

Making Sense of COVID-19

Tests, Outbreaks, & Medication Management

October 27th 2020



Today's Format

- Three speakers, one hour
- Fast-paced and feature packed
- Questions at the end
- Recording and slides will be emailed after the event



Our Speakers







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Making Sense of Covid-19 Tests

PCR, Antibody, Antigen



Peter P. Patterson MD MBA FCAP



PCR (polymerase <u>chain reaction</u>) Test

- <u>What It Does</u>: detects the presence of the virus genetic material mRNA (tests for current Covid-19 infection)
- <u>How it Works</u>: uses a naso-pharyngeal swab or saliva sample. Looks for 3 key mRNA genes of the coronavirus. PCR (polymerase chain reaction) greatly amplifies virus genetic material if present.
- <u>What does a positive result mean?</u>: A positive PCR test means active Covid-19 infection.
- <u>How fast? How accurate is it?</u>: PCR takes ~2hrs.; TAT 1-day up to 10-14 days; Considered the most reliable Covid-19 test. It can detect 100 virus copies in 0.1ml. (infected person usually has millions in 0.1ml).



Covid-19 Antibody test

- <u>What it does</u>: Covid-19 antibodies arise in response to an acute infection. Antibody test identifies people who have had recent (or remote) coronavirus infection and indicates immunity. Population surveys of Covid Antibody (serosurveys) are a good way to track the spread through a region.
- <u>How it works</u>: This is a *blood* test (fingerprick or venipuncture). Looks for immunoglobulins (IgM,IgG) directed against the SARS-CoV-2 virus.
- <u>What does a positive result mean?</u>: indicates recent or past infection
- <u>How fast? How accurate?</u>: Immunoassays take a few hours. Turn-around-time a few days (non-urgent)



Covid-19 Antigen test

- <u>What it does</u>: Identifies people currently infected and communicable. Used to rapidly screen at-risk patients or front-line workers.
- <u>How it works</u>: Uses a nasal swab or saliva sample. Looks for a surface protein (antigen) from the coronavirus (cf. PCR-genes). Like a Dr.'s office strep test.
- <u>What does a positive test mean?</u>: A positive Ag test means <u>communicable</u>, active coronavirus infection.
- <u>How fast? How accurate?</u>: 15 minutes to get an answer. Slightly less sensitive than a PCR test.



Making Sense of Covid-19 Tests Summary

	PCR (Molecular)	Antigen	Serology
Test Measures	Virus genes	Virus coat protein	Antibodies to virus
Sample Type	NP swab or saliva	Nasal or throat swab (saliva)	Blood draw or Finger stick
A Positive means	Current active infection	Current infection (communicable)	Past exposure to Covid-19
Testing window	Days 1-28 after symptoms (exposure)	Days 1-28 after symptoms (exposure)	IgM/IgG From day 5 after symptoms to 6 wks
Result TAT	Same day or up to 10days (location varies)	Rapid point-of-care	Same day or up to 1-3 days



Little-known Secrets of Coronavirus Testing

- PCR test is <u>very</u> sensitive (detects 100 virus particles in 0.1ml) and can stay positive for weeks (well beyond infectious period)
- Ag test is only slightly less sensitive than PCR (i.e. "communicable" test) and fast answer (15 min.) is ideal for outbreak surveillance testing
- Return-to-work after quarantine period no test needed (per CDC)??
 - Antigen test is ideal here ... antigen negative (non-communicable)



Antigen test discordance interpretation

- Ag(+) PCR(-) Ohio Governor Mike Dewine ??!!
- Ag(-) PCR(+) indicates recent Covid-19 infection <u>Not</u> communicable (d/c quarantine)
- Dr. David Harris lab UA Tucson: Antigen test (>10,000 to date)
 - 300 ER/ICU cases: Ag test 96% Positive Predictive Value
 - Could <u>not</u> culture SARS-CoV-2 virus in Ag(-)/PCR(+) cases



News Flash ... Antigen card test ... coming to ALFs

- Abbott (BinaxNOW) being distributed to Assisted Living Facilities (ALF)
- Lateral flow immunoassay
- For point-of-care settings operating under CLIA Certificate of Waiver
- Read visually at 15 minutes (not before) and not after 30 minutes
- Built-in assay process control:
 - Untested card has blue line

