Appendix B

Measurement protocols

- Height, weight and infant length measurement
- Recording ambient air temperature
- Blood pressure measurement
- Measurement of demispan
- Measurement of waist and hip circumferences
- Non fasting blood sample
- Sending blood, saliva and urine to the laboratory
- Saliva sample collection
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Appendix B
Measurement protocols

HEIGHT, WEIGHT AND INFANT LENGTH MEASUREMENT

1.1 Eligibility
You should be able to measure the height and weight of most of the informants. However, in some cases it may not be possible or appropriate to do so. Do not force the informant to be measured if it is clear that the measurement will be far from reliable but whenever you think a reasonable measurement can be taken, do so. Examples of people who should not be measured are:

- Chairbound informants.
- If after discussion with an informant it becomes clear that they are too unsteady on their feet for these measurements
- If the informant finds it painful to stand or stand straight, do not attempt to measure height.
- If an elderly informant is too stooped to obtain a reliable measurement.
- Pregnant women are not eligible for weight as this is clearly affected by their condition.
- Children under the age of 2 years do not have their height measurement taken.
- For small children, there is an option to weight them held by an adult. In this case, you weight the adult on his/her own first and then the adult and the child. The computer will calculate the child’s weight.

1.2 Site
It is strongly preferable to measure height and weight on a floor which is level and not carpeted. If the entire household is carpeted, choose a floor with the thinnest and hardest carpet (usually the kitchen or bathroom).

1.3 Height measurements
The equipment
Portable stadiometer - collapsible device with a sliding head plate, a base plate and three connecting rods marked with a measuring scale.
Frankfort plane card

The protocol – adults (aged 16 and over)
1. Ask the informant to remove their shoes in order to obtain a measurement that is as accurate as possible.
2. Assemble the stadiometer and raise the headplate to allow sufficient room for the informant to stand underneath it. Double check that you have assembled the stadiometer correctly.
3. The informant should stand with their feet flat on the centre of the base plate, feet together and heels against the rod. The informant’s back should be as straight as possible, preferably against the rod but NOT leaning on it. They should have their arms hanging loosely by their sides. They should be facing forwards.
4. Move the informant’s head so that the Frankfort Plane is in a horizontal position (i.e. parallel to the floor). The Frankfort Plane is an imaginary line passing through the external ear canal and across the top of the lower bone of the eye socket, immediately underneath the eye (see diagram). This position is important if an accurate reading is to be obtained. An additional check is to ensure that the measuring arm rests on the crown of the head, i.e. the top back half.
   To make sure that the Frankfort Plane is horizontal, you can use the Frankfort Plane Card to line up the bottom of the eye socket with the flap of skin on the ear. The Frankfort Plane is horizontal when the card is parallel to the stadiometer arm.
5. Instruct the informant to keep their eyes focused on a point straight ahead, to breathe in deeply and stretch to their fullest height. If after stretching up the informant’s head is no longer horizontal, repeat the procedure. It can be difficult to determine whether the stadiometer headplate is resting on the informant’s head. If so, ask the informant to tell you when s/he feels it touching their head.
6. Ask the informant to step forwards. If the measurement has been done correctly the informant will be able to step off the stadiometer without ducking their head. Make sure that the head plate does not move when the informant does this.
7. Look at the bottom edge of the head plate cuff. There is a green arrowhead pointing to the measuring scale. Take the reading from this point and record the informant’s height in centimetres and millimetres, that is in the form 123.4, at the question Height. You may at this time record the informant’s height onto their Measurement Record Card and at the question Mobile? you will be asked to check that you have done so. At that point the computer will display the recorded height in both centimetres and in feet and inches. At Relitie8 you will be asked to code whether the measurement you obtained was reliable or unreliable.
8. Height must be recorded in centimetres and millimetres, e.g. 176.5 cm. If a measurement falls between two millimetres, it should be recorded to the nearest even millimetre. For example, if informant’s height is between 176.4 and 176.5 cm, you should round it down to 176.4. Likewise, if an informant’s height is between 176.5 and 176.6 cm, you should round it up to 176.6 cm.
9. Push the head plate high enough to avoid any member of the household hitting their head against it when getting ready to be measured.

The protocol – children (aged 2-15)
The protocol for measuring children differs slightly to that for adults. You must get the co-operation of an adult household member. You will need their assistance in order to carry out the protocol, and children are much more likely to be co-operative themselves if another household member is involved in the measurement. If possible measure children last so that they can see what is going on before they are measured themselves.

Children’s bodies are much more elastic than those of adults. Unlike adults they will need your help in order to stretch to their fullest height. This is done by stretching them. This is essential in order to get an accurate measurement. It causes no pain and simply helps support the child while they stretch to their tallest height.
It is important that you practice these measurement techniques on any young children among your family or friends. The more practice you get before going into the field the better your technique will be.

1. In addition to removing their shoes, children should remove their socks as well. This is not because the socks affect the measurement. It is so that you can make sure that children don't lift their heels off of the base plate. (See point 3 below).

2. Assemble the stadiometer and raise the head plate to allow sufficient room for the child to stand underneath it.

3. The child should stand with their feet flat on the centre of the base plate, feet together and heels against the rod. The child's back should be as straight as possible, preferably against the rod, and their arms hanging loosely by their sides. They should be facing forwards.

4. Place the measuring arm just above the child's head.

5. Move the child's head so that the Frankfort Plane is in a horizontal position. This position is as important when measuring children as it is when measuring adults if the measurements are to be accurate. To make sure that the Frankfort Plane is horizontal, you can use the Frankfort Plane Card to line up the bottom of the eye socket with the flap of skin on the ear. The Frankfort Plane is horizontal when the card is parallel to the stadiometer arm.

6. Cup the child's head in you hands, placing the heels of your palms either side of the chin. Your fingers should come to rest just under the ears.

7. Firmly but gently, apply upward pressure lifting the child's head upwards towards the stadiometer headplate and thus stretching the child to their maximum height. Avoid jerky movements, perform the procedure smoothly and take care not to tilt the head at an angle: you must keep it in the Frankfort plane. Explain what you are doing and tell the child that you want them to stand up straight and tall but not to move their head or stand on their tip-toes.

8. Ask the household member who is helping you to lower the head plate down gently onto the child's head. Make sure that the plate touches the skull and that it is not pressing down too hard.

9. Still holding the child's head, relieve traction and allow the child to stand relaxed. If the measurement has been done properly the child should be able to step off the stadiometer without locking their head. Make sure that the child does not knock the head plate as they step off.

10. Read the height value in metric units to the nearest millimetre and enter the reading into the computer at the question Height. At the question MbookHt you will be asked to check that you have entered the child's height onto their Measurement Record Card. At that point the computer will display the recorded height in both centimetres and in feet and inches.

11. Push the head plate high enough to avoid any member of the household hitting their head against it when getting ready to be measured.

Additional points – all informants

1. If the informant cannot stand upright with their back against the stadiometer and have their heels against the rod (e.g. those with protruding bottoms) then give priority to standing upright.

2. If the informant has a hair style which stands well above the top of their head, (or is wearing a turban), bring the head plate down until it touches the hair/furban. With some hairstyles you can compress the hair to touch the head. If you can not lower the head plate to touch the head, and think that this will lead to an unreliable measure, record this at question RetRtite. If it is a hairstyle that can be altered, e.g. a bun, if possible ask the informant to change/undo it.

3. If the informant is tall, it can be difficult to line up the Frankfort Plane in the way described. When you think that the plane is horizontal, take one step back to check from a short distance that this is the case.

1.4 Weight measurements

The equipment

Soehnle, Seca or Tanita electronic bathroom scales, calibrated for the Health Survey.

