A service of the Provincial Health Services Authority

PHSA
Laboratories

BCCDC Public Health Laboratory

August 15, 2016

Dear Colleagues,

RE: Respiratory Pathogen Panel Testing - respiratory viruses and atypical bacteria

The BCCDC Public Health Laboratory (BCCDC PHL) screens clinical samples submitted for respiratory virus detection for Influenza A/B/RSV by an in-house developed RT-PCR assay. In the past, specimens were tested for a broader array of other viruses using the Luminex 200 xTAG Respiratory Viral Panel (RVP) fast assay if the Influenza A/B/RSV PCR was negative and the patient met one or more of the following: (i) <5 years old, (ii) part of an outbreak, or (iii) hospitalized (mostly by request). Samples with requests for atypical bacterial agents were only tested by an in-house developed PCR assay for *C. pneumoniae*, *L. pneumophila*, and *M. pneumoniae* (CLM).

In February 2016, the MAGPIX NxTAG Respiratory Pathogen Panel (RPP) assay replaced the older Luminex assay. This assay detects a full range of respiratory viruses, excluding MERS and SARS, as well as CLM (see Table 1 for a full list of targets).

- Analytical performance of the MAGPIX assay was determined to be equivalent to the older Luminex assay and the in-house CLM PCR in a retrospective evaluation.
- From February to May of 2016, 100 samples were tested in a prospective head-to-head evaluation of MAGPIX and the CLM PCR assay. The sensitivities and specificities of the CLM PCR and the MAGPIX assay were equivalent. Furthermore, samples sent only for viral testing yielded CLM positives, and samples sent only for CLM testing yielded viral agents.

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Table 1. Luminex MAGPIX NxTAG RPP assay targets

Viral Targets	Influenza A
	Influenza A H1
	Influenza A H3
	Influenza A 2009 HIN1
	Influenza B
	Respiratory Syncytial Virus A
	Respiratory Syncytial Virus B
	Parainfluenza 1
	Parainfluenza 2
	Parainfluenza 3
	Parainfluenza 4
	Human Bocavirus
	Human Metapneumovirus
	Rhinovirus/Enterovirus
	Adenovirus
	Coronavirus HKU1
	Coronavirus NL63
	Coronavirus OC43
	Coronavirus 229E
Bacterial Targets	*Chlamydophila pneumoniae*
	Legionella pneumophila (all serotypes)
	Mycoplasma pneumoniae

As of August 15, 2016, samples submitted for either CLM or viral detection will both be tested by the MAGPIX NxTAG RPP assay instead of the in-house CLM PCR or the older Luminex assay using a new testing algorithm (Figure 1).

- Respiratory specimens submitted for viral testing will be first tested for Influenza A/B/RSV. If initial results are negative, samples meeting the criteria outlined above [(i) <5 years old, (ii) part of an outbreak, or (iii) hospitalized (mostly by request)] will be tested by the MAGPIX assay, which detects respiratory viruses and atypical bacterial agents.
- Respiratory specimens submitted for CLM testing will be analysed by the MAGPIX assay and therefore undergo simultaneous respiratory viral detection.
- Only one respiratory sample is required for CLM and/or respiratory viral testing.

Implementation of the MAGPIX assay, a syndromic panel, enhances the detection of respiratory pathogens.

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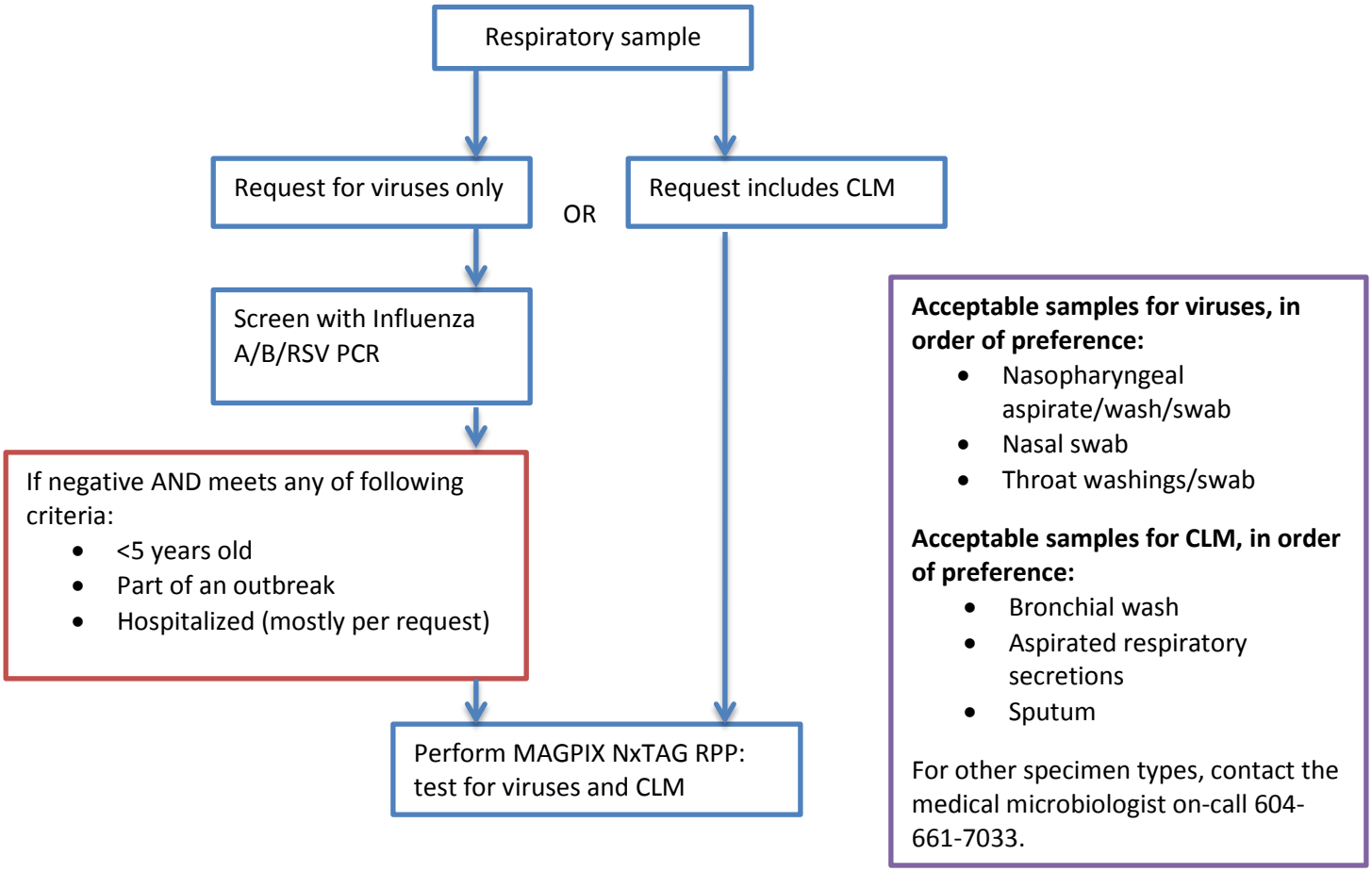
Figure 1: New testing algorithm for respiratory samples



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