'WalesPopWeight' in the final dataset.[32]

Respondent file

- An individual weight (used to ensure the sample matches the population profile of adults aged 16 or over in Wales). This weight variable is named 'WalesAdultWeight' in the final dataset.
- A household weight (used to ensure the sample matches the population profile of households in Wales). This weight variable is named 'WalesHHWeight' in the final dataset.

6.2 Each weight is the product of three component weights:

- A design weight (to compensate for differences in sampling probability).
- An address response propensity weight (to compensate for estimated differences in the probability of achieving an interview at the sampled address).
- A calibration weight (to compensate for differences between the sample profile weighted using the first two weights and the known population profile).

Design weights

6.3 The survey design, and specifically the method by which addresses and individual respondents were chosen, necessitated the application of design weights to compensate for unequal probabilities of selection.

[32] This was derived from ONS 2011-based projections for 2014. See paragraph 7.14 for further details.

6.4 The household design weight adjusts for cases where one dwelling unit is selected from among several found at an address and/or where one household is selected from among several found at the dwelling unit. The household design weight is equal to the product of (i) the address sampling interval, (ii) the number of dwelling units at the selected address, and (iii) the number of households at the selected dwelling unit. To avoid excessive variation in these weights, the product of components (ii) and (iii) was capped at 5.

6.5 The individual design weight adjusts for the selection of one respondent within households containing more than one adult aged 16 or over. The individual design weight is equal to the product of (i) the household design weight and (ii) the number of eligible adults in the household. However, to avoid excessive within-address variation in the weights, the product of (a) components (ii) and (iii) of the household design weight and (b) the number of eligible adults in the household ((i) of the individual design weight) was capped at 5.

Address response propensity weights

6.6 An address level 'response propensity' weight was produced by developing a logistic regression model of the probability of an eligible address yielding an interview, given a set of known characteristics (see 7.8 below for details). The weight is calculated as 1 divided by the predicted probability. The practical result is that addresses that are located in areas with lower than average response rates are given larger than average weights.

6.7 In order to decide which predictor variables to include in the response model, multiple combinations of candidate variables (all LSOA-level characteristics) were tested to find a model that achieved close to the maximum fit to the data but with relatively few variables (a 'parsimonious' model). By taking this approach, the model is expected to be more robust than one that maximises the fit for one particular sample.

The candidate variables were selected so that, in combination, they represent LSOA profile variation. The following variables were candidate variables:

- 2011 WIMD[33] Rank (Overall)
- 2011 WIMD Community Safety Score
- 2001 ONS Area Classification (LSOA level), with some collapsed categories[34]
- Local Authority
- Address Density
- 2001 Census percentage of 16-74 year olds with no qualifications
- 2001 Census percentage of households containing one person
- 2001 Census percentage of individuals with a caring responsibility

- The variables that were included in the final response model are ONS Area Classification, Local Authority, WIMD Rank (Overall), 2001 Census percentage of individuals with a caring responsibility, and 2001 Census percentage of households containing one person.

6.8 Tables 6.1 and 6.2 provide details of all weights included in the Field Test datasets.

[33] Welsh Index of Multiple Deprivation.
[34] TNS BMRB combined some categories with others if only a very small number of addresses had been issued. 'Mature city professionals' was combined with 'Suburbia', 'Mature urban households' was combined with 'Young city professionals', and the three 'Multicultural' categories were combined with 'Struggling urban families'. Before making these decisions TNS BMRB assessed how the 2001 census profiles varied between categories. Small sample categories were combined with their 'nearest neighbour(s)' following a hierarchical cluster analysis.

Table 6.1 – Weights in Respondent-level file

Variable name	Variable title	Explanation for when to use the variable
WalesHhWeight	Weight to represent all households in Wales	This weight scales up the sample to the population of households in Wales (1,330,740, using ONS 2011-based population projections for 2014). The weight was called HCalibrationWeight in Q0.
WalesAdultWeight	Weight to represent all adults 16 or over in Wales	This weight scales up the sample to the population of adults in Wales aged 16 or over (2,546,640, using ONS 2011-based population projections for 2014). The weight was called RWCalibrationWeight in Q0.
SampleAdultWeight*	Weight to make respondent sample reflect all-Wales characteristics	This weight ensures that the weighted base matches the un-weighted base.
SampleHhWeight	Weight to make household sample reflect all-Wales characteristics	This weight ensures that the weighted base matches the un-weighted base.

*This weight is the only weight that is deposited in the UK Data Archive and is the weight that is used for the majority of the analyses

Table 6.2 – Weights in All people file

Variable name	Variable title	Explanation for when to use the variable
WalesPopWeight	Weight to represent the population of Wales	This weight scales up the sample to the population of individuals (any age) in Wales (3,103,454 using ONS 2011-based population projections for 2014). The weight was called EICalibrationWeight in Q0.
SamplePopWeight	Weight to make people in sampled HHs reflect all-Wales characteristics	This weight ensures that the weighted base matches the un-weighted base.

Notes for users

6.9 The sample was stratified by Local Authority prior to selection for the survey. As such, the variable DvUniAuth (which identifies the Local Authority for each address) should be specified as strata when analysing the data.

6.10 Data for individual local authorities can be identified by using the variable 'DvUniAuth'. Variable labels in the dataset clearly indicate the corresponding value for each local authority. As an example, filtering the dataset to include only cases where DvUniAuth = 1 will allow estimates to be produced for the Isle of Anglesey.

Calibration of weights

6.11 Linear regression-based calibration is one of a number of methods of creating weights that ensure that sample characteristics match a number of population characteristics simultaneously. The user-written Stata program 'calibrate' (D'Souza, 2008) was used to generate these weights.

6.12 In this case, the product of the household design weight and the address response propensity weight was used as the 'base weight' and calibration was performed separately for (i) enumerated individuals, (ii) responding individuals, and (iii) households. Attempts to achieve better coherence between these weights (e.g. by using the household calibration weight (WalesHhWeight) as a new base weight for the other two calibrations) were unsuccessful, producing either excessive variance in the final weights or a failure to converge with the population totals.

6.13 The individual and household level population totals were derived from population estimates provided by the 2011 Census, projected forward to 2014[35].

6.14 The population estimates used for individual-level calibration (creating WalesPopWeight) (shown in tables 6.3 and 6.4) were sex by age group at a national level and age within local authority.

[35] https://statswales.wales.gov.uk/Catalogue/Population-and-Migration/Population/Projections/Local-Authority/2011-Based/PopulationProjections-by-LocalAuthority-Year

Table 6.3 - Projected 2014 population estimates by age and sex

Age by sex	N	%
Male 0-4	93,170	3.0
Male 5-9	90,019	2.9
Male 10-15	102,731	3.3
Male 16-19	78,420	2.5
Male 20-24	113,220	3.6
Male 25-29	100,713	3.2
Male 30-34	92,444	3.0
Male 35-39	84,560	2.7
Male 40-44	96,476	3.1
Male 45-49	106,500	3.4
Male 50-54	105,594	3.4
Male 55-59	94,138	3.0
Male 60-64	91,640	3.0
Male 65-69	93,641	3.0
Male 70-74	69,941	2.3
Male 75-79	52,912	1.7
Male 80+	62,410	2.0
Female 0-4	88,660	2.9
Female 5-9	85,375	2.8
Female 10-15	96,859	3.1
Female 16-19	73,937	2.4
Female 20-24	107,240	3.5
Female 25-29	96,078	3.1
Female 30-34	92,194	3.0
Female 35-39	84,607	2.7
Female 40-44	100,279	3.2
Female 45-49	110,961	3.6
Female 50-54	109,715	3.5
Female 55-59	98,252	3.2
Female 60-64	95,356	3.1
Female 65-69	98,217	3.2
Female 70-74	75,487	2.4
Female 75-79	61,405	2.0
Female 80+	100,303	3.2
All	**3,103,454**	**100**

Table 6.4 - Projected 2014 population estimates by age with Local Authority

Local Authority	0-15	16-39	40-64	65+
Isle of Anglesey	12,079	17,479	23,467	17,056
Gwynedd	20,437	36,564	38,408	27,018
Conwy	19,025	27,367	38,964	30,395
Denbighshire	17,073	24,447	31,911	21,695
Flintshire	28,424	42,394	52,518	30,428
Wrexham	26,582	41,375	45,430	25,526
Powys	22,012	31,145	47,100	33,745
Ceredigion	11,209	24,238	23,087	17,233
Pembrokeshire	21,745	30,959	41,657	29,248
Carmarthenshire	33,097	49,393	62,666	41,674
Swansea	41,411	79,991	74,979	46,163
Neath Port Talbot	24,799	40,353	47,490	27,897
Bridgend	25,618	40,370	48,229	27,370
The Vale of Glamorgan	23,471	35,489	43,472	25,616
Cardiff	65,452	143,874	99,941	48,715
Rhondda Cynon Taf	44,455	70,702	76,543	43,547
Merthyr Tydfil	10,991	18,275	19,686	10,614
Caerphilly	34,505	53,014	59,970	32,615
Blaenau Gwent	12,167	20,649	23,352	13,310
Torfaen	17,049	26,524	30,246	17,820
Monmouthshire	15,559	21,682	33,362	21,229
Newport	29,654	47,129	46,433	25,402
All	**556,814**	**923,413**	**1,008,911**	**614,316**

6.15 The population estimates used for household-level calibration (creating WalesHhWeight - shown in Tables 6.5 and 6.6) were household composition at national level and (broad) tenure within local authority (derived from 2010-11 dwelling stock estimates applied to the 2014 projections of household totals).

Table 6.5 - Projected 2014 household tenure estimates by Local Authority

Local Authority	Owned/mortgaged	Other
Isle of Anglesey	21,274	9,669
Gwynedd	34,916	18,197
Conwy	36,272	15,466
Denbighshire	28,592	12,724
Flintshire	47,641	17,298
Wrexham	37,856	21,319
Powys	41,110	18,454
Ceredigion	21,583	10,200
Pembrokeshire	37,388	16,732
Carmarthenshire	57,749	22,816
Swansea	68,215	37,844
Neath Port Talbot	41,900	18,944
Bridgend	43,557	16,426
The Vale of Glamorgan	39,740	15,101
Cardiff	88,856	60,343
Rhondda Cynon Taf	72,032	29,208
Merthyr Tydfil	16,128	8,508
Caerphilly	52,617	22,967
Blaenau Gwent	19,025	11,554
Torfaen	26,068	12,981
Monmouthshire	28,683	10,091
Newport	40,584	22,112
All	**901,786**	**428,954**

Table 6.6 - Projected 2014 household composition estimates

One person	417,194
Two people (no children)	413,791
Three or more people (no children)	134,331
One adult plus child(ren)	89,670
Two or more adults plus child(ren)	275,754
All	**1,330,740**

Design effects and factors

6.16 Design effects and factors have been calculated for several questions, allowing effective sample sizes to be produced at a national and local level[36]. Table 6.7 shows average design effects and effective sample sizes for all 22 local authorities[37].

Table 6.7 - Design effects and effective sample sizes

Local Authority	Design effect	Effective sample size
Isle of Anglesey	1.49	90
Gwynedd	1.35	97
Conwy	1.69	83
Denbighshire	1.75	75
Flintshire	2.01	73
Wrexham	3.11	39
Powys	1.78	62
Ceredigion	1.59	83
Pembrokeshire	1.77	80
Carmarthenshire	2.25	56
Swansea	1.83	58
Neath Port Talbot	2.23	63
Bridgend	1.74	76
Vale of Glamorgan	1.84	57
Cardiff	2.22	57
Rhondda Cynon Taf	1.85	69
Merthyr Tydfil	1.72	78
Caerphilly	1.72	82
Blaenau Gwent	1.57	84
Torfaen	1.70	70
Monmouthshire	1.39	81
Newport	1.46	87
Average	***1.82***	***73***
Full sample	**2.39**	**1,181**

6.17 Table 6.8 shows the design effects, design factors and confidence intervals for a range of questions in the Field Test[38].

[36] Design effects and design factors are statistical measures used to report the effect of the sample design in estimation and analysis. The design effect is defined as the ratio of the variance of an estimator under a sample design to that of the estimator under simple random sampling. The design factor is the square root of the design factor.

[37] The variables used to calculate average design effects were all asked of the full sample. These are WelSpk, UaQualServ, IntPersUse, HSat, AmbContact, SCPerf, DvEcoStat3. WbLifeWrth.

[38] See Annex K for the design effects, design factors and confidence intervals for these questions using sub-group level estimates.

Table 6.8 – Design effects, design factors and confidence intervals for a range of Field Test survey estimates

Variable name	Question wording	Response	Design effect	Design factor	95% Confidence Interval	
					Lower	Upper
WelSpk	Can you speak Welsh?	Yes	2.39	1.55	17.6%	22.2%
		No	2.40	1.55	70.5%	75.6%
		No, but have some ability	3.45	1.86	5.5%	9.1%
		Total	2.47	1.57		
WbLifeWrth	On a scale of nought to 10, where nought is 'not at all' and 10 is 'completely', overall, to what extent do you feel that the things you do in your life are worthwhile?	Total	2.52	1.59	7.84	8.05
HSat	How satisfied are you with this accommodation?	Very satisfied	2.58	1.61	66.4%	71.9%
		Fairly satisfied	2.54	1.59	23.1%	28.2%
		Neither satisfied nor dissatisfied	1.29	1.14	1.2%	2.4%
		Fairly dissatisfied	2.80	1.67	1.9%	3.9%
		Very dissatisfied	1.28	1.13	.5%	1.2%
		Total	2.54	1.59		
DvEcoStat3	Economic status	In employment	2.68	1.64	47.5%	53.6%
		Unemployed	3.12	1.77	9.5%	13.7%
		Economically inactive	2.31	1.52	34.6%	40.1%
		Don't know	1.60	1.27	.4%	1.2%
		Total	2.58	1.61		

Variable name	Question wording	Response	Design effect	Design factor	95% Confidence Interval	
					Lower	Upper
AmbContact	In the last 12 months, have you personally contacted the emergency ambulance service in Wales, either for yourself or someone else?	Yes	2.64	1.63	13.7%	18.0%
		No	2.64	1.63	82.0%	86.3%
		Total	2.64	1.63		
SCPerf	Agree/ Disagree: Good social care services are available in my local area	Strongly agree	2.08	1.44	10.3%	14.2%
		Tend to agree	2.14	1.46	30.4%	36.1%
		Neither agree nor disagree	2.39	1.55	36.6%	42.9%
		Tend to disagree	1.64	1.28	8.7%	12.0%
		Strongly disagree	1.58	1.26	3.8%	6.0%
		Total				
UaQualServ	Agree/ Disagree: My local council provides high quality services	Strongly agree	2.71	1.65	8.3%	12.0%
		Tend to agree	1.68	1.30	37.2%	41.9%
		Neither agree nor disagree	2.12	1.46	19.3%	23.8%
		Tend to disagree	2.66	1.63	15.5%	20.1%
		Strongly disagree	2.52	1.59	9.6%	13.4%
		Total	2.15	1.47		
IntPersUse	Do you personally use the internet, at home, work, or elsewhere?	Yes	2.08	1.44	79.3%	83.4%
		No	2.08	1.44	16.6%	20.7%
		Total	2.08	1.44		

7 Implications for 2016-22 National Survey

7.1 A key objective of the Field test was to inform the development of the new National Survey beginning in 2016. This chapter outlines the key implications and recommendations.

Comparison of design effects

7.2 An important element of this analysis is in looking at comparative design effects from similar surveys. Table 7.1 shows design affects and design factors for questions that were also asked as part of the National Survey for Wales Q0[39].

[39] Data from Q0 (based on cases issued in January to March 2012 and completed by end June 2012) is used for comparison here due to the similarity of the sample design with the Field Test, i.e. both sample were clustered. To ensure reliability of design effect comparisons, the questions selected are those that were asked of all respondents.

Table 7.1 – Comparative design effects/ factors: National Survey for Wales Q0

Variable name	Response	Design effect		Design factor	
		Field Test	NS Q0	Field Test	NS Q0
DvEcoStat3	In employment	2.68	2.08	1.64	1.44
	Unemployed	3.12	2.55	1.77	1.60
	Economically inactive	2.31	2.03	1.52	1.42
	Total	2.58	2.08	1.61	1.44
UaQualServ	Strongly agree	2.71	1.75	1.65	1.32
	Tend to agree	1.68	2.52	1.30	1.59
	Neither agree nor disagree	2.12	2.88	1.46	1.70
	Tend to disagree	2.66	1.73	1.63	1.31
	Strongly disagree	2.52	2.77	1.59	1.67
	Total	2.15	2.43	1.47	1.56
UaComPerf	Strongly agree	1.89	2.27	1.38	1.51
	Tend to agree	2.83	1.95	1.68	1.40
	Neither agree nor disagree	2.15	2.19	1.47	1.48
	Tend to disagree	3.00	2.41	1.73	1.55
	Strongly disagree	2.56	2.99	1.60	1.73
	Total	2.61	2.23	1.62	1.49
IntPersUse	Yes	2.08	1.91	1.44	1.38
	No	2.08	1.91	1.44	1.38
	Total	2.08	1.91	1.44	1.38
LongIll	Yes	1.99	2.15	1.41	1.47
	No	1.99	2.15	1.41	1.47
	Total	1.99	2.15	1.41	1.47

7.3 As noted in Chapter 3, several questions included in the Field Test were taken from the Welsh Health Survey. Table 7.2 shows comparative design effects and design factors for a selection of these questions.

