

UK Biobank

UK Biobank SOP for Vicorder Measurements in the Imaging Centre

Version 1.0

<http://www.ukbiobank.ac.uk/>

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This document outlines the standard operating procedure for Vicorder measurements in the Imaging Clinic for participants of UK Biobank.

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1. Correct Use of the Vicorder

1.1: This manual details the standard operating procedure for Vicorder measurements for the cardiac MRI scan in the Imaging Clinic for participants of UK Biobank.

1.2: The vicorder measurement is repeated twice, once immediately prior to the aortic distensibility scan and once immediately after.

2. Vicorder brachial cuff positioning.

2.1: The Brachial cuff has a red wire attached to it.

2.2: Place the cuff onto the humerus of the left arm like a blood pressure cuff; ensure the connection is towards the inside of the humerus, towards to bicep region.

2.3: Enclose the arm within the cuff and Velcro strap it into place on the arm. Ensure it is tight enough not to come undone, but there is still sufficient space for inflation of the cuff.

3. Vicorder participant registration

3.1: Double click on the Vicorder icon on the desktop, the software will open and perform various checks on the hardware.

3.2: When the checks are complete you will see the 'home page' (figure 1).

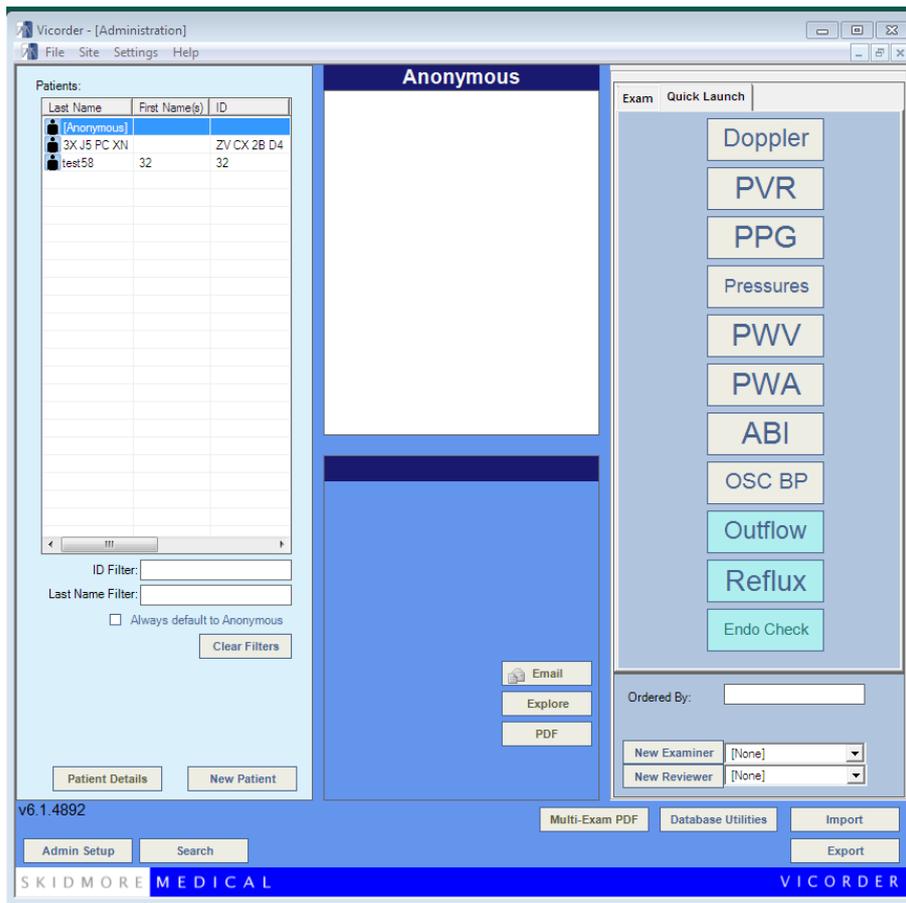


Figure 1: The Vicorder 'home page'

3.3: Select File from the top level menu and then choose the 'New Patient' option. This will automatically populate the participant details (ID and Last Name).

