UNC HEALTH CARE

MEMORANDUM # 184

TO: UNCHCS Attending Physicians and Faculty Practice Physicians, Housestaff, Clinical Nurse Coordinators, Department Heads and Supervisors

FROM: Melissa B. Miller, PhD, Director, Clinical Microbiology/Molecular Microbiology Laboratories

Herbert C. Whinna, MD, PhD, Medical Director, McLendon Clinical Laboratories

SUBJECT: Laboratory Diagnosis of Respiratory Viruses- CHANGES IN TESTING

DATE: February 20, 2019

Effective February 25, 2019, the Molecular Microbiology Laboratory will change the multiplex molecular test it uses to detect respiratory pathogens from **nasopharyngeal swabs**. The new test is the BioFire Respiratory Pathogen Panel (RPP). The RPP assay is FDA-cleared for the detection of influenza A and B (including H1 and H3 subtyping), respiratory syncytial virus, parainfluenza viruses (1-4), metapneumovirus, rhinovirus/enterovirus, adenovirus, *Mycoplasma pneumoniae*, *Chlamydia pneumoniae*, *Bordetella pertussis* and *Bordetella parapertussis*. Both the NP swab test (RPP) and the lower respiratory tract test (RVP) can be ordered in EPIC as LAB5812, Respiratory Panel.

Important notes:

- The new RPP being used on **NP swabs** *only*:
  - detects both rhinovirus and enterovirus, but does not differentiate them.
  - detects the bacterial pathogens *Mycoplasma pneumoniae, Chlamydia pneumoniae, Bordetella pertussis* and *Bordetella parapertussis*.
  - allows more frequent testing and shorter turnaround times.
  - should NOT be used as the primary test to detect *Bordetella pertussis/parapertussis* since it is less sensitive that our in-house PCR (EPIC: LAB923).
- All *Bordetella pertussis* positive results from the new RPP will automatically be confirmed using our in-house PCR since it is more specific.
- The multiplex molecular panels should be reserved for inpatients and patients with underlying immunodeficiencies or co-morbidities. All other patients should be tested by the Rapid Influenza PCR or Rapid RSV/Influenza PCR *only*.

A summary of available molecular respiratory tests are summarized in the table below.

Test Name (SMS)	Influenza A and B Detected	Influenza A Typing	Other* Respiratory Pathogens Detected	Acceptable Specimens	Turn-around time	Testing Schedule	Charge
Rapid Influenza PCR[a]	Yes	No	No	NP swab NP aspirate Nasal wash	60 min	24/7	$231
Rapid RSV/ Influenza Combo PCR[a]	Yes	No	Yes: RSV	NP swab NP aspirate Nasal wash	60 min	24/7	$382

Respiratory Pathogen Panel[b]	Yes	Seasonal H1 and H3, H1N1 (2009)	Yes: panel of viruses and bacteria[c]	NP swab	4-12h M-F 12-24h Sat/Sun	4 runs/day M-F once/day Sat/Sun	$691
Respiratory Virus Panel[d]	Yes	Seasonal H1 and H3, H1N1 (2009)	Yes: panel of viruses[e]	Lower respiratory tract specimens	24-96 hours	once/day M-F	$747

[a]Detailed performance characteristics of the Xpert Xpress Flu/RSV can be found in this manuscript: https://www.ncbi.nlm.nih.gov/pubmed/29769281 (PMID 29769281)

[b]Detailed performance characteristics of the BioFire Respiratory Pathogen Panel (RP2) can be found in this manuscript: https://jcm.asm.org/content/56/6/e01945-17.long (PMID 29593057)

[c]Other pathogens detected include: respiratory syncytial virus, parainfluenza 1/2/3/4, metapneumovirus, rhinovirus/enterovirus, adenovirus, coronavirus, *Mycoplasma pneumoniae, Chlamydia pneumoniae, Bordetella pertussis, Bordetella parapertussis*.

[d]Detailed performance characteristics of the GenMark Dx RVP test can be found in this manuscript: http://jcm.asm.org/content/51/5/1528.long (PMID 23486707)

[e]Other viruses detected include: respiratory syncytial virus, parainfluenza 1/2/3/4, metapneumovirus, rhinovirus, adenovirus and coronavirus.

Questions can be directed to the Molecular Microbiology Laboratory at 984-974-1820 or Dr. Melissa Miller at Melissa.Miller@unchealth.unc.edu.