Table 7.2 – Comparative design effects/ factors: Welsh Health Survey 2014

Variable name	Response	Design effect		Design factor	
		Field Test	WHS 2014	Field Test	WHS 2014
Currently being treated for high blood pressure	Men	1.47	1.06	1.21	1.03
	Women	1.47	1.08	1.21	1.04
	Total	1.47	1.23	1.21	1.11
Currently being treated for any heart condition	Men	1.77	0.96	1.33	0.98
	Women	1.77	1.10	1.33	1.05
	Total	1.77	1.10	1.33	1.05
Currently being treated for any respiratory illness	Men	1.79	1.12	1.34	1.06
	Women	1.79	1.17	1.34	1.08
	Total	1.79	1.21	1.34	1.10
Currently being treated for any mental illness	Men	2.14	1.39	1.46	1.18
	Women	2.14	1.23	1.46	1.11
	Total	2.14	1.39	1.46	1.18
Currently being treated for arthritis	Men	1.59	0.98	1.26	0.99
	Women	1.59	1.08	1.26	1.04
	Total	1.59	1.14	1.26	1.07
Currently being treated for diabetes	Men	1.37	1.00	1.17	1.00
	Women	1.37	1.06	1.17	1.03
	Total	1.37	1.10	1.17	1.05

7.4 As shown in Table 7.1, some design effects are noticeably higher for the Field Test than for the National Survey Q0. This is due in large part to the adoption of the National Survey weighting strategy for the Field Test data, a relatively complex strategy that involves weighting to a large number of discreet age / gender cells within each Local Authority. Given the smaller sample size achieved on the Field Test (2,800 respondents compared with 3,500 in Q0), some weighting cells contained much smaller numbers of respondents, which would be expected to produce random variation in weights and larger design effects.

7.5 The sample size for the 2014 WHS (14,500 respondents) is much larger than for the field test, which again will have led to more variation in weights and therefore higher design effects.

Summary of interviewer feedback

7.6 Feedback provided by interviewers working on the Field test constituted a crucial element of the preparatory work for the new National Survey. Each interviewer was issued with a feedback form and asked to provide comments on the following areas:

- Survey briefing
- Respondents' general interest in / perceptions of the survey
- Survey documents
- Questionnaire
- Self-completion module
- Incentive experiment

7.7 In total, 26 feedback forms were returned and collated by the Research team at TNS BMRB.

7.8 In addition, after fieldwork was completed two debrief sessions were held – in Wrexham and Newport - with a selection of interviewers.

7.9 The key feedback is summarised in table 7.3.

Table 7.3 – Key interviewer feedback

Survey briefing
In general the briefing that interviewers attended before working on the survey was received positively. Interviewers felt that the content was relevant and clearly explained and that, afterwards, they felt confident that they knew what they needed to do.
Some interviewers said that they would have liked more detail about what the purpose of the survey was and what the Welsh Government were trying to achieve through this research. This is likely to be due to the nature of the Field Test briefing, with the main focus placed on the administration of the survey, coverage of the questionnaire and highlighting aspect for which

feedback would be required. However, this feedback suggests that, for the new National Survey briefings, the inclusion of a section on aims and objectives would be welcomed.
Respondents' general interest in / perception of the survey
Respondents' reactions to the survey were varied, but on the whole positive. The doorstep introductions that proved to be most effective focussed on the benefits that the survey would ultimately bring to the community by improving local services. This resonated with many respondents and encouraged them to take part.
Some interviewers working in northern parts of a Wales reported a slightly higher degree of antipathy towards the Welsh Government. Some respondents referred to what they perceived as a 'North / South divide' and of their belief that government money and resources are disproportionately allocated to south Wales, with insufficient attention paid to areas in the north. These respondents tended to refuse to take part because they did not believe that their area would benefit. Interviewers suggested that it would be useful to have a document outlining concrete examples of local policies that had been implemented as a result of the survey, tailored to each local authority[40].
The length of the survey proved to be off-putting for some respondents. Interviewers were instructed to cite the length of the survey, when asked as 45 minutes. This was considered excessive by some respondents, and was mentioned by interviewers as the most common reason for refusal. Also, as outlined in Chapter 3, there was degree of variation in interview length. Some interviewers complained that this made it difficult to make the most effective use of their time, as they could not accurately judge how much time they needed to leave between appointments.
Survey documents
Interviewers thought that more detail could be included in the advance leaflet about how the results of the survey are used. This is a fairly common question they are asked by respondents on the doorstep, so having examples to show

[40] It should be noted, however, that responses rates achieved on the Field Test were not consistently lower in North Wales.

would help encourage participation.
Some interviewers felt that there was too much content in the advance letter, and that this should be reduced. Some respondents remembered receiving the letter but said that they hadn't read it, apparently put off by the length.
Questionnaire
Health questions: There are two sections in the questionnaire that ask respondents whether they suffer from any health conditions. The second section seemed repetitive to some respondents, who felt that they had already answered the same questions at the first section. Others were frustrated at not being able to talk in more detail about their health condition – the questions simply ask for a 'Yes' or 'No' response, which was considered to be somewhat abrupt.
Sitting / Walking: The questions asking how long the respondent spends walking and sitting down proved to be problematic. Most respondents found it very difficult to estimate and produce a response. Based on respondents' reactions, interviewers felt that the information being provided here was unreliable.
Sport / Outdoor activities: Some interviewers said that it felt uncomfortable asking these questions of older or disabled respondents who clearly were unable to take part in these activities due to mobility issues. The sections are quite lengthy and can seem repetitive/ insensitive for these respondents, where questions continue to be asked even though it has already been established that they are not relevant. Some form of filtering may be appropriate.
Fruit and vegetables: Respondents found it difficult to interpret the volumes referred to in the questions asking how much fruit and vegetables they eat. It may be beneficial to produce a visual chart showing comparative measures.
Arts and culture: Some of the attitudinal questions in the 'Arts and culture' section were felt by interviewers to be slightly leading. For example, in being asked whether they agree that 'Arts and culture make Wales a better place to live', many respondents are inclined to agree, with some giving comments to

the effect that 'I suppose it must be true'.
Teeth: Most respondents were puzzled/ taken aback by the question asking them how many natural teeth they have. This caused embarrassment in some cases, where the respondents had few/ no natural teeth. In other cases, the respondent simply didn't know the answer.
Self-completion module
The most common feedback provided by interviewers was that the self-completion module was difficult for older respondents to administer. Some were unfamiliar with using computers, and took some time to come to terms with how the script works. There was also an issue for these respondents due to limited dexterity. Respondents whose hands habitually shake had trouble using the touch screen to select the relevant answer.
There was a clear feeling among interviewers that the self-completion module should be at the end of the interview. Upon finishing the module and handing the laptop back to the interviewer, most respondents instinctively assumed that the interview was over, and were surprised to be asked additional questions.
Incentive experiment
Interviewers generally felt that the offer of an incentive made little difference in terms of encouraging participation. The most common approach was to not mention the incentive to respondents in the first instance, and only refer to it when attempting to overturn a refusal. Most interviewers said that, at most, they secured one interview per assignment as a result of offering an incentive[41].
Many respondents did not realise that they would be offered an incentive, having not noticed that passage in the advance letter where this was explained. It may be beneficial to highlight this text in some way.

[41] Results from the incentive experiment are presented later in this chapter.

Likely response rate for new National Survey

7.10 The Field Test achieved a response rate of 56.5%, against a target of 60%. The achieved response rate was somewhat lower than that achieved over the course of the previous National Survey, where response rates of 70% (2012-13), 71% (2013-14) and 64% (2014-15)[42] were achieved. This difference is driven by four key factors:

- Interview length: The Field Test interview lasted an average of 43 minutes, compared with around 25 minutes for the previous National Survey interview. This longer interview length impacts on both respondents' willingness to participate and the number of interviews that can be achieved per interviewer day, which in turn impact negatively on the response rate that can be achieved.

- Related to the above point, there was a large degree of variability in the interview length. This is discussed in greater detail in Chapter 3, but the clearest implication for lowering of the response rate is in the problems this created when interviewers tried to plan their assignments. The optimum approach is to make appointments with respondents on an initial visit and schedule appointments in succession in order to make the most efficient use of time. The uncertainty around how long a given interview would take made this difficult. As a simple example, an interviewer may leave a gap of 90 minutes between appointments, only to find that the first interview lasted for 40 minutes. This surplus time between appointments restricted the number of interviews that could be completed in the same day.

- Fieldwork period: Under the National Survey fieldwork design, each assignment was given a period of 4-6 months to be worked. For the Field Test each assignment had a period of around three months.

[42] The 2014-15 response rate has been adjusted to take account of the truncated fieldwork period in the final year of the National Survey. For further details on this adjustment please refer to the 2014-15 National Survey technical report.

The shorter fieldwork is likely to have impacted negatively on response rates, with less time set-aside for reissues to boost the response rate in the latter stages of fieldwork.

- The nature of the Field Test meant that all assignments were issued to interviewers from the start of fieldwork. A total of 248 assignments were included in the Field Test sample, meaning that interviewers needed to work an average of 2-3 assignments each. This was challenging in the limited fieldwork period, particularly in ensuring even coverage across assignments. For the main stage survey, with monthly batches of addresses and a longer fieldwork period, it will be easier to maximise response and ensure more even coverage.

7.11 With a longer fieldwork period available, it's likely that a higher response rate would have been achieved. Any positive impact on response based on a longer fieldwork period does however need to be balanced against the fieldwork pressures from the next quarter under the continuous design adopted for the National Survey, with sample from two quarters always being worked at the same time. Nevertheless, it is likely that with an extra 1-2 months of fieldwork time available a response rate of 60% or above could have been achieved.

Feedback on self-completion module

7.12 As explained in Chapter 3, the Field Test incorporated a split-sample self-completion experiment, whereby some respondent interviews included a self-completion (CASI) module and others did not. For interviews without a CASI module, the same questions were asked but instead administered by the interviewer.

7.13 While it wasn't offered as a choice (rather, introduced as simply the next stage of the interview) respondents in the self-completion groups were able to spontaneously refuse the CASI module. In these cases, the question would be interviewer administered. Table 7.4 shows the

acceptance rates for the CASI module, both overall and for Full/ Partial CASI modules.

Table 7.4 – CASI module acceptance rates

Module	Accepted	Refused
CASI (ALL)	75%	25%
Full CASI	76%	23%
Partial CASI	73%	27%

7.14 By way of comparison, the Crime Survey for England and Wales (CSEW) also includes a CASI module. The acceptance rate on this is consistently over 90%[43] - substantially higher than the level achieved on the Field Test. It should be stressed, however, that an age limit is imposed on eligibility for the CASI module on CSEW, with only respondents aged between 16 and 59 being asked to complete it. Based just on those aged 16-59, the proportion accepting the self-completion in the Field Test was 89%, and therefore more in line with the level achieved on CSEW. In fact, the overall 75% acceptance rate on the Field Test is a little higher than the proportion who accepted the self-completion on the Scottish Crime and Justice Survey (66%), another survey where no age limit is imposed on eligibility for the self-completion module.

7.15 Table 7.5 shows the self-completion acceptance rate achieved on the Field Test by age band.

Table 7.5 – CASI module (ALL) acceptance rates, by age

Age	Accepted	Refused
16-29	93%	7%
30-39	92%	8%
40-49	92%	8%
50-59	82%	18%
60-69	72%	28%
70 and over	41%	59%

[43] The acceptance rate in 2013-14 (the most recently published CSEW data) was 94%.

7.16 As the table shows, the overall acceptance rate was strongly influenced by the low rate achieved among the 70+ age group, where only four in ten respondents accepted the self-completion. In the three youngest age groups more than nine in ten respondents accepted the self-completion. The rate was a little lower than average in the 50-59 and 60-69 age groups but in both groups a large majority of respondents accepted the self-completion.

7.17 Respondents who refused were asked to give a reason for why they did not want to administer the CASI module themselves. By far the most common reason given was a dislike of computers (67%), with other common reasons being due to eyesight problems (13%) and being unable to accept due to ill health (12%).

7.18 Ahead of the new National Survey, some thought should be given to the efficacy of offering the CASI module to all respondents. In light of the low acceptance rate and issues described above, it may be appropriate to impose an age limit. As noted above, the Crime Survey for England and Wales only allows respondents aged 16-59 to complete the CASI section, with older respondents asked the questions by an interviewer. Evidence from the Field Test suggests that it would be reasonable to ask respondents up to the age of around 70 to self-complete.

7.19 If it is felt important to provide all respondents with the option of going through the self-completion module themselves, interviewers should be given specific guidance on how to encourage older respondents to go through this section. This may include:

- To stress the importance of completing this part of the survey themselves, and why this is preferable to the interviewer going through it with them based on the nature of the questions.
- To stress that they are on hand to provide any help or assistance as and when required.

- Taking time to go through practice questions with respondents prior to them starting the section.
- Introducing the self-completion approach as the norm, and only introduce the option of going through the section with the interviewer as a last resort.

7.20 The number and nature of questions in the self-completion section should be reviewed, to ensure the length is kept to a minimum and that the type and display of questions makes the process as straightforward as possible for respondents. Further analysis of the data will be carried to this effect.

Results from incentive experiment

7.21 As explained in Chapter 4, an incentive experiment was conducted to assess the extent to which response could be improved by offering respondents a £10 incentive in return for taking part in an interview. Half of addresses were offered an incentive and half were not. Addresses to receive the incentive were randomly allocated within each assignment. This ensured that any differences in response rates could not be attributed to differences in interviewer ability or achievement between the two groups.

7.22 Table 7.6 shows the comparative fieldwork figures for the two groups.

Table 7.6 – Incentive experiment fieldwork figures

Group	Addresses	Deadwood	Interviews	Contact rate[44]	Cooperation rate[45]	Original response rate[46]	Final response rate
Incentive	2,960	402	1,495	91.3%	63.9%	53.2%	58.4%
No incentive	2,828	392	1,314	90.8%	59.4%	49.7%	53.9%

7.23 As outlined in the summary of interviewer feedback (above), while individual interviewers felt the impact of the incentive to be minimal, across the sample as a whole there does appear to have been a notable positive impact on the response rate. A statistically significant response rate increase of more than 4 percentage points was achieved among addresses where an incentive was offered. This is consistent with evidence from other similar incentive experiments, which have found that a small monetary incentive can increase response by around 3-5 percentage points[47].

7.24 There was also some variation in the apparent impact across different areas. Table 7.7 shows the corresponding response rates for each LA. Due to the small-scale nature of the Field Test at an LA level these results should be treated with caution. Indeed, the relatively small sample sized involved are likely to be a major contributory factor in the degree of variation.

[44] This is the proportion of all eligible addresses at which contact with made with someone in the household.
[45] This is the proportion of contact addresses at which an interview was achieved.
[46] This is the response rate achieved on all worked sample prior to any addresses being reissued. A proportion of addresses were subsequently reissued and converted to interviews, thus leading to higher final response rates for both groups.
[47] This includes experiments conducted on the National Travel Survey for the Department for Transport, the Taking Part Survey for the Department of Culture, Media and Sport and the European Social Survey.

Table 7.7 – Incentive experiment response rates, by local authority

Local authority	No incentive (%)	Incentive (%)	Percentage difference
Blaenau Gwent	54.46	63.87	+ 9.41
Bridgend	50.43	60.16	+ 9.74
Caerphilly	56.14	68.75	+ 12.61
Cardiff	55.37	49.17	- 6.21
Carmarthenshire	57.41	56.64	- 0.77
Ceredigion	62.04	60.00	- 2.04
Conwy	59.65	59.02	- 0.63
Denbighshire	55.26	60.00	+ 4.74
Flintshire	52.63	76.99	+ 24.36
Gwynedd	68.27	57.14	- 11.13
Isle of Anglesey	51.72	60.16	+ 8.44
Merthyr Tydfil	54.39	61.21	+ 6.82
Monmouthshire	46.36	47.66	+ 1.30
Neath Port Talbot	52.73	70.94	+ 18.21
Newport	54.29	58.82	+ 4.54
Pembrokeshire	52.63	65.85	+ 13.22
Powys	52.43	47.5	- 4.93
Rhondda Cynon Taf	60.36	52.59	- 7.77
Swansea	42.61	48.74	+ 6.13
Vale of Glamorgan	43.64	51.33	+ 7.69
Torfaen	53.40	55.17	+ 1.77
Wrexham	51.82	53.85	+ 2.03
TOTAL	53.94	58.44	+ 4.50

7.25 In deciding whether to use incentives on the new survey, the relative costs of different approaches will need to be considered. While an additional cost will be accrued through the issuing and administration of incentives, a corresponding reduction in costs should result from achieving a higher response rate on original fieldwork assignments, thus restricting the volume of addresses that will need to be reissued[48].

7.26 There are important implications here for overall survey costs, because reissue interviews are significantly more expensive to conduct than interviews that are achieved without the address being reissued. Without an incentive, a lower original response rate is likely to be achieved. By way of demonstration, for the Field Test the original response rate (i.e.

[48] Reissuing of addresses is discussed in more detail in Chapter 4.

before reissues) among the incentive group was 53.2%, compared with 49.7% among the no incentive group.

7.27 Addresses were reissued in both groups. By the end of fieldwork around 7-8% of final interviews in each group had been conducted at the reissue stage.

7.28 The final response rate (i.e. after reissues) achieved in the incentive group was 58.4%, compared with 53.9% in the no incentive group. Increasing the response rate in the no incentive group to the same level as the incentive group (assuming this was possible) would have required substantially more reissuing. The fieldwork costs associated with conducting additional reissue interviews would at least be equivalent to (and may exceed) the extra costs incurred among the incentive group (due to cost of providing incentives).

7.29 The findings of the Field Test suggest that issuing incentives will deliver the target response rate more easily, reduce the level of costly reissuing required and will, at worst, be cost-neutral.

7.30 It should be noted that, due to differences in survey design and implementation, the Field Test is not directly comparable to the new survey. The key difference in this regard is the shorter fieldwork period used during the Field Test. However, some broad estimates can be made.

7.31 As an example, on the basis of achieving 3,000 interviews at a response rate of 60%, with an assumed eligibility rate of 88%, a sample size of approximately 5,680 addresses would be required. By applying the difference in response rates observed during the Field Test to rates that may be achieved on the new survey, we can show how the volume of reissuing is likely to differ depending on whether or not an incentive is offered (see Table 7.9).