3.4: Highlight the new patient in the list to the left of the screen.

4 .Vicorder Protocol.

4.1: With the correct participant highlighted select 'PWA' from the quick launch area to the right of the home page.

The screenshot displays the 'PWW/PWA Study' software window. It is divided into several sections: 'Study' with a 'Study Name' field containing 'AB CD EF GH'; 'Patient Details' with 'First Name' and 'Last Name' fields, the latter containing 'AB CD EF GH', and a 'View/Edit Patient Information' button; 'Data Saving' with a 'Data Save Path' field showing 'C:\Users\UKBBUser\Documents' and a folder icon, and a 'File Name' field with 'AB CD EF GH.csv' and an example 'data.csv'; 'Calculations' with input fields for 'Length' (0.0 cm), 'Systolic' (0 mmHg), 'MAP' (0 mmHg), 'Diastolic' (0 mmHg), 'Height' (0 cm), and 'Weight' (0 Kg), alongside 'OSC BP' and 'BSA = 0.00' buttons; 'Site' with dropdown menus for 'Proximal', 'Distal', and 'Cuff Type' (Brachial); and a 'Comments' text area. 'Ok' and 'Cancel' buttons are at the bottom.

Figure 2: The Pulse Wave Analysis (PWA) study set up

4.2: Choose 'OSC BP' to get a measure of the blood pressure.

4.3: Warn the participant that the cuff will inflate a couple of times and then press space to inflate the Cuff.

4.4: The cuff will 'seat' around the participant's arm and you will begin to see a trace appear on the screen (figure 3).

