Occupational Health Update: Acute Care Facilities 4/23/24

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Disclosures

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- No financial relationships to disclose
- No off-label or investigational use of medications and/or devices
- The information and views set out in this presentation are those of the author and do not necessarily reflect the official opinion of the University of North Carolina at Chapel Hill or UNC Health

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Objectives

- ACIP Updates
- Vaccines for HCPs (Pre-exposure prophylaxis)
- Post-exposure prophylaxis (Bloodborne Pathogens)
- COVID-19
- Employee Well-Being
- Civic Health

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ACIP Updates

Advisory Committee on Immunization Practices

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ACIP January 2022 Update

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- **Pneumococcal Vaccines**
  - New availability of PCV 15 (Merck Sharp & Dohme Corp.) and PCV 20 (Wyeth Pharmaceuticals LLC)
  - Recommendation for PCV20 alone or PCV15 in combination with PPSV23 for previously unvaccinated 65y+ or 19-64 y/o with increased risk
    - If PCV15 is used, minimum interval of 8 weeks until PPSV23 administration
    - Prior PPSV23 – either PCV15 or PCV20 can be used
    - Prior PCV13 – continue with current schedule for PPSV23 afterwards (still under evaluation of added benefit of PCV15 or PCV20 after)

https://www.cdc.gov/mmwr/volumes/71/wr/mm7104a1.htm?s_cid=mm7104a1_w#T1_down

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Pneumococcal Vaccine Timing for Adults

Make sure your patients are up to date with pneumococcal vaccination.

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CDC recommends pneumococcal vaccination for

- Adults 65 years old and older
- Adults 19 through 64 years old with certain underlying medical conditions or other risk factors:
  - Alcoholism
  - Cerebrospinal fluid leak
  - Chronic heart/liver/lung disease
  - Chronic renal failure*
  - Cigarette smoking
  - Cochlear implant
  - Congenital or acquired asplenia*
  - Congenital or acquired immunodeficiencies*
  - Diabetes
  - Generalized malignancy*
  - HIV infection*
  - Hodgkin disease*
  - Iatrogenic immunosuppression*
  - Leukemia*
  - Lymphoma*
  - Multiple myeloma*
  - Nephrotic syndrome*
  - Sickle cell disease or other hemoglobinopathies*
  - Solid organ transplants*

* Considered an immunocompromising condition

Pneumococcal vaccines

PCV13: 13-valent pneumococcal conjugate vaccine (Prevnar13®)
PCV15: 15-valent pneumococcal conjugate vaccine (Vaxneuvance™)
PCV20: 20-valent pneumococcal conjugate vaccine (Prevnar20®)
PPSV23: 23-valent pneumococcal polysaccharide vaccine (Pneumovax®)

For those who have never received a pneumococcal vaccine or those with unknown vaccination history

Administer one dose of PCV15 or PCV20.

If **PCV20** is used, their pneumococcal vaccinations are complete.

PCV20

If **PCV15** is used, follow with one dose of PPSV23.
- The recommended interval is at least 1 year.
- The minimum interval is 8 weeks and can be considered in adults with an immunocompromising condition*, cochlear implant, or cerebrospinal fluid leak.
- Their pneumococcal vaccinations are complete.

PCV15 → At least 1 year apart (8 weeks can be considered) → PPSV23

For those who previously received PPSV23 but who have not received any pneumococcal conjugate vaccine (e.g., PCV13, PCV15, PCV20)

You may administer one dose of PCV15 or PCV20.

Regardless of which vaccine is used (PCV15 or PCV20):
- The minimum interval is at least 1 year.
- Their pneumococcal vaccinations are complete.