Table 7.9 – Predicted volume of reissuing for incentive and no incentive strategies

	No incentive	Incentive
Original response rate	54%	58%
Original interviews	2,700	2,900
Reissue interviews required to achieve 60% response rate	300	100
Incentives	0	3,000

7.32 Assuming a 4% upturn in original response, we predict that the inclusion of a £10 conditional incentive will be roughly cost neutral. It is expected that the additional costs incurred by offering the incentive (£30,000, if applied to the full achieved sample) will be offset by savings in fieldwork costs arising from a reduced need to reissue, with the cost per interview of a reissue interview roughly double that of an original issue interview. However, without a larger upturn in response at the original stage (around six percentage points or more, which we do not feel is realistic) a significant *reduction* in overall fieldwork costs is unlikely.

Response propensity model

7.33 In order to further assess the effectiveness of issuing incentives, and inform the design of the new survey, some additional analysis was carried out to achieve two key objectives:

- To estimate the probability of gaining an interview for any address sampled for the new survey *before* incentives are taken into account; and
- To estimate the impact of a £10 conditional incentive.

7.34 A full description of this work is included in Annex L. What follows is a summary of the methodology and outcomes.

7.35 Data from the first two years of the National Survey was used to build a statistical model to predict the likelihood of taking part for any given address, based on a set of address characteristics.[49]

7.36 Several models were produced. The predictive power of each model was assessed using data from the third year of the National Survey. This was achieved by comparing the predicted response outcome produced by each model against the *actual* outcome for each address.

7.37 The strongest model for predicting interview probabilities was then applied to the set of sampled addresses used for the 2015 Field Test with the objective of identifying whether there was any interaction between (i) the probability of interview predicted by the model and (ii) whether or not an incentive was offered.

7.38 Application of the model found that the odds of achieving an interview were increased by 18% if a conditional £10 incentive was offered. This increase in odds should result in a response rate increase of around +4% against a non-incentive response rate.

7.39 This suggests that an incentive strategy can be used to reduce the variation in interview probabilities within the sample. This can be achieved by segmenting the address sample on the basis of expected interview probability and offering the incentive to a random sample of addresses within each segment, varying from 0% in areas of high interview probability to 100% in areas of low interview probability.

7.40 In total, this strategy calls for 47% of sampled addresses to receive an incentive. Application of an incentive to 47% of addresses would mean a +2% increase in response rate overall, but varying from +0% in areas with high base response propensity to +4% in areas with low base response propensity.

[49] The full list of candidate variables used in the modelling can be found in Annex L.

7.41 An additional advantage to this approach should be achieved through the targeted issuing of incentives. By specifically incentivising respondents who would otherwise by unlikely to participant, a targeted incentive approach will ensure that the achieved sample is more representative of the population and thus reduce bias.

7.42 There are also a number of potential disadvantages to consider:

- The extra work required to apply the response propensity model will incur additional costs;
- Since assignments will include incentivised and non-incentivised addresses, interviewers will need to make sure they know when speaking to respondents which group they are in, thus presenting an added (albeit relatively minor) complication; and
- Related to the above point, in the event that a non-incentivised respondent discovers that incentives are being offered to other addresses, this could lead to some consternation.

7.43 However, returning to the issue of cost-effectiveness discussed above, a targeted incentive approach is likely to be less expensive than a non-targeted approach. The former will reduce the extent to which incentives are being given to respondents who would be inclined to take part anyway, thus ensuring that incentives are used as effectively as possible.

8 Analysis of split sample experiments

8.1 A key objective of the field test was to inform the development of the new National Survey beginning in 2016. This chapter outlines the findings from several split sample experiments carried out in the field test and recommendations resulting from these findings.

8.2 All differences reported in this chapter are statistically significant[50] and carried out on weighted data unless stated otherwise.

National Survey recontact question

8.3 The National Survey 2012-15 asked respondents whether they would be willing to be recontacted to take part in further research. In the field test, half of respondents were asked if they would be willing to be recontacted by "the Welsh Government, or a research company employed by them," while the other half were asked whether they would be willing to be recontacted by "the Welsh Government, Welsh Government sponsored bodies, or a research company employed by them."

8.4 There was no significant difference in the agreement rates between the two re-contact questions: 67.5% of people asked the 'Welsh Government' only question agreed to be recontacted, compared with 65.1% of those asked the 'Welsh Government and Welsh Government sponsored bodies' question.

General health questions

8.5 Both the Welsh Health Survey (WHS) and National Survey (NS) questions on general health were asked in the field test.[51] Both

[50] A significant difference means that the 95% confidence intervals for the two results do not overlap. This suggests that the difference is statistically significant i.e. that there is less than a 5% (1 in 20) chance of obtaining these results if there is no difference between the same two groups in the wider population. It is not as rigorous as carrying out a formal statistical test, but is relatively conservative and therefore reduces the chance of finding 'false positive' differences, which is an advantage when so many tests are being carried out.

questions asked respondents to rate their general health on a 5 point scale, the WHS rating scale consisted of 'poor,' 'fair', 'good,' 'very good' and 'excellent.' The NS question scale consisted of 'very bad,' 'bad,' 'fair,' 'good,' and 'very good.'

8.6 To directly compare the two questions, responses from both questions were combined into 3 different categories: positive (good/very good/excellent responses from the WHS question and good/very good responses from the NS question), neutral ('fair' responses from both questions) and negative ('poor' responses from the WHS question and 'very bad/'bad' responses from the NS question).

8.7 Responses were more positive in terms of self-ratings of general health using the Welsh Health Survey question version. The Welsh Health survey question also showed a more even distribution of responses between the five possible answer categories.

Active Travel introduction wording

8.8 The transport and active travel module of questions asks about walking or cycling as a means of transport. Half of the sample in the field test were shown the following introduction to the module: *"The following questions are about 'active travel'; that is walking or cycling as a means of transport. By this I mean when you walk or cycle in order to get to a particular destination such as work, the shops or to visit friends."* The other half saw the same introduction with an additional sentence at the end: *"The questions do not cover walking and cycling that you do purely for pleasure, for health reasons, for training or competition, or for just walking the dog."*

8.9 The longer explanation of active travel in the introduction had no effect on self-reported active travel rates.

[51] The National Survey question is the standard "harmonised" question used across a range of government surveys. See http://www.ons.gov.uk/ons/guide-method/harmonisation/primary-set-of-harmonised-concepts-and-questions/index.html for more information.

Computer Assisted Self Completion (CASI) Module

8.10 The sample for the field test was randomly allocated to one of three conditions: the full CASI condition, the partial CASI condition, or the CAPI condition (see Chapter 2 of this report for full details). Although it was not offered as an option, respondents who were not comfortable with the self-completion module could request to have the questions administered by the interviewer. 26.6% of respondents who were in the CASI conditions requested that the interviewer administer the modules, 24.5% of those in the full CASI condition, and 27.9% of those in the partial CASI condition.

8.11 Of those respondents who requested that the CASI modules by administered by the interviewer, 75.3% were aged 60 and over.

8.12 Analysis of the CASI section was complicated due to the high 'refusal' rate, and confounded by the fact that the majority of those who refused were in the older age ranges. To try to uncover whether there was a genuine effect of the self-completion CASI method versus the interviewer CAPI method, analysis of responses was carried out in three different ways:

1. looking at the responses split by the CASI condition to which respondents were assigned (referred to below as the 'Assigned CASI condition' approach). This means that those who refused the CASI were still included in CASI conditions during analysis;
2. treating respondents who requested that the CASI modules be administered by the interviewer as if they were part of the CAPI condition (the 'Recoded refusals' approach). This results in a high proportion of older people in the CAPI condition compared with the other two conditions;
3. excluding respondents over the age of 60 from the analysis (the 'Under 60s only' approach). Results of this analysis will therefore not be representative of older age groups.

Timings

8.13 The CASI module took a mean time of 12.3 minutes to complete and a median time of 11.6 minutes. Table 8.1 shows the mean and median times (in minutes) taken for the section according to the different analyses of the data:

Table 8.1 – Timings of CASI modules by analysis type

	Full CASI		**Partial CASI**		**CAPI**	
	Mean	Median	Mean	Median	Mean	Median
Assigned CASI condition	12.7	11.8	12.2	11.6	11.8	11.1
excluding practice questions	11.6	11.0	11.2	10.7	11.8	11.1
Unweighted base	*929*		*883*		*955*	
Recoded refusals	13.3	12.5	12.6	11.8	11.6	10.9
excluding practice questions	12.1	11.3	11.5	10.8	11.3	10.8
Unweighted base	*697*		*632*		*1438*	
Under 60s only	11.9	11.3	11.7	11.1	11.0	10.5
excluding practice questions	10.9	10.4	10.7	10.1	10.9	10.4
Unweighted base	*456*		*431*		*650*	

8.14 For all three types of analyses, the mean time taken to complete the full and partial CASI conditions was longer than the CAPI condition. When the practice questions were excluded from the timings there was no differences in timings seen between the conditions, except for method one (using the CASI conditions respondents were assigned to) where the partial CASI condition was shorter than the CAPI condition.

Well-being questions (ONS4)

8.15 The harmonised set of four well-being questions (which ask about satisfaction with life nowadays, the extent to which the things done in life are worthwhile, how happy the respondent felt yesterday and how anxious the respondent felt yesterday) was asked in the self-

completion section. In the partial condition, these questions were asked by the interviewer (CAPI). In all three methods of analysis:

- Lower ratings of satisfaction were reported in the full CASI condition compared with both the partial and the CAPI condition.
- Higher ratings of anxiety were reported in the full CASI condition compared with both partial and CAPI conditions.

Warwick-Edinburgh Mental Well-being Scale

8.16 The Warwick-Edinburgh Mental Well-being Scale (WEMWBS) is a 14 item scale with 5 response categories, summed to provide a single score ranging from 14-70. The items are all worded positively and cover both feeling and functioning aspects of mental wellbeing[52]. Higher scores indicate more positive responses to the items. In the partial condition, these questions were asked as a self-completion module (CASI). There were no differences in the overall combined scores between any of the CASI conditions in any of the three methods of analysis.

Alcohol consumption

8.17 Respondents were asked if they drank alcohol at all and, if they did, how much and what type they had drunk during the previous week. In the partial condition, these questions were asked as a self-completion module (CASI). There were no differences in the proportion of respondents who drank alcohol or the frequency with which they drank alcohol between any of the CASI conditions in any of the three methods of analysis.

Smoking

8.18 Respondents were asked whether they smoked or had ever smoked, if they wanted to give up, whether they smoked indoors or outdoors and

[52] The Warwick-Edinburgh Mental Well-being Scale was funded by the Scottish Government National Programme for Improving Mental Health and Well-being, commissioned by NHS Health Scotland, developed by the University of Warwick and the University of Edinburgh, and is jointly owned by NHS Health Scotland, the University of Warwick and the University of Edinburgh.

whether they were exposed to other people's smoke indoors or outdoors. In the partial condition, these questions were asked as a self-completion module (CASI). There were no differences in responses to these questions when using analysis methods one (using respondents' assigned conditions for the CASI experiment) or three (excluding over 60s). Using analysis method two (recoding those who requested that the interviewer administer the self-completion section into the CAPI condition), showed more people in the CAPI condition said they were exposed to smoke outdoors than in the CASI conditions. This was the case for both smokers and non-smokers.

Exercise

8.19 Respondents were asked on which days they walked, did moderate, and did vigorous exercise for at least 10 minutes at a time. In the partial condition, these questions were asked by the interviewer (CAPI). There were no differences in responses to these questions when using analysis method one (using respondents' assigned conditions for the CASI experiment). Using analysis method two (recoding those who requested that the interviewer administer the self-completion section in CAPI), saw higher rates of inactivity for all types of activity (walking, moderate exercise and vigorous exercise) reported in the CAPI condition. Fewer respondents recorded vigorous exercise as most strenuous activity they had undertaken in the previous week in the CAPI condition compared with the other two CASI conditions. Using method three saw higher rates of inactivity for moderate and vigorous exercise in the CAPI condition. Again, in the CAPI condition fewer respondents recorded vigorous exercise as most strenuous activity they had undertaken in the previous week compared with the other two CASI conditions.

Fruit and vegetables

8.20 Respondents were asked about the amounts of fruit and vegetables they had consumed in the previous week. In the partial condition, these questions were asked by the interviewer (CAPI). Using methods two

and three, respondents reported higher consumption of fruit in the full and partial CASI conditions compared with the CAPI condition. Using method one more respondents reported consuming eight or more portions of fruit in the previous day than the other two conditions.

Illnesses

8.21 Respondents were asked if they were currently being treated or had ever been treated for a variety of illnesses and health conditions. In the partial condition, these questions were asked as a self-completion module (CASI). There were no differences in responses to these questions when using analysis methods one or three. Using analysis method two (recoding those who requested that the interviewer administer the self-completion section into the CAPI condition), showed higher reported rates of stroke, high blood pressure and arthritis for those in the CASI conditions compared with those in the CAPI condition.

Pregnancy and BMI

8.22 Respondents were asked their height and weight, and females under 55 were asked whether they were currently pregnant. This information was used to derive respondents' body mass index (BMI). In the partial condition, these questions were asked as a self-completion module (CASI). There were no differences in responses to these questions when using analysis methods one or three. Using analysis method two (recoding those who requested that the interviewer administer the self-completion section into the CAPI condition), respondents recorded shorter heights in the CAPI condition.

Discrimination

8.23 Respondents were asked if they had ever experienced discrimination and, if they had, what for. In the partial condition, these questions were asked as a self-completion module (CASI). There were no differences between any of the CASI conditions in any of the three methods of analysis.

Sexual orientation and religion

8.24 Respondents were asked their sexual orientation and their religion. In the partial condition, these questions were asked as a self-completion module (CASI). In all three analysis methods, more people declared as 'other' when asked in CASI compared with the CAPI condition. Fewer respondents declared as straight using methods two (recoding those who requested that the interviewer administer the self-completion section into the CAPI condition) and three (excluding over 60s) but not method one (using respondents' assigned conditions for the CASI experiment). Reported rates of religion showed no differences between any of the three methods of analysis.

Conclusions and recommendations

8.25 The results of the CASI experiment are confounded due to the high rate of respondents refusing to self-complete and instead asking that the interviewer administer the questions within the CASI module. The results are further confounded by the majority of respondents who needed assistance being 60 and over. Recoding or excluding these respondents in the analysis does not remove this problem.

8.26 Of the 2823 respondents in the field test, approximately a third (34.3%) were in the CAPI condition; within this group, 34.9% were aged 70 and over. If those who needed assistance with the CASI are recoded into the CAPI condition, just under half of respondents (51.5%) are now in the CAPI condition, and this condition now contains almost three quarters (73.8%) of respondents aged 70 and over. If over 60s are excluded from the analysis, 42.7% of all respondents are now in the CAPI condition, and this condition now contains nearly half (45.9%) of respondents aged 70 and over.

8.27 Results from the three methods of comparing results in the CASI section must therefore be interpreted with caution, as the differences may be due to the differences in age profile and not due to differences

in the mode of interviewing. Even excluding those aged over 60 from the analysis (method three) reduces the uneven split of age groups between CASI conditions, but still results in disproportionally higher numbers of older respondents in the CAPI condition.

8.28 However, bearing these issues in mind it is possible to draw some conclusions. Results from the drinking religion and discrimination modules did not seem to be affected by mode of administration. In contrast, results from the questions on well-being and sexual orientation were affected by the mode of administration.

8.29 For several other modules, there are some apparent differences in results by mode of administration but these are likely to simply arise from older people being more likely to ask to complete CASI modules in CAPI. These are the modules on pregnancy and BMI, exercise, fruit and vegetables, illnesses and smoking sections.

8.30 Based on the findings of this report if a self-completion module is included in the 2016-17 National Survey we recommend:

- The longer recontact question with the wording "the Welsh Government, Welsh Government sponsored bodies, or a research company employed by them" is used, in order to give respondents as much information about the process as possible.
- The National Survey version of the general health question is used in order to retain comparability with other data sources. [53]
- The longer introduction to the Active Travel is used, so that the definition of 'active travel' is clearer to respondents.
- Measures are put in place to ensure that respondent refusal of the CASI module is minimised, such as extra interviewer training and ensuring that the self-completion process is as user-friendly as possible.

[53] The Welsh Government intends to carry out analysis of the discontinuities that may occur due to bringing five existing surveys together into the new National Survey.

- Questions on well-being and sexual orientation are administered using CASI.
- The length of the CASI module is kept to a minimum, i.e. it is reserved for sensitive questions. So for example modules on fruit and vegetables, illnesses and smoking are asked in CAPI rather than CASI.

Annex A – Sampling table

Local Authority (LA)	Projected ineligibility rate (%)	Projected response rate (%)	Sample selected (excluding reserve)
Blaenau Gwent	13%	60%	261
Bridgend	11%	60%	255
Caerphilly	8%	60%	249
Cardiff	11%	60%	257
Carmarthenshire	15%	60%	268
Ceredigion	17%	60%	275
Conwy	16%	60%	273
Denbighshire	10%	60%	254
Flintshire	8%	60%	248
Gwynedd	23%	60%	298
Isle of Anglesey	18%	60%	280
Merthyr Tydfil	11%	60%	256
Monmouthshire	11%	60%	257
Neath Port Talbot	9%	60%	251
Newport	10%	60%	254
Pembrokeshire	24%	60%	302
Powys	18%	60%	278
Rhondda Cynon Taf	11%	60%	255
Swansea	13%	60%	263
Torfaen	9%	60%	252
Vale of Glamorgan	10%	60%	253
Wrexham	8%	60%	248
TOTALS			**5,791**

Annex B – Advance letter

Llywodraeth Cymru
Welsh Government

www.llyw.cymru

The Resident(s)
Address
Address
Address
Address

[DATE]
[REF]

Dear Sir / Madam

Your address has been selected for the National Survey for Wales. Each year over 25,000 households are chosen to take part in this survey. It is carried out for the Welsh Government and Welsh Government sponsored bodies.

Taking part will help *your* community

The survey covers a wide range of topics, such as your views on council services, health, and leisure activities. Your contribution to this study is essential to help us develop and improve the services that you, your family and your community need.

