Joint SMVN/SHPN Public Health Microbiology advisory Statement for Influenza Point of Care Tests

Situation

The Scottish Health Protection Network (SHPN) has reviewed the 2017-18 flu epidemic, and confirmed the rapid introduction of Point of Care testing (POCT) for Influenza viral infection compromised national epidemic intelligence. This SBAR describes key recommendations that, if supported by diagnostic microbiology services in Scotland, will ensure a better access to diagnostic data for future seasons.

Background

In the face of high levels of flu cases and exceptional pressure on the system a variety of Flu POCT's were rapidly introduced by some Boards during the 17-18 winter. These had a very positive effect on local treatment and infection control interventions. However because of the speed of introduction, in most cases provision had not been made to communicate results to ECOSS (the central infection database held by HPS), meaning the national Influenza epidemic intelligence in Scotland was inadvertently compromised. Similar introduction of Flu POCT's has been identified as a risk for epidemic intelligence for flu and therefore the Scottish Health Protection Network has requested that a jointly agreed statement is agreed this year which will mitigate the risk for public health in future flu seasons.

This jointly developed and agreed statement identifies the key recommendations agreed between the SHPN, SMVN and HPS to ensure the consistent introduction of rapid influenza point of care tests (Flu POCT's) across all Boards in Scotland, whilst preserving and supporting the data sharing required to inform national epidemic intelligence.

Assessment

Following a questionnaire sent to all Scottish microbiology laboratories, a follow up discussion with all respondents and subsequent discussions the following points were identified as important topics for consideration to ensure the effective local introduction of Flu POCT's.

As the precise timing of the arrival of seasonal flu is unpredictable it should be agreed locally between managers, clinicians and infection control what circumstances trigger the start of applying POCT and similarly when testing should stop. These decisions can be based on such measurements as the number of respiratory requests, the number or percentage of flu positives and the local pressure on bed occupancy. Whatever method is employed the decision of when to use POCT locally should be communicated to HPS (nss.hpsflu@nhs.net).

POCT machines can either test for a small range of viral pathogens (eg flu/RSV) or a wide range comparable to diagnostic laboratories. The former may be cheaper but will raise questions on whether further laboratory testing will be required to identify the infecting virus.

As no one solution will fit all, it is important that the choice is communicated to HPS so a national register is held as to what testing is employed to help inform national epidemic intelligence.

Initial verification of the performance of the chosen system should be carried out by the local microbiology laboratory. POCTs tend to be expensive so careful consideration is needed as to where to locate the machine(s) for maximum benefit. This will usually be at acute admissions or A&E, but could equally be in outlying hospitals, paediatric, oncology wards or ICU.

There needs to be agreement with infection control, clinicians and bed managers if this location is going to be the sole user or whether other wards will also get access (testing protocol).

Not only are the POCT machines expensive but so are the tests themselves so there needs to be agreement with clinical staff as to which and under what circumstances patients will be tested (clinical protocol). This protocol may also include what happens to patients who have a respiratory infection that is not flu or RSV (where only those are tested by POCT). Options for further testing in the laboratory should be discussed and agreed.

It is advisable to recruit an individual or small team to act as guardians of the POCT. These should be omnipresent on the ward and senior (and strong) enough to resist pressure to deviate from testing or clinical protocols.

Training of ward staff to carry out testing can be done by the POCT manufacturer but should also involve laboratory staff to ensure the complete process is covered adequately. To ensure trained staff are always on the ward, training can be carried out by cascading from a small group. Once this has been accomplished lab staff can carry out competency testing to ensure training was effective.

Ideally the POCT machine should be set up so that it can only be accessed by trained staff eg by personal log in.

As training may precede flu season by perhaps months a single page pictorial guide to testing procedure should be posted near to the POCT to act as an aide memoire.

The POCT should be linked electronically to the laboratory information system (LIMS) to ensure tests appear not only on the patient's record but results are also cascaded to other local and national data collection services in a timely manner.

However, local circumstances (and cost pressures) may mean that the POCT cannot be directly connected to the LIMS. In such cases mechanisms must be put in place to ensure patient's details and results are manually entered as soon as feasible. Such an approach is sub-optimal as there are opportunities for transcriptional errors and incomplete/inaccurate patient record.

Quality control (QC) of the POCT should be the responsibility of the local microbiology laboratory. QC can be achieved by the use of EQA schemes (eg QCMD), repeat/parallel laboratory testing and/or batch acceptance.

Ideally POCT can be part of the laboratory's UKAS scope of practice. However this may only be worthwhile if it is used regularly each year.

POCT are often used as a means of managing patients and bed occupancy and are in addition to testing provided by the Microbiology lab. Costs for this service should therefore not be expected to come out of existing lab budgets. Indeed it may help in enforcing clinical and testing protocols if the hosting ward were responsible for the costs of POCT.

Although the cost of consumables/equipment hire may not fall on the laboratory, extra costs are nevertheless incurred by training, verification, quality control etc. and these should be assessed and suitably addressed.

Recommendations

1) Individual board/regional laboratory services, in partnership with local clinicians, infection control teams, finance departments and managers should consider and apply the points identified above to support the effective local introduction of Flu POCT's.
2) Board diagnostic laboratory services should inform HPS which, when, and where POCT tests are being used throughout the flu season via nss.hpsflu@nhs.net. This information will be part of a Scottish national flu testing database, which will inform data analysis. This database will be administered by HPS, updated on an annual basis in October, and further updated where any change in service delivery occurs during the course of the flu season.
3) To ensure that the results of Flu POCTs are made available to local databases and for analysis as part of national epidemic intelligence, the following should be considered:
    a. The preferred solution is that all local Flu POCT machines provide a data feed into the board LIMS. This will ensure that tests results appear on the patient's record and are cascaded to other local and national data collection services.
    b. If for whatever reason the above is not possible, the local board should devise a system to ensure that all Flu POCT's are transcribed into the LIMS on a minimum of a weekly basis, such that all results from the preceding week are recorded on the LIMS by the Monday of the following week.
    c. Whichever system (a or b) is employed labs must liaise with HPS to ensure suitable codes are used to differentiate POCT from laboratory based flu testing. Such codes can also be used for internal audit purposes.