COVID-19

Update for the 23rd Annual Education Conference
David M. Aronoff, MD,
James B. Talmage, M.D.
Robert B. Snyder, M.D.

Current Information pertaining to
Tennessee Worker’s Compensation
• Session Key will be given toward the end
Presenters

- David M. Aronoff, MD, FIDSA, FAAM
  Professor & Addison B. Scoville Jr. Chair in Medicine
  Director, Division of Infectious Diseases
  Department of Medicine
  Vanderbilt University Medical Center

- James B. Talmage, M.D.
  Assistant Medical Director, Bureau of Workers’ Compensation
  Adjunct Associate Professor in the Division of Occupational Medicine,
  Department of Family and Community Medicine
  Meharry Medical College

- Robert B. Snyder, M.D.
  Medical Director, Bureau of Workers’ Compensation
COVID-19
Where Are We Now in Worker's Compensation

David M. Aronoff, MD, FIDSA, FAAM
Professor & Addison B Scoville, Jr Chair in Medicine
Director, Division of Infectious Diseases
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Outline

- Brief review of SARS-CoV-2
- Where we are today
- Clinical features of acute infection & timing related to exposure
- Transmission & protection from infection
- Diagnosis of acute & past infection
- Clinical features of post-infectious syndromes
My Experience with COVID-19

• Daily Zoom-based **multidisciplinary huddles** since March (7 days/week)
  • Involved in the care of all VUMC inpatients (>900)

• Lead **COVID-19 serology study** with TN Department of Health

• Multiple committees related to **diagnosis & treatment** of COVID-19

• Working with **businesses & schools** on reopening plans

• Active in **media communications** & public outreach
Brief Review of SARS-CoV-2
Coronavirus: COVID-19

• Infection due to newly discovered coronavirus

**COVID-19: Co**r**ona** Vi**r**us **D**isease identified in 2019

• Due to **SARS-CoV-2** virus

• Other coronaviruses:
  • SARS-CoV-1 (SARS, absent since 2004) & MERS-CoV (MERS) that cause serious disease
  • Others that cause common colds

• New virus = no immunity (everyone is at some risk)

• Emerged in China, of bat origin
SARS-CoV-2 Structure

Single-strand, enveloped RNA virus
Corona, from Latin, meaning crown (viral envelope has crown-like projections)

https://commons.wikimedia.org/wiki/File:3D_medical_animation_corona_virus.jpg
Where We Are Today
Where We Are Today

• World: >31 million cases & >950,000 deaths
• America: >7 million cases total & >200,000 deaths
• Tennessee: >180,000 cases & >2,200 deaths
  • We are currently the 9th most active state in the USA
• Nashville: >27,000 cases & >250 deaths

(These data accessed on 09/19/2020)
Clinical Features of Acute Infection & Timing Related to Exposure
COVID-19
Who’s at Risk?

- Anyone can become infected
- Some at higher risk for severe infections:
  - Older age
  - Underlying comorbid illnesses (high blood pressure, diabetes, obesity)
  - Immunocompromised
- Children with lower risk for clinical infection / hospitalization:
  - Can have asymptomatic infection & spread disease
COVID-19 Incubation: Infection to Illness Onset

- Among 10 confirmed NCIP cases in Wuhan, Hubei province, China\textsuperscript{[1]}
  - Mean incubation: 5.2 days
    (95% CI: 4.1-7.0)
- Among 181 confirmed SARS-CoV-2 infections occurring outside of Hubei province\textsuperscript{[2]}
  - Median incubation: 5.1 days
    (95% CI: 4.5-5.8)
  - Symptom onset by Day 11.5 of infection in 97.5% of persons


\textbf{Estimated Incubation Period Distribution}\textsuperscript{[1]}

\begin{itemize}
  \item Days From Infection to Symptom Onset
  \item Relative Frequency
\end{itemize}
Distribution of Receptors for SARS-CoV-2

Baraniuk C, The Scientist, 04/29/2020
Primary Symptoms of COVID-19

- Headache
- Congestion or runny nose, new loss of taste or smell
- Cough, sore throat
- Fatigue, muscle or body aches, fever or chills
- Shortness of breath or difficulty breathing
- Nausea or vomiting, diarrhea

“Symptoms may appear **2-14 days after exposure** to the virus”

Most people get symptoms but **20-40%** do not
COVID-19 Clinical Presentation May Vary by Age, Sex

- Observational study of Europeans with mild-to-moderate COVID-19 (ie, no ICU admission) via standardized questionnaire (N = 1420)\(^1\)
  - **Mean duration of symptoms** (n = 264): 11.5 ± 5.7 days
  - Ear, nose, throat complaints more common in **young patients**; fever, fatigue, loss of appetite, diarrhea in **elderly patients** (P < .01)
  - Loss of smell, headache, nasal obstruction, throat pain, fatigue more common in **women**; cough, fever in **men** (P < .001)

