

Guidance to Influenza Laboratories
Diagnosing Swine Influenza A/H1N1 Infections of current concern
25 April 2009

All un-subtypable influenza A specimens are strongly recommended to be sent immediately to one of the five WHO Collaborating Centres for influenza for diagnosis and further characterization.

Sample collection and handling

- The current influenza specimen collection protocol should be followed.¹
- Standard influenza specimen storage, packaging and shipping practice and relevant IATA regulations should be followed.²

Available laboratory tests

- Rapid antigen tests designed to detect influenza A viruses should be able to detect this swine virus but due to the low sensitivity, compared to other lab diagnostic methods, may give false negative results.
- It is possible that the antibodies used in immunofluorescence and other immunoassays may not bind to targets on the virus and could result in false negative results.
- While primers used in PCR assays to detect highly conserved parts of the influenza genome and confirm the presence of influenza A will probably work; primers currently used in PCR diagnostics for subtyping influenza A virus may not detect non-human viruses. Information on specific assays will be available in the near future.
- The only reliable means of confirming swine influenza A/H1N1 would require virus isolation (virus isolation should be done in a BSL-3 facility) and at least partial sequencing of the genome.
- Partial or complete virus genome sequencing from clinical samples, if possible, will provide definitive identification of the new strain.
- Laboratory biosafety measures for handling possible pandemic strains should follow the published guidelines on handling influenza viruses.³

Updating laboratory tests

The WHO Collaborating Centre in CDC Atlanta is currently updating PCR protocols for detection of the swine A(H1N1) reassortant viruses:

¹ http://www.who.int/csr/disease/avian_influenza/guidelines/humanspecimens/en/index.html

² http://www.who.int/csr/disease/avian_influenza/guidelines/transport/en/index.html

³ http://www.who.int/csr/disease/avian_influenza/guidelines/handlingspecimens/en/index.html

- The current CDC influenza subtyping PCR assay kit cannot detect the new reassortant swine A(H1N1) virus.
- A modification to include testing procedures for recent swine viruses is being prepared by CDC.
- The gene targets of the PCR will be influenza A, universal swine NP and swine H1 HA.
- CDC is preparing a "Swine Influenza PCR Testing Kit" which will include the primers and probes as well as positive control samples. The kits will be available to National Influenza Centres under defined process.

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⁴ <http://www.who.int/csr/disease/influenza/collabcentres/en/index.html>