PPSV23 → At least 1 year apart → PCV15 or PCV20

NCIRDlg410 | 04/01/22

www.cdc.gov/pneumococcal/vaccination.html

CDC U.S. Department of Health and Human Services Centers for Disease Control and Prevention

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ACIP April 2022 Update

- Hepatitis B Vaccines are now universally recommended for all adults aged 19 – 59 years old instead of based solely on risk factors. This reflects the rising cases of Hepatitis B since nadir in 2014, and acknowledges that risk-based intervention misses people reluctant to disclose.
- Also note that ACIP recommendations for Hepatitis B screening was updated in March 2023 to include testing at least once per lifetime in addition to risk factor based testing

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ACIP June 2022 Update

- **JYNNEOS for Monkeypox**
  - Two vaccines (JYNNEOS and ACAM2000) for orthopoxviruses (including MPX and smallpox). JYNNEOS w/ much less contraindications.
  - Pre- or post- exposure prophylaxis indications based on risk factors (generally intimate, prolonged contact)
- Most healthcare workers do not need to get this vaccine. Exceptions include HCPs w high risk exposure (caring for +pt for prolonged period without PPE) and lab personnel handling specimens (current wording as of 4/10/23: "You work in settings where you may be exposed to mpox:
  - You work with orthopoxviruses in a laboratory
  - You are part of an orthopoxvirus and health care worker response team"

https://www.cdc.gov/mmwr/volumes/71/wr/mm7122e1.htm Vaccines |https://www.cdc.gov/poxvirus/mpox/vaccines/index.html Mpox | Poxvirus | CDC

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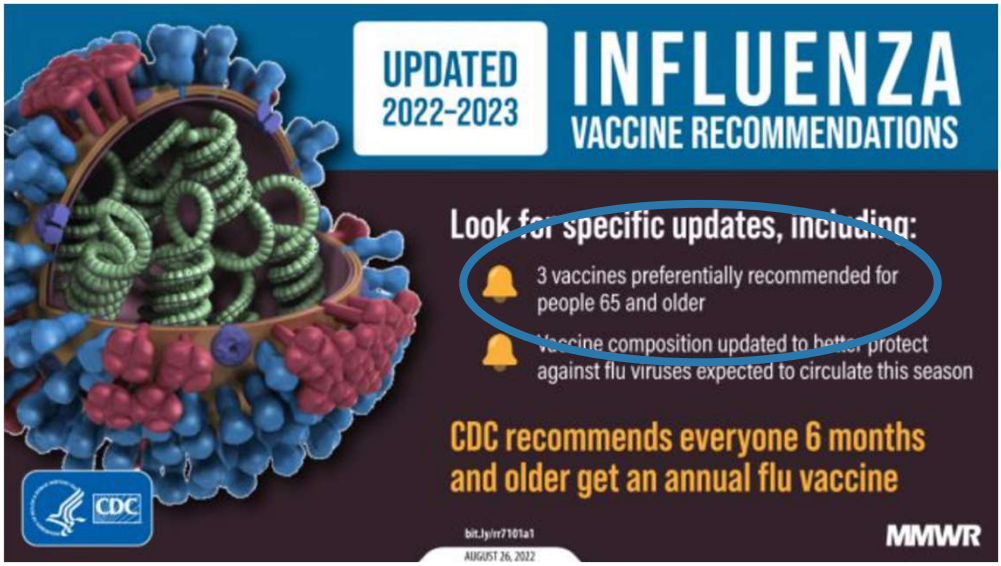
ACIP August 2022 Update



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ACIP June 2023 Update

- RSV Vaccine (Abrysvo or Arexvy) for adults 60+ (shared decision making)
  - Single dose (for now), high efficacy over two RSV seasons
  - Can be coadministered with other vaccines
  - Abrysvo is also recommended for pregnant people 32 – 36 wks GA from Sept – Jan
  - When vaccinating adults 60+ years, it should be done year round (in contrast with pregnant people and babies only during RSV season)

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ACIP December 2023 Update

- Polio
  - New: Unvaccinated or partially vaccinated adults should complete primary series
    - Case of polio in 2022 in NY in an unvaccinated adult prompted this new recommendation
  - Unchanged: Fully vaccinated adults with exposure risk (travel to endemic area, etc) should get one booster

https://www.cdc.gov/mmwr/volumes/72/wr/mm7249a3.htm

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Vaccines Indicated for Healthcare Personnel

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HCP Vaccination Recommendations