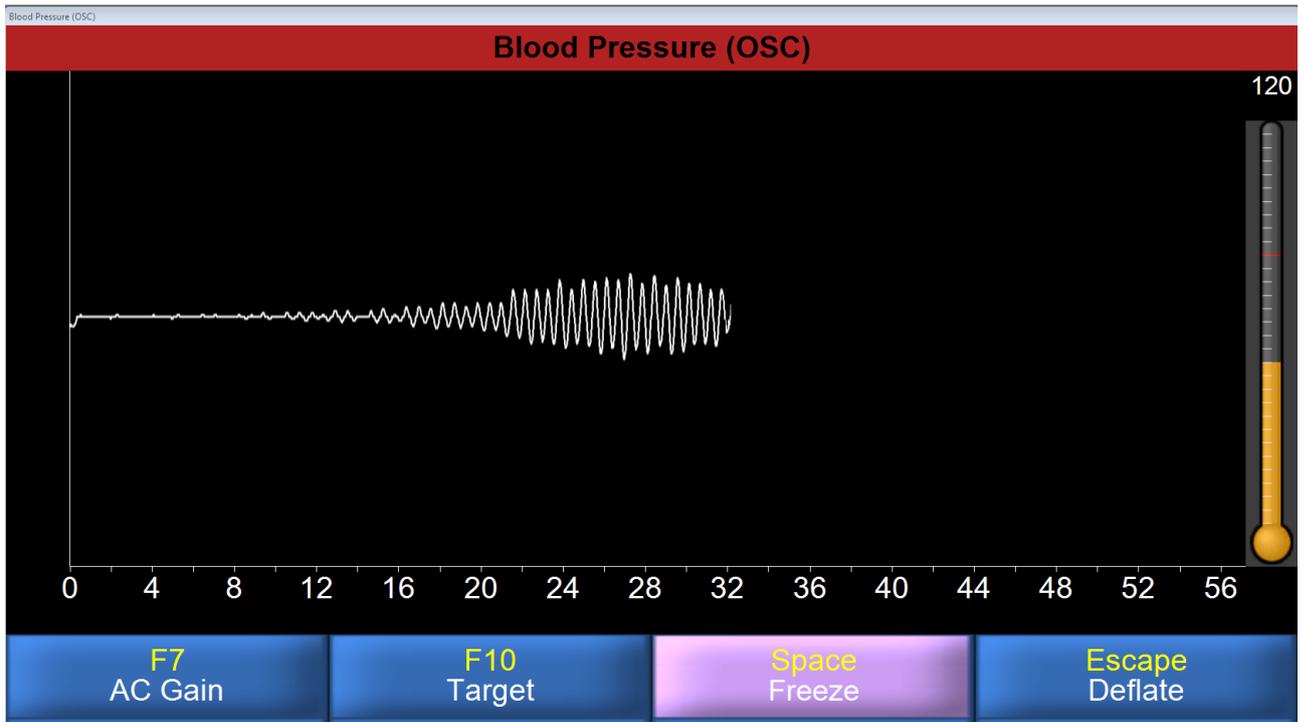


Figure 3: The trace when collecting the blood pressure measurement

4.5: The software will automatically stop and capture the result. Hit 'Return' to close and save the measure (figure 4).

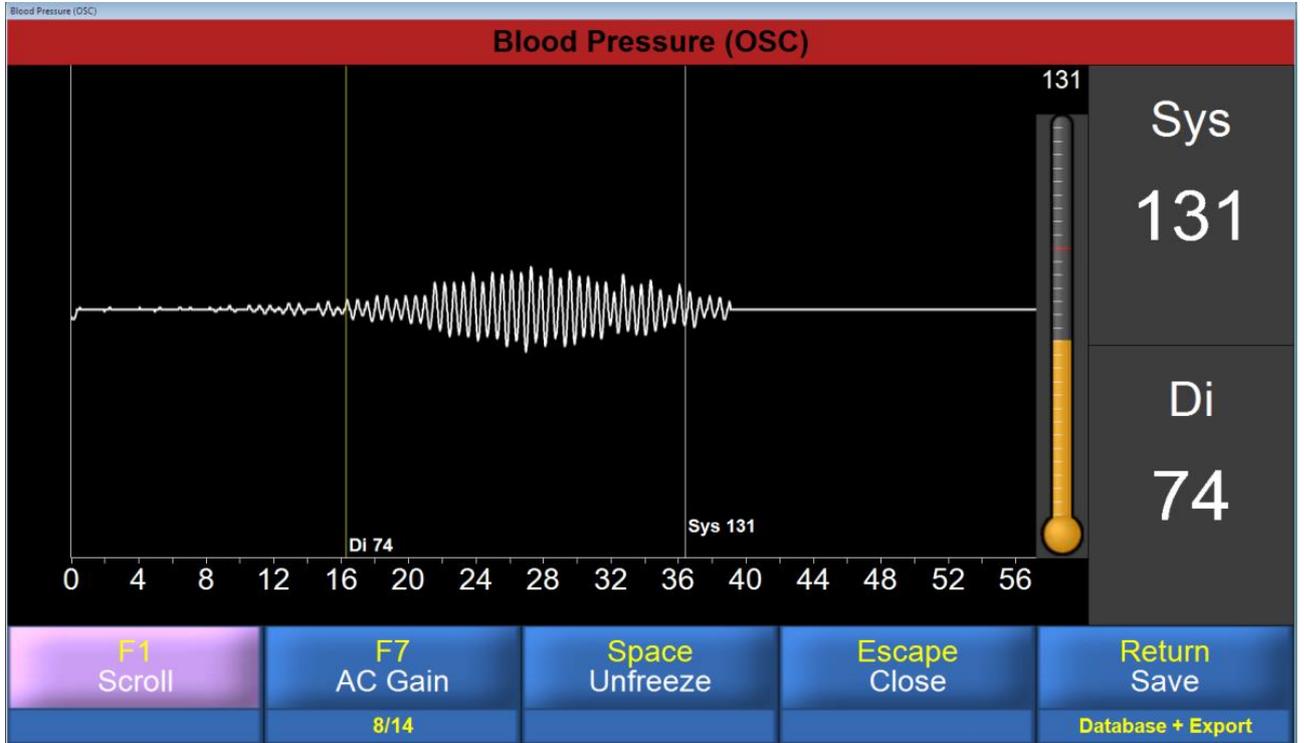


Figure 4: The blood pressure results. Hit Return.

