KANTAR

NatCen
Social Research that works for society

Understanding Society Innovation Panel Wave 12

Technical report

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Contents

Introduction

The UK Household Longitudinal Study (UKHLS) is known to sample members as *Understanding Society*. This major longitudinal household panel survey started in 2009, and is the largest study of its kind, with around 40,000 households interviewed at Wave 1. The study collects data from household members aged 10 and above on an annual basis.

It is commissioned by the Economic and Social Research Council (ESRC) and led by the Institute for Social and Economic Research (ISER) at the University of Essex.

Main fieldwork is complemented by an Innovation Panel which tests significant innovations in methods of data collection and study delivery such as mixed-mode interviewing, differential incentives, question layout and question wording experiments. IP12 was reserved specifically for testing health related research innovations.

This report provides an account of the twelfth wave of the Innovation Panel (IP12) of Understanding Society which was undertaken by Kantar, Public Division, and NatCen Social Research, working in consortium.

Overview of methodology

Households were issued to one of three modes:

- CAWI first
- CAPI first with interviewers
- CAPI first with nurses

The allocation of households to issue mode was done by ISER.

As with previous waves, there were a number of different elements to the study:

- A household enumeration questionnaire, completed once per household to confirm who is currently living there;
- A household questionnaire, completed once per household to gather some household level information;
- An individual questionnaire, completed by anyone aged 16 or more in each household;
- A paper self-completion questionnaire, completed by children aged 10 to 15;

In addition, IP12 involved the collection of biomeasures and biological samples.

Outputs

Data from Understanding Society is deposited at the UK Data Archive after each wave is completed.

1. Sample composition

1.1 The IP sample

The sample for the Innovation Panel is entirely separate from that of the main study. Originally selected from the Postcode Address File (PAF), the IP sample is representative of households in Britain. Unlike the main study it does not cover Northern Ireland.

There have been refreshment samples at several previous IP waves to increase the overall sample size: IP4, IP7, IP10 and IP11, and the sample for IP12 included a mixture of households from the original (wave 1) IP sample and each of these refreshment samples.

In total, 2,162 'active' households were issued at IP12. This included:

- 638 households from the original (wave 1) IP sample
- 298 households from the IP4 refreshment sample
- 355 households from the IP7 refreshment sample
- 306 households from the IP10 refreshment sample
- 565 households from the IP11 refreshment sample.

The number of individuals in the issued sample is shown in table 1.1.

Table 1.1 Number of individuals in the issued sample, by sample type

	Adults (16+)	10 – 15s	Under 10s
Original IP sample	1,269	114	122
IP4 refreshment sample	592	60	58
IP7 refreshment sample	715	66	94
IP10 refreshment sample	587	47	81
IP11 refreshment sample	1,032	99	161

1.2 Issue mode

Table 1.2 shows how many households, adults and 10-15s were issued to each of the issue modes.

Table 1.2 Households, adults and 10-15s in the issued sample, by issue mode

Issue mode	Households	Adults (16+)	10 – 15s
CAWI first	724	1,449	115
CAPI first, interviewers	715	1,354	130
CAPI first, nurses	723	1,392	141

2. Fieldwork design

2.1 Fieldwork structure

Fieldwork took place between 11th July and 24th November 2019. Households were issued to one of three modes:

- CAWI first
- CAPI first with interviewers
- CAPI first with nurses

Fieldwork for the CAWI first sample followed a sequential mixed mode design. Households were initially invited to take part online. At the end of the initial web fieldwork period any individuals or whole households that had not taken part online were issued to a face-to-face interviewer. From this point on the majority of interviewing was completed face-to-face although the web survey remained available for sample members to complete that way. A small amount of telephone interviewing (CATI) was also undertaken to 'mop up' any remaining individuals that had not taken part towards the end of fieldwork.

For the CAPI first groups the majority of fieldwork was completed using face-to-face interviewing (CAPI), supplemented by a small amount of web interviewing (CAWI) and telephone interviewing (CATI) later in fieldwork to 'mop up' individuals and households that had not taken part. During face-to-face fieldwork the web survey was technically available to these groups (and some sample members requested web login information so they could complete online), but was not offered until the last 3 weeks of fieldwork when anyone who had not yet taken part (and did not have an unproductive outcome that would make it inappropriate) was sent a letter (and email, if an email address was available) inviting them to take part online.

Nurse fieldwork was undertaken by NatCen. Interviewer fieldwork in England and Wales was split between Kantar and NatCen, and Kantar undertook all interviewer fieldwork in Scotland.

2.1.1 Fieldwork timings

The CAWI first sample had an initial web fieldwork period of 6 weeks. This was longer than intended due to delays sending out reminder emails and letters to complete the web survey. At the end of 6 weeks any households that had not completed online were issued to a face-to-face interviewer. The time allowed for face-to-face fieldwork varied for the three issue modes. Details are included in table 2.1 below.

Table 2.1 Fieldwork timing

CAWI first	CAPI first, interviewers	CAPI first, nurses
Web only fieldwork 6 weeks		
Face-to-face fieldwork (web survey remains open) 10 weeks	Face-to-face fieldwork 12.5 weeks	Face-to-face fieldwork 15 weeks
Telephone mop up 3 weeks	Telephone mop up + invite to complete online 3 weeks	Telephone mop up + invite to complete online 3 weeks

2.1.2 CATI mop up fieldwork

In the last three weeks of fieldwork, outstanding cases could be contacted by telephone. Not all live sample was transferred to the CATI mop up, some face-to-face interviewing was still carried out during these last three weeks.

