

Standard operating protocol

Creating a smoke-free homes value for your city

This guide will permit you to create a smoke-free homes value suitable for your city.

1. You will require:
 - a. 1-5 RAPID devices, set up as per the SOP “Installing a RAPID monitor in a participant’s home”
2. Recruit a convenience sample of five volunteers who keep their homes entirely smoke-free. These volunteers can be university employees, including researchers in your group. Note that smoking should not be allowed anywhere within the home at any time, including by occasional visitors. Please also exclude homes where a wood-burning stove or other significant source of flame is in use.

For each participant:

3. Prepare a ruaraidhdobson.pythonanywhere.com link to let you check that the monitor is working. Save this on your phone (as an email or similar).
 - a. This should be of the form:
https://ruaraidhdobson.pythonanywhere.com/html/MONITOR_ID_HERE/10/?api-key=727ed05f610be2cad5645262bb8604863dc12646ed70cd24a760d746144edea2
4. At a convenient time for them, install the RAPID device in their home in the main living area.
5. Using your phone, check that the monitor is sending data to the PythonAnywhere site correctly.
 - a. You can do this by navigating to
https://ruaraidhdobson.pythonanywhere.com/html/MONITOR_ID_HERE/10/?api-key=727ed05f610be2cad5645262bb8604863dc12646ed70cd24a760d746144edea2 to check the last ten minutes of data sent to the server
 - b. If it is not, check the connection between the Raspberry Pi and the Dylos, and then remove the power lead from the Raspberry Pi, replacing it ten seconds later.
 - c. Check that the Raspberry Pi’s LEDs are on when power is being supplied.
 - d. If five minutes have gone by with no data being received, power off and unplug all components and wait for a minute before reassembling them. Try again to access data from the RAPID. If you still can’t, there may be a problem with the device or with the MiFi. If possible in the setting, you can contact Ruaraidh Dobson on +447803 406 343 or at ruaraidh.dobson@abdn.ac.uk. You may need to arrange a new installation time with the participant and return the monitor to your institution for inspection.
6. Arrange a convenient time around five days later to collect the monitor. Note the date and time of installation.
7. After the monitor has been collected, navigate to <https://ruaraidhdobson.pythonanywhere.com>. Enter 727ed05f610be2cad5645262bb8604863dc12646ed70cd24a760d746144edea2 in the API key box, select the “CSV” option and enter the date and time you began monitoring under “Since:”. Your browser will download a spreadsheet containing the home’s results. Save this spreadsheet with a name identifying it as part of this procedure (e.g. Barcelona_SFhome_1.csv)

When all five homes have been measured:

8. Take the arithmetic mean of PM2.5 concentrations listed in each home's spreadsheet. Compile these means into a single spreadsheet, and take the geometric mean of the five values. Round this to the nearest whole number. This will be used as your smoke-free homes value.
9. Please send this final spreadsheet to the WP4 team.