) nod

Valid test shows blue → pink/purple line



SARS-CoV-2 Testing in Response to a Case

- Any new Covid-19 infection in a resident or patient-facing staff should prompt investigation (surveillance testing)
- Expand diagnostic testing for all residents and HCP personnel
 - Prioritize symptomatic residents and healthcare personnel
 - If testing supplies or capacity is limited, perform unit-based testing or testing of high-risk residents (e.g. roommates of COVID-19 infected residents)
- Perform repeat testing of all previously negative residents and HCP's
 - Test every 3-7 days until no new positive results are found after 14 days since last positive test result
 - If testing capacity is limited, prioritize testing for residents with known exposure and HCP's on affected units



Managing COVID-19 Outbreaks

In Acute & Post-Acute Settings



Madhu K. Murthy, MD, MHSA



Managing COVID-19 Outbreak

Definition:

PAC setting (SNF, LTC, ALF, LTAC)

• A resident or healthcare worker (HCW) with a positive lab test (PCR or Antigen)

Or

• Two or more residents or HCW with new-onset symptoms within 72 hours of each other



Acute Care or Hospital Setting

 Two or more patients who have a positive lab test (PCR or Antigen) 7 or more days after admission for a non-COVID condition

Or

 Two or more positive lab test in HCW who do not share a household and not close contact

Or

• A combination of above criteria

(h) nod

Measures:

- Communication:
 - Staff and patients
 - Updated policies
 - Facility preparedness
- Staff protection:
 - Screening (symptoms and testing)
 - Proper use of PPE
 - Education



Measures:

- Patient protection:
 - Transmission-based precautions
 - Screening
 - Risk stratification
- Be prepared
 - CDC and local health department guidelines
 - Key healthcare and community partners
 - Facility emergency plan



End of Outbreak

28 days from date of last symptoms

Or

• Last positive test of an asymptomatic person

(whichever is longer)



Discontinuation of Transmission-Based Precautions

Symptom-Based Strategy:

Mild to moderate illness and <u>not</u> severely immunocompromised

- At least 10 days since symptoms first appeared <u>and</u>
- At least 24 hours since last fever without antipyretics and
- Symptoms have improved



Discontinuation of Transmission-Based Precautions

Symptom-Based Strategy:

Severe to critical illness or severely immunocompromised

- At least 10 days and up to 20 days since symptoms first appeared <u>and</u>
- At least 24 hours since last fever without antipyretics and
- Symptoms have improved



Discontinuation of Transmission-Based Precautions for <u>Suspected Cases</u>

- Exclude by negative test (molecular assay for SARS-CoV-2)
- High clinical suspicion, continue precautions and repeat testing
- If testing not performed, symptom-based strategy can be used
- Clinical judgement and level of suspicion



Medication Management

During the COVID-19 Pandemic



Emily Schmitz, Pharm.D





Medication considerations

- Deprescribe
- Medication adjustments
- Anticoagulation
- Vaccine update



Deprescribe

- Discontinue meds that are unnecessary or provide minimal clinical benefit
 - Iron, vitamins, herbal supplements, docusate, etc
 - Long term preventative meds in residents limited life expectancy
- Temporarily discontinue meds
 - Calcium, magnesium, B12

Optimize Medication Use

- Reduce frequency of monitoring in stable residents
- Reduce frequency of medication dosing
 - Short to long acting formulations
 - TID => BID dosing, BID => daily dosing
- Change timing of doses
- Consolidate administration times



Reduce Risk of COVID-19 Transmission

- Nebulizers => hand-held inhalers (with spacer)
- Scheduled APAP => PRN
- Reduce unnecessarily frequent monitoring



Anticoagulation considerations

- LTC Resident with mild-moderate disease treating in place
 - Continue antithrombotic if already receiving
 - Start antithrombotic if high risk for VTE for up to 45 days
- LTC Resident with **severe** disease electing palliative treatment in place
 - Anticoagulation not recommended
 - If palliative treatment not elected => transfer to hospital
- Patients discharged to PALTC after hospitalization with mod-severe COVID-19
 - Continue prophylactic anticoagulation for up to 45 days
 - Continue therapeutic anticoagulation for up to 3 months
 - Consider conversion from LMWH => DOAC



Vaccine Update

- CDC partnering with CVS and Walgreens to offer on-site vaccinations
- Sign up- by Friday 11/6/20
 - LTC/ ALF: <u>https://redcap.link/LTCF</u>
- Cold chain considerations- Ultra low temp fridge or 23kg of dry ice
- No cost to facility
- Available to employees and residents
- Possibly need 2 doses, depending on type of vaccine approved





Questions?