The reading is shown in metric units, but as for height, the computer provides a conversion. If the informant would like to know their weight in stones and pounds you will be able to tell them when the computer has done the calculation. You also have a conversion chart on the back of the coding booklet.

The scales have an inbuilt memory which stores the weight for 10 minutes. If during this time you weigh another object that differs in weight by less than 500 grams (about 1 lb), the stored weight will be displayed and not the weight that is being measured. This means that if you weigh someone else during this time, you could be given the wrong reading for the second person.

So if you get an identical reading for a second person, make sure that the memory has been cleared.

Clear the memory from the last reading by weighing an object that is more than 500 grams lighter (i.e. a pile of books, your briefcase or even the stadiometer). You will then get the correct weight when you weigh the second informant.

You will only need to clear the memory in this way if:

a) You have to have a second or subsequent attempt at measuring the same person

b) Two informants appear to be of a very similar weight

c) Your reading for an informant in a household is identical to the reading for another informant in the household whom you have just weighed.

The protocol

1. Turn the display on by using the appropriate method for the scales. In most cases, this will involve pressing firmly with your hand or foot on top of the scales (the scales will automatically turn off after a short time). The readout should display 8888.8 (8888 for the Seca 870) momentarily. If this is not displayed check the batteries, if this is not the cause you will need to report the problem to the National Centre at Brentwood. While the scales read 8888.8 do not attempt to weigh anyone.

2. Ask the informant to remove shoes, heavy outer garments such as jackets and cardigans, heavy jewellery, loose change and keys.
3. Turn the scales on with your foot again. Wait for a display of 0.0 before the informant stands on the scales.

4. Ask the informant to stand with their feet together in the centre and their heels against the back edge of the scales. Arms should be hanging loosely at their sides and head facing forward. Ensure that they keep looking ahead - it may be tempting for the informant to look down at their weight reading. Ask them not to do this and assure them that you will tell them their weight afterwards if they want to know.

The posture of the informant is important. If they stand to one side, look down, or do not otherwise have their weight evenly spread, it can affect the reading.

5. The scales will take a short while to stabilise and will read ‘C’ until they have done so. (The Seca 870 displays alternate flashing lines in the display window. With the Tanita scales the weight will flash on and off when stabilised). If the informant moves excessively while the scales are stabilising you may get a false reading. If you think this is the case reweigh, but first ensure that you have erased the memory.

6. The scales have been calibrated in kilograms and 100 gram units (0.1 kg). Record the reading into the computer at the question ‘Weight’ before the informant steps off the scales. At question MBookW7 you will be asked to check that you have entered the informant’s weight onto their Measurement Record Card. At that point the computer will display the measured weight in both kilos and in stones and pounds.

WARNING
The maximum weight registering accurately on the scales is 130kg (20½ stone). If you think the informant exceeds this limit code them as “Weight not attempted” at RespWts. The computer will display a question asking them for an estimate. Do not attempt to weigh them.

Additional points
Pregnant women do not have their weight measured. For women informants aged 16-49, the computer displays a question asking them whether they are pregnant and then enforces the appropriate routing. If you have an informant aged under 16 who is obviously pregnant, codes as “Weight not attempted” at RespWts and “Other – specify” at NoWtsM.

Weighing Children
You must get the co-operation of an adult household member. This will help the child to relax and children, especially small children are much more likely to be co-operative themselves if an adult known to them is involved in the procedure.

Children wearing nappies should be wearing a dry disposable. If the nappy is wet, please ask the parent to change it for a dry one and explain that the wetness of the nappy will affect the weight measurement.

In most cases it will be possible to measure children’s weight following the protocol set out for adults. However, if accurate readings are to be obtained, it is very important that informants stand still. Ask the child to stand perfectly still - "Be a statue." For very young children who are unable to stand unaided or small children who find this difficult you will need to alter the protocol and first weigh an adult then weigh that adult holding the child as follows:-

a) Code as “Weight obtained (child held by adult)” at RespWts
b) Weigh the adult as normal following the protocol as set out above. Enter this weight into the computer at WdAdult.
c) Weigh the adult and child together and enter this into the computer at WdChAd.

The computer will then calculate the weight of the child and you will be asked to check that you have recorded the weight onto the child’s Measurement Record Card at MBookW7. Again the computer will give the weight in both kilos and in stones and pounds.

1.5 Infant length measurement

1.5.1 Eligibility
This measurement is for infants aged under 2 years but at least 6 weeks old.

1.5.2 Equipment
Rollometer Baby Measure Mat
Frankfort Plane Card
Kitchen roll

1.5.3 Procedure
Infants (children under the age of 2) should be measured lying down (supinely). Two people are required for the task, yourself and the child’s parent.

1. Ask the parent to remove any bulky clothing that the infant is wearing. It is not necessary for them to remove the infant’s nappy.

2. Unroll the Rollometer and lay it flat on any suitable flat, firm surface (e.g. table, floor). It is essential that the Rollometer is fully unrolled and as flat as possible, therefore doing the measurement on a deep pile carpet or rug would not be appropriate. Lay one layer of kitchen roll on the mat (just in case there are any accidents!!)

If taking the measurement on a table, take extra care and ensure that somebody is with the infant at all times to prevent them rolling/falling off the table.

3. Place the child onto the foam bed with his/her head touching the headpiece on which the name Rollometer is printed.
4. Move the child’s head so that Frankfort Plane is in a position at right angles to the floor/table (see diagram below). Ask the parent to hold the child in this position and make sure their head is in contact with the headpiece.

5. Straighten the child’s legs by holding the legs by the ankles with one hand and applying a gentle downward pressure.

6. With your free hand, move the foot rest on which the measuring tape is mounted to touch the child’s heels by depressing the red button on the tape measure.

7. The measurement is read from the red cursor in the tape window. The measurement is recorded in centimetres and millimetres to the nearest millimetre. If the measurement lies between two millimetres then you should round to the nearest even millimetre. For example, if the measurement is halfway between 68.3 and 68.4, then round up to 68.4. If the measurement is halfway between 68.8 and 68.9 then round down to 68.8.

2 Recording ambient air temperature

2.1 The thermometer

You have been provided with a digital thermometer and probe. This instrument is very sensitive to minor changes in temperature. It is therefore important that you record temperature at the appropriate time in your routine. It can also take a few minutes to settle down to a final reading if it is experiencing a large change in temperature (e.g. coming into a warm house from a cold outside).

Immediately after you have settled the informant down to rest for five minutes prior to taking their blood pressure set up the thermometer to take a reading. Just prior to recording the blood pressure note the temperature and record it when the computer prompts you to do so. Always switch it off after taking a reading, to avoid battery problems. The thermometer automatically switches off if you have left it on for more than 7 minutes.

Place the thermometer on a surface near the Omron. Do not let the probe touch anything - you can for example let it hang over the edge of a table. Do not put it on top of the Omron as it will be warm.

Please note that you must enter the temperature to one decimal place - do not round it to the nearest degree. For example, enter ‘21.2’, not just ‘21’. If you do not enter a decimal point, the computer will give you a warning. If the temperature is exactly, say, 21 degrees, then all you need to do is suppress the warning and it will automatically fill in the ‘.0’ for you. Otherwise, you must go back and amend your answer. As a further check, it will also ask you to confirm that a temperature ending in ‘.0’ is correct.

2.2 Instructions for using the thermometer

1. The probe plug fits into the socket at the top of the instrument.

2. Press the completely white circle to turn the instrument on. To turn off, press the white ring.

3. Before taking a reading off the display, ensure that the reading has stabilised.

4. Be careful of the probe - it is quite fragile.

5. When ‘LO BAT’ is shown on the display the battery needs replacing, take no further readings.

6. The battery in your thermometer is a long-life battery and should last at least one year. However, should it run low please purchase a new battery. Take the old one with you to ensure it is the same type. Claim in the usual way.