We need to interview somebody in *your* household

The survey is being carried out for us by an independent research organisation, TNS BMRB. One of the survey interviewers is planning to visit your address to arrange a convenient time for an interview. If you'd like to arrange a time to suit you, or if you have any questions, please call **0800 015 2479**.

Interviewers are available during the day, in the evenings and at weekends. They carry an identity card, for your reassurance. Please show this letter to other people in your household in case the interviewer visits when you are not at home.

We value *your* contribution

I am sure you will enjoy taking part in this important study. The information you give us is protected by law and is treated as confidential. As a thank you for taking part, you will receive a £10 gift voucher.

Thank you for your help.

Dr Steven Marshall
Chief Social Research Officer, Welsh Government

For more information, go to our website www.gov.wales/nationalsurveyinfo or give us a call.

Cathays Park
Cardiff
CF10 3NQ

surveys@wales.gsi.gov.uk

Llywodraeth Cymru
Welsh Government

www.llyw.cymru

Preswylydd/Preswylwyr
Cyfeiriad
Cyfeiriad
Cyfeiriad
Cyfeiriad

[DATE]
[REF]

Annwyl Syr / Madam,

Mae eich cyfeiriad wedi cael ei ddewis ar gyfer Arolwg Cenedlaethol Cymru. Bob blwyddyn mae dros 25,000 o gartrefi yn cael eu dewis i gymryd rhan yn yr arolwg hwn. Mae'n cael ei gynnal ar gyfer Llywodraeth Cymru a cyrff a gaiff eu noddi gan Lywodraeth Cymru.

Bydd cymryd rhan yn helpu *eich* cymuned

Mae'r arolwg yn ymdrin ag amrywiaeth o bynciau, fel eich barn ar wasanaethau cyngor, iechyd, a gweithgareddau hamdden. Mae eich cyfraniad at yr astudiaeth hon yn hanfodol i'n helpu i ddatblygu a gwella'r gwasanaethau yr ydych chi, eich teulu a'ch cymuned eu hangen.

Mae angen i ni gyfweld â rhywun yn eich cartref *chi*

Mae'r ymchwil yma yn cael ei gynnal ar ein rhan gan y sefydliad ymchwil annibynnol, TNS BMRB. Mae un o gyfwelwyr yr arolwg yn bwriadu ymweld â'ch cyfeiriad i drefnu amser cyfleus i gynnal cyfweliad. Os hoffech chi drefnu amser sy'n gyfleus i chi, neu os oes gennych unrhyw gwestiynau, ffoniwch **0800 015 2479**.

Mae'r cyfwelwyr ar gael yn ystod y dydd, gyda'r nos ac ar benwythnosau ac maent yn cario cerdyn adnabod, i dawelu eich meddwl. Dangoswch y llythyr hwn i bobl eraill yn eich cartref rhag ofn bydd y cyfwelydd yn galw pan nad ydych adref.

Rydym yn gwerthfawrogi eich cyfraniad *chi*

Rwy'n siŵr y byddwch yn mwynhau cymryd rhan yn yr astudiaeth bwysig hon. Mae'r wybodaeth y byddwch yn ei rhoi i ni yn cael ei diogelu gan y gyfraith ac yn cael ei thrin yn gyfrinachol. Er mwyn diolch i chi am gymryd rhan, byddwch yn derbyn tocyn anrheg gwerth £10.

Diolch am eich cymorth.

Dr Steven Marshall
Prif Swyddog Ymchwil Gymdeithasol, Llywodraeth Cymru

Am fwy o wybodaeth, ewch i'n gwefan www.llyw.cymru/arolwgcenedlaetholgwyb neu rhowch alwad i ni.

Parc Cathays
Caerdydd
CF10 3NQ

arolygon@cymru.gsi.gov.uk

Annex C – Survey leaflet

Llywodraeth Cymru
Welsh Government

www.gov.wales

National Survey for Wales

This leaflet gives you more information about the study and answers some questions you may have.

What is the National Survey for Wales?

The National Survey for Wales is a study of people across the whole of Wales. It covers a range of topics, for example:

- local services, such as council, education, and health services;
- health and wellbeing; and
- leisure, sports and arts activities.

This research is being carried out by two independent research organisations, TNS BMRB and Beaufort Research, on behalf of the Welsh Government, Sport Wales, the Arts Council of Wales, and Natural Resources Wales.

The survey covers a wide variety of topics. Here are some of the previous results:

- 57% of people think their council provides high quality services. 53% would like more information on how their council is performing.
- 15% of people say their general health is excellent, 36% very good, 30% good, 14% fair and 6% poor.
- 68% of people were very satisfied with the care they received from their GP at their last visit, and 23% were fairly satisfied.
- 73% of households have access to the internet. 20% of people aged 18 and over have never used the internet. Of these, 58% say they don't want to use the internet and 39% don't need to.
- 39% of people take part in sport three or more times a week.
- 81% of people go to arts events at least once a year and 60% go twice or more.
- 95% of adults had taken part in outdoor activities in the last 12 months.
- 81% of people feel safe walking in their local area after dark.

Why should I take part?

This is a chance for you to give your opinion on a wide range of issues that affect your life, and make a difference to the actions taken by the Welsh Government and its partners. Taking part in the survey is voluntary, but by taking part you will help make sure the results reflect the views of the whole of Wales.

Why has my household been chosen?

Every year we select 25,000 households to take part in this research. These households are chosen at random from the Royal Mail's list of addresses.

Is the information I give confidential?

Any personal information you give us will be kept confidential and in accordance with the Data Protection Act. It will not be possible to identify you from any report based on the results.

Your details will not be used for marketing purposes.

Who will have access to the information I provide?

Your information will be held by a small team of statisticians in the Welsh Government and only used for research purposes.

Detailed but anonymised results will also be shared with:

- statisticians in Sport Wales, the Arts Council of Wales and Natural Resources Wales; and
- some other approved organisations, for example NHS Wales and universities.

Any organisation using these results must sign a confidentiality agreement. They will only use them for research purposes, and will not pass them on to anyone else.

We do not share detailed results with commercial companies.

What happens next?

An interviewer will call at your home in the next few weeks. They will select one person in your household to take part in a short interview, which will take place in your home. If the interviewer calls at a time that is not convenient, they will be happy to make an appointment for another time.

Can I be interviewed in Welsh?

If you would like to be interviewed in Welsh, please tell the interviewer when they visit, or contact the freephone number **0800 015 3001** to arrange this in advance.

How can I check that the interviewer is genuine?

All TNS-BMRB and Beaufort interviewers carry a Market Research Society Interviewer Identity Card (as shown). You should not let anyone into your home if they do not show you this card.

Who are TNS-BMRB and Beaufort?

TNS-BMRB and Beaufort are independent research organisations. Both companies carry out a large amount of research on behalf of government, charities, and the voluntary sector, as well as commercial organisations.

Contact us

For further information about this research, or to arrange an interview, please contact Peter Matthews at TNS-BMRB on the freephone number **0800 015 2479** or at **nationalsurveyforwales@tns-bmrb.co.uk**.

You can also visit the National Survey for Wales website: **www.gov.wales/nationalsurveyinfo**

If you would like to speak to the Welsh Government directly, please email **surveys@wales.gsi.gov.uk** or call **0300 060 3300**.

TNS
www.tns-bmrb.co.uk

beaufortresearch
www.beaufortresearch.co.uk

Llywodraeth Cymru
Welsh Government

www.llyw.cymru

Arolwg Cenedlaethol Cymru

Mae'r daflen hon yn rhoi mwy o wybodaeth am yr astudiaeth ac yn ateb rhai o'r cwestiynau sydd gennych.

Beth yw Arolwg Cenedlaethol Cymru?

Mae'r Arolwg Cenedlaethol i Gymru yn astudiaeth o oedolion ledled Cymru gyfan. Mae'n ymdrin ag amrywiaeth o bynciau, fel:

- gwasanaethau lleol, fel eu cyngor, addysg, a gwasanaethau iechyd;
- iechyd a lles; a
- gweithgareddau hamdden, chwaraeon a chelfyddydol.

Mae'r ymchwil hon yn cael ei gynnal gan sefydliad ymchwil annibynnol, TNS BMRB a Beaufort, ar ran Llywodraeth Cymru, Chwaraeon Cymru, Cyngor Celfyddydau Cymru, ac Adnoddau Naturiol Cymru.

Mae'r arolwg yn cwmpasu amrywiaeth eang o bynciau. Dyma rai o ganlyniadau blaenorol:

- Roedd 57% o bobl yn teimlo bod eu hawdurdod lleol yn darparu gwasanaethau o ansawdd uchel. Byddai 53% yn hoffi mwy o wybodaeth am sut y mae eu cyngor yn perfformio.
- Roedd 15% o bobl yn dweud bod eu hiechyd cyffredinol yn ardderchog, 36% yn dda iawn, 30% yn dda, 14% yn weddol a 6% yn wael.
- Roedd 68% yn 'fodlon iawn' â'r gofal a gawsant gan eu meddyg teulu ar eu hymweliad diwethaf, a 23% yn 'eithaf bodlon'.
- Roedd gan 73% o gartrefi fynediad i'r rhyngrwyd. Roedd 20% o bobl 18 oed a throsodd erioed wedi defnyddio'r rhyngrwyd. O'r rhain, dywedodd 58% nad oeddent eisiau ac 39% fod dim angen iddynt ddefnyddio'r rhyngrwyd.
- Cymerodd 39% o bobl ran mewn chwaraeon dair gwaith yr wythnos neu fwy.
- Aeth 81% o bobl yn i ddigwyddiadau celfyddydol o leiaf unwaith mewn blwyddyn, a 60% dwywaith neu fwy.
- Cymerodd 95% o oedolion ran mewn gweithgareddau awyr agored yn ystod y 12 mis diwethaf.
- Dywedodd 81% eu bod yn teimlo'n ddiogel wrth gerdded yn eu hardal leol ar ôl iddi dywyllu.

Pam ddylwn i gymryd rhan?

Mae hwn yn gyfle i chi roi eich barn ar amrywiaeth eang o faterion sy'n effeithio ar eich bywyd, ac felly yn gwneud gwahaniaeth i'r camau a gymerwyd gan Lywodraeth Cymru a'i phartneriaid. Mae cymryd rhan yn yr arolwg yn wirfoddol, ond drwy gymryd rhan, byddwch yn helpu i sicrhau fod y canlyniadau yn adlewyrchu barn Cymru gyfan.

Pam gafodd fy nghartref ei ddewis?

Bob blwyddyn rydym yn dewis 25,000 o gartrefi i gymryd rhan yn yr ymchwil hon. Dewiswyd y cartrefi yma ar hap o restr cyfeiriadau'r Post Brenhinol.

A yw'r wybodaeth a roddaf yn gyfrinachol?

Bydd unrhyw wybodaeth bersonol a roddwch i ni yn cael ei chadw'n gyfrinachol ac yn unol â'r Ddeddf Diogelu Data. Ni fydd yn bosib i'ch adnabod chi mewn unrhyw adroddiad a fydd yn seiliedig ar y canlyniadau.

Ni fydd eich manylion yn cael eu defnyddio ar gyfer marchnata.

Pwy fydd yn cael mynediad at y wybodaeth a roddaf?

Bydd eich gwybodaeth yn cael ei gadw gan dîm bychan o ystadegwyr Llywodraeth Cymru ac yn cael ei ddefnyddio at ddibenion ymchwil yn unig.

Bydd canlyniadau manwl ond diddenw hefyd yn cael eu rhannu gyda:

- ystadegwyr Chwaraeon Cymru, Cyngor Celfyddydau Cymru ac Adnoddau Naturiol Cymru; a
- rhai sefydliadau eraill sydd wedi cael eu cymeradwyo, er enghraifft GIG Cymru a phrifysgolion.

Mae rhaid i unrhyw sefydliad sy'n defnyddio'r canlyniadau yma lofnodi cytundeb cyfrinachedd. Bydd y canlyniadau yn cael eu defnyddio at ddibenion ymchwil yn unig, ac ni fyddant yn cael eu trosglwyddo i unrhyw un arall.

Nid ydym yn rhannu canlyniadau manwl gyda chwmnïau masnachol.

Beth fydd yn digwydd nesaf?

Bydd cyfwelydd yn galw yn eich cartref yn yr wythnosau nesaf. Byddant yn dewis un person yn eich cartref i gymryd rhan mewn cyfweliad byr, a fydd yn digwydd yn eich cartref. Os bydd y cyfwelydd yn galw ar adeg anghyfleus, byddant yn hapus i wneud apwyntiad arall.

Galla i gael cyfweliad yn Gymraeg?

Gallwch. Os hoffech chi gael cyfweliad yn Gymraeg, dywedwch wrth y cyfwelydd pan fyddant yn ymweld neu cysylltwch â'r rhif rhadffôn **0800 066 5064** i drefnu hwn o flaen llaw.

Sut allaf wneud yn siŵr fod y cyfwelydd yn ddilys?

Bydd pob cyfwelydd TNS BMRB a Beaufort yn cario Cerdyn Adnabod Cymdeithas Ymchwil Marchnad (fel y dangosir). Ni ddylech adael unrhyw un i mewn i'ch cartref os nad ydynt yn dangos y cerdyn hwn.

Pwy yw TNS BMRB a Beaufort?

Mae TNS BMRB a Beaufort yn sefydliadau ymchwil annibynnol. Mae'r ddau gwmni yn cynnal llawer iawn o waith ymchwil ar ran y llywodraeth, elusennau, a'r sector gwirfoddol, yn ogystal â sefydliadau masnachol.

Cysylltwch â ni

Am ragor o wybodaeth am y gwaith ymchwil hwn, neu i drefnu cyfweliad, cysylltwch â Peter Matthews yn TNS BMRB ar y rhif rhadffôn **0800 015 3001** neu ar **arolwgcenedlaetholcymru@tns-bmrb.co.uk**.

Gallwch hefyd ymweld â gwefan Arolwg Cenedlaethol Cymru: **www.llyw.cymru/arolwgcenedlaetholgwyb**

Os hoffech siarad â Llywodraeth Cymru yn uniongyrchol, anfonwch e-bost at arolygon@cymru.gsi.gov.uk neu ffoniwch **0300 060 4400**.

TNS
www.tns-bmrb.co.uk

beaufortresearch
www.beaufortresearch.co.uk

INTRODUCTION CARD

National Survey for Wales

My name is …… I'm calling from TNS BMRB and am conducting the National Survey for Wales. You should have recently received a letter telling you about the survey.

This survey is being conducted for the Welsh Government and covers your views on a range of issues, such as local public services and what you think about your local area.

IF RESPONDENT WANTS MORE INFORMATION PLEASE REFER THEM TO THE LETTER.

Here's my ID card…*[please show ID].* It's a totally confidential survey and shouldn't take up much of your time – would you help me?

CERDYN CYFLWYNIAD

Arolwg Cenedlaethol Cymru

Fy enw i yw ... ... Rwy'n galw o TNS BMRB i gynnal Arolwg Cenedlaethol Cymru. Dylech fod wedi derbyn llythyr yn ddiweddar yn dweud wrthych am yr arolwg.

Mae'r arolwg hwn yn cael ei gynnal ar ran Llywodraeth Cymru ac mae'n gofyn eich barn ar nifer o faterion, fel gwasanaethau cyhoeddus lleol a'ch ardal leol.

OS FYDD YR ATEBYDD EISIAU MWY O WYBODAETH DYLECH GYFEIRIO I'R LLYTHYR.

Dyma fy ngherdyn adnabod ... [*dangoswch eich cerdyn ID*]. Mae'n arolwg gwbl gyfrinachol ac ni ddylai gymryd llawer o'ch amser - byddech yn fodlon helpu?

Annex E – Interviewer instructions

National Survey for Wales Field Test
Interviewer instructions

Background
The National Survey for Wales has been running since January 2012 – the current year of the survey has just finished. This will mark the end of the survey in its existing form. The Welsh Government has decided to end the current survey and instead to combine the National Survey with a number of other surveys they conduct. A new Welsh Integrated Survey is due to start in 2016.

The surveys being integrated are:

- National Survey for Wales
- Welsh Health Survey
- Active Adults Survey
- Arts in Wales Survey
- Welsh Outdoor Recreation Survey

This move is designed to collect the information needed by the Welsh Government more efficiently, and reduce burden on respondents.

Overview of assignments
Fieldwork will run from May to July 2015. The aim of the survey is to achieve a total of c. 3,000 interviews. The target response rate is 60%.

The fieldwork period for original assignments will last for around 6 weeks – so an assignment that starts at the beginning of May will need to be completed by mid-June.

The survey uses a random probability sampling method. This is the same method used on most major government surveys (e.g. Crime Survey, Taking Part). Each interviewer has been provided with a list of randomly pre-selected addresses, taken from the Post Office Address File (PAF).

The number of addresses in each assignment will vary. All assignments contain between 20 and 30 addresses, with most assignment sizes in the mid-20s. The number of days per assignment will vary accordingly, but will be between 4 and 6 days.

The proportion of deadwood addresses will also vary for each assignment, depending on the area. The overall deadwood rate for the survey is projected to be around 12%, which is in line with the level recorded in 2013-14.

The aim for each assignment will be to achieve interviews at these addresses by randomly selecting one adult from within the household to take part in the survey.

Addresses (and dwelling units/households, once selected) **cannot be replaced**. You should also never change a respondent selection except in cases where you can no longer interview the selected respondent due to an error in the contact sheet or a change in the composition of the household (see the section on the Electronic Contact Sheet for further details).

While there is no standard assignment size, a typical assignment could be composed as follows:

- Total number of addresses = 25
- Deadwood addresses = 3
- Effective addresses = 22
- Response rate = 70%
- Number of interviews (22 x 70%) = 15-16.

You will need to make a **minimum of six calls** to an address before coding a final non-contact outcome code. Calls counted towards these six must be on different days and at different times of the day. At least two must be made on a weekday evening (after 6pm)

or at the weekend. There is no maximum limit on the number of times you can call at an address – you are free to keep working as long as you think there is a chance of contact.

You must fully work and code a final outcome at every address.