4.6: Hit 'OK' again

4.7: Press 'Space' to start inflating the cuff once more for the PWA measure.

4.8: You should start seeing a trace appear after a few seconds. Let the trace run across the screen 4 times (10 beats) and then hit 'Space' again to 'freeze' the results (figure 5).

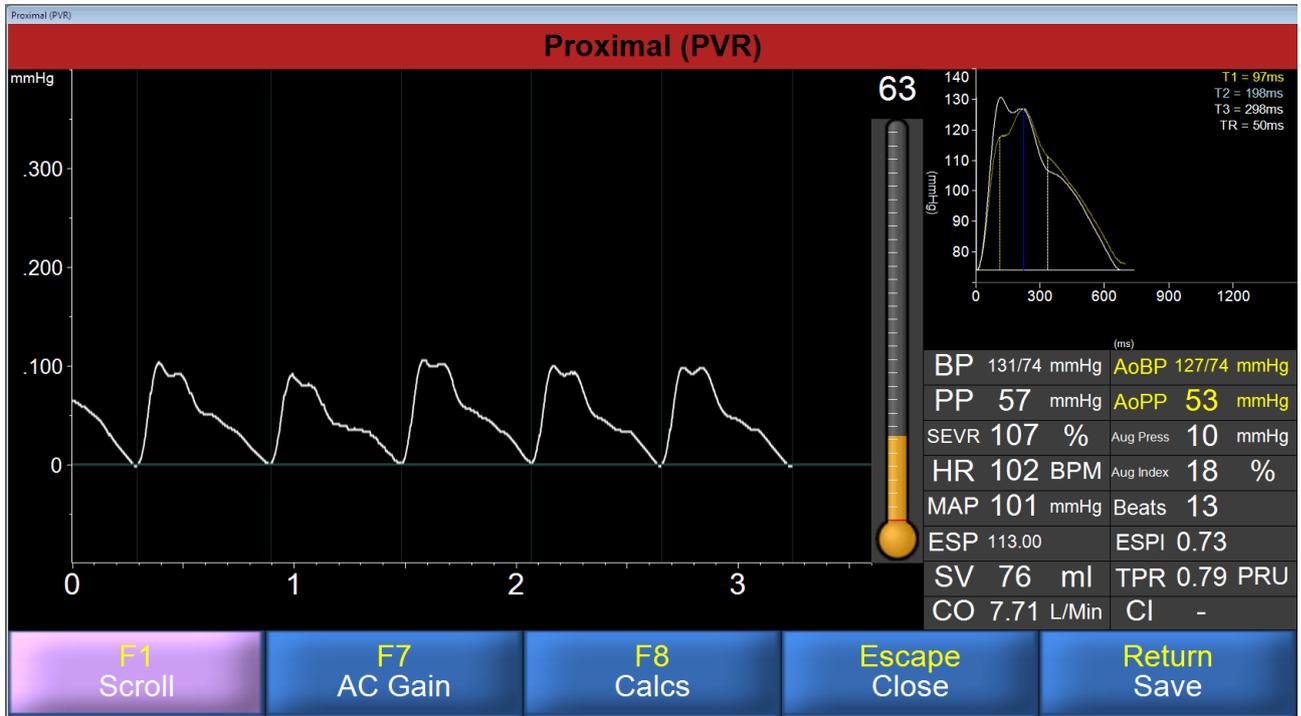


Figure 5: The results of the PWA measure

4.9: Hit 'Return' to save the results and close the measure.

4.10: If you are asked to confirm the location then just hit 'Save'.

4.11: A second measure is required after the distensibility scan has completed. .