Cases to be included in the CATI mop up were issued to a group of Kantar face-to-face interviewers who specialise in converting re-issues by telephone.

2.2 Contact with sample members

Understanding Society puts much effort into contacting respondents and keeping them engaged with the study. As well as contact for each year's interview, there are also between wave mailings and emails to sample members to feedback findings from the study and encourage people to keep their contact details up to date. This section describes the contact strategy for IP12.

2.2.1 Advance mailing

The advance mailing varied a little depending on issue mode.

For the CAPI first sample, all eligible sample members aged 16 or over were sent a letter shortly before the start of face-to-face fieldwork. The letter explained that an interviewer or nurse would call soon. A change of address card was attached to the bottom of the letter, and the mailing also included a freepost return envelope for the change of address card.

For the CAWI first sample, all eligible sample members aged 16 or over were sent a letter on the first day of web fieldwork asking them to complete the survey online and providing the web address and their login details for doing so. The letter also explained that, if they were unable to complete the survey online, an interviewer would contact them as usual. The letters also included a change of address card and freepost return envelope. If an email address was available, these sample members were also sent an email with a unique link to start the web survey.

Both CAPI first and CAWI first letters also included an information leaflet that gave more details about the health focus of IP12. This told sample members about the hair and blood samples they would be asked for as part of IP12 and informed them that this sample collection was voluntary, how the samples would be stored and used, and how their data would be kept confidential.

There were 60 different types of advance letter. This number was required because of the various different experiments included on the study. For all addresses in Wales, the letter was sent in both Welsh and

English. All letters were designed with Understanding Society branding, and were signed by the Director of Understanding Society.

2.2.2 New entrant letters

For the households issued CAWI-first at IP12, it was necessary to have a mechanism to contact individuals who had been added to households during household grids done on the web. Letters were sent to these individuals to provide them with their web login details and ask them to take part in the study online. These letters also included a change of address card and freepost return envelope.

2.2.3 Reminder letters and emails

For adults in the web first sample they were sent two reminder emails (if an email address was available) and one reminder letter if they had not completed online by the time these reminder mailings were being prepared. These reminders were sent during the web fieldwork period before web-first households were issued to a face-to-face interviewer.

2.2.4 First contact attempt with sample members

Where households had been productive at the previous wave, interviewers and nurses were instructed to attempt first contact by telephone so they could make an appointment to complete the survey. This can be more convenient for respondents and more efficient for interviewers and nurses.

For households that had not taken part at the previous wave, first contact was attempted face-to-face. Households that have not taken part at the previous waves are less likely to take part at the current wave, and an in-person visit from an interviewer is less likely to elicit a refusal than a telephone call. Where interviewers or nurses had made repeated unsuccessful face-to-face contact attempts they would start attempting contact by telephone.

3. Experiments

The focus of IP12 was on health, as such most of the experiments included in the study had a health focus. Health related experiments included were:

- Collection of biological samples and biomeasures in different modes;
- Measuring blood pressure in advance of the interview, different conditions that might encourage this;
- Asking for self-reported height and weight in the CASI section vs the interviewer or nurse asking;
- Whether offering feedback on samples impacts the agreement to provide biological samples.

In addition to this there was an incentive experiment which has been continued across multiple waves of the IP. The final experiment tested two different ways of collecting or confirming mobile telephone numbers for respondents.

Each of the experiments is described in detail below.

3.1 Collection of biological samples and biomeasures in different modes

Biomeasures and biological samples have previously been collected on Understanding Society using nurse follow up visits after waves 2 and 3. The key purpose of IP12 was to test whether such measures could be collected in a different way that would a) cost less, and b) fit better with the current design of Understanding Society where most households are invited to complete online and, if they do, there is no face-to-face visit.

The questions this experiment aims to answer are: Can and will sample members collect their own biological samples and biomeasures? And if so, are these samples/measurements of a good enough quality for analysis.

The particular samples and measures collected for comparison were hair, dried blood spots (DBS), blood pressure, height and weight.

To test this the sample for IP12 was randomly allocated to three groups:

- Issued web first (and followed up by a face-to-face interviewer if they did not take part online);
- Issued to a face-to-face interviewer first (but could take part online if they expressed a preference for this);
- Issued to a nurse first (but could take part online if they expressed a preference for this);

The biomeasures and biological samples collected varied depending on the mode in which the respondent completed. Details of what was collected in each mode are provided in table 3.1 below.

10-15 year olds were also asked for a hair sample. In the case of interviews undertaken by nurses, this was taken by the nurse during the parent interview (if the young person was at home and consent was given by both the parent and the young person). For web interviews, a parent would be asked at the end of the interview if we could post them a hair kit for their 10-15 year old child/children, and interviewers asked to hand these out at the end of the parent interview.