7. To remove old battery and insert a new one, unscrew the screw on the back of the thermometer.

3 BLOOD PRESSURE MEASUREMENT (Aged 5+)

3.1 Eligibility

High blood pressure is an important risk factor for cardiovascular disease. It is important that we look at the blood pressure of everyone in the survey using a standard method so we can see the distribution of blood pressure across the population. This is vital for monitoring change over time, and monitoring progress towards lower blood pressure targets set in the Health of the Nation.

The only people not eligible for blood pressure measurement are those who are pregnant or aged less than 5 years old. However, if a pregnant woman wishes to have her blood pressure measured, you may do so, but do not record the readings on the computer.

Timings: Blood pressure can be higher than normal immediately after eating, smoking, drinking alcohol or taking vigorous exercise. This is why respondents are asked to avoid doing these for 30 minutes before you arrive. As already suggested, if you can juggle informants within a household around to avoid having to break this “half-hour” rule, do so. But sometimes this will not be possible and you will have to take their blood pressure within this time period. In which case enter all the codes that apply at ConSubX.

3.2 Protocol for blood pressure recording: Omron hem-907

This section describes the protocol for measuring blood pressure using the Omron HEM 907. More detailed information may be obtained from the instructions booklet inside the box. If you have any further questions or problems then please contact the Survey Doctor.

Protocol

Equipment
Omron HEM 907 blood pressure monitor
Small cuff (17-22 cm)
Standard adult cuff (22-32 cm)
Large adult cuff (32-42 cm)
AC adapter

The Omron HEM-907 blood pressure monitor is an automated machine. It is designed to measure systolic blood pressure, diastolic blood pressure and pulse rate automatically at pre-selected time intervals. On this study three readings are collected at one-minute intervals.

The Omron 907 is equipped with a rechargeable battery, which is usable for approximately 300 measurements when fully charged. To recharge the battery, connect the monitor to the mains. A battery symbol will appear in the CHARGING display when the battery is charging. When ready to use the symbol will disappear. A dark battery symbol in the BATTERY display indicates that the battery is charged and the machine is usable. The battery can be charged in approx. 12 hours. When the battery symbol in the BATTERY display starts to flash there are 20-30 measurements left, you need to charge the battery soon. When a light battery symbol appears in the BATTERY display the battery needs to be put on charge immediately. The Omron 907 is NOT designed to work off the mains adaptor; it should be run off the battery power pack. The mains adaptor should ONLY be used to charge the battery pack.

Please remember to charge the battery!!!

The picture below shows the main features of the Omron HEM-907.

3.3 Preparing the informant
The informant should not have eaten, smoked, drunk alcohol or taken vigorous exercise in the 30 minutes preceding the blood pressure measurement as blood pressure can be higher than normal immediately after any of these activities.

Ask the informant to remove outer garments (e.g. jumper, cardigan, jacket) and expose the right upper arm. The sleeve should be rolled or slid up to allow sufficient room to place the cuff. If the sleeve constricts the arm, restricting the circulation of blood, ask the informant if they would mind taking their arm out of the sleeve for the measurement.

3.4 Selecting the correct cuff
Adults aged 16 and over: Do not measure the upper arm circumference. Instead, choose the correct cuff size based on the acceptable range which is marked on the inside of the cuff. You will note that there is some overlap between the cuffs. If the informant falls within this overlap range then use the standard cuff where possible.

Children aged 5 to 15: It is important to select the correct cuff size. The appropriate cuff is the largest cuff which fits between the axilla (underarm) and the antecubital fossa (front of elbow) without
obscuring the brachial pulse and so that the index line is within the range marked on the inside of the cuff. You will be provided with a child’s cuff as well as the other adult cuffs. Many children will not need the children’s cuff and instead will require a small adult cuff or a standard adult cuff. You should choose the cuff that is appropriate to the circumference of the arm.

Adults and Children: The appropriate cuff should be connected via the grey air tube to right end side of the monitor.

3.5 Procedure

Wrap the correct sized cuff round the upper right arm and check that the index line falls within the range lines. Use the left arm only if it is impossible to use the right. If the left arm is used, record this on the schedule. Locate the brachial pulse just medial to the biceps tendon and position the arrow on the cuff over the brachial artery. The lower edge should be about 1-2 cm above the cubital fossa (elbow crease).

Do not put the cuff on too tightly as bruising may occur on inflation. Ideally, it should be possible to insert two fingers between cuff and arm. However, the cuff should not be applied too loosely, as this will result in an inaccurate measurement.

The informant should be sitting in a comfortable chair with a suitable support so that the right arm will be resting at a level to bring the antecubital fossa (elbow) to approximately heart level. They should be seated in a comfortable position with cuff applied, legs uncrossed and feet flat on the floor.

Explain that before the blood pressure measurement we need them to sit quietly for five minutes to rest. They should not smoke, eat, drink or during this time. Explain that during the measurement the cuff will inflate three times and they will feel some pressure on their arm during the procedure.

It is important that children as well as adults rest for five minutes before the measurement is taken. However, making children sit still for five minutes can be unrealistic. They may move around a little, but they should not be running or taking vigorous exercise. As with adults, they should not eat or drink during this time.

After five minutes explain you are starting the measurement. Ask the informant to relax and not to speak until the measurement is completed as this may affect their reading.

3.6 How to operate the monitor

See picture of Omron HEM-907 monitor on page XX.

1. Switch the monitor on by pressing the ON/OFF button. Wait for the READY TO MEASURE symbol to light, indicating the machine is ready to start the measurement (approx 2 sec).

2. Check that the MODE Selector is set to AVG and the P-SET (pressure setting) Volume is set to AUTO.

3. Press the START button to start the measurement. The cuff will now start to inflate and take the first measurement. When the first measurement is complete the LCD displays show systolic pressure, diastolic pressure, and pulse rate. Record the readings on the interview schedule.

4. Blood pressure will then be recorded at one-minute intervals thereafter. After each interval record the reading from the LCD displays on the interview schedule.

5. After the three measurements are complete press the ON/OFF button to turn off the power and remove the cuff.

If there are any problems during the blood pressure measurements or the measurement is disturbed for any reason, press the STOP button and start the procedure again. If the informant has to get up to do something, then ask them to sit and rest for five minutes again.

3.7 Error readings

They appear on the LCD display:

Er1, Er2. Check that the tube connecting the cuff to the monitor is properly inserted and it is not bent. Check that the cuff is properly wrapped around the arm. Repeat the measurement.

Er3. Check that the tube connecting the cuff to the monitor is not bent. Repeat the measurement.

Er4. This could be because of a motion artefact. Ask the informant to sit as still as possible and take the measurement again. If you still get another Er4 error reading, it could be because the informant has a very high blood pressure. Set the P-SET Volume to 260 and repeat the measurement.

Er5, Er6. Check that the cuff is properly wrapped around the arm. Repeat the measurement.

If any of these errors readings persist record that it wasn’t possible to get a reading and explain to the informant that this sometimes happens. Then contact Brentwood and inform them that there is a problem with the monitor.

Er7, Er8. Check that the informant does not move, ask the informant to sit as still as possible and take the measurement again. If you still get an error reading the pulse may be irregular. Do NOT palpate the pulse. Record that it wasn’t possible to get a reading and explain to the informant that this sometimes happens.

Er9. Technical fault. Contact Brentwood immediately and inform them that there is a problem with the monitor.

3.8 Feedback to informants

If the informant/parent wishes, you should record details of their readings on their Measurement Record Card. If an adult informant has a raised blood pressure you must give him/her advice based on the result. This will be calculated by the computer and will appear on the screen for you to read out exactly as written. Write any advice given onto the MRD. The interviewer should have given them a MRC with the height and weight recorded on it. If the respondent has lost it, or claims never to have had one, make out a new one, ensuring the name is on the front of the card.