4.12: Leave the PWA measure open and warn the participant that the cuff will inflate once more once the distensibility has finished.

4.13: Hit 'Space' to start inflating.

4.14: You should start seeing a trace appear after a few seconds.

4.15: Let the trace run across the screen 4 times (10 beats) and then hit 'Space' again to 'freeze' the result.

4.16: Then hit 'Return' to save the results and close the measure.

4.17: If you are asked to confirm the location then just hit 'Save'.

4.18: Finally, hit 'Escape' to leave the measure and return to the Home Screen.

4.19: You should have 1 blood pressure measure and two PWA measures showing in the panel down the centre of the vicorder home screen (as demonstrated in Figure 6).

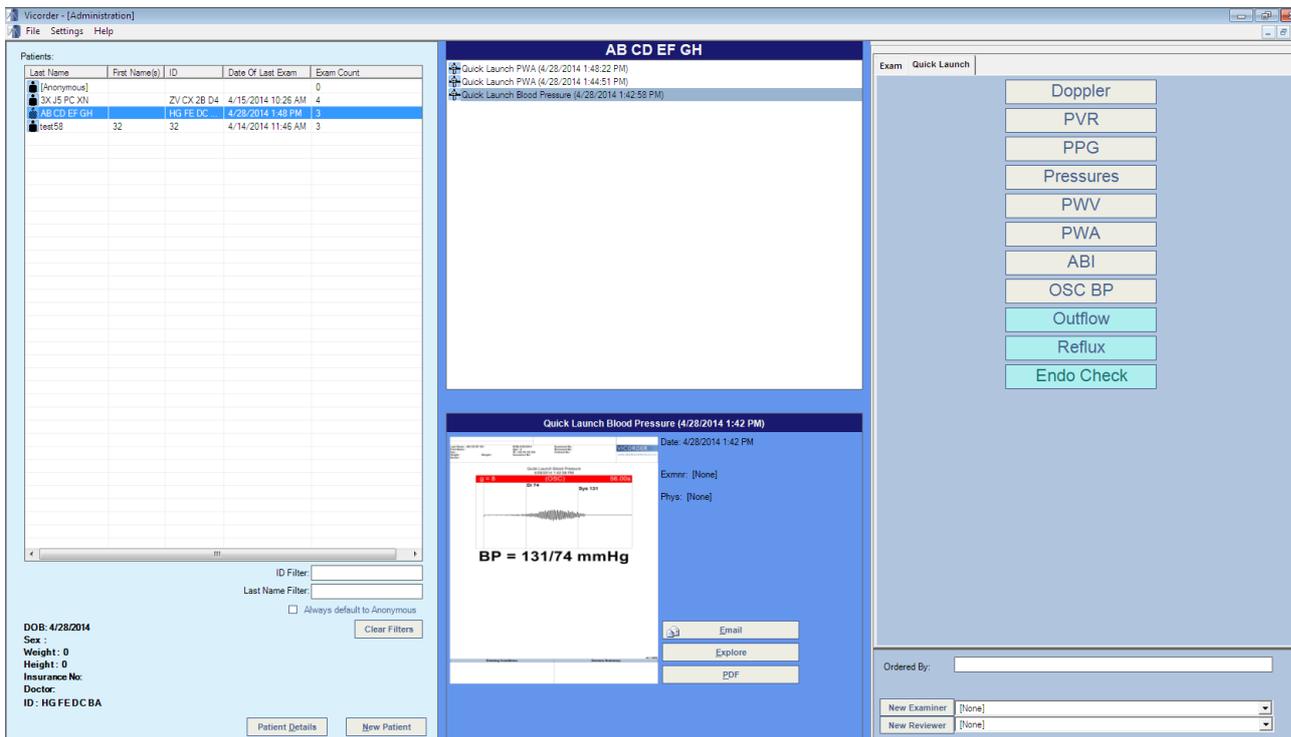


Figure 6: Vicorder home screen showing the 3 measures.