Vaccination	Recommendation
COVID-19	If not up to date, provide COVID-19 vaccine. Pts >6 months should receive 1 bivalent booster. (For adults, easiest to ask if they've received a booster since Sept 1, 2022.)
Hepatitis B	If no prior dose, either 2 doses of Heplisav-B or 3-dose series of either Engerix or Recombivax Obtain serology 1-2 months after final dose
Influenza	Give 1 dose annually
MMR	HCP born in 1957 or later need 2-doses of MMR, 4 weeks apart if no prior immunity or vaccination. Before 1957, consider serology testing and dosing if needed
Varicella	If no prior infection, serologic immunity, prior vaccination, give 2 doses of varicella vaccine 4 weeks apart
Tetanus, diphtheria, pertussis	Give 1 dose to all who have not received previously. Each pregnancy. Booster every 10 years (Td or Tdap)
Meningococcal	Routinely to microbiologists exposed to isolates of *N. Meningitidis*

https://www.cdc.gov/vaccines/adults/rec-vac/hcw.html

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ACIP COVID-19 Vaccine

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COVID Vaccination Recommendations (immunocompetent)

Ages 12 years and older

COVID-19 vaccination history prior to updated (2023–2024 Formula) vaccine*	Updated (2023–2024 Formula) vaccine	Number of updated (2023–2024 Formula) doses indicated	Dosage (mL/ug)	Vaccine vial cap and label colors§	Interval between doses
Unvaccinated	Moderna	1	0.5 mL/50 ug	Dark blue cap; blue label	—
	OR				
	Novavax	2	0.5 mL/5 ug rS protein and 50 ug Matrix-M adjuvant	Blue cap; blue label	Dose 1 and Dose 2: 3–8 weeks†
	OR				
	Pfizer-BioNTech	1	0.3 mL/30 ug	Gray cap; gray label	—
1 or more doses any mRNA; 1 or more doses Novavax or Janssen, including in combination with any Original monovalent or bivalent COVID-19 vaccine doses	Moderna	1	0.5 mL/50 ug	Dark blue cap; blue label	At least 8 weeks after last dose
	OR				
	Novavax	1	0.5 mL/5 ug rS protein and 50 ug Matrix-M adjuvant	Blue cap; blue label	At least 8 weeks after last dose
	OR				
	Pfizer-BioNTech	1	0.3 mL/30 ug	Gray cap; gray label	At least 8 weeks after last dose

*COVID-19 vaccination history refers to previous receipt of doses of Original monovalent mRNA or bivalent mRNA vaccine or a combination of the two; for people ages 12 years and older, Original monovalent Novavax COVID-19 Vaccine doses, alone or in combination with any mRNA vaccine doses; and for people ages 18 years and older, Janssen COVID-19 Vaccine doses, alone or in combination with any mRNA or Original monovalent Novavax vaccine doses.

†An 8-week interval between the first and second COVID-19 vaccine (Moderna, Novavax, and Pfizer-BioNTech) doses might be optimal for some people as it might reduce the small risk of myocarditis and pericarditis associated with these vaccines.

https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#recommendations

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COVID-19 Vaccine Update – Back to Monovalent

Take away – immunocompetent people over age of 5 only need one dose of the updated monovalent mRNA COVID vaccine since Sept 2023 (two doses if Novovax) to be up to date

https://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#Interchangeability

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COVID Vaccines

- So wait – I thought it wasn't required anymore for healthcare personnel?
  - The federal CMS regulation which had required all HCPs to be covid vaccinated has been retired. Individual hospitals, LTC companies, etc can decide to have it be an internal condition of employment if they wish. CMS continues to require reporting of HCPs' vaccination rates.

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- Yes, it is safe to receive COVID, flu and RSV shots at the same time!