It is not the purpose of this survey to provide informants with medical advice. Nevertheless, many informants will ask you what their blood pressure readings mean. Make sure you are very familiar with the guidance below. We wish it to be strictly followed. It is very important that as little anxiety as possible is caused but at the same time we have a duty to advise people to see their GP’s if blood pressure is raised.

a) Child informants (age 5 to 15)

We do not wish you to comment on the child’s blood pressure readings to the parents. If they seek comment, reiterate what you have already said about not being able to interpret a single blood pressure measurement without checking to see whether it is normal for the child’s age and height. Reassure them that if it is found to be abnormal, the Survey Doctor will get in touch and advice them as to what steps they should take. This rule applies for all readings you obtain.

b) Adult informants (aged 16+)
In answering queries about an adult's blood pressure it is very IMPORTANT to remember that it is not the purpose of the survey to provide informants with medical advice, nor are you in a position to do so as you do not have the informant's full medical history. But you will need to say something. What you say in each situation has been agreed with the Department of Health, and you have been given a sheet with these comments to read out. It is very important that you make all the points relevant to the particular situation and that you do not provide a more detailed interpretation as this could be misleading. Read the instructions below very carefully and make sure you always follow these guidelines.

Your comments should be based on the last two of the first three readings you take from the Omron HEM-907. Base your advice on the higher of the last two readings. If the first reading is higher than the other two, explain that the first reading can be high because people are nervous of having their pressure taken.

Definitions of raised blood pressure differ slightly. The Department of Health has decided to adopt the ones given below for this survey. It is important that you adhere to these definitions, so that all informants are treated in an identical manner. These are shown below.

### ADULTS ONLY

<table>
<thead>
<tr>
<th>SURVEY DEFINITION OF BLOOD PRESSURE RATINGS</th>
</tr>
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<tbody>
<tr>
<td>For men and women aged 16+</td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Systolic</strong></td>
</tr>
<tr>
<td>Normal:</td>
</tr>
<tr>
<td>&lt;140</td>
</tr>
<tr>
<td>Mildly raised:</td>
</tr>
<tr>
<td>140 - 159 or 85 - 99</td>
</tr>
<tr>
<td>Moderately raised:</td>
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<tr>
<td>160 - 179 or 100 - 114</td>
</tr>
<tr>
<td>Considerably raised:</td>
</tr>
<tr>
<td>180 or more or 115 or more</td>
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<tr>
<td>NB: &lt; less than</td>
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</tbody>
</table>

### Points to make to a informant about their blood pressure (given on screen):

**Normal:**

"Your blood pressure is normal."

**Mildly raised:**

"Your blood pressure is a bit high today."

'Blood pressure can vary from day to day and throughout the day so that one high reading does not necessarily mean that you suffer from high blood pressure.'

'You are advised to visit your GP within 2 weeks to have a further blood pressure reading to see whether this is a once-off finding or not.'

**Raised:**

"Your blood pressure is a bit high today."

'Blood pressure can vary from day to day and throughout the day so that one high reading does not necessarily mean that you suffer from high blood pressure.'

'You are advised to visit your GP within 5 days to have a further blood pressure reading to see whether this is a once-off finding or not.'

Note: If the informant is elderly and has severely raised blood pressure, amend your advice so that they are advised to contact their GP within the next week or so about this reading. This is because in many cases the GP will be well aware of their high blood pressure and we do not want to worry the informant unduly. It is however important that they do contact their GP about the reading within 7 to 10 days. In the meantime, we will have informed the GP of their result (providing the informant has given their permission).

### 3.9 Action to be taken by the nurse after the visit

If you need to contact the Survey Doctor, do not do this from the informant's home - you will cause unnecessary distress.

a) Children

No further action is required after taking blood pressure readings on children. All high readings are viewed routinely by the Survey Doctor. However, in the rare event that you encounter a child with a very high blood pressure, i.e. systolic 160 or above or diastolic 110 or above please call the Survey Doctor.

b) Adults

The chart below summarises what action you should take as a result of the knowledge you have gained from taking an adult's blood pressure readings. For this purpose you should only take into account the last two of the three readings you take. We do not want you to use the first reading as it is prone to error for the reason stated above.
### 4. Measurement of Demi-Span (Age 65+)

#### 4.1 Purpose:
When the interviewer visits the informant she attempted to measure the informant’s height and weight. However, measuring height can be quite difficult if the informant cannot stand straight or is unsteady on her feet. This can occur with some elderly people, and with people who have particular disabilities. Additionally, height decreases with age. This decrease varies from person to person and may be considerable. It is becoming increasingly important to have information about the health of older adults. Therefore, an alternative measure of skeletal size, the demi-span, was developed which can be measured easily and does not cause unnecessary discomfort or distress to older adults.

The demi-span measurement is the distance between the sternal notch and the finger roots with arms outstretched laterally. Two readings are taken. Explain to the informant that this is to improve accuracy.

#### 4.2 Eligibility
Only those aged 65 and over are eligible for the demi-span measurement. Informants aged 65 and over who cannot straighten either arm, should not have this measurement taken.

Record any reasons why demi-span measurement was refused, not attempted or only one was obtained.

#### 4.3 Equipment
A thin retractable demi-span tape calibrated in cm and mm and a skin marker pencil.

A hook is attached to the tape and this is anchored between the middle and ring fingers at the finger roots. The tape is then extended horizontally to the sternal notch (see illustration below). The tape is easily damaged if it is bent.

#### 4.4 Preparing the informant
The measurement is made on the right arm unless this arm cannot be fully stretched in which case the left arm may be used.

Record which arm was used and whether the informant was standing, or sitting.

Although the measurement requires minimal undressing, certain items that might distort the measurement will need to be removed. These include:
- Ties
- Jackets, jumpers and other thick garments
- Jewellery items such as chunky necklaces/bracelets
- Shoulder pads
- High heeled shoes

Shirts should be unbuttoned at the neck.

If the informant does not wish to remove any item that you think might affect the measurement, you should record that the measurement was not reliable when prompted by the computer.

#### 4.5 Procedure
1. Locate a wall where there is room for the informant to stretch his/her arm. They should stand with their back to the wall but not support themselves on it. Ask the informant to stand about 3 inches (7cm) away from it.
2. Ask the informant to stand with weight evenly distributed on both feet, head facing forward.

3. Ask the informant to raise their right arm until it is horizontal. The right wrist should be in neutral rotation and neutral flexion. Rest your left arm against the wall allowing the informant’s right wrist to rest on your left wrist.

4. When the informant is standing in the correct position mark the skin at the centre of the sternal notch using the skin marker pencil. (explain to the informant that this mark will wash off afterwards). It is important to mark the sternal notch while the informant is standing in the correct position.

If the sternal notch is obscured by clothing or jewellery, use a piece of micropore tape on the clothing or jewellery. If the informant will not allow use of either the marker pencil or the tape, proceed with the measurement but record the measurement as unreliable and explain why in a notepad.

5. Ask the informant to relax while you get the demi-span tape.

6. Place the hook between the middle and ring fingers so that the tape runs smoothly along the arm.

7. Ask the informant to raise their arm. Check they are in the correct position, the arm horizontal, the wrist in neutral flexion and rotation.

8. Extend the tape to the sternal notch. If no mark was made, feel the correct position and extend the tape to this position.

9. When ready to record the measurement ask the informant to stretch his/her arm.

Check that:
- The informant is in the right position; no extension or flexion at the wrist or at the shoulders
- The hook has not slipped forward and the zero remains anchored at the finger roots.
- The informant is not leaning against the wall or bending at the waist.