Fieldwork documents
You will be provided with a range of documents to help you with your assignments:

- Advance letters
- Survey leaflets
- Introduction card
- Main showcards (dual language)
- Core showcard (dual language)
- English questionnaire
- Welsh questionnaire (if you speak/read Welsh)
- Briefing slides
- Interviewer instructions
- Police letter
- Appointment cards
- Calling cards
- Data linkage documents (showcard, leaflet, flowchart, worked example and FAQs)
- Thank You leaflets
- Map of addresses
- Assignment sheet
- Incentives

You will send each of the selected households an advance letter and survey leaflet. You should aim to send the advance materials out at least a couple of days before you start making calls. We will also provide you with spare copies of the letter and leaflet for use on the doorstep if needed.

If you need any replacement documents, please contact the office as soon as possible.

Introducing the survey
Some introductory text is included in the electronic contact sheet and can also be found on the 'Introduction card' provided in your work pack. Once you are familiar with the survey you may want to develop your own introduction – you do not need to stick to the text we have provided, but this might be a helpful guide at the start of your assignment.

The survey covers a wide range of subjects, so you may want to think about which topics are most likely to appeal to the person you are speaking to, and tailor your introduction as necessary.

Interviewers who have worked on the survey so far passed on the following tips for securing participation:

- Stress that it is an important national survey covering all of Wales.
- Convey the importance of their participation (need to represent views of all groups across Wales) and be passionate about the survey yourself.
- Also stress the local aspect of the survey.
- Tell people that it is their chance to tell the Welsh Government what they think about key policy areas.

Incentive experiment
As part of the pilot, we will be carrying out an incentive experiment. This will involve some respondents receiving a £10 giftcard upon completing the interview and some not receiving one.

The experiment is designed to test how much impact the offer of an incentive has on respondents' willingness to take part.

There are two different versions of the advance letter – one mentions the incentive and one does not.
You will receive an assignment sheet indicating which addresses are being offered an incentive. Odd numbered serial numbers (e.g. 100101) will be offered an incentive, while even numbered serial numbers (e.g. 100102) will not.

For addresses being offered an incentive, you can mention this on the doorstep when encouraging them to take part.

The front of the giftcard will feature a 19 digit serial number and an expiry date, which you will need to enter into the script.

Sub-sampling
Due to the large number of topics covered on the survey, some questions only be asked of a sub-sample of respondents. All of the sub-sampling will be set automatically by the script, so no action will be required from you. This modular approach is designed to ensure that no single interview is excessively long.

This approach means that certain topics will be asked in some interviews, but not others. You should bear this in mind when introducing the survey on the doorstep, and avoid mentioning subjects that are only asked of a sub-sample, as these questions may not be asked.

Interviewing in Welsh
The respondent will be able to decide the language they want the interview to be completed in. The CAPI script and all respondent facing documents have been translated into Welsh for this purpose.

A question has been included in the contact sheet to ask which language the respondent wants to be interviewed in. The respondent will need to be able to **speak and read** their chosen language – please check this before proceeding. If the respondent asks for the interview to be conducted in Welsh, you will be given the option to conduct the interview

yourself (i.e. if you speak Welsh). If you do not speak Welsh, you will need to contact the office and tell them that you need a Welsh-speaking interviewer.

TNS interviewers – please contact:
Paulina Strojewska – 0161 455 7932 / 0800 056 6784

Beaufort interviewers – please contact:
Owen Knight - 029 2037 6741 / 0800 0665 064

They will arrange for the interview to be passed on to another interviewer, who will call back at a later date.

It is important to present the language option **neutrally**, and not to steer the respondent based on whether or not you can speak Welsh. If someone is unsure about whether they will be able to complete the interview in Welsh you can stress that the survey has been set-up to make it as accessible as possible – for example by including difficult/technical Welsh words in English, having dual language showcards, etc.

A question is included at the start of the main questionnaire to determine the language that the interview will be conducted in. Please ensure that this question is coded correctly, as this will set the language for the full questionnaire.

The respondent may select a language here that is different to the one specified in the contact sheet. They are free to do this – if you can no longer conduct the interview contact the office.

It is not possible to change the questionnaire language midway through an interview. If a respondent asks to change the language near the start of the interview, you can go back to the language question and re-code as needed. You have also been provided with a paper copy of the questionnaire – if a respondent asks to change languages when you are further through the interview, it will probably be easier to refer to this. All showcards are dual-language, so you can refer to these as needed.

In a small minority of cases you may find someone who only speaks Welsh, or asks to go through the contact sheet in Welsh. If this happens and you don't speak Welsh, you should contact the office on the above number to arrange for the address to be passed to a Welsh-speaking interviewer. The respondent facing questions in the contact sheet also appear in Welsh so if you are a Welsh speaker you can refer to this and continue the screening/selection process as normal.

It is also possible that the respondent may not be able to speak/read English or Welsh sufficiently to be interviewed. In these cases, you can use a household translator, provided they are at least 14 years old. At the start of the interview the script will ask you to indicate whether you are using a household translator – if you are, some of the more sensitive questions will be routed out.

You should **never** use a household translator to conduct an interview in Welsh.

Finders' fee
For any Welsh translator requests that are received and where the respondent goes on to complete a full interview, you will be paid a Finder's Fee of £10. This will be arranged on a monthly basis.

Electronic contact sheets (ECS)
This survey uses an electronic contact sheet (ECS), which has been in place since the survey started in January 2012.

The process for completing the contact sheet is as follows:

- **Confirm the address (v1)**
    1. Once you have selected the address from the E-rep grid the first screen will ask you to confirm that the address details are correct (i.e. to ensure you have selected the correct address). You should complete this question before you make contact.

- **Confirm the police station you have registered with**
  2. You then need to confirm the police station you have registered with. Note that once you have typed in a police station once it will appear for future addresses as a 'button' so will speed up this process. After you have confirmed the police station you should attempt to make contact at the address.

- **Confirm the address (v2)**
  - After the police station has been confirmed a second address check is included. Here you can show the address on your screen to the person who answers the door. This will be act as a check that you are at the correct address and reassure them about the survey.
- **Confirm address eligibility**
  3. You will need to establish whether the address is traceable, residential, and occupied as a main residence.
- **Record number of dwelling units**
  4. In most cases there will only be one dwelling unit at an address.
  5. If there is more than one dwelling unit (e.g. a house split into flats) you will need to select one.
    - In these cases you should list all of the dwelling units in a convenient order (e.g. numerically, alphabetical, top to bottom). You should include occupied AND unoccupied dwelling units.
    - CAPI will then automatically select one.
    - If an unoccupied dwelling unit is selected, just use the appropriate outcome code and move on to you next address. Do not try to change the dwelling unit once it has been selected.
- **Record number of households**
  6. In very rare cases there may be more than one household in a single dwelling unit (e.g. student flats, where the residents live in a single dwelling (same front door) but live separately and don't share any communal accommodation/ facilities.
  7. After the dwelling unit has been selected, a question will ask how many households live there (one or more than one). If there is more than one household, you will be asked to record the number of households and CAPI will make a selection. As with the dwelling unit, do not try to change the household once it has been selected.
- **Record number of eligible adults**
  8. A person must be aged 16+ to be eligible for the survey.
  9. If there is only one person living at an address, they are the person you should attempt to interview – no person selection will be needed.
  10. In households where there is more than one person aged 16+, you will be asked to list all of the eligible household members (in any order you wish). CAPI will then select one for interview.
  11. In the vast majority of cases you should not try to change the person once they have been selected (see below for exceptions).
- **Gain parental permission (16/17 year old respondents only)**
  12. If the selected respondent is aged 18 or over, no parental permission is required.
  13. If the selected respondent is aged 16 or 17 and living with a parent or guardian you will be asked whether parental permission has been obtained.
  14. If a parent or guardian is unavailable at the time of your call, you will need to visit again at a later time/date to obtain permission before proceeding with an interview.
  15. If you are able to obtain parental permission you need to write in the name of the person giving permission and record their relationship to the respondent (no signature is required).
- **Record the respondent's chosen language**
  16. You will be asked to record the language that the respondent would like the interview to be conducted in. Be aware that if you are completing the contact sheet with someone other than the respondent, the language may change once you make contact with the respondent.
  17. If you speak and read the chosen language, you can proceed with the interview. If not, you should either contact the office and request a Welsh-

speaker, or (in the case of any language other than English or Welsh) attempt to use a household translator.

At appropriate points in the contact sheet you will be presented with filtered sets of outcome codes to record both interim and final outcomes. You will need to record an outcome for each call to every address. The outcome codes should cover all eventualities, but if you are in any doubt as to which code to use, contact the office.

If you code an interim outcome code you will be asked to enter details of when you next plan to call at the address. When you return, the ECS will have stored all of the data you entered previously so you can continue from where you left off on your last call.

The ECS will pass data on the number and names of adults in the household through to the main interview, so that these details appear automatically. You will be given the opportunity to check these details with the respondent and edit them if necessary. Be aware that the respondent may be different to the person who provided the details in the contact sheet, so you may need to explain how you got the information.

Please note that in most cases you need to stick with the original respondent selection – even if you discover that an error has been made. The only cases where you should re-do the respondent selection are as follows:

1. If you discover that the selected respondent is no longer living/has never lived in the household when you return to attempt an interview. This may be because they have left the household in between you making a selection and returning for an interview or because they were mistakenly included in the original selection (for example if they were away at university for most of the year but happened to be at home when at that time).
2. If the whole household has changed in between making a selection and returning for an interview – for example one family has moved out and an entirely new one has moved in.
3. If you discover that you have carried out the selection at the wrong address.
4. If you are working a reissue and the original interviewer has not provided sufficient information in the ECS to allow you to establish which of the household members was selected as the respondent.

In each of cases 1-4 you should re-do the respondent selection based on the standard guidance from your Field team.

Please note that in any **other** situations where an error has been made in the contact sheet or you have been given incorrect information you should **not** re-do the selection and instead stick with the originally selected respondent and enter the correct details in the household grid.

The Questionnaire
The questionnaire will average around 45 minutes in length.

Don't know/Refused
Most 'Don't know' and 'Refused' codes (and some others, e.g. 'Not applicable') will appear as separate buttons at the top of the screen. To select one of these options, simply click on the relevant button. For any 'grid' questions (i.e. where more than one question is asked on a single screen) you will need to select 'continue' on the initial screen without selecting a response to be able to select a DK/REF code.

Household grid
The household grid is the series of questions that appears at the start of the interview – this where information on the gender and date of birth of all household members is recorded, as well as the relationship of each household member to the respondent. Each question in this section will appear as a grid, so that information for all household members should be recorded on a single screen. For example, when recording gender you will see a list of all household members on screen, and be asked to select either 'Male' or 'Female' for each person before proceeding to the next screen.

Showcards
All prompted response lists will use a showcard. You have been provided with a set of showcards and a core showcard. The core showcard consists of a single A4 sheet and contains the two most commonly used response lists. All other response lists will use the main showcards set.

All showcards are dual-language, featuring both English and Welsh response lists.

Please ensure that you always use the correct showcard when prompted (i.e. the specific showcard named on screen) and only use showcards when specified. DO NOT show the respondent the screen.

Feedback
Your feedback on the questionnaire is an essential element of the field test. You will be issued with feedback forms – you may want to have these with you when you're out interviewing, or make notes and write up your comments in the form later.

Main areas of interest:

- Issues around length
- Problematic questions
- Sensitive questions
- Question ordering
- Self-completion sections

We will be asking you to return your completed feedback forms to us after you have completed your assignment.

Data linkage
The Welsh Government would like to link survey answers to other information that is held about respondents (e.g. health and education records). The information would be held by a Welsh Government funded research unit at Swansea University (SAIL). As a result, there is a question included at the end of the interview to ask if respondents would be happy for their data to be linked in this way. In the first year of the survey around two thirds of people agreed to have their data linked.

This is a fairly long question, so you need to go through it slowly and make sure the respondent understands everything. You will also be prompted to show them the Data Linkage Showcard which provides more information on this process. It is important to emphasise to respondents that:

- if they choose not to link their survey answers will still be used;
- linking their survey answers to other records will give the Welsh Government a lot more information to analyse;
- their details will be kept confidential at all times;

- once their survey answers have been linked to the other data held about them, their personal details will be removed so that they cannot be identified;
- the information will only be used by public sector organisations and will not be made available to commercial companies such as market research companies; and
- they can withdraw their consent at any time in the future.

If they agree to have their data linked you will need to check/record their date of birth and pass them a leaflet with more information.

You have been given a separate FAQs document outlining more detail on Data Linkage in the survey.

Field Administration

- CAPI name: TNS interviewers – WIPS15

  Please ensure that you download both the Dimensions script and the eRep grid for each survey month that you are working.

- Job number: 260127481

- Fieldwork dates below:

  WIPS15 – 4th May to 2nd August
  Original assignments to be completed by 21st June

- On average we expect you to achieve 15 interviews from your assignment.

- If you have any problems achieving the 15 interviews required please get in touch with your point of contact in Manchester.

- Payment is by results.

Project contacts

If you have any queries about the survey please get in touch with:

TNS BMRB
Sam Sullivan – 020 7656 5774

Annex F – Data linkage showcard, flowchart, and worked example

Dweud eich dweud
Have your say

Arolwg Cenedlaethol Cymru
National Survey for Wales

Llywodraeth Cymru
Welsh Government

www.cymru.gov.uk

Making your survey answers **even more** valuable

What do we want to do?

- Link your survey answers to information that the NHS and other public organisations hold about you (e.g. GP, hospital, and education records.)

Why do we want to link your survey answers?

- This will give the Welsh Government a wealth of extra information, so that they can have a clearer picture of issues in Wales and how to tackle them.

If you agree, what will happen to your information?

- If you agree, we will send your name, address, sex and date of birth to the NHS in Wales. They will work with a Welsh Government funded research unit at Swansea University to link your survey answers to other information about you.
- Your name, address and postcode will then be removed so that you cannot be identified.
- Your personal details will be kept completely confidential and be used for research purposes only.

Where can I get more information about this?

- If you agree to this, the interviewer will give you a leaflet with:
  - further information about linking your data; and
  - contact details in case you have any questions later on.

Do you agree for us to link your survey answers with other information held about you?

Dweud eich dweud
Have your say

Arolwg Cenedlaethol Cymru
National Survey for Wales

Llywodraeth Cymru
Welsh Government

www.cymru.gov.uk

Yn gwneud atebion eich arolwg **hyd yn oed yn fwy gwerthfawr**

Beth ydym eisiau ei wneud?

- Cysylltu eich atebion arolwg i wybodaeth y mae'r Gwasanaeth Iechyd Gwladol (GIG) a chyrff cyhoeddus eraill yn ei chadw amdanoch chi (e.e. cofnodion meddyg teulu, ysbyty a chofnodion addysg.)

Pam rydym am gysylltu eich atebion arolwg?

- Bydd hyn yn rhoi gwybodaeth ychwanegol i Lywodraeth Cymru fel y gallant gael darlun cliriach o faterion yng Nghymru a sut i ddelio a nhw.

Os byddwch yn cytuno, beth fydd yn digwydd i'ch gwybodaeth?

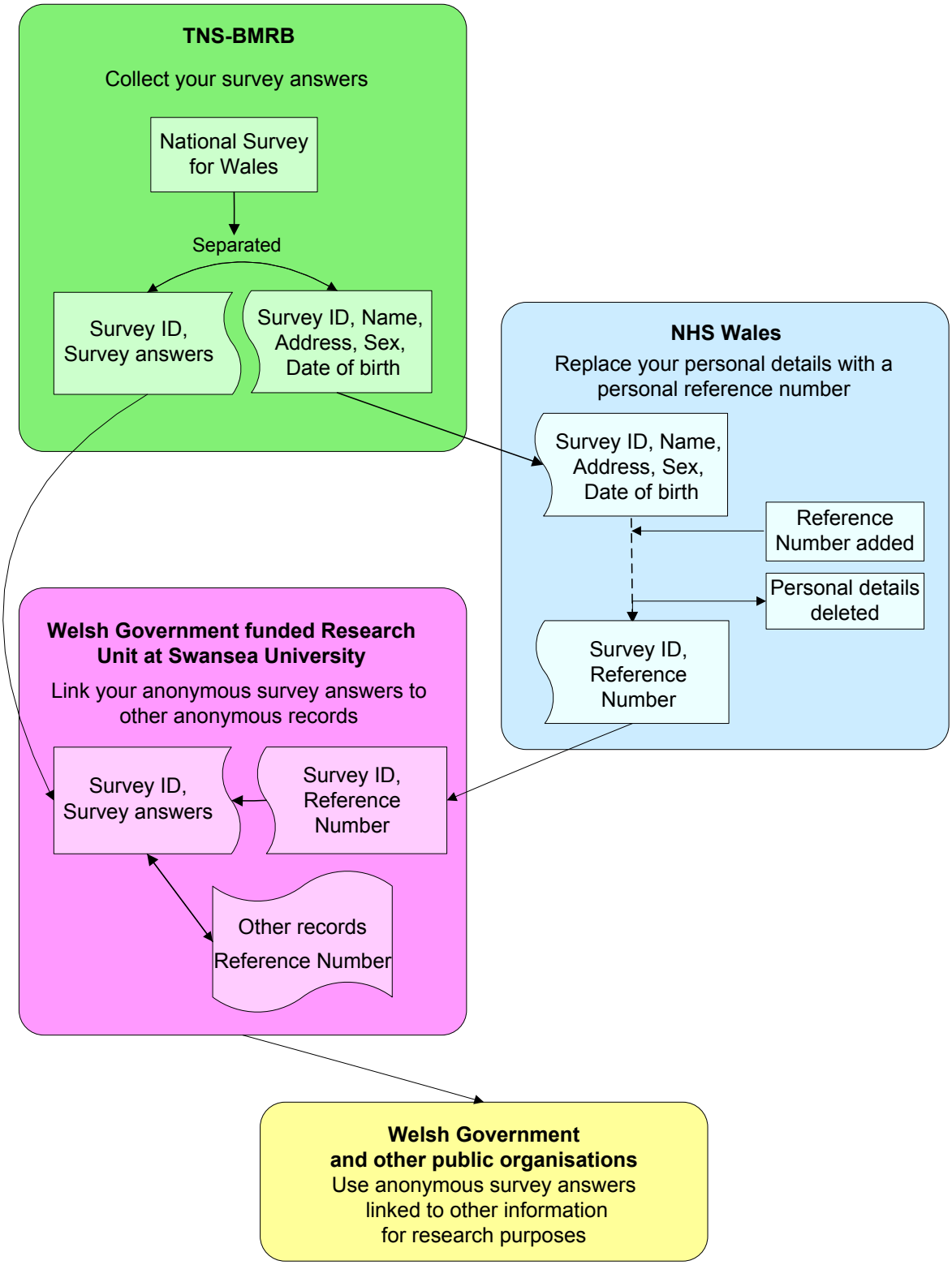
- Os byddwch yn cytuno, byddwn yn anfon eich enw, cyfeiriad, rhyw a dyddiad geni i'r Gwasanaeth Iechyd Gwladol yng Nghymru. Byddant yn gweithio gydag uned ymchwil ym Mhrifysgol Abertawe, sy'n cael ei ariannu gan Lywodraeth Cymru, i gysylltu eich atebion arolwg i wybodaeth arall amdanoch chi.
- Byddant yn cael gwared â'ch enw, cyfeiriad a'ch cod post fel na fydd yn bosib i'ch adnabod.
- Bydd eich manylion personol yn cael eu cadw yn gwbl gyfrinachol ac yn cael ei ddefnyddio at ddibenion ymchwil yn unig.