- Make it as easy as possible for your staff and residents to get the latest COVID shots

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Hepatitis B

- **Indications**
  - Universal; HCP with potential blood exposure (OSHA required OR signed refusal)
- **Administration**
  - Prior to administration do not routinely perform serologic screening for HB unless cost effective
  - After last dose in the series, test for immunity (>10 mIU/mL); if inadequate provide one more series and test again for immunity; if inadequate test consider as "non-responder"
  - If non-immune after two series, test for HBsAg

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Hepatitis B

- HEPLISAV-B approved in late 2017
- Adults > 18 years of age
- Two doses one month apart
- Not studied in hemodialysis patients

Table 7
Study 3: Seroprotection Rates of HEPLISAV-B and Engerix-B[a]
(ages 18 - 70 years)

Age (years)	HEPLISAV-B[a]		Engerix-B[a]		Difference in SPRs (HEPLISAV-B minus Engerix-B)
	N	SPR (95% CI)	N	SPR (95% CI)	Difference (95% CI)
18-29	174	100.0% (97.9, 100.0)	99	93.9% (87.3, 97.7)	6.1% (2.8, 12.6)*
30-39	632	98.9% (97.7, 99.6)	326	92.0% (88.5, 94.7)	6.9% (4.2, 10.4)*
40-49	974	97.2% (96.0, 98.2)	518	84.2% (80.7, 87.2)	13.1% (9.9, 16.6)*
50-59	1439	95.2% (94.0, 96.3)	758	79.7% (76.6, 82.5)	15.5% (12.6, 18.7)*
60-70	1157	91.6% (89.9, 93.1)	588	72.6% (68.8, 76.2)	19.0% (15.2, 23.0)*

https://www.fda.gov/downloads/BiologicsBloodVaccines/Vaccines/ApprovedProducts/UCM584762.pdf

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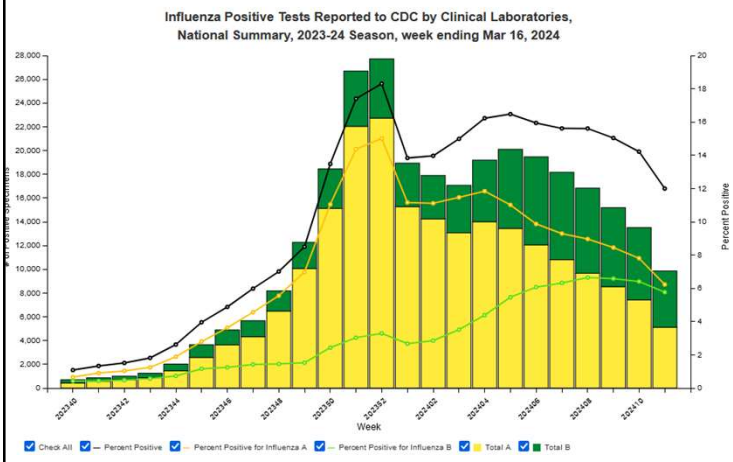
Influenza Season 23-24



	Week 11
No. of specimens tested	82,202
No. of positive specimens (%)	9,862 (12.0%)
Positive specimens by type	
Influenza A	5,121 (51.9%)
Influenza B	4,741 (48.1%)

Weekly U.S. Influenza Surveillance Report | CDC

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Every year individuals around the world work to study, track, and prevent flu. This page profiles these Flu Fighters and the work they are doing to contribute to flu prevention in the U.S. and around the world!