10. Record the measurement in cms and to the nearest mm when prompted by the computer. If the length lies half-way between two millimetres, then round to the nearest even millimetre. For example, if the measurement is halfway between 68.3 and 68.4, round up to 68.4. And if the measurement is halfway between 68.8 and 68.9, round down to 68.8. Always record the response to one decimal point (e.g. 55.4). The computer will not allow you to enter a response without a decimal point, so even if the measurement comes to exactly 56cm, you must enter 56.0. If you do enter a measurement ending in 0, the computer will ask you to confirm this.

11. Ask the informant to relax and loosen up the right arm by shaking it.

12. Repeat the measurement from steps 4-11. If your second measurement differs from the first by 3cm or more, the computer will give you an error message, and instruct you to either amend one of your previous responses, or to take a third measurement. Amend a previous response if you have made a mistake when entering the measurement, e.g. entered 65.2 instead of 75.2. Take a third measurement if there is another reason for the measurements being different. If in doubt, take a third measurement rather than over-writing one of the previous two. The computer will automatically work out which two to use.

13. Offer to write the measurements onto the respondent’s Measurement Record Card. If the respondent would like the measurement in inches, there is a conversion chart on the back of your drug coding booklet.

4.6 Using the tape

The tape is fairly fragile. It can be easily damaged and will dent or snap, if bent or pressed too firmly against the informant’s skin. Also the ring connecting the hook to the tape is a relatively weak point. Avoid putting more strain on this ring than necessary to make the measurements.

When extending the tape, hold the tape case rather than the tape itself as this puts less strain on the hook and tape. When hooking the tape to the sternal notch, do not press into the sternal notch so much that the tape kinks.

4.7 Seated measurements

If the informant is unable to stand in the correct position, or finds it difficult to stand steadily, ask them to sit for the measurement. Use an upright chair and position it close to a wall. Still try to support the arm if possible. You may need to sit or kneel to take the reading.

If the informant is much taller than you, take the measurement with the informant sitting.

If the informant’s arm is much longer than yours, support the arm close to the elbow rather than wrist level. Your arm must not be between the elbow and shoulder as this will not provide sufficient support.

5 MEASUREMENT OF WAIST AND HIP CIRCUMFERENCES (AGE 11+)

5.1 Purpose

There has been increasing interest in the distribution of body fat as an important indicator of increased risk of cardiovascular disease. The waist-to-hip ratio is a measure of distribution of body fat (both subcutaneous and intra-abdominal). Analyses suggest that this ratio is a predictor of health risk like the body mass index (weight relative to height).

5.2 Equipment

Insertion tape calibrated in mm, with a metal buckle at one end.

The tape is passed around the circumference and the end of the tape is inserted through the metal buckle at the other end of the tape.

5.3 Eligibility

Waist and hip measurements will only be carried out on informants aged 11 and over.

The informant is ineligible for the waist and hip measurement if:

- Chairbound
- Has a colostomy/ileostomy

If any of the previous apply, record this in the Nurse Questionnaire at WHIP/NARM. If there are any other reasons why the measurement was not taken, record this on the computer and type in the reason.
5.4 Preparing the informant

The interviewer will have asked the informant to wear light clothing for your visit. Explain to the informant the importance of this measurement and that clothing can substantially affect the reading.

If possible, without embarrassing you or the informant, ensure that the following items of clothing are removed:

- all outer layers of clothing, such as jackets, heavy or baggy jumpers, cardigans and waistcoats
- shoes with heels
- tight garments intended to alter the shape of the body, such as corsets, lyra body suits and support tights

If the informant is wearing a belt, ask them if it would be possible to remove it or loosen it for the measurement.

Pockets should be emptied.

Some respondents may be wearing religious or other symbols which they cannot remove and which may affect the measurement. Do not embarrass or offend the respondent by asking them to remove such things. Some respondents may be wearing articles of clothing which cannot be removed and will affect the measurement (e.g. saris) - this should also be recorded.

If the informant is not willing to remove bulky outer garments or tight garments and you are of the opinion that this will significantly affect the measurement, record this on the Nurse Schedule at questions W1Re1 and/or W1Re6.

If possible, ask the informant to empty their bladder before taking the measurement. If the person is over 16 they will be eligible to provide a urine sample - this may be collected earlier in the interview if the person needs to empty their bladder.

5.5 Using the insertion tape

All measurements should be taken to the nearest millimetre. If the length lies half-way between two millimetres, then round to the nearest even millimetre. For example, if the measurement is halfway between 68.3 and 68.4, round up to 68.4. And if the measurement is halfway between 68.8 and 68.9, round down to 68.8. Please note that you must enter the measurement to one decimal place - do not round it to the nearest centimetre. For example, enter "78.2", not just "78". If you do not enter a decimal point, the computer will give you a warning. If the measurement is exactly, say, 78cm, then all you need to do is suppress the warning and it will automatically fill in the "0" for you. Otherwise, you must go back and amend your answer. As a further check, the computer will also ask you to confirm that a measurement ending in '0' is correct.

Ensure the informant is standing erect in a relaxed manner and breathing normally. Weight should be evenly balanced on both feet and the feet should be about 25-30cm (1 foot) apart. The arms should be hanging loosely at their sides.

If possible, kneel or sit on a chair to the side of the informant.

Pass the tape around the body of the informant and insert the plain end of the tape through the metal ring at the other end of the tape.

To check the tape is horizontal you have to position the tape on the right flank and peer round the participant's back from his/her left flank to check that it is level. This will be easier if you are kneeling or sitting on a chair to the side of the informant.

Hold the buckle flat against the body and flatten the end of the tape to read the measurement from the outer edge of the buckle. Do not pull the tape towards you, as this will lift away from the informant's body, affecting the measurement.

5.6 Measuring waist circumference

1. The waist is defined as the point midway between the iliac crest and the costal margin (lower rib). To locate the levels of the costal margin and the iliac crest use the fingers of the right hand held straight and pointing in front of the participant to slide upward over the iliac crest. Men's waists tend to be above the top of their trousers whereas women's waists are often under the waistband of their trousers or skirts.

2. Do not try to avoid the effects of waistbands by measuring the circumference at a different position or by lifting or lowering clothing items. For example, if the informant has a waistband at the correct level of the waist (midway between the lower rib margin and the iliac crest) measure the waist circumference over the waistband.

3. Ensure the tape is horizontal. Ask the participant to breathe out gently and to look straight ahead (to prevent the informant from contracting their muscles or holding their breath). Take the measurement at the end of a normal expiration. Measure to the nearest millimetre and record this on the schedule.

4. Repeat this measurement again.

5. If you are of the opinion that clothing, posture or any other factor is significantly affecting the waist measurement, record this on the schedule.

5.7 Measuring hip circumference

1. The hip circumference is defined as being the widest circumference over the buttoks and below the iliac crest. To obtain an accurate measurement you should measure the circumference at several positions and record the widest circumference.

2. Check the tape is horizontal and the informant is not contracting the gluteal muscles. Pull the tape, allowing it to maintain its position but not to cause indentation. Record the measurement on the schedule to the nearest millimetre, eg 95.3. If the length lies half-way between two millimetres, then round to the nearest even millimetre.

3. If clothing is significantly affecting the measurement, record this on the schedule.

4. Repeat this measurement again.

5.8 General points

The tape should be tight enough so that it doesn't slip but not tight enough to indent clothing. If clothing is baggy, it should be folded before the measure is taken.

If the informant is large, ask him/her to pass the tape around rather than having to "bug" them. Remember though to check that the tape is correctly placed for the measurement being taken and that the tape is horizontal all the way around.
If your second waist or hip measurement differs by 3cm or more from the first, the computer will give you a warning. If you have made a mistake when entering the figures (e.g. typed 78.2 instead of 68.2), you should type over the mistake. If it was not a mistake, you should suppress the warning and take a third measurement.