Table 3.1 Biomeasures and biological samples collected by interview mode

CAWI	CAPI with an interviewer	CAPI with a nurse
Respondent asked to measure blood pressure ahead of interview and readings recorded during interview	Respondent asked to measure blood pressure ahead of interview and readings recorded during interview	Respondent asked to measure blood pressure ahead of interview and readings recorded during interview
Self-reported height and weight collected during interview	Self-reported height and weight collected during interview	Self-reported height and weight collected during interview
	Interviewer measures height, weight and blood pressure during the interview	Nurse measures height, weight and blood pressure during the interview
Hair and DBS sampling kit posted to respondent after interview for them to collect and return their own samples	Hair and DBS sampling kit left with respondent after interview for them to collect and return their own samples	Nurse collects hair, DBS and whole blood samples during interview.

Hair samples were analysed for hormones including cortisol, cortisone and testosterone.

Blood samples were analysed for cholesterol (total cholesterol and HDL), triglyceride and HbA1c (glyclated haemoglobin).

The design is intended to compare:

- Response to biological sample collection in different modes by looking at the number of biological samples received;
- The quality of self-collected hair and DBS samples compared with samples collected by nurses;
- Willingness of respondents to allow interviewers to take biomeasures compared with nurses;
- Accuracy of self-reported height and weight compared with measures taken during CAPI interviews;
- Response to the request to measure blood pressure ahead of the interview and accuracy of self-reported blood pressure compared with measures taken during CAPI interviews.

3.2 Measuring blood pressure ahead of the interview

All adults sample members were asked, in advance letters, to get their blood pressure measured ahead of their interview. This applied to all issue modes. There were three different variants of how the request was phrased in the letters. In all cases, sample members were offered a £5 incentive if they did get their blood pressure measured before their interview.

One variant included a ‘pro-social appeal’ which aimed to motivate respondents. The text included for this was: “High blood pressure has been called the ‘silent killer’ with 1 in 10 people living with undiagnosed or untreated high blood pressure. Researchers would like to use Understanding Society to investigate the causes and consequences of high blood pressure, but the data would be much less useful if we were not able to get information about blood pressure from a whole range of people”.

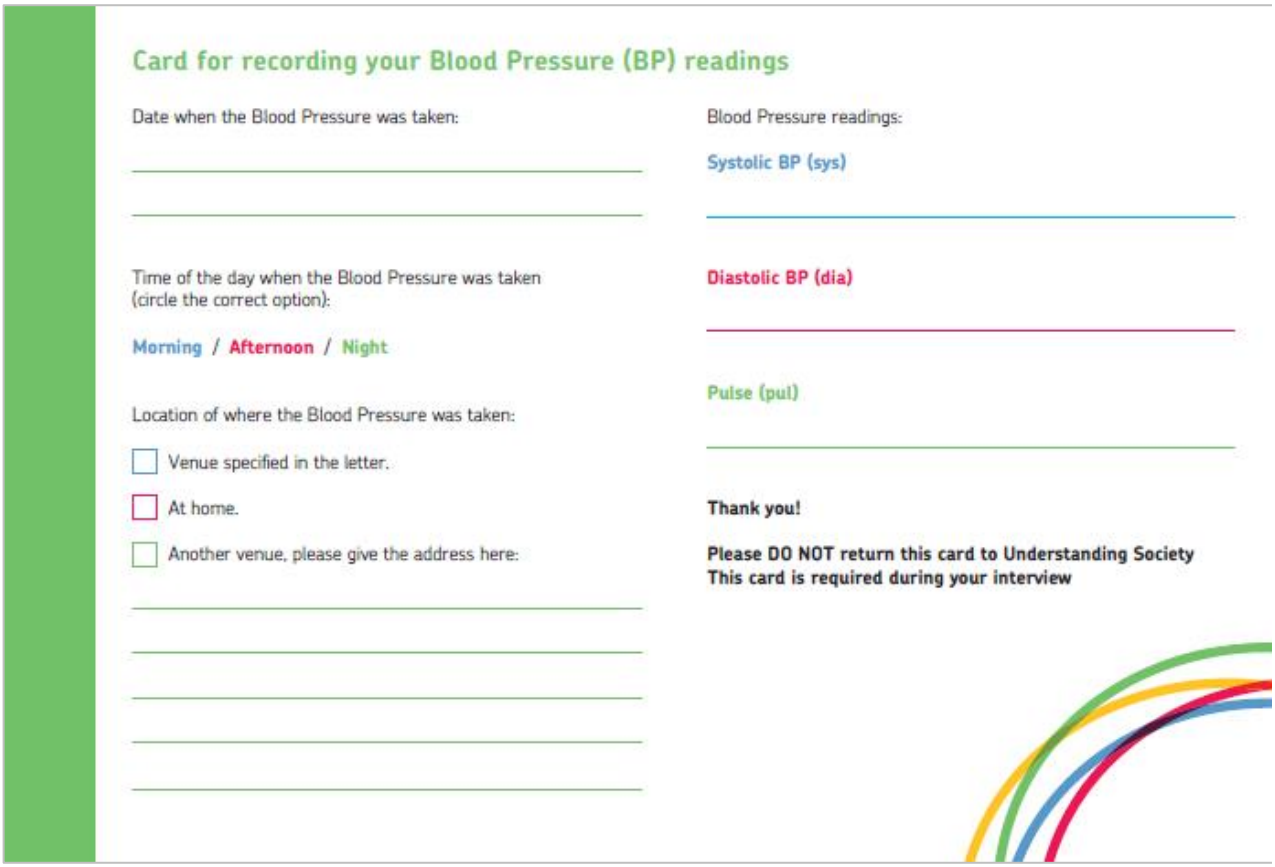
The second variant included details of a local pharmacy where it is possible to measure blood pressure for free, which aimed to make it easier for respondents to fulfil the request. The text included in this variant was: “We believe [NAME] pharmacy at [ADDRESS] near you provides free blood pressure checking and this is

one place you may be able to get your blood pressure checked. Please note that pharmacy specific criteria may apply. Therefore we advise calling to confirm before you go. Their number is [#]."