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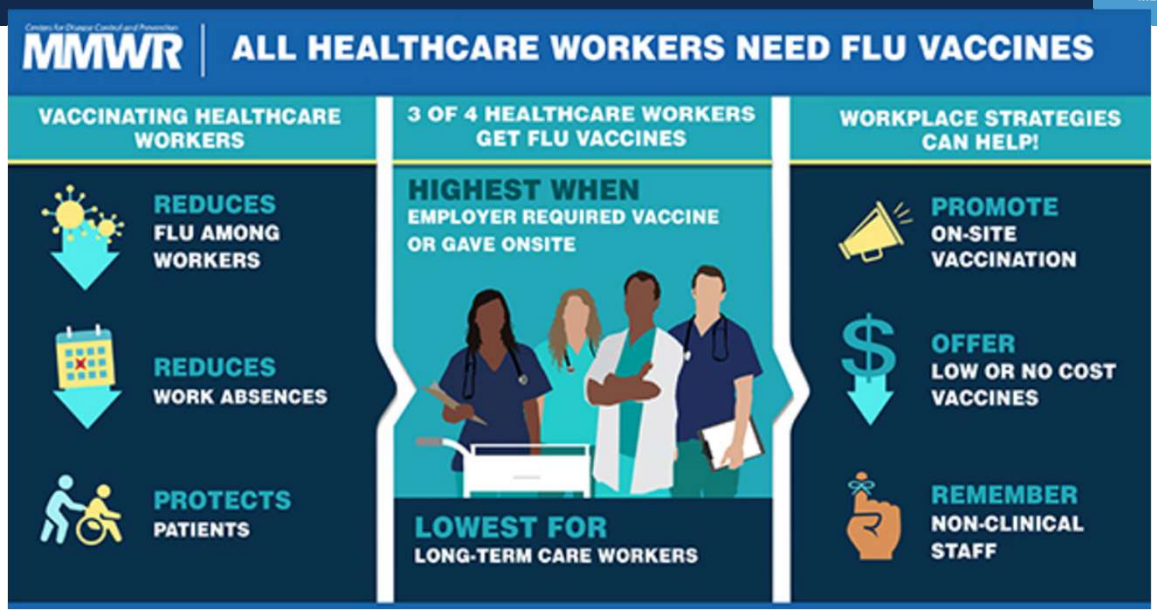

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Influenza vaccines

- ACIP recommendations
  - One annual dose for all persons ≥ 6 months of age (sometimes 2 doses for kids)
  - Required for residents and HCP in ECFs in NC (1 N.C. Gen. Stat. Ann. § 131E-113(a))
  - Required in SC LTC (S.C. Code Ann. Regs. 61-17)
  - No legal mandates for other healthcare workers
  - Immunize as soon as vaccine becomes available for the current season

https://www.cdc.gov/flu/pdf/professionals/acip/acip-2021-22-summary-of-recommendations-updated.pdf

Long-term-care-toolkit.pdf (cdc.gov)

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Measles is coming back

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Measles cases in 2024

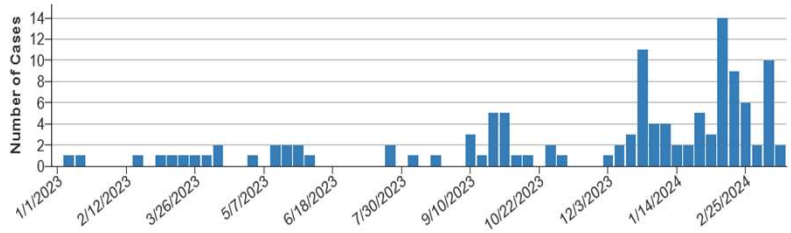
As of March 21, 2024, a total of 64 measles cases were reported by 17 jurisdictions: Arizona, California, Florida, Georgia, Illinois, Indiana, Louisiana, Maryland, Michigan, Minnesota, Missouri, New Jersey, New York City, Ohio, Pennsylvania, Virginia, and Washington.

More cases in 2024 so far than all of 2023

Super contagious: 9 out of 10 susceptible people who are exposed will contract measles

Number of measles cases reported by week

2023-2024* (as of March 21, 2024)



If you suspect a case of measles in your facility, call your local health department or NC Epi On Call 919-733-3419 IMMEDIATELY 24/7 (not days or hours later)

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Measles, Mumps, Rubella (MMR)

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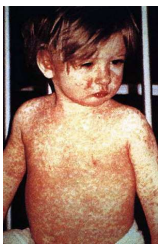
- **Measles**
  - Born before 1957: Consider immune (except during outbreak): Born after 1957: 2 doses
  - Immunity = Appropriate immunizations or positive serology
- **Mumps**
  - Born before 1957: Consider immune (except during outbreak): Born after 1957: 2 doses.
  - 3rd dose considered in outbreak settings.
  - Immunity = Appropriate immunizations or positive serology
- **Rubella**
  - 1 dose of MMR to susceptible women of childbearing potential
  - Immunity = Appropriate immunizations or positive serology