If you have problems palpating the rib, ask the informant to breathe in very deeply. Locate the rib and as the informant breathes out, follow the rib as it moves down with your finger. If your informant has a bow at the back of her skirt, this should be untied as it may add a substantial amount to the waist circumference.

Female informants wearing jeans may present a problem if the waistband of the jeans is on the waist at the back but dips down at the front. It is essential that the waist measurement is taken midway between the iliac crest and the lower rib and that the tape is horizontal. Therefore in this circumstance the waist measurement would be taken on the waist band at the back and off the waist band at the front. Only if the waistband is over the waist all the way around can the measurement be taken on the waistband. If there are belt loops, the tape should be threaded through these so they don’t add to the measurement.

5.9 Recording problems
We only want to record problems that will affect the measurement by more than would be expected when measuring over light clothing. As a rough guide only record a problem if you feel it affected the measurements by more than 0.5cm. We particularly want to know if waist and hip are affected differently.

6 NON FASTING BLOOD SAMPLE (AGE 16+)

6.1 Eligibility
All persons aged 16 and over, with the following exceptions, are eligible to give blood.

- a. People with clotting or bleeding disorder (see note below)
- b. People who have ever had a fit
- c. People who are not willing to give their consent in writing.
- d. People who are currently on anticoagulant drugs, e.g. Warfarin therapy.

Check if the informant has a clotting or bleeding disorder or is on anticoagulant drugs, such as Warfarin, and record this at ClotR. These are very uncommon. If you find someone with these problems, do not attempt to take blood, even if the disorder is controlled.

By clotting or bleeding disorders we mean conditions such as haemophilia and low platelets, i.e., thrombocytopenia. There are many different types of bleeding/clotting disorders but they are all quite rare. The reason these informants are excluded from blood sampling is that:

- a) the integrity of their veins is extremely precious
- b) we do not wish to cause prolonged blood loss

For the purposes of blood sampling, those who have had, for example, a past history of thromboembolism, a deep venous thrombosis, a stroke caused by a clot, a myocardial infarction, an embolus are NOT considered to have clotting disorders.

Some informants might be taking anticoagulant drugs such as Warfarin which thins their blood so that they do not stop bleeding easily. If this is the case, then do not take a blood sample. You will need to check this out, particularly with older informants.

Aspirin therapy is not a contraindication to blood sampling.

Informants who have ever had a fit (e.g. epileptic fit, convulsion) should not be asked to provide a blood sample. This applies even if the fits occurred some years ago.

If you are uncertain whether a condition constitutes a contraindication to blood sampling, the Survey Doctor will be happy to answer your queries.

6.2 Purpose
A non-fasting blood sample will be collected from those aged 16 and over, who give consent for this and will be analysed for the following:

<table>
<thead>
<tr>
<th>Blood sample</th>
<th>What it measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total and HDL cholesterol</td>
<td>Total cholesterol and fibrinogen are being measured because raised levels are associated with higher risks of heart attacks, while HDL cholesterol has a protective role.</td>
</tr>
<tr>
<td>Haemoglobin and ferritin</td>
<td>Haemoglobin and ferritin are being measured because they are indicators of nutritional status, being reduced if there is an inadequate iron supply in the diet. Frequently, an inadequate iron supply can imply a more general nutritional problem.</td>
</tr>
<tr>
<td>Fibrinogen</td>
<td>Fibrinogen is measured because it is a major determinant of platelet aggregation and blood viscosity. It is a major independent risk factor for cardiovascular disease (CVD) and may interact with lipids to promote CVD risk.</td>
</tr>
<tr>
<td>Glycated Haemoglobin</td>
<td>Glycated haemoglobin is a measure of the respondent’s glycaemic status. High levels are indicative of diabetes</td>
</tr>
<tr>
<td>C-reactive protein</td>
<td>The level of C-reactive protein in the blood gives information on inflammatory activity in the body, and it is also associated with risk of heart disease.</td>
</tr>
</tbody>
</table>

The blood will not be tested for any viruses, such as HIV (AIDS) and will not be used for genetic testing.

6.3 Equipment

- Tourniquet
- Alcohol swabs
- Dental rolls
- Vinyl gloves
- Adhesive dressing
- Plastic postal containers
- Padded envelopes
- Sealable plastic bags
- Kitchen roll
- Micropore tape
- Set of labels for blood sample tubes

Vacutainer holder
Vacutainer needles 21G (green)
Vacutainer needles 22G (black)
Butterfly needles 2G
Needle disposal box
Vacutainer plain red tubes
Vacutainer EDTA purple tubes
Vacutainer citrate blue tubes
Ametop gel
Tegaderm dressings
6.4. Amnotop gel

6.5. Procedure for taking blood sample

1. Ask the screening question to check whether the informant has a bleeding tendency, or is on any drug or medication that may influence the results of the samples

2. Explain the purpose and procedures for taking blood sample

3. Explain that the information on Amnotop gel must be read carefully. The informant has an allergy to any of the drugs on Amnotop gel, it must be read by the informant.

4. Explain that the information on Amnotop gel must be read by the informant.

5. If the informant wishes Amnotop gel to be used, it must be read by the informant.

6. If the informant wishes Amnotop gel to be used, it must be read by the informant.

7. If the informant wishes Amnotop gel to be used, it must be read by the informant.

8. If the informant wishes Amnotop gel to be used, it must be read by the informant.
AMETOP GEL should be stored in your fridge. It should not be allowed to get damp. If the AMETOP GEL tube becomes damp or frozen and it looks as if the gel may have been affected you should not use it but return it to Brentwood recording the damage on the record sheet.

Your should not use AMETOP GEL which is past its use by date. Please check the date and if it is past the date, return it to Brentwood explaining this on the record sheet.

6.8 Applying Ametop gel

Ametop gel must only be applied to healthy skin; therefore it must not be applied to sore or broken skin (eg. eczema or cuts). Make sure the Ametop gel is kept away from eyes or ears.

If the young person requires AMETOP GEL to be applied prior to venepuncture, inspect the anteceubital fossa and decide which arm you will use for blood-taking. If both arms are suitable, use the left arm.

Ametop gel must be applied to ONE arm only. This means that, if you encounter problems during blood-taking (eg. collapsing vein), NO ATTEMPT can be made to take blood from the other arm.

Apply Ametop gel over the anteceubital fossa. Cover with a Tegaderm dressing (a vapour permeable and self-sticking film dressing) to keep the AMETOP GEL in place. See details about how to apply AMETOP GEL below. Please note the illustration shows AMETOP GEL being used on the hand.

National Centre policy is to only take blood samples from the arm.

As you may well be aware, removing the Tegaderm is sometimes painful so take care on hairy arms!

It is very important that the used tubes of AMETOP GEL should not be left lying around. Make sure you have removed them from the household on completion of the phlebotomy.

Use the AMETOP GEL record sheet to record the informant’s serial number and the date Ametop gel was used. Return this sheet with any unused tubes of Ametop gel to the Brentwood office.

6.9 Preparing the informant

Ask the informant if they have had any problems having blood taken before.

1. Explain the procedure to the informant. The informant should be seated comfortably in a chair, or if they wish, lying down on a bed or sofa.
2. Inspect the antecubital fossae and decide which are you will use for blood-taking. IF NO AMETOP GEL HAS BEEN USED: Ask the informant to roll up their left sleeve and rest their arm on a suitable surface. Ask them to remove their jacket or any thick clothing, if it is difficult to roll up their sleeve.

IF AMETOP GEL HAS BEEN USED: Remove the Tegaderm dressing and wipe away excess Ametop gel.