The third variant was the control group and included neither of these.

A card was included in all advance letters for sample members to record their blood pressure readings if they did get this measured in advance. This is shown in figure 3.1. As well as providing a convenient place to record the information, the purpose of the card was to prompt sample members to record all the information that would be asked for during the interview, and to make the request as noticeable as possible when sample members opened their letter.

Figure 3.1 Card provided to record blood pressure readings



3.3 Self-reported height and weight

All adults were asked to report their height and weight. For online respondents this was necessarily always self-completion so this experiment only applied to CAPI interviews. For CAPI, the height and weight questions were either asked directly by the interviewer or nurse, or they were included in the self-completion (CASI) section of the interview so the respondent would enter their height and weight themselves and would not need to tell the interviewer or nurse.

Whether this was asked by the interviewer or nurse, or included in the CASI section of the interview, the self-reported height and weight questions came before the interviewer or nurse request to measure height and weight. However, an information leaflet was included in advance letters which mentioned that nurses and interviewers would be measuring height and weight, so respondents may have been aware these would be measured during the interview at the point they were asked for their self-reported height and weight.

The purpose of this experiment was to test whether the mode in which the height and weight questions are asked affects the accuracy of individuals' responses on body weight and height.

3.4 Offering feedback on biological samples

When adults were asked to provide hair and blood samples, around half were offered feedback on the analysis of the blood sample[1] and half were not. This was to test whether offering feedback affects response to sample collection.

3.5 Collecting mobile telephone numbers

Having up to date mobile telephone numbers is important on a longitudinal study as they are a good way to trace people who have moved or contact people who are not often at home. IP12 therefore tried two different ways of asking respondents to provide or check and update their mobile telephone number, to see which was more effective. For around half of respondents contact details were collected and confirmed in the way currently used on Understanding Society:

- A single question was used to check all types of telephone number (home, mobile and work) as well as email address;
- If the respondent said their mobile telephone number was incorrect at this question, or if they did not have a mobile telephone number in the sample, they were then asked for their current mobile telephone number.

For the other half of respondents, they were asked about their mobile telephone number separately. In this group the first question to appear in the contact details section was to confirm their mobile telephone number was correct (if there was one in the sample). If the respondent said their mobile telephone number was incorrect at this question, or if they did not have a mobile telephone number in the sample, they were then asked for their current mobile telephone number.

3.6 Incentive experiment

There has been an incentive experiment running on the Innovation Panel since Wave 1. It assesses the impact of incentives on response rates, efficiency of fieldwork, and costs. As part of this experiment there were four different incentive amounts that were either sent to sample members unconditionally, or promised as a conditional incentive. Incentives are unconditional for adults that took part at the previous wave, and conditional for those that did not take part at the previous wave (including new entrants to households). The amounts sent or offered were:

- £10
- £20
- £30
- £10 but with an additional £20 offered if the sample member takes part online before face-to-face fieldwork starts.

The incentive experiment is at household level so that all members of a household are offered the same amount. Households stay in the same experimental group at each wave so that the amount they are offered does not change from wave to wave.[2]

[1] Feedback was on levels of HbA1C, total cholesterol and HDL-cholesterol

[2] There was an exception to this for IP12 as the mode allocation changed so some households that were usually issued web-first (and offered the additional £20 for completing online) were issued face-to-face first and so were just given a £10 incentive at IP12.

4. Fieldwork documents

The experimental nature of IP12, and the collection of measures and biological samples meant a large number of documents were required to support fieldwork. Many of these documents also required different versions for web interviews, nurse administered CAPI interviews, and interviewer administered CAPI interviews.

4.1 Advance letters

As covered in section 2.2.1, all adults were sent an advance letter to inform them that fieldwork was starting for the study. Included with the letter there was a participant information leaflet to inform study members of the health focus of the study and describe the measures and biological samples that they would be asked for during the interview.

4.2 Information leaflets used during interviews

Two information leaflets were used during the course of face-to-face interviews. One to cover the measurements of height, weight and blood pressure, and one to cover the collection of hair and blood samples. These leaflets explained why the measures and samples were being taken, what the procedures were for collecting the measures and samples and, in the case of blood and hair samples, how the samples would be analysed. These were handed to respondents during the interview to read[3], so that they could give informed consent to each measure.

4.3 Consent forms

Consent forms were used for the hair and blood samples. In the case of nurse interviews the nurse asked the sample member to complete the form before starting the hair and blood sampling procedures. Interviewers left the consent form for respondents along with the hair and DBS collection kit. For web interviews, the consent form was posted to respondents along with the hair and DBS kit.

4.4 Hair and dried blood spot (DBS) sampling kits

For sample members that did not take part with a nurse, they were asked if they would be willing to collect hair and dried blood spot (DBS) samples themselves and return them by post. If they agreed they were sent a kit for collecting these samples in the case of web interviews, or the interviewer handed them a kit if they took part with a face-to-face interviewer.