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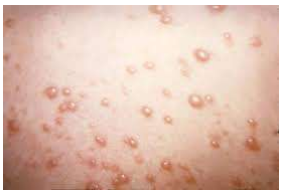
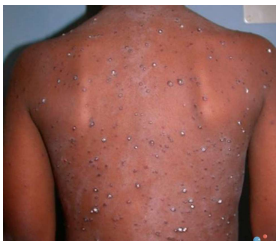
Varicella

- **Special consideration should be given to those who have close contact with**
  - Persons at high risk for severe disease (e.g., immunocompromised persons)
  - Persons are at high risk for exposure or transmission (e.g., teachers of young children, college students, military recruits, international travelers)
- **Immunity**
  - 2 doses of vaccine (gold standard), positive serology. Could also accept history of varicella if lab confirmed or epi-linked, but verbal report "I had chicken pox as a kid" doesn't count.
  - Receiving Shingrix vaccine does not count as immunity for varicella





https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6007a1.htm

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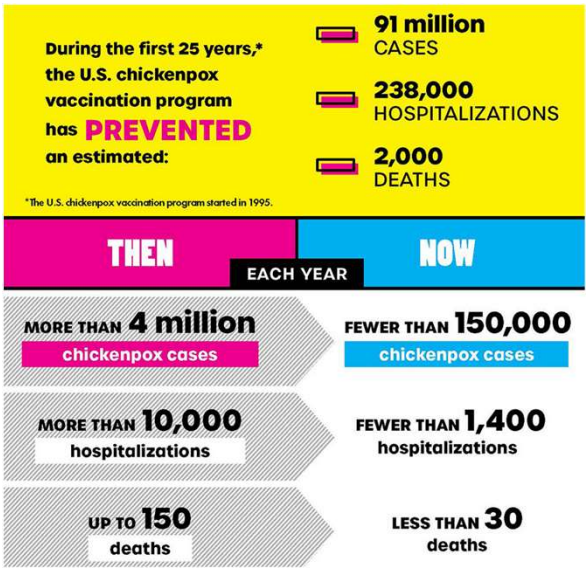
Varicella



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Tetanus-diphtheria-acellular pertussis (Tdap)

- **Substitute 1 dose Tdap for all adults when Td booster due if no history of Tdap.**
  - May be used to provide tetanus PEP
  - Provide to all adults with exposure to young children (no delay after Td)
  - Also recommended for pregnant people in each pregnancy (preferably 27-36 weeks gestational age)
  - Only one dose of Tdap is required, employees who are 10 years out from Tdap can be boosted with Td or Tdap (but Tdap preferred)

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Meningococcal Vaccine

- Recommended for adults had high risk of disease (persistent complement deficiency, functional or anatomic asplenia, or HIV infection (adolescents)).
  - Two vaccines series are needed: MenACWY and Serogroup B (MenB)
- MenACWY
  - Immunosuppressed – 2 doses of MenACWY and boosters every 5 years, 2 or 3-dose MenB
  - **Microbiologists – 1 dose, booster every 5 years (MenACWY), 2 or 3-dose MenB**
    - **Now they could get the combo MenABCWY vaccine when both are indicated**
  - Anatomic/functional asplenia patients should be vaccinated against MenACWY/MenB

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Tuberculosis Surveillance

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TAKE ON TB

To eliminate tuberculosis (TB), we must prioritize groups at increased risk of TB

Living in congregate settings is a risk factor for TB disease:

Homeless Shelters

Correctional Facilities

Long-term Care Facilities

www.cdc.gov/tb

CDC Centers for Disease Control and Prevention
National Center for HIV, Viral Hepatitis, STD, and TB Prevention

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TB Conversion in HCW

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Tuberculin Skin Test Conversions and Occupational Exposure Risk in US Healthcare Workers

Claudia C. Dobler,[1,2] Wigdan H. Farah,[2] Mouaz Alsawas,[2] Khaled Mohammed,[2,3] Laura E. Breeher,[1] M. Hassan Murad,[1,2] and Robin G. Molella[1]

[1]Division of Preventive, Occupational and Aerospace Medicine and [2]Evidence-Based Practice Center, Mayo Clinic, Rochester, Minnesota; and [3]Pediatric Residency Program, University of Minnesota, Minneapolis

Background. Healthcare workers (HCWs) undergo occupational tuberculosis screening at regular intervals. However, the risk of contracting tuberculosis at the workplace in a setting with a low background tuberculosis incidence is unclear. We aimed to evaluate the risk of tuberculin skin test (TST) conversion and the risk of occupational tuberculosis infection among HCWs in such a setting.