3. Do not ask the informant to clench his/her fist.

Select a suitable vein and apply the tourniquet around the informant’s arm. However, it is desirable to use the tourniquet applying minimal pressure and for the shortest duration of time. Do not leave the tourniquet in place for longer than 2 minutes.

Ask the informant to keep his/her arm as still as possible during the procedure.

4. Put on your gloves at this point (you must wear your gloves).

Recent advice indicates that there is no need to clean the venepuncture site with an alcohol swab unless the site looks dirty. Some people who are used to giving blood or having blood samples taken may be surprised if you do not clean the site first. You may use an alcohol swab if you or the informant prefers to do so.

ETOH wipes should only be used if the skin is intact. Take blood without using a sterile wipe first if the skin is not intact.

If the site looks dirty (or if the informant asks you to do so), clean the venepuncture site gently with an alcohol swab The swab used must be 70% or over ETOH content (those which are supplied are 70% ETOH).

If an alcohol swab is used, allow the area to dry completely before the sample is drawn (allow 30 seconds).

6.10 Taking the sample

The vacutainers should be filled in capacity in turn and inverted gently on removal to ensure complete mixing of blood and preservative. Remember that you should fill three vacutainers (Plain Red, EDTA Purple and Citrate).

Release the tourniquet (if not already loosened) as the blood starts to be drawn into the tube. Remove the needle and place a dental roll firmly over the venepuncture site. Ask the informant to hold the pad firmly for three minutes to prevent haematoma formation.

If venepuncture is unsuccessful on the first attempt, make a second attempt on the other arm. If a second attempt is unsuccessful, DO NOT attempt to try again. Record the number of attempts on the Schedule.

Record which arm the sample was drawn from (or both).

**IMPORTANT WARNING**

Never re-sheath the needle after use.

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Do not allow the disposal box to become overfull as this can present a potential hazard.

Check on the venepuncture site and affix an adhesive dressing, if the informant is not allergic to them. If they are allergic, use a dental roll secured with micropore.

6.11 Fainting informants

If a informant looks or feels faint during the procedure, it should be discontinued. The informant should be asked to lie down with feet elevated.

If they are happy for the test to be continued after a suitable length of time, it should be done so with the informant supine and the circumstances should be recorded. They may wish to discontinue the procedure at this point, but willing to give the blood sample at a later time.

6.12 Disposal of needles and other materials

Place the used needles and the vacutainer holders in the sharps box and put gloves etc in the self-seal disposal bag. The needle disposable box should be taken to your local hospital or GP practice for incineration. Telephone them beforehand, if you are not sure where to go.

If you have difficulties with finding a hospital or practice, contact your local pharmacist. If you need to pay a fee for the sharps box disposal, you will be fully reimbursed. Please telephone Brentwood to let them know the cost per sharps box before you give them to your pharmacy. Arrangements are currently being made with Ambulance Services for disposal but until you receive more information continue to use the means of disposal you have in the past. If you come across any problems with the disposal, contact the Survey Doctor or Brentwood. The sealed bag containing gloves etc can be disposed of with household waste as long as it does not have any items in it that are contaminated by blood.

6.13 Needle stick injuries

Any nurse who sustains such an injury should seek immediate advice from their GP. The nurse should inform his/her nurse supervisor of the incident, and the nurse supervisor should inform The Survey Doctor.

6.14 Informants who are HIV or Hepatitis B positive

If a informant volunteers that they are HIV or Hepatitis B positive, do not take a blood sample. Record this as the reason on the Schedule. You should never, of course, seek this information.

7 SENDING BLOOD, SALIVA AND URINE SAMPLES TO THE LABORATORY

The samples are sent to the Royal Victoria Infirmary Laboratory in Newcastle-upon-Tyne. It is important that all samples are sent properly labelled and safely packaged and that they are despatched immediately after it has been taken.

7.1 Labelling the Blood Tubes

Label the tubes as you take the blood. It is vital that you do not confuse blood tubes within a household.
Use the set of serial number and date of birth labels (blue) to label the vacutainer tubes. Attach a serial number label to every tube that you send to the lab. Enter the serial number and date of birth very clearly on each label. Make sure you use blue biro - it will not run if it gets damp. Check the Date of Birth with the informant again verbally.

Stick a blue label over the label already on the tube. The laboratory needs to be able to see on receipt how much blood there is in the tube.

We cannot stress too much the importance of ensuring that you label each tube with the correct serial number for the person from whom the blood was obtained. Apart from the risk of matching up the blood analyses to the wrong person’s data, we will be sending the GP the wrong results. Imagine if we detect an abnormality and you have attached the wrong label to the tube!

7.2 Packaging the blood, saliva and urine samples

Pack the blood tubes for each informant separately from those of other members of the household. All tubes from one person should be packed together in one despatch container. You have been provided with two different types of despatch containers, a small one and a large one. Depending on the total number of samples each informant provides, you will need to use the appropriate packaging.

As a rough guide, those aged 16 and over will need a large despatch container (3 blood tubes, plus urine) for each informant.

“Saliva-only” households: you would only have a saliva-only-household if all adults had refused nurse visits or samples. In this case, all saliva samples from the same household can go in the same despatch container. In this case all relevant despatch notes should be put into the box.

“Urine-only” households: you would have a urine-only-household if all adults refused a blood sample and/or if any children had refused the saliva samples. In this case, all urine samples from the same household can go in the same package, and all relevant despatch notes should be put into the box. NB this only applies to respondents for whom a blood sample was not collected.

You should not mix saliva and urine obtained from different respondents. If you have taken more than one sample type in a household, then each household member must have their samples dispatched separately. If you have a blood only household, then each household member must have their samples dispatched separately.

7.3 The packaging comprises

Small Packaging

- Absorbent insert
- Plastic container
- Cardboard mailing box with foam

Using the small packaging

1. Insert the blood sample tubes in the pockets of the absorbent insert.
2. Roll the insert with the folded despatch note*.
3. Place the rolled insert in the plastic container and close.
4. Push the plastic container into the foam and put in the cardboard box.

* If you find it difficult to insert the despatch note in the plastic tube, fold it and put in the cardboard box.

Please note:
- Use a separate package for each informant.
- Do not seal the mailing box with tape.
- Check there is a label firmly attached and addressed to the RVI lab in Newcastle

Large packaging

- Sealable bubble wrap pouch
- Plastic container
- Cardboard mailing box
- A moisture absorbent sachet (stays at the bottom of the plastic container)

Using the large packaging:

1. Insert the sample tubes in the bubble wrap pouch.
2. Remove the red tape and seal the bubble wrap pouch
3. Roll the insert with the folded despatch note* and close.
4. Put the large plastic container in the cardboard box.

* If you find it difficult to insert the despatch note in the plastic tube, fold it and put in the cardboard box.

Remember to check that the serial number and dates of birth correspond on the despatch notes and blood tubes

7.4 Posting the blood, saliva and urine samples

The size of the packaging means you will not be able to post blood samples in a letter box. The samples will have to be taken to the post office for posting.

The samples should be posted within 24 hours of the sample been taken. Try to avoid taking samples if you think that you will be unable to post it within 24 hours.

Weekend posting

If you miss the Saturday post collection, the sample must be posted on the following Monday morning.

Storage of blood samples

If you are unable to post the samples immediately, they can be stored at room temperature.

When you have posted the samples, fill in the date of posting on the office copy of the Despatch Notes.

7.5 Completing the Despatch Note

The Consent Booklet contains one lab Despatch Note. This should be filled in with a black pen and sent to the laboratory with the blood, saliva and/or urine samples.
Enter the informant’s serial number very carefully. This should both correspond to your entry on page 1 of the Consent Booklet and to the serial numbers you have recorded on the tubes.

Complete items 2, 3 and 4. Check that the date of birth is correct and consistent with entry on nurse schedule and tube label. Do not forget to code which age group category the informant belongs to.