As well as a set of detailed instructions, the kits included a questionnaire with some questions about hair colour and haircare, and everything that was needed for collecting the samples. The contents of the kit is listed in table 4.1.

Where interviewers handed out kits, they were responsible for labelling them with barcodes. A barcode was attached to each of: the DBS collection card; the Ziploc bag in which the hair sample was returned; the consent form; and the paper haircare questionnaire. For kits sent to respondents to the web survey, the kit was labelled in the same way before being posted.

[3] For CAWI interviews, the hair and blood sample leaflet was posted to respondents, along with the sample collection kit.

Table 4.1 Contents of hair and DBS self-collection kits

For hair samples:	For DBS samples
• A dried blood spot collection card • Alcohol free moist wipes • Lancets • Gauze pads • Alcohol wipes • Plasters • A Ziploc bag in which to seal the blood spot card once dry • Desiccant packs • Sharps tube for returning used lancets • Return packaging	• Comb • Scissors • Hair bands • Sheet of aluminium foil (to fold the hair sample in once cut) • Arrow shaped sticker (to mark the scalp end of the hair sample) • Ziploc bag for sealing the sample in

4.4.1 Instructions

Detailed step-by-step instructions were sent to or left with respondents on how to collect hair and DBS samples. As well as the procedures for collecting and returning the samples, these covered the exclusion criteria for the samples. For example, there was an instruction not to collect a DBS sample if taking blood thinners, and not to collect a hair sample if their scalp was infected or bleeding. The instructions also pointed respondents towards two animations that had been produced to help people collect hair and DBS samples.[4]

4.5 Interviewer materials

In addition to the documents already mentioned, interviewers and nurses were provided with materials that would help them with conducting fieldwork. These included:

- Sample information sheets (SIS) – one per household, including a few details about that household and who lived there[5]
- A set of instructions covering all aspects of fieldwork and a set of protocols for collecting biomeasures and biological samples
- Showcards
- Understanding Society branded cards that could be used for appointments or as a calling card
- Tracing letters that could be used to help find sample members who had moved
- Thank you leaflets (to be handed out at the end of an interview)
- Spare copies of advance letters.

[4] www.understandingsociety.ac.uk/hair and www.understandingsociety.ac.uk/blood

[5] The SIS included details such as incentive type, outcomes at previous wave, age and gender of household members, and whether the household was in the feedback or no feedback experimental group. Full sample information (names, addresses, telephone numbers etc) was held electronically on interviewers and nurses CAPI laptops, and not included on the SIS.

5. The interview

The main component of the IP12 interview was the individual adult questionnaire. This was administered using a CAI script, and interviews were attempted with all individuals aged 16 or more in the household. Just over a third of interviews (35%) were conducted face-to-face by interviewers, and 31% were conducted face-to-face with nurses, and the CAPI questionnaire also included a self-completion (CASI) section. A third of interviews (31%) were conducted online and a small number (1%) of respondents took part by telephone. Other elements of the IP12 interview were:

- The household enumeration grid and household questionnaire (completed once per household)
- The youth self-completion questionnaire for 10-15 year olds (on paper)
- A proxy interview for adults that were unable or unwilling to complete a full interview.

5.1 Interview length

Face-to-face individual interviews were longer than usual due to the inclusion of measures taken during the interview. They were particularly long for nurses to allow time for the collection of biological samples.

Table 5.1: Median interview lengths (hours, minutes and seconds) by interview type

Questionnaire element	CAPI interviews with nurses	CAPI interviews with interviewers	CAWI interviews
Household questionnaire (including enumeration)	0:10:59	0:08:02	0:08:50
Individual adult CAI questionnaire	1:22:02	0:52:56	n/a
Individual adult CASI questionnaire	0:09:03	0:09:06	n/a
Individual adult questionnaire – total (CAI +CASI)	1:30:34	1:02:00	0:31:32
CAI proxy questionnaire	0:07:21	0:05:53	n/a

5.2 Equipment for taking biomeasures

Both interviewers and nurses were collected height, weight and blood pressure during interviews, where respondents agreed to this. To do this they used the following equipment:

- SECA 877 scales
- Leicester Stadiometers
- Omron HEM 907 BP monitor

They also carried digital thermometers in order to take the air temperature at the time of the blood pressure measurement.

Nurses also carried additional equipment to enable them to collect hair, whole blood, and dried blood spot samples.

Table 5.2: Equipment carried by nurses for taking hair, DBS and whole blood samples

For hair samples:	For DBS samples:	For blood samples:
Contents of self-collection hair kits as described in table 4.1	Contents of self-collection DBS kits as described in table 4.1 and also: • Isopropyl Alcohol Hand gel • Disposable gloves • Micropore tape and gauze pad (if allergic to plasters)	• 6ml serum tube - red (x2) • 6ml Li Heparin tube – green • 4ml K2 EDTA tube – Purple • 2 ml K3 EDTA tube – Lilac • Laboratory Despatch note for Lab • 5 slot clam shells • Polylope envelope

In addition, nurses carry a standard kit containing the following:

- Box of alcohol swabs
- Box of non-alcohol swabs
- Pack of Tournistrip tourniquets
- Set of needles (butterfly & straight)
- Pack gauze swabs
- Micropore tape roll
- Box of gloves (non-latex disposable)
- Sharps bin (1L flip top)

5.3 Questionnaire programming

The CAI instrument was programmed using Unicom Intelligence software (previously known as IBM Data Collection), which is able to handle the complexity of the Understanding Society questionnaire. The same script was used for CAPI, CAWI and CATI, with some minor modifications to allow for mode type. Two scripts were created, the first was at household level and included the household enumeration grid, the household questionnaire and administrative content such as call records. The second was the individual level script which included the adult interview, proxy interview and administration of the youth self-completion questionnaire.