- Among 17 fatal COVID-19 cases detailed by the China National Health Commission, **median time from first symptom to death**: 14 days (range: 6-41)\(^2\)
  - Numerically faster in **older patients**: 11.5 days if ≥ 70 yrs vs 20 days if < 70 yrs (P = .033)


Slide credit: adapted from clinicaloptions.com
Frequency of Presenting Symptoms Among COVID-19–Positive Hospitalized Patients in the UK

Median symptom duration preceding admission among 16,221 patients: 4 days (IQR: 1-8)
## Outcomes of SARS-CoV-2 Infection

<table>
<thead>
<tr>
<th>Asymptomatic</th>
<th>Mild / moderate</th>
<th>Severe</th>
<th>Critical</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-40%</td>
<td>80%</td>
<td>15%</td>
<td>&lt;5%</td>
<td>1-3%</td>
</tr>
</tbody>
</table>

1. Mild to moderate = mild symptoms up to mild pneumonia
2. Severe = shortness of breath, hypoxia, or >50% lung involvement on imaging
3. Critical = Respiratory failure, shock, or multiorgan system dysfunction
4. Deaths = case fatality rate; proportion of diagnosed cases that died

# Outcomes of SARS-CoV-2 Infection in TN

## Statewide Totals

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confirmed and Probable Cases</td>
<td>180,497</td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>15,120</td>
<td></td>
</tr>
<tr>
<td>COVID-19 Related Deaths</td>
<td>2,196</td>
<td>1.2% of cases</td>
</tr>
<tr>
<td>Hospitalizations</td>
<td>8,063</td>
<td>4.5% of cases</td>
</tr>
<tr>
<td>Recovered</td>
<td>163,181</td>
<td>90.4% of cases</td>
</tr>
</tbody>
</table>

**Last update:** 9/18/2020  
**Next update:** 9/19/2020 5:00 PM CDT

https://myutk.maps.arcgis.com/apps/opsdashboard/index.html#72ce9fd4bee241f28c2f4f70f338a4e4
COVID-19
Different than Influenza

**COVID-19**
- No underlying immunity
- More prolonged period of asymptomatic/ pre-symptomatic infection (perhaps up to 10-12 days prior to symptoms)
- Fatality rates ~ 10-fold higher

**Seasonal Influenza**
- Vaccine available
- Prior infection protection
- Some asymptomatic & pre-symptomatic detection of virus (but shorter time, ~1 day)
Transmission & Protection from Infection
Proposed Routes of SARS-CoV-2 Transmission

**Urine/feces:** RNA found in both; live virus cultivated from few specimens

**Points of entry:** Eyes, nose, or mouth

**SARS-CoV-2-Infected Host**

- **Aerosols**
  - < 5 µm diameter
  - Suspended in air
  - Airborne (?)
  - > 1 meter *distance*

- **Contact/Droplet**
  - > 5 µm diameter

- **Direct contact**
  - or
  - < 1 meter *distance*

- **Fomites (?)**

- **Environmental Stability**

**Susceptible Host**

Key Considerations on Modes of SARS-CoV-2 Transmission

- Person-to-person considered predominant mode of transmission, likely via respiratory droplets from *coughing, sneezing, or talking*\(^1,2\)
  - High-level viral shedding evident in upper respiratory tract\(^3,4\)
  - Airborne transmission *suggested* by multiple studies, but frequency unclear in absence of aerosol-generating procedures in healthcare settings\(^2\)

- Virus *rarely cultured in respiratory samples > 9 days after symptom onset*, especially in patients with mild disease\(^5\)

- Multiple studies describe a correlation between *reduced infectivity with decreases in viral loads* and rises in neutralizing antibodies\(^5\)

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*Slide credit: clinicaloptions.com*
The Importance of Silent Transmission

“Nobody wants to think of themselves as being infected with the SARS-CoV-2 virus, capable of killing somebody, especially when they feel normal and have zero symptoms of infection,” Aronoff said. “Silent transmission events are fueling this pandemic.”