Ble gallaf gael mwy o wybodaeth am hyn?

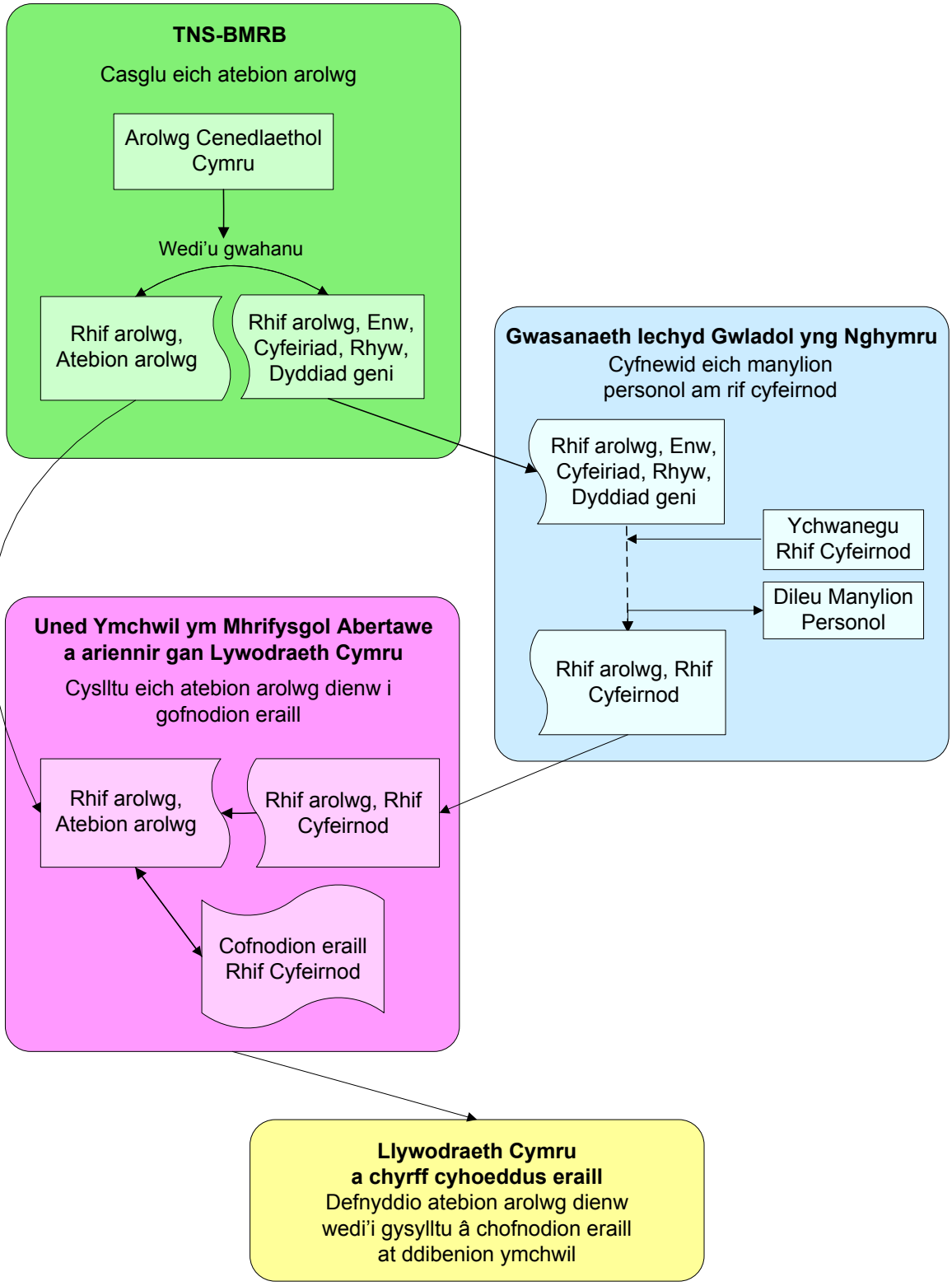
- Os ydych yn cytuno â hyn, bydd y cyfwelydd yn rhoi taflen i chi gyda:
  - fwy o wybodaeth am gysylltu eich data; a
  - manylion cyswllt rhag ofn y bydd gennych unrhyw gwestiynau yn nes ymlaen.

Ydych chi'n cytuno i ni gysylltu eich atebion arolwg â gwybodaeth arall sy'n cael ei gadw amdanoch chi?

How do we link your survey answers to other information?



Sut ydym yn cysylltu eich atebion arolwg i gofnodion erall?



NATIONAL SURVEY FOR WALES: DATA LINKING EXAMPLE

Below is an example of what the survey database will look like. All the responses from each interview appear anonymously as one record (line) with a unique Survey ID. The records of people who have consented to data linking (DL) are highlighted in yellow.

Survey ID	Age	Gender	Q1	Q2	Q3	Q4	DL
NSW001	23	F	Yes	4	Welsh	Christian	Yes
NSW002	65	F	Yes	4	British	Christian	No
NSW003	41	M	No	1	Welsh	None	Yes
NSW004	54	F	Yes	4	Welsh	Christian	No
NSW005	21	M	No	2	Welsh	Jewish	No

The personal details of those people who consent to have their data linked (highlighted above) appear in a separate database, with the associated Survey ID. These two databases are kept separately and access to the personal details database is highly restricted to ensure confidentiality and anonymity of respondents.

Survey ID	Name	D.O.B	Address
NSW001	Jane Doe	01.01.89	6 Senedd Road, Barry, CF12 1AB
NSW003	Joe Bloggs	03.12.70	49 New Rd, Cardiff, CF14 1PQ

Only the personal details and associated Survey ID of those that consent to data linkage are sent to NHS Wales. NHS Wales uses the personal details to identify that respondent's NHS number (a unique number everyone has) and changes this into a unique and anonymous data linkage reference number. They then delete the personal details and send the Survey ID and DL reference number to the Health Information Research Unit (HIRU), at Swansea University, to be added into the data linkage pool.

Survey ID	DL ref
NSW001	NHS0036
NSW003	NHS9210

The survey answers (but not the personal details) of the respondents who have consented to link their data are also sent to HIRU. HIRU then join up the two sets of information:

Survey ID	DL ref	Age	Gender	Q1	Q2	Q3	Q4	DL
NSW001	NHS0036	23	F	Yes	4	Welsh	Christian	Yes
NSW003	NHS9210	41	M	No	1	Welsh	None	Yes

Each time a person agrees to have their data linked (in future surveys for example), or when admin data on them is added to the data linkage pool, NHS Wales will only receive their personal details; and they will produce the same DL reference number to enable all records associated with an individual to be linked up in the data linkage pool. NHS Wales never receives the actual survey answers, only the unique Survey

ID/Admin ID. They do not keep a record of these and the associated DL reference number.

Analysis will only be done on groups of people, not on individuals.

AROLWG CENEDLAETHOL CYMRU: ENGHRAIFFT O GYSYLLTU DATA

Dyma enghraifft o beth fydd cronfa ddata'r arolwg yn disgwyl fel. Dangosir atebion pob cyfweliad yn ddienw fel un cofnod (llinell) gyda 'rhif arolwg' unigryw. Mae cofnodion y rhai sydd wedi cytuno i gysylltu eu data wedi eu hamlygu yn felyn.

Rhif arolwg	Oed	Rhyw	C1	C2	C3	C4	Cysylltu
NSW001	23	B	Oes	4	Cymro/ais	Cristion	Ydw
NSW002	65	B	Nac oes	4	Prydeinwr(aig)	Cristion	Na
NSW003	41	G	Nac oes	1	Cymro/ais	Dim	Ydw
NSW004	54	B	Oes	4	Cymro/ais	Cristion	Na
NSW005	21	G	Nac oes	2	Cymro/ais	Iddew	Na

Mae manylion personol y rhai sy'n cytuno i gysylltu eu data (a amlygir uchod) yn ymddangos mewn cronfa ddata ar wahân, gyda'r rhif arolwg cysylltiedig. Mae'r ddwy gronfa ddata yn cael eu cadw ar wahân. Mae mynediad i'r gronfa ddata sy'n cadw manylion personol yn cael ei gyfyngu'n fawr i sicrhau cyfrinachedd ac anhysbysrwydd yr ymatebwyr.

Rhif arolwg	Enw	Dyddiad geni	Cyfeiriad
NSW001	Jane Doe	01.01.89	6 Heol Senedd, Y Barri, CF12 1AB
NSW003	Joe Bloggs	03.12.70	49 Heol Newydd, Caerdydd, CF14 1PQ

Dim ond y manylion personol a rhif arolwg cysylltiedig y rhai sy'n cytuno i gysylltu eu data sy'n cael eu hanfon i GIG Cymru. Mae GIG Cymru yn defnyddio'r manylion personol er mwyn canfod eu rhif GIG (rhif unigryw sydd gan bawb) ac mae'n newid y rhif yma i fod yn rif cyfeirnod unigryw ac anhysbys ar gyfer cysylltu data. Yna mae'r manylion personol yn cael eu dileu ac mae'r rhif arolwg a'r rhif cyfeirnod newydd yn cael eu hanfon at yr Uned Ymchwil Gwybodaeth Iechyd (HIRU), ym Mhrifysgol Abertawe i gael eu hychwanegu i mewn i'r gronfa o ddata i'w cysylltu.

Rhif arolwg	Rhif Cyfeirnod
NSW001	NHS0036
NSW003	NHS9210

Cafodd atebion arolwg (ond nid y manylion personol) yr ymatebwyr a oedd wedi cytuno i gysylltu eu data eu hanfon hefyd at HIRU. Yna mae HIRU yn cyfuno'r ddwy gronfa ddata:

Rhif arolwg	DL ref	Oed	Rhyw	C1	C2	C3	C4	Cysylltu
NSW001	NHS0036	23	B	Oes	4	Cymro/ais	Cristion	Ydw
NSW003	NHS9210	41	G	Nac oes	1	Cymro/ais	Dim	Ydw

Bob tro y bydd rhywun yn cytuno i gysylltu eu data (mewn arolygon yn y dyfodol, er enghraifft), neu pan fydd data gweinyddol arnynt yn cael ei ychwanegu at y gronfa o ddata i'w cysylltu bydd GIG Cymru yn derbyn eu manylion personol; a byddant yn

cynhyrchu'r un cyfeirnod unigryw i alluogi pob cofnod sy'n gysylltiedig ag unigolyn i gael eu cysylltu. Dyw GIG Cymru byth yn derbyn yr atebion arolwg eu hun, dim ond y rhif arolwg neu'r rhif adnabod sy'n gysylltiedig â data gweinyddol. Nid ydynt yn cadw cofnod o rain na'r rhif cyfeirnod cysylltiedig.

Bydd pob dadansoddiad yn cael eu gwneud ar grwpiau o bobl ac nid ar unigolion.

Annex G - Data linkage leaflet

Dweud eich dweud
Have your say

Arolwg Cenedlaethol Cymru
National Survey for Wales

Llywodraeth Cymru
Welsh Government

www.cymru.gov.uk

National Survey for Wales

This leaflet gives you more information about data linking and answers some questions you may have.

Thank you for giving your consent!

Thank you very much for participating in the National Survey for Wales and for giving your consent to link your survey answers.

Why do you want to link my survey answers?

Linking your survey answers to other records will give us much more information to analyse.

For example: in the National Survey for Wales you were asked about your wellbeing. In the future, if survey answers are linked to GP records, we can look at how wellbeing affects people's health and vice versa.

Why did I need to give my consent?

The NHS in Wales will be linking your survey answers to other records that the NHS and other public organisations hold about you, and to do this they need your name, address, sex and date of birth.

By giving your consent, you have given us permission to pass this information to the NHS in Wales.

What will happen to my information?

The NHS in Wales and a Welsh Government funded research unit at Swansea University will work together to link your survey answers with records the NHS and other public organisations hold about you.

As soon as the link has been made, your name, address and postcode will be removed so that you cannot be identified from the linked data.

Who will be able to use the linked data?

The data will be made available to researchers from organisations like Universities and local authorities for projects that have been approved by the Welsh Government.

These organisations must sign a confidentiality agreement preventing them from passing the information on to anyone else. They will not be able to identify any individuals.

Your information will be used for research purposes only and will not be passed on to any company for marketing purposes.

What if I change my mind about giving my consent to link my data?

If you change your mind, all you need to do is telephone 029 2082 6685 or write to:

Lisa Walters
Welsh Government
Cathays Park
Cardiff
CF10 3NQ

Please give your name, address and date of birth. We will then make sure that the link is removed between your survey answers and other records.

If I withdraw my consent, will my survey answers still be useful?

Yes. Your survey answers will still be very valuable and will continue to be used to help the Welsh Government understand the views of people in Wales.

Linking your survey answers to other records is not the main purpose of this survey; it is simply another way you can help us to make your survey answers even more valuable.

It is entirely up to you whether you wish to give your consent for us to link your survey answers to other records.

Further information about linking data

For information about the records that are currently being held by the Welsh Government funded research unit at Swansea University, visit their website **http://hiru.swansea.ac.uk.**

NO PROOFS REQUIRED

Dweud eich dweud
Have your say

Arolwg Cenedlaethol Cymru
National Survey for Wales

Llywodraeth Cymru
Welsh Government

www.cymru.gov.uk

Arolwg Cenedlaethol Cymru

Mae'r daflen hon yn rhoi mwy o wybodaeth am gysylltu data ac yn ateb rhai o'ch cwestiynau.

Diolch i chi am roi eich caniatâd!

Diolch yn fawr i chi am gymryd rhan yn yr Arolwg Cenedlaethol Cymru ac am roi eich caniatâd i gysylltu eich atebion arolwg.

Pam ydych chi eisiau cysylltu fy atebion arolwg?

Bydd cysylltu eich atebion arolwg i gofnodion eraill yn rhoi llawer mwy o wybodaeth i ni gael dadansoddi.

Er enghraifft: Yn yr Arolwg Cenedlaethol Cymru gofynnwyd i chi am eich lles. Yn y dyfodol, os bydd atebion arolygon yn cael eu cysylltu â chofnodion meddyg teulu, gallem ystyried sut mae lles yn effeithio ar iechyd pobl, neu i'r gwrthwyneb.

Pam oedd angen i mi roi caniatâd?

Bydd y Gwasanaeth Iechyd Genedlaethol (GIG) yng Nghymru yn cysylltu eich atebion arolwg i gofnodion eraill sydd gan y GIG a chyrff cyhoeddus eraill amdanoch chi, ac i wneud hyn mae angen eich enw, cyfeiriad, rhyw a'ch dyddiad geni arnynt.

Drwy roi eich caniatâd, rydych wedi cytuno i ni drosglwyddo'r wybodaeth hon i'r GIG yng Nghymru.

Beth fydd yn digwydd i fy ngwybodaeth?

Bydd y GIG yng Nghymru ac uned ymchwil a ariannwyd gan Lywodraeth Cymru ym Mhrifysgol Abertawe yn gweithio gyda'i gilydd i gysylltu eich atebion arolwg gyda chofnodion y mae'r GIG a chyrff cyhoeddus eraill yn eu cadw amdanoch chi.

Pan fydd y cyswllt wedi cael ei wneud, bydd eich enw, cyfeiriad a'ch cod post yn cael eu dileu fel ein bod ni methu eich adnabod o'r data sydd wedi'i gysylltu.

Pwy fydd yn gallu defnyddio'r data sydd wedi cael eu cysylltu?

Bydd y data ar gael i ymchwilwyr o sefydliadau fel prifysgolion ac awdurdodau lleol ar gyfer prosiectau sydd wedi'u cymeradwyo gan Lywodraeth Cymru.

Mae rhaid i'r sefydliadau hyn lofnodi cytundeb cyfrinachedd sy'n eu rhwystro rhag trosglwyddo'r wybodaeth i unrhyw un arall. Ni fyddant yn gallu adnabod unigolion.

Bydd eich gwybodaeth yn cael ei ddefnyddio at ddibenion ymchwil yn unig ac ni fydd yn cael ei rhoi i unrhyw gwmni at ddibenion marchnata.

Beth os byddaf yn newid fy meddwl am roi caniatâd i gysylltu fy nata?

Os byddwch yn newid eich meddwl, y cyfan sydd angen i chi ei wneud yw ffonio 029 2082 6685 neu ysgrifennu at:

Lisa Walters
Welsh Government
Cathays Park
Cardiff
CF10 3NQ

Rhowch eich enw, cyfeiriad a dyddiad geni. Yna byddwn yn gwneud yn siŵr ein bod yn cael gwared â'r cysylltiad rhwng eich atebion arolygon a'ch cofnodion eraill.