5.4 Youth self-completion questionnaire

Youth questionnaires for sample members aged 10 to 15 were completed on paper, although the individual level script included information to help interviewers and nurses administer these. Firstly interviewers and nurses sought verbal consent from a parent or guardian, then asked the young person if they would complete the questionnaire. The interviewer or nurse used information from the CAI instrument to fill in some details on the front of the questionnaire, before handing it to the young person along with an envelope in which to seal it when completed, and a £5 voucher. Ideally the young person would complete the questionnaire while the interviewer or nurse was in the household, but this was not always possible.

Interviewers and nurses could also leave questionnaires with parents to be given to the young person.

Interviewers and nurses were encouraged to go back to households to collect completed questionnaires, but as a last resort sample members could be left with a reply paid envelope in which to return the questionnaire themselves.

5.4.1 Households completing via web

Where the household completed the survey online, questionnaires were posted to a parent (who had completed online) with a request to ask their child to complete and return the paper questionnaire.

5.5 Translations

The CAPI questionnaire and documents were translated into Welsh. However, no respondents required a Welsh interview.

5.6 Audio recording

If respondents gave permission, sections of the interview were recorded. This included:

- Interviewers/nurses measuring blood pressure, height and weight
- Nurses taking hair, DBS and whole blood samples
- Interviewers handing out hair and DBS kits
- Interviewers/nurses asking respondents for the blood pressure readings they may have collected ahead of the interview.

6. Piloting and development

There were three stages of development work. The first two were focused on the collection of blood and hair samples. These were designed to test and revise the kits and instructions provided to participants, as well as the protocols for nurses at stage 2. The third stage was a small-scale pilot of all fieldwork procedures.

6.1 Stage 1: in-office test of hair and DBS self-collection

In April 2018, 11 volunteers from Kantar (with no knowledge of the hair and DBS sampling procedures) tested the instructions and kits for self-collection of hair and DBS samples. There was not sufficient time to get ethical approval for this stage of testing and so the volunteers were not able to actually take any samples, but they worked through the instructions and completed all the steps apart from puncturing their skin or cutting their hair. The volunteers were observed and were asked to 'think aloud' as they worked through the instructions, as well as pointing out if they found anything difficult or unclear.

6.2 Stage 2: test of hair and blood sampling instructions and protocols

In June 2018 both the kits and instructions for self-collected samples and the protocols for nurses to collect hair, DBS and whole blood samples were tested.

For the self-collected samples, 6 members of the public were pre-recruited. Researchers visited their homes to observe them collecting hair and DBS samples using the kits and instructions. The participants were asked to use the instructions and kits as they would if completing the sample collection without being observed, although some did ask questions if unsure at any point.

A nurse attempted to collect hair, DBS and whole blood samples from 12 pre-recruited members of the public by visiting their homes. Two could not give a hair sample due to lack of hair, one was excluded from both types of blood sampling due to taking blood thinners, and one refused the whole blood sample. The purpose of this was to test the protocols and equipment provided to nurses was suitable.

Both these stages of pre-testing were useful in refining the instructions, equipment and protocols for sample collection.

6.3 Stage 3: Pilot

Pilot fieldwork took place between the 7th of March and the 8th of April 2019. Interviews were achieved with 56 individuals in 38 households.

The pilot replicated the design of main fieldwork. The purpose was to test the script, documents and equipment ahead of the main field work period. In particular, it was to see how interviewers, nurses and respondents coped with the extra demands of requesting or collecting health measures and biological samples during the interviews.

The pilot tested all fieldwork procedures, including the collection of samples, but did not test the process of sending samples to labs for analysis. Samples from the pilot were not analysed, and respondents were informed of this during fieldwork.

7. Briefings

All interviewers and nurses working on the study were fully briefed, at face-to-face briefings, before the start of fieldwork.

7.1 Interviewer briefings

All interviewers who worked on IP12 were already working on Understanding Society, so the briefings did not need to cover general fieldwork procedures, but were focused on the elements of the study that were new to interviewers. Briefings lasted two days and covered:

Day 1

- An overview of the experiments included in IP12
- Reasons for collecting health measures
- Overall fieldwork design
- Survey documents and when to use them
- Procedures for measuring blood pressure, height and weight (demonstration, then practice)
- Kits for collecting hair and DBS samples (including how to label, when to use, and questions respondents might have)
- Sections of the questionnaire that would be recorded (if permission given) and how to send the recordings back

Day 2

- Accreditations for measuring height, weight and blood pressure
- Topics covered by the questionnaire
- Maximising response (to the study overall and to biomeasures)
- Carrying and handling equipment
- Fieldwork admin.