-LA Times, July 25, 2020
Timing of SARS-CoV-2 Transmission Based on Symptoms

- Prospective study of lab-confirmed COVID-19 cases (n = 100) & their close contacts (n = 2761) in Taiwan[^1]
  - Transmission occurred more frequently with exposure just before or within 5 days of symptom onset vs later

- Pre-symptomatic infections
  - Accounted for 6.4% of locally acquired infections in a study in Singapore (N = 157)[^2]
  - Modelling study of transmission in China (n = 154) estimated that 44% of transmissions may have occurred just before symptoms appeared[^3]

- A recent systematic review & meta-analysis estimated that the proportion of total infections that are truly asymptomatic range from 6% to 41% (pooled estimate of 15%)[^4]
  - Asymptomatic transmission rates ranged from 0% to 2.2% vs symptomatic transmission rates of 0.8% to 15.4%
  - 3 studies reported that the estimated viral load did not differ between symptomatic & asymptomatic individuals

[^3]: Slide credit: adapted from clinicaloptions.com
## Nonpharmacologic Preventative Interventions

### Recommended Prevention Strategies\(^{[1,2]}\)

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify &amp; quickly test suspect cases with subsequent isolation of infected individuals</td>
<td></td>
</tr>
<tr>
<td>Quarantine close contacts of infected individuals</td>
<td></td>
</tr>
<tr>
<td>Wash hands often with soap &amp; water, sanitizer</td>
<td></td>
</tr>
<tr>
<td>Maintain social distance (~ 6 feet)</td>
<td></td>
</tr>
<tr>
<td>Wear cloth face cover in public(^{[3,4]})</td>
<td></td>
</tr>
<tr>
<td>Practice respiratory etiquette</td>
<td></td>
</tr>
<tr>
<td>Disinfect frequent-touch surfaces regularly</td>
<td></td>
</tr>
<tr>
<td>Avoid crowds, close-contact settings, and poorly ventilated spaces</td>
<td></td>
</tr>
</tbody>
</table>


Slide credit: clinicaloptions.com
RESEARCH LETTER

Association Between Universal Masking in a Health Care System and SARS-CoV-2 Positivity Among Health Care Workers

The coronavirus disease 2019 (COVID-19) pandemic, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has severely affected health care workers (HCWs). As a result, hospitals, medical centers, and other health care organizations have implemented various strategies to reduce transmission of SARS-CoV-2 among HCWs. One such strategy is the universal masking of all HCWs, regardless of symptom status. However, the effectiveness of universal masking in combination with “lock-down” measures in managing the COVID-19 pandemic remains unclear. To assess the likely effectiveness of face masks in combination with “lock-down” measures in managing the COVID-19 pandemic, we conducted a modeling study in a health care system with 1,000,000 employees. The data were obtained from the Institute for Health Metrics and Evaluation. The results showed that the effectiveness of universal masking in combination with “lock-down” measures in managing the COVID-19 pandemic was 80%. The study was conducted in collaboration with the Institute for Health Metrics and Evaluation and the Johns Hopkins Center for Health Security. The findings suggest that universal masking in combination with “lock-down” measures can significantly reduce the transmission of SARS-CoV-2 among HCWs.

Masks Do More Than Protect Others During COVID-19: Reducing the Inoculum of SARS-CoV-2 to Protect the Wearyer

Monica Gandhi, MD, MPH 1, Chris Beyrer, MD, MPH, 1 and Eric Goosby, MD 1

1Department of Medicine, Division of Infectious Diseases and Global Medicine, University of California, San Francisco, CA, USA; 2Tel Aviv University, Tel Aviv, Israel

Although the benefit of population-level public face mask use has been well recognized during the COVID-19 pandemic, the importance of individual face mask use remains to be understood. We conducted a modeling study using a mathematical model to assess the impact of individual face mask use on the transmission of SARS-CoV-2. The results showed that individual face mask use can reduce the transmission of SARS-CoV-2 by 60%. The study was conducted in collaboration with the Institute for Health Metrics and Evaluation and the Johns Hopkins Center for Health Security. The findings suggest that individual face mask use can significantly reduce the transmission of SARS-CoV-2 and protect the wearyer.

NOTICE

Please follow CDC guidelines and wear a face covering in our facility.

Thank you.


Association of country-wide coronavirus mortality with demographics, testing, lockdowns, and public wearing of masks (Update July 2, 2020)

Christopher T. Leffler, MD, MPH 1,2,3
Edel Ing MD, MPH, CPH, MiAD 4
Joseph D. Lynke V, MD 1,4
Matthew C. Hogan, NIS, MPH 5
Craig A. McKeeon, MD 6
Andrzej Gryczowski, MD, PhD, MBA 7,8
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Face Masks Considerably Reduce Covid-19 Cases in Germany

A synthetic control method approach

Timo Mütze,1 Reinhold Kostafoß2, Johannes Röde3 and Klaus Wilder4,5

1University of Southern Denmark, 2MHI and ROA, 3University of Kassel, 4Lund University and 5Johannes Gutenberg University Mainz, CC46247 and Visiting Research Fellow DAn
3 June 2020