Os byddaf yn tynnu fy nghaniatâd, bydd fy atebion arolwg dal yn ddefnyddiol?

Bydd. Bydd eich atebion arolwg yn dal i fod yn werthfawr a bydd yn parhau i gael ei ddefnyddio i helpu Llywodraeth Cymru ddeall barn pobl yng Nghymru.

Nid cysylltu eich atebion arolwg i gofnodion eraill yw prif bwrpas yr arolwg hwn, ffordd arall ydyw i'n helpu ni i wneud eich atebion hyd yn oed yn fwy gwerthfawr.

Eich penderfyniad chi ydyw i roi eich caniatâd i ni gysylltu eich atebion arolwg i gofnodion eraill.

Mwy o wybodaeth am gysylltu data

I gael gwybodaeth am y cofnodion a gynhelir gan yr uned ymchwil a ariennir gan Lywodraeth Cymru ym Mhrifysgol Abertawe, ar hyn o bryd ewch i'w gwefan **http://hiru.swansea.ac.uk.**

NO PROOFS REQUIRED

Annex H – List of derived variables

Variable name	Description	Dataset(s)
DvHhType	Derived variable - Household type	Respondent, All people
DvTenurGrp	Derived variable - Tenure (grouped)	Respondent, All people
DvTenurGrp2	Derived variable - Tenure (grouped)	Respondent, All people
DvHhUnd5	Derived variable - Household contains children aged under 5	Respondent, All people
DvHhUnd16	Derived variable - Household contains children aged under 16	Respondent, All people
DvHhUnd19	Derived variable - Household contains children aged under 19	Respondent, All people
DvHh60OrOvr	Derived variable - Household contains adult aged 60 or over	Respondent, All people
DvUrbRurMor	Derived variable - Urban/rural classification – morphology	Respondent, All people
DvUrbRurCon	Derived variable - Urban/rural classification – context	Respondent, All people
DvUrbRurCom	Derived variable - Urban/rural classification – combined	Respondent, All people
DvUrbRur	Derived variable - Urban/rural classification	Respondent, All people
DvUniAuth	Derived variable - Unitary Authority	Respondent, All people
DvPolReg	Derived variable - Police region	Respondent, All people
DvFireReg	Derived variable - Fire & Rescue Service region	Respondent, All people
DvAsEcArea	Derived variable - Assembly Economic Fora Area	Respondent, All people
DvPsFoot	Derived variable - Public services footprint	Respondent, All people
DvPcArea	Derived variable - Postcode area	Respondent, All people
DvLSOA2001	Derived variable - Lower super output area (based on 2001 Census)	Respondent, All people
DvLSOA2011	Derived variable - Lower super output area (based on 2011 Census)	Respondent, All people
DvWaConst	Derived variable - Welsh Assembly constituency	Respondent, All people
DvParlConst	Derived variable - Parliament constituency	Respondent, All people
Dv2011OAC	Derived variable - ONS Output Area Classification	Respondent, All people
Dv2011OACsg	Derived variable - ONS Output Area	Respondent,

	Classification Supergroup	All people
Dv2011OACsg2	Derived variable - ONS Output Area Classification Supergroup (3 and 4 merged)	Respondent, All people
DvACORN	Derived variable - ACORN classification	Respondent, All people
DvElecWard	Derived variable - Electoral Wards	Respondent, All people
DvLocHlth	Derived variable - Local health board	Respondent, All people
DvComFrstClust	Derived variable - Community First Cluster	Respondent, All people
DvSpAreaNW	Derived variable - Spatial Plan area - North West Wales	Respondent, All people
DvSpAreaNE	Derived variable - Spatial Plan area - North East Wales	Respondent, All people
DvSpAreaCen	Derived variable - Spatial Plan area - Central Wales	Respondent, All people
DvSpAreaPH	Derived variable - Spatial Plan area - Pembrokeshire Haven	Respondent, All people
DvSpAreaSB	Derived variable - Spatial Plan area - Swansea Bay	Respondent, All people
DvSpAreaSE	Derived variable - Spatial Plan area - South East Wales	Respondent, All people
DvWIMDOvr5	Derived variable - Welsh Index of Multiple Deprivation - overall score (in quintiles)	Respondent, All people
DvWIMDInc5	Derived variable - Welsh Index of Multiple Deprivation - income score (in quintiles)	Respondent, All people
DvWIMDEmp5	Derived variable - Welsh Index of Multiple Deprivation - employment score (in quintiles)	Respondent, All people
DvWIMDHlth5	Derived variable - Welsh Index of Multiple Deprivation - health score (in quintiles)	Respondent, All people
DvWIMDEdu5	Derived variable - Welsh Index of Multiple Deprivation - education score (in quintiles)	Respondent, All people
DvWIMDHse5	Derived variable - Welsh Index of Multiple Deprivation - housing score (in quintiles)	Respondent, All people
DvWIMDEnv5	Derived variable - Welsh Index of Multiple Deprivation - physical environment score (in quintiles)	Respondent, All people
DvWIMDServ5	Derived variable - Welsh Index of Multiple Deprivation - access to services score (in quintiles)	Respondent, All people

DvWIMDSafe5	Derived variable - Welsh Index of Multiple Deprivation - community safety score (in quintiles)	Respondent, All people
DvHiQual	Derived variable - Highest educational qualification	Respondent
DvEcoStat	Derived variable - Economic status	Respondent
DvEcoStat3	Derived variable - Economic status (3 classification)	Respondent
DvEmpStat	Derived variable - Employment status	Respondent
DvNeet	Derived variable - Not in education, employment or training (NEET) status	Respondent
DvWeLang1	Derived variable - Welsh language ability - can speak, read and write Welsh	Respondent
DvWeLang2	Derived variable - Welsh language ability - can speak and read Welsh, but not write Welsh	Respondent
DvWeLang3	Derived variable - Welsh language ability - can speak Welsh, but can't read or write Welsh	Respondent
DvWeLang4	Derived variable - Welsh language ability - can understand spoken Welsh only	Respondent
DvAgebnd10	Derived variable - Age bands (10 year bands)	Respondent
DvAgeGrp	Derived variable - Age group (old working age definition)	Respondent
DvAgeGrp2	Derived variable - Age group 2	Respondent
DvAgeGrp3	Derived variable - Age group 3	Respondent
DvWkinAge	Derived variable - Working age (old definition)	Respondent
DvWkinAge2	Derived variable - Working age (new definition)	Respondent
DvPenFlag	Derived variable - Pensionable age at time of interview	Respondent
DvWbSatLifeGrp2	Overall satisfaction with life (Low or High)	Respondent
DvWbLifeWrthGrp2	Overall extent of feeling that the things done in life are worthwhile (Low or High)	Respondent
DvWbTimeGrp2	Overall satisfaction with amount of time to do things enjoy doing (Low or High)	Respondent
DvLLTI	Derived variable - Has a limiting long-standing illness, disability or infirmity	Respondent
DvAtFrqBke	Derived variable - Frequency of active travel by bicycle	Respondent
DvAtFrqWlk	Derived variable - Frequency of active travel by walking	Respondent
DvChildEdu	Derived variable - Respondent has a child in full-time education	Respondent

DvAFResp	Derived variable - Respondent currently or previously serving in UK armed forces	Respondent
DvAFFamily	Derived variable - Family member currently or previously serving in UK armed forces	Respondent
DvAFRespFam	Derived variable - Respondent or family member currently or previously serving in UK armed forces	Respondent
DvAFFamily	Derived variable - Respondent is in the Armed Forces Community	Respondent
DvAFRespFam	Derived variable - Whether household members (aged 16-19 not in FT education or aged 19 64) in paid work, either full-time or part-time	Respondent
DvAFCommunity	Derived variable - Household contains a carer	Respondent
DvWkingHh	Derived variable - Household contains someone receiving help from care and support services in Wales	Respondent
DvSCHhCarer	Derived variable - Social care service - Received help from care and support services as a carer	Respondent
DvSCHhUse	Derived variable - Social care service - Received help from care and support services as an user	Respondent
DvScCarer	Derived variable - Social care service - Not received help from care and support services	Respondent
DvScUser	Derived variable - Social care service - Received help from care and support services - Dk/Ref	Respondent
DvScNeither	Derived variable - Social care service - Received help from care and support services - not asked	Respondent
DvScDkRef	Derived variable - Household in material deprivation	Respondent
DvScNotasked	Derived variable - Children in material deprivation	Respondent
DvHhMatDep	Derived variable - Walls (solid or cavity) insulated	Respondent
DvChMatDep	Derived variable - usual mode of travel to primary school - car or lift	Respondent
DvWallsIns	Derived variable - usual mode of travel to primary school - bus	Respondent
DvAtPsModeTravCL	Derived variable - usual mode of travel to primary school - walk	Respondent
DvAtPsModeTravBus	Derived variable - usual mode of travel to secondary school - car or lift	Respondent

DvAtPsModeTravWlk	Derived variable - usual mode of travel to secondary school - bus	Respondent
DvAtSsModeTravCL	Derived variable - usual mode of travel to secondary school - walk	Respondent
DvAtSsModeTravBus	Derived variable - Household type	Respondent
DvAtSsModeTravWlk	Derived variable - Tenure (grouped)	Respondent

Summary of final outcome codes

The Table below gives you a summary of all the Outcome Codes that you might record.

OUTCOME CODE	COMMENTS
1 Not yet built/under construction	When new housing estates are being built, addresses are often put on the PAF as soon as final planning permission has been approved. This means that addresses can exist on the PAF well before a house or apartment is even built (often even before the foundations are laid).
2 Derelict/demolished	Similarly, it may take some time for an address to be removed from the PAF. Therefore, an address may be on the PAF long after the building has fallen into disrepair or been completely demolished.
3 Vacant/empty housing unit	Any property that is clearly empty or vacant is ineligible. Some vacant properties will be obvious (e.g. windows boarded up, no furniture, etc). With other properties it will be more difficult to distinguish between an empty/vacant property and one where it is just very difficult to make contact with anyone. Ways of establishing whether a property is vacant or not are covered in detail in briefings and in section 1.3.2.
4 Non residential address	This code should cover all addresses occupied solely by a business, school, hospital, government office, shop, etc). In all cases you need to be certain that there is no residential property that shares the same address as the business or industry.
5 Communal establishment/institution	This covers all addresses where people are living communally (e.g. residential homes, barracks, halls of residence, etc.). In all cases you need to be clear that the residents do meet the definition of communal living, and are not living independently. You need to be certain that there is not a private household that shares the same address with the communal establishment.

6 Not main residence	Short term holiday cottages or flats should be fairly easy to identify. To establish whether something is a second home or not you need to establish what the resident regards as their main residence. If the resident is absent, you may need to establish this from a neighbour or through some other means.
20 Inaccessible	This is a code which should be very rare and used only with Team Leader approval. For example if a remote address is temporarily inaccessible due to the weather. During the Foot and Mouth outbreak in 2001, several addresses were inaccessible during the whole field period and it would have been appropriate to use this code.
21 Unable to locate address	You should be able to locate most addresses. If you need to use code 21 you should ALWAYS record the methods used to find the address in the Notes section.
24 Unknown whether address is residential due to refusal of information	This code should be very rarely used. You would only use it if you make contact with someone at an address but cannot establish if it is residential (e.g. if you are not sure if it is a business or a flat/house).
25 Unknown whether address is residential due to non-contact	This code should be very rarely used. In most no contact cases you should use code 40. You should only use code 25 if you are unsure whether the address is residential (e.g. whether it is a business or flat/house) after making 6+ calls and checking with neighbours.
26 Unknown whether address is residential due to other reasons	This code should be very rarely used. You should only use it if you are unable to establish whether an address is residential for reasons other than non-contact or refusal.
40 No contact with anyone at address	This is the main non-contact code. On the NSW because everyone is potentially eligible for inclusion, if you have established an address to be residential and occupied it must be eligible.

	Therefore, if you fail to make ANY contact with a responsible adult at the address you should code it as a non-contact. Code 40 can only be used if you have made a minimum of 6 calls at the address. If you are uncertain (after 6+ calls) whether a residential address is vacant or not, you should always use code 40.
41 Contact made but not with a responsible resident	This code should be very rarely used. It would usually only apply if you make contact at an address but only with children who it is not appropriate to ask for information.
42 No contact with selected respondent	Once you have done the person selection and know who you want to interview, you may never manage to see or speak to the selected person. If you use this code you MUST have made a minimum of 6 calls at the address.
43 Parental permission required – no contact with parent	If the selected respondent is 16 or 17 and you have not managed to obtain permission from a parent or guardian (due to non-contact) you should use code 43.
50 Office refusal	You should only use code 50 if told to do so by your Team Leader. You should not use this code if someone on the doorstep tells you that they have phoned or written to the office.
51 Refused all information	As with code 40 if the address has been established as residential and occupied it must be eligible for the survey. Therefore, if you are refused any information the address is automatically unproductive. This is most likely to be someone who refuses to tell you who lives in the household, meaning you cannot do a person selection. In most cases if someone refused to provide details at this stage you should call again on a different day.
52 Refusal by selected person	This code should be used where the selected person has refused. If you get a refusal on your first contact it would usually be appropriate to call again on a different day to see if the reason the person refused was circumstantial. Code 52 is probably the most important outcome where you need to make detailed notes in the Notes section.

53 Refusal by proxy	This is where someone refuses on behalf of the selected respondent. You should try to avoid proxy refusals if at all possible. If you do use this code you must make detailed notes in the Notes section, including (if known) who gave the refusal.
54 Parental permission required – permission refused	Parental refusal is a type of proxy refusal which we now want to identify separately from other types of proxy refusal.
55 Refused during the interview	Occasionally someone will start the interview but refuse midway through. You should use this code in these cases – but only if there will be no chance of calling back to complete the interview at a later date.
60 Contact but no specific appointment	This is where some contact with the selected respondent has been made but it has not been possible to set up a firm appointment to call round and interview them. This could be because you turn up just as they are leaving the house, or they say it is not a convenient time and you have not been able to gain contact since.
62 INTERIM – Appointment for interview	This code should be used if you have selected a respondent and arranged to call back at a particular time to conduct the interview.
63 Broken appointment	This code should be used if the selected person is willing to be interviewed at an agreed time, but you are unable subsequently to re-contact them.
64 Ill at home during survey period	Code 64 should be used for people who are temporarily ill or incapacitated but who would be able to do the survey at a different time (e.g. people with cold/flu, recovering from minor surgery, etc).
65 Away / in hospital throughout field period	This code should be used if the selected respondent is expected to be away for the survey period (the next 3 months). If someone does fall into this category, make sure that they are eligible for inclusion in the survey. Anyone away from the address continuously for more than 6 months should have not been included at the person selection stage.
66 Physical or learning disability /	This code should be used for people who are

difficulty	unable to do the survey because of permanent or stable conditions (e.g. people with severe learning difficulties, people who are terminally ill, etc). You should check whether the selected respondent wishes to take part in the survey – never assume that someone is unable to complete the survey.
67 Language difficulties	You should only use this code if you have established that you cannot conduct the interview using a translator. This code should not be used for the Welsh language. If you find someone who wants to be interviewed in Welsh and cannot speak Welsh yourself you should use interim code 68 and contact the office.
68 INTERIM - Welsh language need identified	The NSW is being conducted in both the English and Welsh language. If a respondent wants to do the interview in Welsh and you do not speak/read Welsh yourself you should select this code and contact the office as quickly as you can (using the contact name/number in the electronic contact sheet).
70 Full interview	The definition of full interview on the NSW is getting to the end of the survey.
75 Partial interview	If the interview is terminated part way through you should code this as a partial interview. Note that we are not able to include any partial interviews in the data on the NSW.
110 INTERIM – No contact at address (no selection done yet)	You should use this code if you call at an address and there is no one in (and you have never previously contacted anyone there). You can only use a final no contact code after 6+ calls.
111 INTERIM – Contact made at address but need to call back (no selection done)	This code is for cases where you have called at an address, made contact but not yet made a selection (so need to call back).
112 INTERIM – No contact at	This code is for cases where, on a previous call, you have made contact and done the selection.

address (respondent selection done)	However, when you call back there is no one there.
113 INTERIM – Contact at address but no contact with selected respondent	This code is similar to 112 (as in both cases you have made contact and selected the respondent). You make contact at the address when you call back but the selected respondent is not there/ unavailable.
114 INTERIM – Contact with selected respondent but need to call back	Here you have previously made contact and selected a respondent. When you call back you make contact with the selected respondent but they are not available to be interviewed then so you need to arrange a further call back.
115 INTERIM – Contact at address but no contact with parent	You should use this code if you have made contact at an address but only with someone aged under 18 – so you need to call back to make contact with a parent.
116 INTERIM – Contact with parent of 16/17 year old – call back	You should use this code if you have selected a 16/17 year old and made contact with their parent – and need to call back to interview the 16/17 year old.

Annex K – Sub-sampling specification

Spec for NSW subsampling

Sub-sampled sections

1. Create 18 new columns:

ss_attend
ss_barriers
ss_biodiv
ss_culture
ss_dcrim
ss_encactiv
ss_future
ss_outdoor
ss_sportschl

2. Sort the full sample file (TNS and Beaufort) by Local Authority and Post Code.
3. Use a 1 in n method to randomly allocate a 1 to the following

   - 2,841 records in the ss_attend column.
   - 473 records in the ss_barriers column.
   - 473 records in the ss_biodiv column.
   - 473 records in the ss_culture column.
   - 473 records in the ss_dcrim column.
   - 473 records in the ss_encactiv column.
   - 2,841 records in the ss_future column.
   - 2,841 records in the ss_outdoor column.
   - 473 records in the ss_sportschl column.

Incentives

4. Create a new column: 'Incentive'.
5. Sort the full sample file (TNS and Beaufort) by Serial
6. For all odd numbered serials, enter a '1' in the 'Incentive' column. For all even numbered serials, enter a '2' in the 'Incentive' column.