Accreditations involved observing each interviewer complete the full blood pressure, height and weight measuring procedures (using another interviewer as a respondent). Interviewers would pass the accreditation if they made no mistakes, or a small number of minor mistakes (such as forgetting to ask the respondent to empty their pockets before being weighed, or ensuring they have their legs uncrossed for the blood pressure measurement). On passing, any minor mistakes were fed back to the interviewer to remind them of the correct procedure. If they made several minor mistakes or a major error (such as incorrectly placing the blood pressure cuff, or incorrectly recording a reading) the interviewer would have to repeat the accreditation for that measure later in the day.

7.2 Nurse briefings

As the tasks for nurses included tasks usually undertaken by an interviewer, and as nurses did not have prior knowledge of the study, all nurses attended a longer briefing which also covered an introduction to Understanding Society and general fieldwork procedures. Briefings lasted three days and covered:

Day 1

- An introduction to Understanding Society and the Innovation Panel
- An overview of the nurse assignment tasks (including longitudinal sample, households and type of individuals, case structure, observation questions and household grid principles)
- Guidance on making contact (phone and doorstep)
- Managing assignments on the device – covering the Kantar CAPI systems and the electronic contact sheet (for recording calls, coding outcomes and accessing questionnaires)
- Additional admin in NatCen CAPI systems required as part of the assignment

Day 2

- Review of day 1
- CAPI case practice which involved nurses working independently on their laptops using a series of scenarios and practice interviews
- Troubleshooting
- Fieldwork materials and when to use them
- Youth self-completion questionnaire
- Overcoming reluctance – response targets, how to maximise response and how to handle objections
- Movers and tracing
- Overview of the nurse content including blood pressure, height and weight and an introduction to the biological samples
- Tips for success

Nurses were given homework to undertake between days 2 and 3 of the briefing.

Day 3

- Review of homework
- An overview of the experiments included in IP12
- Reasons for collecting health measures
- Accreditations for measuring height, weight and blood pressure
- Introduction to consent for biological samples
- Kits for collecting hair and DBS and blood samples (including how to label, how and when to use, and questions respondents might have)
- Handling equipment
- Fieldwork practicalities
- Support during fieldwork

8. Response

8.1 Household level response rates

Of the 2,162 households issued for IP12, 32 were ineligible but an additional 64 eligible 'split off' households were created during fieldwork[6], meaning there were 2,194 eligible households in total. Of eligible households, 62% were productive, but this varied for the different samples included, as shown in table 8.1 below.

Table 8.1 Household level response rate, by sample type

	Original IP	IP4 refresh	IP7 refresh	IP10 refresh	IP11 refresh	Total
Any productive	**71.4%**	**66.4%**	**67.8%**	**53.5%**	**51.4%**	**62.4%**
Fully productive	52.8%	49.8%	47.8%	35.6%	33.8%	44.2%
Partially productive	18.5%	16.6%	20.0%	17.9%	17.6%	18.2%
Any unproductive	**28.6%**	**33.6%**	**32.2%**	**46.5%**	**48.6%**	**37.6%**
HH element(s) only	1.5%	1.7%	3.1%	1.3%	1.9%	1.9%
Refusal	18.1%	17.6%	16.7%	28.8%	32.0%	22.9%
Non-contact	2.9%	5.0%	4.2%	5.8%	5.6%	4.5%
Other unproductive	6.1%	9.3%	8.3%	10.6%	9.0%	8.3%
Base	*653*	*301*	*360*	*312*	*568*	*2,194*

There was a big difference in response rates dependent on whether the household had taken part at the previous wave: 71% of households that has been productive at IP11 were productive again at IP12 but only 25% of households that had not been productive at IP11 were productive at IP12. This is shown in table 8.2.

[6] A split off household is created when an original sample member moves out of the household they had been living in.

Table 8.2 Household level response rate, by previous wave participation

	Households productive last wave	Households not productive last wave	Total
Any productive	**70.5%**	**24.9%**	**62.4%**
Fully productive	50.5%	15.1%	44.2%
Partially productive	20.0%	9.7%	18.2%
Any unproductive	**29.5%**	**75.1%**	**37.6%**
HH element(s) only	1.8%	2.1%	1.9%
Refusal	19.2%	40.0%	22.9%
Non-contact	3.3%	10.0%	4.5%
Other unproductive	5.1%	23.1%	8.3%
Base	*1,804*	*390*	*2,194*

The response rate was slightly higher for households that were issued web-first (66%) compared with households issued to interviewers and nurses (60% and 61% respectively). This is shown in table 8.3.

Table 8.3 Household level response rate, by issue mode

	Web first	Interviewer first	Nurse first	Total
Any productive	**66.3%**	**59.8%**	**61.1%**	**62.4%**
Fully productive	47.2%	42.6%	42.9%	44.2%
Partially productive	19.2%	17.2%	18.2%	18.2%
Any unproductive	**33.7%**	**40.2%**	**38.9%**	**37.6%**
HH element(s) only	2.1%	1.7%	1.9%	1.9%
Refusal	17.8%	23.3%	27.5%	22.9%
Non-contact	5.5%	5.5%	2.5%	4.5%
Other unproductive	8.3%	9.7%	7.0%	8.3%
Base	*725*	*721*	*748*	*2,194*

8.2 Individual level response rates

There were 4,191 eligible adults issued for IP12 (including new entrants). Of these, 2,150 (51%) completed a full adult interview and a further 12 partially completed an adult interview. There were also 51 proxy

interviews (1%). The response rate was much higher for adults that had taken part at the previous wave (68%, including partial interviews) than those that had not (19%). This is shown in table 8.4.