For reprint orders, please contact: reprints@keelpublishing.com
Diagnosis of Acute & Past Infection
A Word on Sampling

Nasal  Nasopharyngeal  Saliva

# Different Types of Coronavirus Tests

<table>
<thead>
<tr>
<th></th>
<th><strong>Molecular Test</strong></th>
<th><strong>Antigen Test</strong></th>
<th><strong>Antibody Test</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Also known as...</strong></td>
<td>Diagnostic test, viral test, molecular test, nucleic acid amplification test (NAAT), RT-PCR test, LAMP test</td>
<td>Rapid diagnostic test (Some molecular tests are also rapid tests.)</td>
<td>Serological test, serology, blood test, serology test</td>
</tr>
</tbody>
</table>
| **How the sample is taken...** | Nasal or throat swab (most tests)  
Saliva (a few tests) | Nasal or throat swab                               | Finger stick or blood draw |
| **How long it takes to get results...** | Same day (some locations)  
or up to a week | One hour or less                                   | Same day (many locations)  
or 1-3 days |
| **Is another test needed...** | This test is typically highly accurate and usually does not need to be repeated. | Positive results are usually highly accurate but negative results may need to be confirmed with a molecular test. | Sometimes a second antibody test is needed for accurate results. |

[https://www.fda.gov/consumers/consumer-updates/coronavirus-testing-basics](https://www.fda.gov/consumers/consumer-updates/coronavirus-testing-basics)
Molecular Detection (NAAT*, RNA-based)

- Detects viral RNA
- Uses an AMPLIFICATION step that makes it very sensitive
- Can be done on nasopharyngeal, nasal or saliva samples
- Requires special reagents & instrumentation
- Highly accurate but false negatives can occur, particularly early after infection
- There are ~150 FDA-authorized/EUA tests available

*NAAT = nucleic acid amplification test

# RNA-based Tests

## Advantages & Disadvantages

<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Accurate</td>
<td>• Machinery &amp; reagents</td>
</tr>
<tr>
<td>• Often can increase throughput (many tests per run/day)</td>
<td>• Supply chain</td>
</tr>
<tr>
<td>• Very sensitive</td>
<td>• Throughput can be limiting with point-of-care (PoC) platforms</td>
</tr>
<tr>
<td></td>
<td>• Detects RNA NOT infectious virus, so does NOT inform about infectivity (contagiousness)</td>
</tr>
<tr>
<td></td>
<td>• Viral RNA can be detected long after recovery / not contagious</td>
</tr>
</tbody>
</table>

*NAAT = nucleic acid amplification test*
Antigen Detection (Protein)

- Detects viral structural protein
- Can be done on nasopharyngeal, nasal or saliva samples
- Amenable to rapid, POC testing
- Not as sensitive as NAATs*
- Inexpensive

*NAAT = nucleic acid amplification test

Antigen Tests
Advantages & Disadvantages

**ADVANTAGES**

- Rapid
- Cheap
- POC use

**DISADVANTAGES**

- Sensitivity not as good as NAAT*
  - Must be shedding a LOT of virus to be detected
  - Maybe false positive issues
  - Not as much experience with these
    - Performance in the real world not entirely clear

*NAAT = nucleic acid amplification test
Antigen Tests with FDA EUA

### Individual EUAs for Antigen Diagnostic Tests for SARS-CoV-2

This table includes information about authorized SARS-CoV-2 antigen diagnostic tests that have been authorized individually. These EUAs have been issued for each individual test with certain conditions of authorization required of the manufacturer and authorized laboratories.

<table>
<thead>
<tr>
<th>Date EUA Issued</th>
<th>Manufacturer</th>
<th>Diagnostic (Letter of Authorization)</th>
<th>Technology</th>
<th>Authorized Setting(s)¹</th>
<th>Authorization Documents²</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/26/2020</td>
<td>Abbott Diagnostics Scarborough, Inc.</td>
<td>BinaxNOW COVID-19 Ag Card</td>
<td>Antigen</td>
<td>H, M, W</td>
<td>HCP, Patients, IFU</td>
</tr>
<tr>
<td>08/18/2020</td>
<td>LumiraDx UK Ltd.</td>
<td>LumiraDx SARS-CoV-2 Ag Test</td>
<td>Antigen</td>
<td>H, M, W</td>
<td>HCP, Patients, IFU</td>
</tr>
<tr>
<td>07/02/2020</td>
<td>Becton, Dickinson and Company (BD)</td>
<td>BD Veritor System for Rapid Detection of SARS-CoV-2</td>
<td>Antigen</td>
<td>H, M, W</td>
<td>HCP, Patients, IFU</td>
</tr>
<tr>
<td>05/08/2020</td>
<td>Quidel Corporation</td>
<td>Sofia SARS Antigen FIA</td>
<td>Antigen</td>
<td>H, M, W</td>
<td>HCP, Patients, IFU</td>
</tr>
</tbody>
</table>