Complete item 5 (date sample was taken).

On the DESPATCH NOTE:

- At item 6 ring a code to tell the laboratory whether or not permission has been obtained to store part of the blood. Your entry here should correspond to your entry at Item 9e on the front page of the booklet.
- At item 7 enter your Nurse Number.

Tear off the appropriate despatch note and send with the samples to the laboratory.

On the last page of the consent booklet complete the Office DESPATCH note for the non fasting blood samples, saliva and urine samples. This tells us the date you sent the samples to the lab and indicates what we should expect back from the laboratory.

If you have only achieved an incomplete blood sample (e.g. have only filled one tube), please state this clearly on both copies of the despatch note and give the reason.

8 SALIVA SAMPLE COLLECTION (AGE 4-15)

We wish to obtain a measure of exposure to passive smoking. This can be detected by measuring the level of cotinine in saliva. Cotinine is a derivative of nicotine and shows recent exposure to tobacco smoke, either because the individual is a smoker or because they have been exposed to other people’s tobacco smoke. Note that informants’ cotinine analysis results will not be sent to them or their GP. This means that children will only be offered a GP letter if they have had their blood pressure measured.

8.1 Eligibility

A saliva sample should be obtained from all informants aged 4 to 15. A sample will not be requested from pregnant girls, as mentioned earlier, you should not ask for this information if it has not been volunteered.

8.2 Equipment

For all informants:
- Plain 5 ml tube
- Short wide bore straw
- Kitchen paper

The straw makes it easier for people to direct their saliva sample into the tube. Its use will also minimise the amount of other items that are included in saliva, such as crumbs, which might enter the tube.

If an informant prefers to dribble directly into the tube, then this method should be used.

Obtaining consents

There is a separate consent form for the saliva sample Saliva Sample Consent Form – S. This is to obtain consent to take the sample and should be signed by the parent or the person with legal parental responsibility.

Before taking the sample, check that you have the written consent and that you have circled the correct code on the front of the booklet. If the informant agrees to the saliva sample, you should circle code 11 on the front of the consent booklet. If the informant refused the saliva sample or you were unable to obtain the sample you would code 12.

Once you have obtained the sample, write the informant’s date of birth and serial number on a blood tube label in blue bio and attach it to the saliva syringe.

8.3 Procedure

The aim is to get as much saliva as possible into the tube.

The protocol:

1. Remove the cap from the plain tube.
2. Give the straw to the informant. Explain that you want him/her to gather up their saliva (spit) in their mouth and then let it dribble through the straw into the tube. Make sure that you are not getting sputum i.e. that the informant is not clearing their chest for the spit.
3. Allow the informant about three minutes to do this. Collect as much as you can in this time. The saliva will be frothy, so it is easy to think you have collected more than you actually have, so do not give up too soon. You should have at least 0.5cm depth in the tube (not including froth).
4. If informants find it difficult to use the straw they may dribble into the tube directly. This is acceptable, but encourage them to use the straw where possible.
5. If the informant’s mouth is excessively dry and they can not produce saliva allow them to have a drink of plain water. Wait for a few minutes to ensure that no water is retained when they provide the saliva sample.
6. Record on the computer that you have taken the sample along with any problems you may have encountered.

8.4 Packaging the saliva sample

1. Make sure that the lid of the salivary tube is secure.
2. Label the tube (using the blue labels provided for blood samples). Enter the informant’s serial number and date of birth on the label.
3. Insert the tube in the packaging. The choice of the appropriate size of packaging will depend on the total number of samples obtained by each informant as explained in Section 7.2.

Continue to pack as instructed in Section 7.2 'Packaging the blood samples'.

“Saliva-only” households: If no blood and urine samples are obtained, all saliva samples from the same household can go in the same despatch container. In this case all relevant despatch notes should be put into the box.
9 URINE SAMPLE (AGE 16+)

9.1 Introduction
Dietary sodium (salt) consumption has been shown to relate to high blood pressure and cardiovascular disease. Sodium consumption can be assessed by measuring its levels in urine.

9.2 Eligibility
All informants aged 16 years and over in the core sample will be eligible. Women who have their periods are still eligible to give a urine sample. Informants with a catheter are eligible. If the sample is taken from the catheter bag this should be recorded in the questionnaire. Women who are pregnant will not be asked to give a urine sample.

9.3 Feedback to informants
We will not be sending the results of individual urine tests to informants or their GPs. If asked, use the information below to explain to informants why this is the case.

The level of salt in an individual’s urine is heavily influenced by their dietary salt intake during that day. If we were able to measure an individual’s salt levels over a three or four day period and take an average from all the measurements, we would obtain an accurate estimate of their salt levels. However, if for example an individual has had a Chinese takeaway on the day we take our sample, higher levels will be higher than normal on that occasion and the individual measurement (spot sample) will not be an accurate reflection of the individual’s salt levels.

The spot sample is therefore an inadequate indicator of dietary sodium on an individual basis, and individual results will not be useful or meaningful to individuals or their GPs. However, at a population level the peaks and troughs will even out, providing us with useful information for analysis.

9.4 Equipment
- A 100ml Polypropylene disposable beaker for urine collection
- A 10ml Sarstedt urine collection syringe containing a small amount of a preservative
- An instructions card on how to use and fill the Sarstedt syringe
- Labels

Obtaining consents
There is a separate consent form for the urine sample. The Urine Sample Consent Form – U(A). Before taking the sample, check that you have the written consent and that you have circled the correct code on the front of the booklet. If the informant agrees to the urine sample, you should circle code 13 on the front of the consent booklet. If the informant refused the urine sample or you were unable to obtain the sample you would code 14.

9.5 Procedure
Nurses will explain the procedure to informants and show them how to fill the Sarstedt syringe from the urine collection beaker. A demonstration set that consists of a syringes and a beaker which can be filled with water can be used for this purpose. The instruction card (see next page) can be left with the informant for easy reference while performing the urine collection in private, if required.

Informants will be asked to wash their hands with soap and water prior to voiding. The syringe should be filled immediately following voiding. The idea is to minimise specimen exposure to air. It

is important that the inside of the urine collection container is not touched or allowed to come into contact with any part of the informant’s body or clothing or any external surfaces.

Please ask informants to collect a mid-flow sample of their urine. The urine will be passed in the disposable collection beaker. The syringe has a removable extension tube for withdrawing the urine from the beaker. After the syringe has been filled, the extension tube is removed, the end of syringe sealed with a plastic cap, and the syringe plunger stalk snapped. The instruction card shows the steps for the urine sample collection. Ask the informants to wash the outside of the filled and sealed syringe and dry it using toilet roll when the sample collection is complete.

If the informant is unable to fill the syringe themselves, or would rather not do so, you can offer to do this for them. Ask the informant to give you the urine collection container immediately after voiding, and fill the syringe yourself.

9.6 Packaging, labelling and despatching the urine sample
1. Make sure that the plastic cap is securely sealed, and the syringe plunger stalk snapped.
2. Label the urine sample tube (using the red labels provided for blood samples). Enter the informant’s serial number and date of birth on the label using a blue biro.
3. Insert the tube in the despatch container, either together with that informant’s blood container and/or saliva sample (if obtained), or on its own. The choice of the appropriate size of packaging will depend on the total number of samples obtained by each informant as explained in Section 7.2 (three or fewer samples which include urine go in a small despatcher, more than 3 samples go in a large despatcher).

Continue to pack as instructed in Section 7.2 ‘Packaging the blood samples’.

“Urine-only” households: If no blood and saliva samples are obtained, all urine samples from the same household can go in the same package. In this case all relevant despatch notes should be put into the box. NB this only applies to informants for whom a blood or saliva sample was not collected!