Table 8.4 Individual level response rate, by previous wave participation

	Adults productive last wave	Adults not productive last wave	Total
Full adult interview	67.2%	18.6%	51.3%
Partial adult interview	0.3%	0.3%	0.3%
Proxy interview	0.7%	2.3%	1.2%
Unproductive	31.8%	78.7%	47.2%
Base	*2,817*	*1,374*	*4,191*

As with households, the individual level response rate was a little higher for the web first group (55%) than for the interviewer and nurse first groups (49% and 50% respectively). This is shown in table 8.5.

Table 8.5 Individual level response rate, by issue mode

	Web first	Interviewer first	Nurse first	Total
Full adult interview	54.6%	48.9%	50.2%	51.3%
Partial adult interview	0.6%	0.1%	0.1%	0.3%
Proxy interview	0.8%	1.6%	1.2%	1.2%
Unproductive	43.9%	49.4%	48.5%	47.2%
Base	*1,433*	*1,349*	*1,409*	*4,191*

In households where at least one adult took part in the survey, there were 231 eligible 10 to 15 year olds. Of these, 139 (60%) completed a youth paper questionnaire.

9. Data

9.1 Combining CAWI and CAPI data

At IP12 there were two sources of CAI data to be merged – CAPI and CAWI (CATI interviews were also completed on the CAPI script). This meant the first stage of data processing was combining the CAPI and CAWI data together.

There were measures in place within the electronic sample management system to minimise the chances of duplicate interviews being conducted on CAPI and CAWI. Data was passed between the CAPI and CAWI systems daily but the transfer of information to and from CAPI was reliant on interviewers and nurses synchronising their laptops. In general interviewers and nurses would synchronise each day that they worked on Understanding Society but there could be circumstances under which they did not. There were therefore a very small number of duplicate interviews across CAPI and CAWI and the data merging process needed to take account of these. If both interviews were fully complete then the more recent interview was usually selected.

It was also possible for a respondent to start their interview on CAWI and complete it via CAPI. In these cases the interview would restart at the beginning of the first incomplete module (so respondents might be re-asked a few questions) rather than the specific question at which the interview had finished on CAWI. Such cases were extremely rare but, again, the data merging process needed to allow for this and stitch the two partial interviews together.

While IP12 used the same CAI script across modes (with routing to tailor question wording depending on the mode), there were some questions which had to be scripted separately for different modes because different question layouts were used. For example at some questions the CAWI script made use of drop down lists rather than standard response lists. In raw data there would be two versions of the question, one for CAPI and one for CAWI (and CATI) so the formatted data needed to draw data from both of these.

9.2 Data scanning and reconciliation

The vast majority of Understanding Society data was collected using CAI scripts. The scripts made use of consistency checks and range checks to clarify any data discrepancies with respondents as they arose. This means there was little need for any cleaning or editing of the data after fieldwork.

The exception to this was the data from:

- Youth self-completion questionnaires;
- Assessment of experience questionnaires (sent to participants after their interview to gather feedback on the process);
- Haircare questionnaires handed or posted out with hair and blood sampling kits for respondents that took part online or with an interviewer.

As these were completed on paper there could be data inconsistencies such as missing data, routing errors, multiple answers at single choice questions, and values out of range. Questionnaires were scanned to capture the data, and then a series of checks were undertaken to find any inconsistencies. Rules were agreed for how to handle data inconsistencies and edits applied in accordance with these rules.

Scanned data from youth self-completion questionnaires needed to be reconciled against CAI data to ensure data was attributed to the correct sample member. This was done using serial number, name, date of birth and gender.

Assessment of experience questionnaires included a PID to allow them to be matched back to the rest of the data, but no other identifiers were included so it was not possible to conduct further checks on whether they matched the right sample member. Hair care questionnaires included a PID and a barcode (the same barcode applied to the biological samples) to help with reconciliation.

9.3 SIC and SOC coding

Questions from the employment and proxy sections of the questionnaire were coded to 4 digit SIC and SOC codes. The codes and verbatims were included in the data.

9.4 Data checking

Once data from all sources had been combined and formatted, a series of checks were undertaken to validate the data and ensure consistency of format. Three rounds of checking were employed:

- Administrative checks on individuals and households – these were to ensure that all households and individuals were included in the data with a final outcome, that individuals were finally located in one household, that outcomes were consistent with the presence of raw data, and that and joiners added to the household grid were accounted for.
- Structural checks on all files – these checked the format of files, and also that the right households and individuals were included in each file.
- Routing checks – these checked, for every variable, that a response was present when there should be a response, and not present where there should not be a response, according to questionnaire routing.

9.5 Changes to the script after fieldwork began that affect data

Initially the script was routed so that sample members who completed via CAWI were only asked if a hair and blood kit could be posted to them if they were in the web first experimental group. This was amended early on in fieldwork so that anyone who completed online was asked (as long as they were not pregnant or breastfeeding). Only 10 sample members who were not in the web first group completed online before this change was made and so were not offered a hair and blood sampling kit.