Antibody Tests for Past Infection

• Measurable, circulating antibodies in the blood develop in many, but not all patients after infection
• These are typically IgG or IgM antibodies that can be reliably detected using blood tests (not fingerstick tests yet)
• Tests become positive about 3-4 weeks after infection but can be negative, especially if illness very mild or asymptomatic (false negative result)
• Antibodies can fall below detectable levels within a few months (false negative result)
## Antibody Tests
### Advantages & Disadvantages

<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
</table>
| • Suggest past infection, especially if typical symptoms occurred  
  • Can be used to estimate prevalence of disease in the population (at least within the past 3+ weeks) | • False negatives can occur  
  • Positive test does not mean a person is protected from getting reinfected  
    • Though hopefully protected against severe infection |
Clinical Features of Post-Infectious Syndromes
Complications of COVID-19

Direct damage from SARS-CoV-2
- Stroke, encephalopathy, brain fog, dizziness, anxiety, insomnia, headache

Inflammation
- Loss of taste or smell
- Cough, sore throat
- Respiratory failure, emboli, dyspnea, O₂ use, cough
- Kidney injury, failure
- Nausea, diarrhea

Blood clots in small & large vessels
- Chest pain, heart dysfunction, palpitations
- Chronic fatigue, muscle/body aches, joint pain

Yong, E. The Atlantic. 08/19/2020
https://www.eatthis.com/covid-main-symptoms/
The lasting misery of coronavirus long-haulers

Months after infection with SARS-CoV-2, some people are still battling crushing fatigue, lung damage and other symptoms of 'long COVID'.

Michael Marshall
Long-term Symptoms of COVID-19

- Patients are reporting long term sequelae of COVID-19
- Women > men
- Young & previously fit & healthy
- “Many long-haulers start feeling better in their fourth or fifth month, but recovery is tentative, variable, and not guaranteed”

Yong, E. The Atlantic. 08/19/2020
Also see Lambert, N. J. & Survivor Corps. COVID-19 “Long Hauler” Symptoms Survey Report. Indiana University School of Medicine; 2020
https://www.eatthis.com/covid-main-symptoms/
Thanks to all the providers at VUMC, the patients & their families

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@DMAronoff  🚀
An invader's impact
In serious cases, SARS-CoV-2 lands in the lungs and can do deep damage there. But the virus, or the body's response to it, can injure many other organs. Scientists are just beginning to probe the scope and nature of that harm.

1 Lungs
A cross section shows immune cells crowding an inflamed alveolus, or air sac, whose walls break down during attack by the virus, diminishing oxygen uptake. Patients cough, fevers rise, and breathing becomes labored.

2 Heart and blood vessels
The virus (red) enters cells, likely including those lining blood vessels, by binding to angiotensin-converting enzyme 2 (ACE2) receptors on the cell surface. Infection can also promote blood clots, heart attacks, and cardiac inflammation.

3 Brain
Some COVID-19 patients have strokes, seizures, confusion, and brain inflammation. Doctors are trying to understand which are directly caused by the virus.

4 Eyes
Conjunctivitis, inflammation of the membrane that lines the front of the eye and inner eyelid, is more common in the sickest patients.

5 Nose
Some patients lose their sense of smell. Scientists speculate that the virus may move up the nose's nerve endings and damage cells.

6 Liver
Up to half of hospitalized patients have enzyme levels that signal a struggling liver. An immune system in overdrive and drugs given to fight the virus may be causing the damage.

7 Kidneys
Kidney damage is common in severe cases and makes death more likely. The virus may attack the kidneys directly, or kidney failure may be part of whole-body events like plummeting blood pressure.

8 Intestines
Patient reports and biopsy data suggest the virus can infect the lower gastrointestinal tract, which is rich in ACE2 receptors. Some 20% or more of patients have diarrhea.
Topics

- Clinical Update
- Current Bureau Statistics
- Presumptions
- Causation
- MMI
- Impairment Ratings
- Return-to-Work Guidelines
- Worker and Business Observations
- Q&A
• Total claims filed are 15% lower than 2019
• COVID-19 Claims are < 6% total claims filed so far for the year
• Filed COVID-19 Cases:
  – September 13: 133 (peak 194-July 26)
  – Denied 44
• Cumulative
  Total 2616
  Denied 1201
Analysis

• The claims not denied may still be investigated or pending (2-week period)
• NCCI has not yet sent us the industry codes to tell us where the claims are coming from
• The data on the reason for denials is not captured accurately with the forms that are filed with the Bureau
• No disputes (denied claims) filed with the court (CWCC)
  – so far not through mandatory mediation
Presumptions

• Types
  – Limited
    • first responders
    • healthcare workers
  – Broad
    • if proof of work exposure

• Other states
  – Broad
  – Limited
  – None-Tennessee
  – Washington State

• Process
  – Laws
  – Executive Orders
High rate “Infection” in asymptomatic persons
Thus, becoming INFECTED by Contact with the General Public, OR Co-Workers, IS POSSIBLE
CAUSATION

• **When** is Covid-19 a “Work Compensable Illness”?

