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*Translating research into patient benefits*

# The Airwave Health Monitoring Study

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## Objectives

The Airwave Health Monitoring Study is a large occupational prospective cohort study of the British police forces which was established to investigate possible long-term health effects associated with use of the Airwave (TETRA) radio system.

The study involves health screening with collection and storage of data and samples linked to health records with consent for their use for future research.

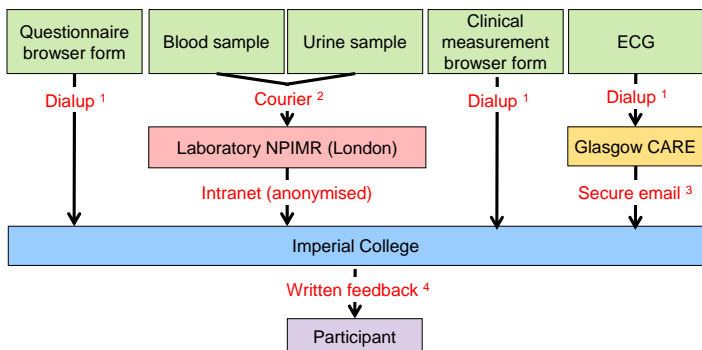


## Methods

### Population and design

- Participants are recruited among the participating police forces and agencies in England, Wales and Scotland with a target sample size of 70,000.
- Participants are invited to:
  - complete an enrolment questionnaire (22.0% response), providing data on socio-demographic characteristics, lifestyle, health and Airwave usage.
  - attend a health screening (45.7 % response), providing data on lifestyle, health and well-being, medical history, Airwave usage, 7-day diet questionnaire, cognitive test, clinical measurements, blood and urine samples.
- Cancer events and deaths are obtained from the Medical Research Information Service (MRIS) and General Register Office for Scotland (GROS). Links are also being established to hospital data systems.
- A follow-up questionnaire is planned for 2011/12

### Health screening design



<sup>1</sup> Point-to-point data transfer via dialup <sup>2</sup> overnight <sup>3</sup> Names of participants but no addresses <sup>4</sup> via Royal Mail

## Samples stored

| Type         | Content (2 ml / tube) | Cryovials (max.) |
|--------------|-----------------------|------------------|
| EDTA         | Plasma                | 2                |
|              | White cells           | 1                |
|              | Red Cells             | 2                |
| SC           | Plasma                | 1                |
|              | White cells           | 1                |
|              | Red Cells             | 1                |
| SST          | Serum                 | 3                |
|              | Plasma                | 2                |
| LHEP         | White cells           | 1                |
|              | Red Cells             | 2                |
|              | Urine                 | 5                |
| ACD          | ACD                   | 2                |
| <b>Total</b> |                       | <b>23</b>        |

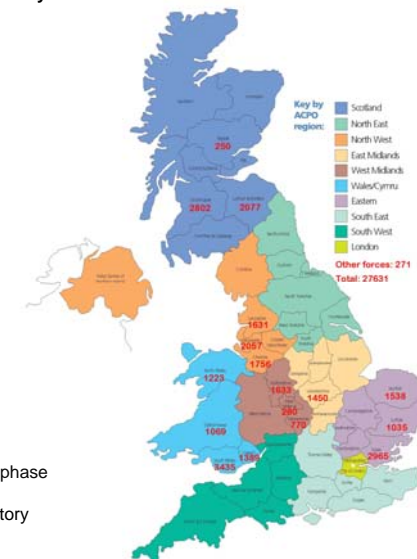


EDTA = Ethylenediaminetetraacetic acid; SC=Sodium Citrate; SST=Serum SeparatingTube; LHEP=Lithium Heparin; ACD = acid-citrate-dextrose

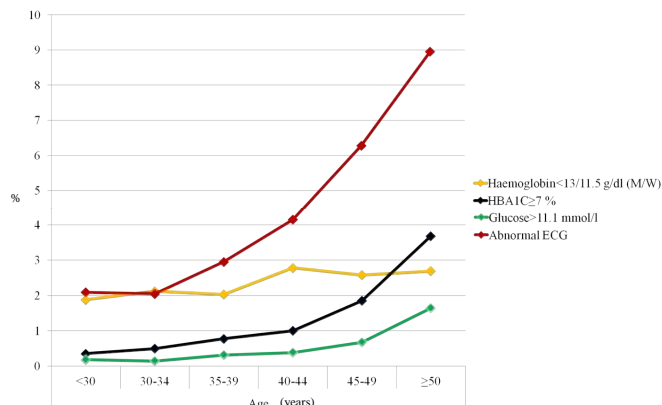
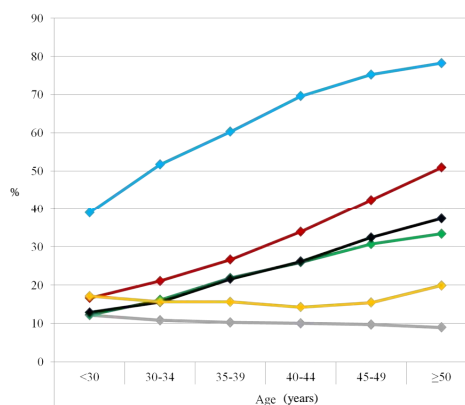
## Progress and Results

- 29 forces have been included to date (17 forces complete; 5 forces – screening ongoing; 7 forces – enrolment phase ongoing), with 27,631 participants screened
- 23 x 27,631 = 635,513 x 2ml aliquots, most stored in liquid-nitrogen (vapour-phase) at Hammersmith Biorepository (pictured above, London)
- Backups in Northwick Park Hospital (London) and Queen Mary, University of London

## Number of participants screened per police force by the end of 2010



## Percentages of screened participants for various health indicators by age in the Airwave Health Monitoring Study (2010)



DBP Diastolic Blood Pressure; SBP Systolic Blood Pressure; BMI Body Mass Index; WC Waist Circumference; CRP High Sensitivity C-reactive Protein; HbA1C Glycosylated Haemoglobin; ECG Electrocardiogram