Annex L – Response Propensity Model Report

OVERVIEW OF RESPONSE PROPENSITY MODEL

Explanation and assumptions

This work was carried out to achieve two key objectives:

1) to estimate the probability of obtaining an interview for any address sampled for the new National Survey, given a set of covariates but *before* incentives are taken into account.

2) to estimate the impact of a £10 conditional incentive and, furthermore, assess whether this impact varies as a function of (1).

This work will allow the Welsh Government to assess the cost effectiveness of the incentive and, secondarily, to judge interviewer performance more accurately than at present by comparing it against expectation. It may also be used to refine the sample design in future (e.g. by varying the sample fractions to maximise the representativeness of the interview sample).

This work is based on an analysis of field outcomes from the NSW as realised over the period 2012-14. Therefore, there is an explicit assumption that the average probability of obtaining an interview from each address sampled for the new National Survey will be the same as it was for the NSW. This is unlikely to hold exactly but the estimated interview probabilities for each sampled address can be shifted up or down using a universal conversion factor on the assumption that the *ratio* of interview probabilities between classes of address will hold for both surveys even if the *average* interview probability is different.

Summary of conclusions

The strongest model for predicting interview probabilities is a five variable model, based on the local authority, the output area classification, the local population density and two of six summary variables derived from 2011 Census data in Wales (see below for details of this model). With regard to the 2015 Field Test, the odds of achieving an interview increased by 4% for every one percentage point increase in interview probability, as estimated from the model. The odds of achieving an interview were further increased by 18% if a conditional £10 incentive was offered. The impact of the incentive did not vary as a function of the expected interview probability.

An incentive strategy has been constructed with the objective of using it as a tool for reducing the variation in interview probabilities within the sample. This can be achieved by segmenting the address sample on the basis of expected interview probability and offering the incentive to a random sample of addresses within each segment, varying from 0% in areas of high interview probability to 100% in areas of low interview probability. In total, this strategy calls for 47% of sampled addresses to receive an incentive.

Application

Fieldwork outcome data from the 2012-15 NSW - plus the 2015 Field Test - was used for this work. Data from the first two years of the NSW (2012-14, the 'training' dataset) was used to build an address-level model of interview probability. The predictive power of each model specification was assessed using data from the *third* year of the NSW (2014-15, the 'test' dataset). The most powerful model was then applied to the set of sampled addresses used for the 2015 Field Test with the objective of identifying any interaction between (i) the modelled interview probability and (ii) the incentive condition.

A multinomial (rather than a binomial) logistic regression method was used to model address-level interview probabilities. This model structure was selected so that the fieldwork agency appointed to carry out the new National Survey would benefit from probabilistic estimates for different types of unproductive outcome (something that should help with performance management). The model's dependent variable had four categories : ((i) interview, (ii) eligible unproductive, (iii) ineligible unproductive ('deadwood') and (iv) unknown eligibility unproductive). The aggregate probability of outcome (i) across all sampled addresses in an assignment is equivalent to the expected interview rate[54].

To build the model of interview probability, each sampled address was classified based on twelve pre-selected variables, some at the level of the local OA (c120 households), some at the level of the local LSOA (c600 households) and one or two at other levels. For reasons of simplicity, *all these variables have been treated as address-level variables*, meaning that a single level regression model can be built instead of a multi-level model. The coefficients from a single level model are much easier to apply to new samples than the coefficients from multi-level alternatives. The method used to test model fit (see below) is robust enough to avoid any problems of over-fitting that might follow from this simplification.
The following variables were attached to each sampled address:

- Local authority
- Output Area Classification (OA level)
- ONS urban/rural classification (OA level)
- 2011 Welsh index of multiple deprivation (decile based categories, LSOA level)
- Geographic scale of assignment area (in hectares)
- Population density (derived from Census 2011, LSOA level)

[54] The aggregate of (i)/((i)+(ii)+((iv)*(((i)+(ii))/((i)+(ii)+(iii))))) is equivalent to the expected AAPOR3 response rate.

- Six orthogonal (i.e. uncorrelated) principal components, derived from an analysis of LSOA level 2011 Census data in Wales

- (Field test only) Whether a £10 incentive was offered (address level)

'Year of issue' and 'quarter of issue' were also considered for inclusion, but ultimately excluded since neither variable is useful for predicting the future. 'Quarter of issue' might have worked as a proxy for season/prevailing weather but with only two instances of each quarter in the training dataset, any systematic effects are likely to be confounded with natural random variation.

Variables that are dependent upon interviewer visits to collect the data (e.g. observations about the state of the address or local area) were not used. This data is less consistently recorded than the Census-based variables and has been shown to provide little additional accuracy in estimating response propensity.
The classification variables listed above formed the set of candidate predictor variables in the model of interview probability. Power transformations of the metric variables were tested to improve model fit. Only two variables (population density and the size of the assignment area) benefited from this kind of transformation. The natural logs of each of these variables have been used instead of the untransformed versions.

Model fit was assessed by applying the model coefficients estimated using the training dataset (NSW 2012-14) to the test dataset (NSW 2014-15). The sampled addresses within the test dataset were ranked in order of modelled interview probability (as estimated by the most complex model) and divided into twenty equal sized groups. For each group, the observed interview rate was recorded and compared to the modelled mean interview probability. The (unsigned) difference between the two was computed for each group for each model under consideration. The average error per group was used as a metric for judging the predictive power of each model. See Step 4 in 'Results' for more detail.

The set of model coefficients with the greatest predictive power was then applied to the set of addresses sampled for the 2015 Field Test. A binomial logistic regression model of address level outcomes was estimated with two predictors: (i) an indicator of whether a £10 incentive was offered, and (ii) the modelled interview probability. The results were used to inform an incentive strategy that would minimise the variation in interview probabilities within the sample.

Results

Identification of the best model:

Step 1: All of the candidate predictors (untransformed except for taking the natural logs of population density and geographic scale) were included in an initial main effects model in which training set data (NSW 2012-14) was used to predict training set fieldwork outcomes (NSW 2014-15). The complexity of the survey design (a stratified sample of addresses, clustered by interviewer, and with variations in the

applied sample fraction) was taken into account when estimating the standard error of each parameter in the model.

Step 2: The predictor variables were ranked in order of their respective Wald F scores, a statistic which reflects the importance of the variable in question to the fit of the model to the data. Variables with very low (non-significant) F scores were excluded from further consideration because low predictive power with regard to the training dataset (NSW 2012-14) is likely to mean even lower predictive power with the test dataset (NSW 2014-15). This left eight predictor variables.

Step 3: The 8-variable model coefficients were saved in an XML file and seven further models were produced, each with one variable subtracted from the preceding model based on the Wald F score ranks in that model[55]. This model-building process was implemented purely to generate eight credible models of varying complexity.

Table 1: Variables in each model

Variable	Models in which variable is included
Natural log of the local LSOA population density	1-8
LSOA principal component 4	1-7
LSOA principal component 5	1-6
Output Area Classification	1-5
Local authority	1-4
LSOA principal component 3	1-3
LSOA principal component 6	1-2
Output area ONS urban/rural classification	1

Step 4: Each set of model coefficients was applied to the test dataset (NSW 2014-15) and then the sampled addresses were ranked in order of *expected* interview probability (as estimated by the most complex 8-variable model #1) and divided into twenty equal sized groups. For each group, the *observed* interview rate was recorded. However, because the observed interview rate in the test dataset (NSW 2014-15) was only 52.9% compared to 60.2% in the training dataset (NSW 2012-14), the observed interview rates for each group were artificially scaled up[56] to eliminate the difference in levels which would have otherwise interfered with the assessment of the models. Underpinning this adjustment is the assumption that this difference in levels is consistent across the twenty groups. This is largely borne out by the high group-level correlation (R=0.94) between the observed and expected interview rates, despite the difference in levels.

[55] Variable ranks shifted as the models were reduced. For example, the 1-variable model (model #8) included the natural log of the local LSOA population density, despite its second place rank within the eight-variable model.

[56] Each group's observed interview rate was transformed by re-expressing it as odds (rate/(1-rate)), multiplying these odds by the odds ratio 1.35 (=(60.2/39.8)/(52.9/47.1)) and then re-expressing these revised odds as a new interview rate.

Table 2: Observed versus expected (modelled) interview rates

Group	Observed interview rate	Expected (model #8) interview rate	Scaled observed interview rate
1	58.1%	69.0%	65.1%
2	55.1%	67.3%	62.4%
3	55.4%	66.1%	62.6%
4	59.3%	65.2%	66.2%
5	58.3%	64.4%	65.3%
6	57.8%	63.8%	64.9%
7	56.9%	63.2%	64.0%
8	53.4%	62.5%	60.7%
9	56.6%	61.9%	63.7%
10	55.8%	61.3%	63.0%
11	53.8%	60.7%	61.0%
12	51.5%	60.1%	58.8%
13	53.6%	59.4%	60.8%
14	53.1%	58.7%	60.4%
15	49.5%	58.0%	56.9%
16	49.8%	57.0%	57.2%
17	48.3%	55.8%	55.7%
18	47.8%	54.1%	55.3%
19	46.2%	51.5%	53.6%
20	37.6%	44.6%	44.8%
Average	52.9%	60.2%	60.1%
Standard deviation between groups		5.8%	5.1%
Correlation coefficient expected/observed			0.94 [percentages] / 0.88 [ranks]

Step 5: The (unsigned) difference between the *expected* and (scaled) *observed* interview rates was computed for each group for each model. The mean error per group was computed for each model as well as for (i) the subset of five groups with the *highest* expected interview rate and (ii) the subset of five groups with the *lowest* expected interview rate. These average error scores were used as metrics for judging the predictive power of each model. The results are shown in table 3 below.

Table 3: Error rates for each model

Model # (n variables included)	Average error per group	Average error per group (5 groups with *highest* expected conversion rates)	Average error per group (5 groups with *lowest* expected conversion rates)
	% points [model fit rank]	% points [model fit rank]	% points [model fit rank]
#1 (8)	1.6 [3rd]	2.9 [5th]	0.7 [4th]
#2 (7)	1.6 [5th]	2.9 [7th]	0.7 [3rd]
#3 (6)	1.6 [4th]	2.9 [6th]	0.6 [2nd]
#4 (5)	1.6 [2nd]	2.8 [4th]	0.6 [1st]
#5 (4)	1.3 [1st]	1.4 [1st]	1.1 [5th]
#6 (3)	2.5 [6th]	2.4 [2nd]	4.2 [6th]
#7 (2)	2.6 [7th]	2.6 [3rd]	4.3 [7th]
#8 (1)	3.8 [8th]	4.0 [8th]	6.7 [8th]
Intercept-only model	3.8 [9th]	4.1 [9th]	6.9 [9th]

The most noticeable increase in error overall (and for the groups with lowest expected interview rates) occurs between models #5 and #6 when the Output Area Classification variable is removed. Model #5 appears to be the best model overall (and the best model for the groups with highest expected interview rates) but Model #4 is better for the groups with *lowest* expected interview rates. The difference between the two is that Model #4 includes a local authority indicator, while Model #5 dispenses with that. Either model would perform to a similar level but Model #4 was selected due to its better performance for the groups with lowest expected interview rates (where the range in expected interview rates is greatest and the usefulness of the model most obvious).

Model #4 includes the following variables: natural log of the local LSOA population density; LSOA principal components 4 and 5; Output Area Classification and local authority.

Step 6: Model #4 was applied to the Field Test address sample to estimate an expected interview probability *in the absence of incentives*. It is worth noting that the Field Test interview was longer than the NSW and the fieldwork period shorter. Consequently, the observed interview rates are lower than they would have been under the NSW protocol (and somewhat lower than would be expected under the new National Survey protocol). The *expected* interview rates are therefore much higher than the observed Field Test interview rates.

Step 7: A binomial logistic regression model of Field Test outcomes (interview *v* non-interview) was estimated with two predictors: (i) an indicator of whether a £10 incentive was offered, and (ii) the expected interview probability (based on NSW 2012-14, model #4). Both parameters are significant features of the model. The odds of achieving an interview increased by 4% for every one percentage point

increase in estimated interview probability. The odds of achieving an interview were 18% higher if an incentive was offered than they were if no incentive was offered. The model fit is *not* improved by adding an interaction term (p=0.325), suggesting the incentive has a uniform impact on the (log) odds of an interview, regardless of the 'base' odds. As expected, the model is also not substantially improved by including derivatives of the expected interview probability such as polynomial term(s) or categorical quantile terms. While the apparent fit of the model to the data is slightly improved if the expected interview probability is replaced with a set of nine categorical quantile terms, this is likely an over-fitted model, responding to random departures from the expected interview rate rather than reflecting a non-linear relationship between the expected interview rates of the NSW and the Field Test.

The final main effects model coefficients are shown in table 4 below. Table 5 shows the same model with the addition of a (non-significant) interaction term, while table 6 shows a main effects model with nine quantile terms replacing the single continuous term for expected interview probability.

Table 4: Final model parameter estimates

Parameter Estimates (Odds of interview at each sampled address in the Field Test)							
	Hypothesis Test			Design Effect	Odds ratio	95% Confidence Interval for Odds ratio	
	t	df	Sig.			Lower	Upper
(Intercept)	-2.546	226	.012	1.475	.890	.813	.974
[incentive=£10]	3.104	226	.002	1.011	1.179	1.062	1.309
[incentive=£0]	.	.	.	.	1.000	.	.
[Expected interview rate (model 4) minus 60.91% (mean value for Field Test addresses)] (range : -25% to +10%)	3.962	226	.000	1.888	16.886	4.140	68.874

Table 5: Main effects + interaction terms model parameter estimates

Parameter Estimates (Odds of interview at each sampled address in the Field Test)							
	Hypothesis Test			Design Effect	Odds ratio	95% Confidence Interval for Odds ratio	
	t	df	Sig.			Lower	Upper
(Intercept)	-2.545	226	.012	1.473	.890	.813	.974
[incentive=£10]	3.094	226	.002	1.013	1.179	1.061	1.308
[incentive=£0]	.	.	.	.	1.000	.	.
[Expected interview rate (model 4) minus 60.91% (mean value for Field Test addresses)] (range : -25% to +10%)	2.494	226	.013	1.480	9.398	1.600	55.206
[incentive=£10]* [Expected interview rate (model 4) minus 60.91% (mean value for Field Test addresses)]	.987	226	.325	1.217	3.102	.324	29.743

Table 6: Main effects model parameter estimates (quantile variant)

Parameter Estimates (Odds of interview at each sampled address in the Field Test)							
	Hypothesis Test			Design Effect	Odds ratio	95% Confidence Interval for Odds ratio	
	t	df	Sig.			Lower	Upper
(Intercept)	1.510	226	.133	1.520	1.178	.951	1.458
[incentive=£10]	3.083	226	.002	1.014	1.178	1.061	1.308
[incentive=£0]	.	.	.	.	1.000	.	.
[Expected interview rate (model 4) = lowest decile]	-3.390	226	.001	1.903	.574	.416	.793
[Expected interview rate (model 4) = 2nd lowest decile]	-3.636	226	.000	1.496	.591	.444	.786
[Expected interview rate (model 4) = 3rd lowest decile]	-1.729	226	.085	1.469	.781	.589	1.035
[Expected interview rate (model 4) = 4th lowest decile]	-1.983	226	.049	1.282	.768	.590	.998
[Expected interview rate (model 4) = 5th lowest decile]	-3.155	226	.002	1.536	.629	.471	.840
[Expected interview rate (model 4) = 5th highest decile]	-1.102	226	.272	1.500	.853	.642	1.133
[Expected interview rate (model 4) = 4thhighest decile]	-.644	226	.520	1.314	.916	.702	1.197
[Expected interview rate (model 4) = 3rd highest decile]	-1.881	226	.061	1.945	.734	.531	1.015
[Expected interview rate (model 4) = 2nd highest decile]	-1.354	226	.177	1.372	.830	.632	1.089
[Expected interview rate (model 4) = highest decile]	.	.	.	.	1.000	.	.

Step 8: An incentive strategy was constructed with the objective of using it as a tool for reducing the variation in interview probabilities within the sample. This was achieved by ranking the Field Test addresses by their estimated interview probability *in the absence of incentives* (as derived from NSW 2012-14, model #4) and dividing them into ten equal groups on that basis. A solving algorithm was used to find the optimal share of sampled addresses that should be offered an incentive in each group. The optimal share for each group is the share that minimises the variance in expected interview rates between groups. *Within* each group, a random sample of addresses should be offered the incentive with probability equivalent to the optimal share.

By taking this approach, it is possible to use incentives as a tool for balancing the respondent sample, despite the fact that the positive impact of incentives is uniform and does not vary with the expected interview probability.
The optimal allocation is shown below, suggesting the use of incentives at 47% of sampled addresses in total but varying from 100% of addresses in groups 1 and 2 to 0% of addresses in groups 9 and 10. Under this design, the standard deviation in (modelled) Field Test interview rates is 4.6% of the mean (2.3%/49.0%). Alternative solutions may be produced based on a higher minimum interview rate but only at the expense of greater variation in interview rates between groups. Generally speaking, non-response bias is best tackled by reducing variation in interview probabilities rather than by increasing the overall interview rate so we would recommend a focus on the former.

Group	Sample size	P(interview|field test) *without* incentive, derived from main effects model (table 4)	P(interview|field test) *with* incentive, derived from main effects model (table 4)	Optimal % randomly selected to be offered incentive	P(interview|field test) with optimal mix, derived from main effects model (table 4)
1	578	39.7%	43.7%	**100%**	43.7%
2	583	43.7%	47.7%	**100%**	47.7%
3	578	45.3%	49.4%	**77%**	48.4%
4	581	46.2%	50.4%	**62%**	48.8%
5	576	47.1%	51.2%	**50%**	49.1%
6	582	47.9%	52.0%	**38%**	49.5%
7	578	48.8%	52.9%	**25%**	49.8%
8	580	49.5%	53.6%	**14%**	50.1%
9	580	50.6%	54.7%	**0%**	50.6%
10	579	52.3%	56.4%	**0%**	52.3%
% offered incentive in total				**47%**	
CV (stdev/mean)		7.8%	7.2%		4.6%