• **Dr. Snyder’s Update** on Current # of Claims, # of Denials, and the status of “Presumption” Laws and Orders.

• **DECISION on Compensability** is the **Insurer’s**
  – **Or, If Appealed, the Judge in CWCC**-
  – **Just as in any other claim** for injury or illness.

• Guidance from the TN Bureau of Workers’ Compensation
CAUSATION

• To Assist Employees who wish to File a Claim
  – Include a copy of Test Result for the Virus
  – Include copies of Medical Records of ALL Treatment Providers
    • ER, Urgent Care, PCP, Hospital
  – Include a statement from Employee of
    • Date of His/Her Symptom Onset and How he/she was Exposed at work
    • Date of Onset of Symptomatic Illness [IF Any] in those working with or living with the employee
  – Employer Should ADD
    • Job Description
    • Employee attendance records for pertinent interval.
      – 1 week BEFORE Symptom Onset until Stable RTW occurred
CAUSATION

- “MISTAKE AVAILABLE TO BE MADE”
- Be AWARE: MD’s or NP’s diagnosing and treating Covid-19 patients may NOT be used to, or familiar with, the TN Workers’ Compensation system requirements for documenting facts need for causation DECISIONS.
- Or Aware of what Employers REQUIRE before RTW
- Or Aware of Concepts of MMI and PPI.
CAUSATION

• Employer/Insurer Due Diligence
  – In circumstances where an employer relies on its own interpretation of medical evidence without seeking an expert medical opinion to support its interpretation, fails to take reasonable steps to investigate a claim before denying it, fails to consider evidence in favor of the injured worker, and/or declines to reconsider its denial of a claim in the face of newly-discovered countervailing evidence, an interlocutory award of fees may be appropriate.

• **IF MD/NP** treating an Employee for Covid-19 is **NOT Aware** of:
  – EEOC/CDC rules/guidance on RTW
  – Workers’ Compensation Concepts of Causation MMI, PPI, etc.

• And since the MDs who usually treat Injured Workers for more serious conditions [Orthopaedists, Neurosurgeons, etc.]
  – **Will not be comfortable with** Causation, MMI, PPI, etc. in Covid-19
  – Consider **Occupational Medicine** or **PM&R** doctors for these decisions.
    • [https://acoem.org/find-a-provider](https://acoem.org/find-a-provider)
    • [https://members.aapmr.org/AAPMR/AAPMR_FINDER.aspx](https://members.aapmr.org/AAPMR/AAPMR_FINDER.aspx)
In Workers’ Compensation in General, Permanent Impairment Rating and Case Closure REQUIRE the individual to be “AT MMI”.

- Maximum Medical Improvement (MMI): The point at which a condition has stabilized and is unlikely to change (improve or worsen) substantially in the next year, with or without treatment.
- While symptoms and signs of the condition may wax and wane over time, further overall recovery or deterioration is not anticipated.
Guidance on MMI & PPI:

**TN BWC AdMI/Rable Review**
- MODIFIED to include rating PPI in AMA Guides, 5th Edition states

**Journal of Occupational and Environmental Medicine** – Open Access
September 2020 Issue - [https://journals.lww.com/joem/pages/default.aspx](https://journals.lww.com/joem/pages/default.aspx) then

file:///C:/Users/DrT/Downloads/Evaluating_Covid_19_Injury_Claims_With_a_Focus_on.5%20(3).pdf
Aside

• **If You Wish to Receive** the BWC Quarterly Newsletter on Workers’ Compensation Medical & Legal Topics,
  – AdMIRable Newsletter
  – E-mail Jay.Blaisdell@tn.gov, and **Ask** to be added to his e-mail list
# MMI - SCENARIOS

<table>
<thead>
<tr>
<th>SCENARIO Positive Test or MD Diagnosis</th>
<th>MMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never had symptoms</td>
<td>Out of quarantine &amp; 10 days after positive test</td>
</tr>
<tr>
<td>Pre-Symptomatic when tested</td>
<td>See Below</td>
</tr>
<tr>
<td>Mildly ill, recover at home</td>
<td>Asymptomatic, Back to Work, 2-3 weeks after symptoms have resolved, but if pneumonia was documented 4-8 weeks is typical *</td>
</tr>
<tr>
<td>Severe Disease, Hospitalized</td>
<td>Multiple studies, on other viruses with ICU treatment for ARDS, 50% of survivors have returned to work within 1 YEAR.</td>
</tr>
</tbody>
</table>

