

Imperial College
London

Airwave Health Monitoring
(Contract Number PG 0484)
Second Quarterly Report (1/12/2003)

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1. Background

The Home Office has commissioned Imperial College to conduct a research programme on “Airwave Health Monitoring”. Airwave, the new communications system for the police service in England, Wales and Scotland, is based on Terrestrial Trunked Radio (TETRA) technology.

The aim of the Airwave Health Monitoring programme is to investigate any possible impact of the use of Airwave on the health of police officers and staff. The programme addresses needs raised in the recent report by the National Radiological Protection Board’s Advisory Group on Non-ionizing Radiation on “Possible health effects from TETRA” (AGNIR 2001).

The objectives of the research programme are as follows:

- a) To pilot among police officers and staff within two police forces (West Midlands and Lancashire) the necessary procedures and mechanisms to administrate a health questionnaire, health screening and TETRA data collection for the long-term health monitoring study (see objective (3)).
- b) To conduct an electroencephalogram and cognitive study to examine the relationship between TETRA use and psychological wellbeing, or cognitive/neurophysiological function. The study will be based on TETRA exposure (high vs low) and symptoms (symptomatic vs asymptomatic) in three samples of police officers and staff (50 in each) recruited from the initial pilot project. This study component will commence after the pilot study.
- c) Following the pilot study, to conduct long-term health monitoring of the whole police force (England, Wales and Scotland) via the procedures developed in the pilot phase. Decisions on extending health screening to all forces will be made at the end of the pilot phase.

2. Summary of progress to date

Progress to date can be summarized as follows:

- The final health screening proposal has been submitted to the Home Office. Upon finalization of the contract, recruitment and purchase of equipment for the health screen will commence.
- A secure site for long-term storage of samples has been established.
- The health questionnaire has been drafted and is undergoing final revision in consultation with the Airwave Health Monitoring Steering Committee and local representatives of the West Midlands and Lancashire Police Forces.
- Information leaflets and consent forms have been drafted. The ethical aspects of the study design have been reviewed and approved by an independent NHS Multi-Centre Research Ethics (MREC) Committee.
- A protocol to extract data on individual Airwave use from Airwave O2 has been developed. Discussions are in progress with Airwave O2 to arrange regular transfer of Airwave O2 call data to Imperial College.
- Magazine articles describing the research programme have been printed in the December issues of the West Midlands and Lancashire Police Force magazines.
- A website has been registered to post information about the study online.

3. Health screening

The final health screening proposal with costs has been completed and submitted to the Home Office for assessment.

During the pilot study, police officers and staff from the West Midlands and Lancashire constabularies will have the opportunity to undertake voluntary health screening. Data collected will include height, weight, blood pressure, lung function, ECG (heart trace), together with samples of urine and blood for immediate processing of clinical profiles and long-term storage of samples (for future analysis of biochemical and genetic factors). Logistical planning for the health screening programme is continuing with the West Midlands and Lancashire Constabularies.

Whereas the Lancashire constabulary is already using Airwave, it is estimated that the West Midlands force will not have completed the Airwave roll-out until mid-2004. Health screening procedures will therefore be adapted to each constabulary in the pilot study. In the West Midlands, it has been agreed with HO that 500-1000 police staff will be screened before Airwave is in use, and re-examined after introduction of Airwave. In Lancashire, health screening will be available to current Airwave police users.

Secure and confidential storage of all biological samples is an essential aspect of the study. A tracking system is being developed using barcoded cryovials and storage boxes to ensure confidential and accurate logging of all sample transfers from health screening clinics to long-term storage.

4. Health questionnaire and MREC review

The health questionnaire, information leaflets and consent forms have been drafted and are undergoing final revision in consultation with the Airwave Health Monitoring Steering Committee and local representatives of the West Midlands and Lancashire Police Forces. The ethical aspects of the study design have also been reviewed and approved by an independent NHS Multi-Centre Research Ethics (MREC) Committee. Data from the completed questionnaires will be stored securely on the Airwave Health Monitoring database at Imperial College.

5. Airwave O2 Data

In order to accurately assess the use of Airwave among the Police Force and relate this to health data, Airwave O2 call detail record (CDR) data for each Airwave user will be collected prospectively from the monthly downloads of relevant parameters from the Airwave O2 database. Imperial College are interested in the following statistics for each officer, per month: total number of outgoing calls; total duration of outgoing calls; total number of incoming calls (including those from landlines); total duration of incoming calls (including those from landlines); total number of times the “press-to-talk” (PTT) button is pressed; and total length of time PTT button is pressed.

Other information on mode and location of use will be determined from the health questionnaire.