UK Severe Influenza Surveillance System (USISS)
Protocol for sentinel Acute NHS Trusts
2011-12

Health Protection Agency
2011
1. **Background**

Prior to the pandemic there was a recognised gap in surveillance of severe respiratory infection in the UK, in particular with regards to hospitalised cases of influenza. During the pandemic a web-based hospital reporting system was established to meet this need in England by the Health Protection Agency (HPA) and the Department of Health (DH). This surveillance system expedited the collection and analysis of data on hospitalised cases of laboratory confirmed influenza. This included number of cases, underlying clinical risk-factors, hospital course and outcome. The system provided real-time surveillance at a national, regional and Trust level. The information collected was used to inform the development and refinement of policies for influenza prevention and control.

A pilot hospital-based surveillance scheme for severe influenza, the UK Severe Influenza Surveillance System (USISS), was initiated during the 2010/11 post-pandemic influenza season in order to monitor and estimate the impact of seasonal influenza on the population and to describe the epidemiology of severe disease. Following an end-of-season evaluation of this pilot scheme, it was decided by the DH convened Influenza Surveillance Strategy Group (ISSG) that this data collection should continue in 2011/12. During the forthcoming season, data will be collected from a sentinel network of hospitals on

a) Aggregate numbers of hospitalised confirmed cases and

b) Individual confirmed cases admitted to Intensive Care Unit (ICU).

Collection of weekly aggregate data on influenza cases from all ICUs in England will be also be undertaken, but using a separate data stream. This protocol addresses the data collection and submission for the sentinel stream of USISS.

2. **Objectives**

The objectives of the 2011/12 USISS scheme are:

a. To monitor and estimate the impact of severe influenza (both seasonal and pandemic) on the population.

b. To describe the epidemiology of severe influenza (hospitalisations, ICU admissions and deaths) in time, place and person including risk groups for severe disease.

c. To identify and describe the epidemiological features of a novel influenza virus.

d. To contribute to the assessment of countermeasures.

e. To contribute to policy and response at a regional and national level.

3. **Case definitions**

For the purpose of hospital-wide surveillance, a confirmed case of influenza is defined as:

“A person who is admitted to hospital (at any level of care) AND has a laboratory-confirmed influenza A (H1, H3 or novel) or B infection”.

For the purpose of ICU surveillance, a confirmed case of influenza is defined as:
“A person who is admitted to HDU/ICU AND has a laboratory-confirmed influenza A (H1, H3 or novel) or B infection”.

4. **Testing guidance**

Patients admitted to hospital should be tested for influenza when presenting with:

a) Fever ($\geq 38^\circ$ C) or history of fever AND  
b) Two or more of the following symptoms: cough, sore throat; headache; rhinorrhea, limb or joint pain; vomiting or diarrhoea

Or where there is a raised clinical suspicion of influenza.

5. **Data collection**

The following data on confirmed hospitalised influenza patients will be collected from a sentinel network of Trusts in England:

a. Aggregate Hospital-wide data:

Sentinel Trusts to report weekly (by Wednesday at 14:00) the number of laboratory confirmed flu cases hospitalised at all levels of care the previous week until the previous Sunday 24:00. These are to be broken down by age group and flu type/subtype (Appendix 1).

b. Individual-level ICU data:

Sentinel Trusts will report weekly (by Wednesday at 14:00) individual-level data on laboratory confirmed flu cases admitted to HDU/ICU the previous week until the previous Sunday 24:00. Data collected will include admission details, risk factors, treatment and course of illness.

6. **Proposed recruitment strategy**

To ensure representativeness of sentinel Acute Trusts, 36 Acute Trusts will be recruited by stratified random sampling. Trusts will be stratified by region (10 in England), size (<500 beds and $\geq$500 beds) and trust type (Acute or Teaching). Specialty Trusts will likely not have hospitalised influenza cases or a microbiology laboratory with the capability to test for influenza, and will therefore not fulfil criteria to participate in the scheme.

7. **Data collection and entry**

To submit the data to the USISS system, a designated user will access a secure web-enabled tool using a unique username and password. The designated user could be an information officer, administrative assistant, nurse, infection control practitioner, or consultant,
depending on resources at each Acute Trust. Data should be entered on a weekly basis – including nil returns. We request that data is reported each Wednesday by 14:00 for the previous week (Monday 00:00 to Sunday 23:59).

Designated users at Acute Trusts will be able to use the web tool to view the data they have uploaded, amend and update data from previous weeks, and generate reports summarising Trust aggregate data or comparative national aggregate data.

8. Data security and confidentiality
Data will be collected and stored according to The Health Service (Control of Patient Information) Regulations 2002. The USISS scheme will collect both aggregate and individual-level data using a secure web-tool. HPA has obtained approval from the National Information Governance Board for Health and Social Care (NIGB) ethics and confidentiality committee for the collection of this data. Authentication credentials for accessing the web tool will be required in the form of a username and password. The password will be encrypted in a SQL Server database. Encryption of the entire message, including password, will take place as transport layer encryption is employed. Users will not be able to access individual-level data entered by users at other Trusts.

9. Dissemination of results
Data from USISS will be disseminated through internal weekly reports to stakeholders as well as through the publicly available HPA National Influenza Weekly Reports. In addition, users will be able to generate epidemiological reports at any time through the web-tool.

10. Approval for USISS data collection
Both the Department of Health influenza Surveillance Steering Group (ISSG) and the Pandemic Influenza Preparedness (PIP) Programme Board have signed-off on the planned surveillance activities for USISS in 2011/12.

11. Period of operation
USISS is expected to operate annually, initially from October 2011 (week 40) to May 2012 (week 20). In the event of unexpected influenza activity, it will be possible to activate the system out of season.

Appendix 1: Aggregate data items for hospital-wide surveillance from a sentinel group of Trusts
<table>
<thead>
<tr>
<th>Total confirmed influenza cases in all levels of care</th>
<th>Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of new confirmed influenza cases admitted to the Trust in the previous week</td>
<td>&lt;1 1-4 years 5-14 years 15-44 years 45-64 years ≥65</td>
</tr>
<tr>
<td>Influenza A/H1N1 (2009)</td>
<td></td>
</tr>
<tr>
<td>Influenza A/H3N2</td>
<td></td>
</tr>
<tr>
<td>Influenza A/unknown subtype</td>
<td></td>
</tr>
<tr>
<td>Influenza B</td>
<td></td>
</tr>
</tbody>
</table>