* = “Long Covid” was not well publicized at the time of the writing of these publications.
Pandemic Preparedness in the Workplace and the Americans with Disabilities Act

*UPDATED IN RESPONSE TO COVID-19 PANDEMIC - March 21, 2020*
Answered 20 Commonly Asked Questions, Including:

- *On March 11, 2020, the coronavirus disease (COVID-19) was also declared a pandemic.*
- **Special Exemptions NOW Apply**
- *Based on guidance of the CDC and public health authorities as of March 2020, the COVID-19 pandemic meets the direct threat standard.*
Tennessee Coronavirus
August 18, 2020
New Cases/Day/100,000 Population (Averaged over prior 7 days)
Statewide: 22.92 new cases/100,000 population/day

- Black: over 50 new cases/100,000 population/day
- Darkest Red: over 30 new cases/100,000 population/day
- Darker Red: over 20 new cases/100,000 population/day
- Red: 10-20 new cases/100,000 population/day
- Orange: 5-10 new cases/100,000 population/day
- Yellow: 1-5 new cases/100,000 population/day
- Green: Less than 1 new case/100,000 population/day
11. During a pandemic, may an employer require its employees to adopt infection-control practices, such as regular hand washing, at the workplace?
   – Yes.

12. During a pandemic, may an employer require its employees to wear personal protective equipment (e.g., face masks, gloves, or gowns) designed to reduce the transmission of pandemic infection?
   – Yes. An employer may require employees to wear personal protective equipment during a pandemic. However, where an employee with a disability needs a related reasonable accommodation under the ADA (e.g., non-latex gloves, or gowns designed for individuals who use wheelchairs), the employer should provide these, absent undue hardship.
Special Virus

- Distance of spread may be further than first thought

Fig 2 | Long range video imaging over 8 m of the multiphase turbulent cloud (gas cloud containing liquid droplets of all sizes) from natural human violent emission such as a sneeze, revealing a range of the cloud, and its droplet concentrated payload, of up to 7-8 m. Reproduced with permission from Bourouiba.
Masks

Do Your Part: WEAR A MASK

MY Mask Protects YOU

YOUR Mask Protects ME
What You Should Know About COVID-19 and the ADA, the Rehabilitation Act, and Other EEO Laws

Technical Assistance Questions and Answers - Updated on Sep. 8, 2020
A.1. **How much information** may an employer request from an **employee who calls in sick**, in order to protect the rest of its workforce during the COVID-19 pandemic? (3/17/20)

- During a pandemic, ADA-covered employers **may ask** such employees if they are experiencing **symptoms** of the pandemic virus.
- A2. Employers should **rely on the CDC**, other public health authorities, and reputable medical sources for guidance on **emerging symptoms associated with** the disease.
EEOC – What You Should Know

- A.3. When may an ADA-covered employer take the body temperature of employees during the COVID-19 pandemic? (3/17/20)

- Generally, measuring an employee's body temperature is a medical examination. Because the CDC and state/local health authorities have acknowledged community spread of COVID-19 and issued attendant precautions, employers may measure employees' body temperature. However, employers should be aware that some people with COVID-19 do not have a fever.
A.4. Does the ADA allow employers to require employees to stay home if they have symptoms of the COVID-19? (3/17/20)
   – Yes.

A.5. When employees return to work, does the ADA allow employers to require a doctor's note certifying fitness for duty? (3/17/20)
   – Yes.
A.6. May an employer administer a COVID-19 test (a test to detect the presence of the COVID-19 virus) when evaluating an employee’s initial or continued presence in the workplace? (4/23/20; updated 9/8/20 to address stakeholder questions about updates to CDC guidance)

The ADA requires that any mandatory medical test of employees be “job related and consistent with business necessity.” Applying this standard to the current circumstances of the COVID-19 pandemic, employers may take screening steps to determine if employees entering the workplace have COVID-19 because an individual with the virus will pose a direct threat to the health of others. Therefore an employer may choose to administer COVID-19 testing to employees before initially permitting them to enter the workplace and/or periodically to determine if their presence in the workplace poses a direct threat to others.
The ADA does not interfere with employers following recommendations by the CDC or other public health authorities regarding whether, when, and for whom testing or other screening is appropriate. Testing administered by employers consistent with current CDC guidance will meet the ADA’s “business necessity” standard.

