

## Primary Care Surveillance in the UK – Actions, Outcomes, Benefits.

<sup>1</sup>DL Cooper (BSc, MRes), <sup>1,3</sup>GE Smith (MB BS, FFPH), <sup>1,2</sup>A Elliot (PhD), <sup>1</sup>SE Harcourt (BSc), <sup>1</sup>S Smith (BSc, MPH), <sup>1</sup>P Loveridge (BEng), <sup>1</sup>S Ibbotson (FFPH), <sup>3</sup>R George (MB BS, MSc, FRCPath), <sup>4</sup>J Hippisley-Cox (FRCGP, MD, MRCP, DRCOG).

(1) Health Protection Agency West Midlands, Birmingham, England; (2) Birmingham Research Unit of the Royal College of General Practitioners, Birmingham, England; (3) Health Protection Agency Centre for Infections, London; (4) Division of Primary Care, Nottingham.

**OBJECTIVE:** To describe the arrangements for Primary Care Surveillance in the UK and provide examples of the benefits of this work for Public Health.

**BACKGROUND:** Routine primary care data provide the means to systematically monitor a variety of syndromes which could give early warning of health protection issues (microbiological and chemical). It is possible to track milder illnesses which may not present to hospitals (e.g. chicken pox, conjunctivitis) or illnesses for which laboratory specimens are not routinely taken (e.g. influenza). Real-time data are also needed to respond to major health protection incidents.

**METHODS:** The Primary Care Surveillance Team of the UK Health Protection Agency collect and analyse data from the following four components of Primary Care Surveillance:

- The Royal College of General Practitioners Weekly Returns Service: A wide range of infections and medical conditions covering 0.8 million people (90 practices).
- QRESEARCH: A range of diagnoses, prescriptions, vaccinations, and outcomes for about 3.5 million people (500 practices).
- QFLU: Diagnoses of influenza and pneumonia, antiviral prescriptions and vaccine uptake covering 17 million people (>2700 practices).
- NHS Direct: Calls to a national telephone triage system about a range of syndromes, covering 55 million people.

**RESULTS:** The relative strengths and weaknesses of the different primary care data sources complement each other. Two examples are provided below.

As part of the UK Department of Health Heatwave plan for England and Wales daily NHS Direct data are used for surveillance purposes. Between May and September 2006 there were four distinct peaks in NHS Direct heat/sun stroke calls, on the 11th June, 3rd July, 19th July and 26th July, occurring on the same day or one day after national peaks in temperature. Trends in heat and sun stroke calls were summarised in daily NHS Direct surveillance bulletins and distributed to relevant agencies. These were the only real-time data available during the heatwave and provided a valuable source of intelligence on how severe the health effects of heat were.

After a major oil depot fire (Buncefield, SE England) Primary Care Surveillance data were used to

highlight any unusual increase in clinical illness in the areas potentially affected. Consultation data from the QRESEARCH and QFLU databases indicated that there were some short lived increases in clinical conditions in parts of Southern England, occurring at a time of year when high levels of respiratory disease was expected. NHS Direct surveillance also detected a local rise in difficulty breathing calls three weeks after the blast, but found no clustering down wind (SE & SW) of the blast zone. The increase in calls and consultations were not attributed to the blast. Primary care surveillance, with accompanying interpretation, provided reassurance to both the incident team and the public that there was no unusual increase in clinical illness. This conclusion was supported by hospital admissions data (indicating no unexpected rise in illness) and environmental sampling results (indicating a lack of ground-level pollution).

**CONCLUSIONS:** Primary care surveillance data provide a timely snapshot of community morbidity in the UK.

Surveillance outputs have been used to provide early warning of rises in infectious disease (e.g. influenza<sup>1</sup>) and disease caused by environmental factors (pollen, poor air quality<sup>2</sup>); track and verify community morbidity (e.g. heat stroke<sup>3</sup>); provide reassurance during times of perceived high risk (around major chemical incidents and terrorist attacks); monitor health protection policy (e.g. antimicrobial resistance<sup>4</sup>); and provide input into planning and exercises (Pandemic 'flu<sup>5</sup>).

An evaluation of the usefulness of primary care surveillance outputs for front-line public health staff is planned for 2006/2007.

[1] Baker M, Smith GE, Cooper DL, Verlander NQ, et al. Early Warning and NHS Direct: a role in community surveillance? *J Public Health* 2003; 25:362-368.

[2] Cooper DL, Smith GE, Baker M, Chinemana F, et al. A national symptom surveillance system in the UK using calls to a telephone health advice service. *MMWR* 2004; 53 (Supp): 179-183.

[3] Leonardi G, Hajat S, Kovats RS, Smith GE, et al. Syndromic surveillance use to detect the early effects of heat-waves: an analysis of NHS Direct data in England. *Social and Preventive Medicine*, 51 (4), 2006.

[4] Smith GE, Smith S, Heatlie H, Bashford JNR, et al. What has happened to antimicrobial usage in primary care in the United Kingdom since the SMAC report? – Description of trends in antimicrobial usage using the General Practice Research Database. *J Public Health* 2004 26: 359-364.

[5] DH. UK Health Departments' Influenza pandemic contingency plan.

Acknowledgements: We thank EMIS and EMIS practices, and NHS Direct for use of data.