- Hint: Ask your Employment Attorney

Consistent with the ADA standard, employers should ensure that the tests are considered accurate and reliable.
A.7. CDC said in its Interim Guidelines that antibody test results “should not be used to make decisions about returning persons to the workplace.” In light of this CDC guidance, under the ADA may an employer require antibody testing before permitting employees to re-enter the workplace? (6/17/20)

- No. An antibody test constitutes a medical examination under the ADA. In light of CDC’s Interim Guidelines that antibody test results “should not be used” to make decisions about returning persons to the workplace,” an antibody test at this time does not meet the ADA’s “job related and consistent with business necessity” standard for medical examinations or inquiries for current employees.
EEOC – What You Should Know

• A.8. May employers ask all employees physically entering the workplace if they have been diagnosed with or tested for COVID-19? (9/8/20; adapted from 3/27/20 Webinar Question 1)
  – Yes.

• A.10. May an employer ask an employee who is physically coming into the workplace whether they have family members who have COVID-19 or symptoms associated with COVID-19? (9/8/20; adapted from 3/27/20 Webinar Question 4)
  – No. The Genetic Information Nondiscrimination Act (GINA) prohibits employers from asking employees medical questions about family members. GINA, however, does not prohibit an employer from asking employees whether they have had contact with anyone diagnosed with COVID-19 or who may have symptoms associated with the disease.
A.11. What may an employer do under the ADA if an employee refuses to permit the employer to take his temperature or refuses to answer questions about whether he has COVID-19, has symptoms associated with COVID-19, or has been tested for COVID-19? (9/8/20; adapted from 3/27/20 Webinar Question 2)

Under the circumstances existing currently, the ADA allows an employer to bar an employee from physical presence in the workplace if he refuses to have his temperature taken or refuses to answer questions about whether he has COVID-19, has symptoms associated with COVID-19, or has been tested for COVID-19.
When is it SAFE for Employees – NOT in Health Care Settings (i.e. Hospitals, etc.)

- to Discontinue Isolation and
- Return to Work?

SAME Criteria for BOTH
CDC: Criteria to Discontinue Isolation & RTW

- **Updates as of July 20, 2020**
- **A test-based strategy is no longer recommended** to determine when to discontinue home isolation, except in certain circumstances.
- **Symptom-based criteria** were modified as follows:
  - Changed from “at least 72 hours” to “at least 24 hours have passed since last fever without the use of fever-reducing medications.”
  - Changed from “improvement in respiratory symptoms” to “improvement in symptoms” to address expanding list of symptoms associated with COVID-19.
- For **patients with severe illness**, duration of isolation for up to 20 days after symptom onset may be warranted. Consider consultation with infection control experts.
- For persons who never develop symptoms, isolation and other precautions can be discontinued 10 days after the date of their first positive RT-PCR test for SARS-CoV-2 RNA.
CDC Guidelines for Health Care Workers

Effect on Workers

- Education
  - Lower level-more affected
- Equipment: they do not have or would not help in their job
  - Internet access
  - Smartphone, computer
- Environment
  - Service industries, manufacturing
  - Food processing and distribution
  - Healthcare
- Disproportionate Impact
  - Poor
  - Geographic effect
  - Clusters
  - Medical Conditions
  - Age
For Workers’ Compensation

• Medical Benefits
  – responsible for treatment

• Indemnity
  – responsible for lost time-temporary disability (partial or total)
    • Isolation
      – Exposure, self-imposed
    • Quarantine
      – Tested positive or directed by doctor or Health Official
  – permanent impairment (partial or total)
Worker Protections

- Presumptions
  - Limited and specific
- Healthcare
  - Coverage
  - Medicaid-TennCare
  - Telehealth
- Unemployment
  - Eligibility and access to unemployment insurance and the “CARES” Act funds
- Leave
  - Coverage for quarantine or isolation
- Essential workers
  - Childcare
- Coercion
  - Forced return to work
**Liability Protection (PC0001ES2)-businesses, “persons”, employees**
- Comply with “CDC Guidelines”
- Protect against “Frivolous” suits-
  - “clear and convincing evidence...”
  - Gross negligence
  - Willful misconduct
  - Dismiss with prejudice

**Personal Protective Equipment (PPE)**
- Required
- Supplied
- Exposure and risk

**Mandates or Employer Requirements**
- Working conditions-exposure of employees, public
- PPE

**Coercion**
- Forced to work
Session Key

• XXXX
Mission:
“Fulfilling the Promise of Workers’ Compensation...today and tomorrow.”

Vision:
“To be the most effective Workers’ Compensation Regulatory Agency in the United States.”

Values:
Integrity, Excellence, Innovation, Transparency and Respect.
Thank You

• Questions
  – Live
  – Follow up