Methods. We conducted a retrospective cohort study of employees of a large tertiary medical center in the US Midwest who had undergone TST screening during the study period 1 January 1998 to 31 May 2014.

Results. Among 40 142 HCWs who received a TST, only 123 converted over 16.4 years. Only 9 (7%) of the converters had a suspected tuberculosis exposure at the workplace and none developed active tuberculosis. The majority of TST converters (66%) had a negative QuantiFERON-TB test at the time of the conversion.

Conclusions. In one of the largest cohorts of HCWs in a low-tuberculosis-incidence setting, we demonstrated an extremely low risk of occupational tuberculosis exposure among TST converters and no resulting active tuberculosis cases. In this setting, the approach of testing HCWs at baseline and after tuberculosis exposure, rather than at regular intervals, should be considered.

Keywords. tuberculosis; work place; screening; transmission.

Dobler CC, Farah WH, Alsawas M, Mohammed K, Breeher LE, Murad MH, Molella RG. Tuberculin Skin Test Conversions and Occupational Exposure Risk in US Healthcare Workers. Clin Infect Dis. 2018 Feb 10;66(5):706-711. doi: 10.1093/cid/cix861. PMID: 29028965.

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Testing/ Treatment

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- **Baseline (preplacement) screening and testing.** All U.S. health care personnel should have baseline TB screening, including an individual risk assessment, which is necessary for interpreting any test result. IGRAs (quant gold or T spot) or tb skin tests can be used. Follow CDC algorithm for interpretation.
- **Serial screening and testing for health care personnel without LTBI is NOT indicated.** In the absence of known exposure or evidence of ongoing TB transmission, U.S. health care personnel (as identified in the 2005 guidelines) without LTBI should not undergo routine serial TB screening or testing at any interval after baseline (e.g., annually.) Could consider annual screening with high risk groups like respiratory therapists.
- **Health care personnel with LTBI and no prior treatment** should be offered, and strongly encouraged to complete treatment with a recommended regimen, including short-course treatments, unless a contraindication exists

Sosa LE, Njie GJ, Lobato MN, et al. Tuberculosis Screening, Testing, and Treatment of U.S. Health Care Personnel: Recommendations from the National Tuberculosis Controllers Association and CDC, 2019. MMWR Morb Mortal Wkly Rep 2019;68:439–443. DOI: http://dx.doi.org/10.15585/mmwr.mm6819a3external icon.

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NC TB Policy Manual

- **SARS-CoV-2 Vaccine and TB testing**
  - TB screening with skin test or interferon gamma release assay may be performed regardless of timing of SARS-CoV-2 vaccination (and visa versa). – Jan 28 2021 memo
- **Patients in long term care facilities**
  - Testing upon admission (two-step TST or IGRA). Annual screening which can be accomplished by a verbal elicitation of symptoms.
    - 10A NCAC 41A .0205; 10A NCAC 13D .2202 &.2209
- **Long term care facility employees**
  - Testing upon employment (two-step for TST or IGRA) and after any exposures. Annual education.
    - 10A NCAC 41A .0205; 10A NCAC 13D .2202 & .2209; OSHA

https://epi.dph.ncdhhs.gov/cd/lhds/manuals/tb/COVIDvaxMemo01282021.pdf

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Fit Testing

- If employees may need to wear respirators as part of their PPE (i.e. for caring for COVID patients), then they need to be annually fit tested through your respiratory protection program.
- Medical clearance for N95s is not complicated – there really aren't medical conditions which affirmatively preclude the use of an N95 except anatomical challenges.

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Bloodborne Pathogens

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Bloodborne Pathogens

- Approximately 385,000 needle sticks and other sharps-related injuries to hospital-based healthcare personnel each year.
- 58 total known occupationally acquired HIV cases in HCPs; all but 1 were prior to 1999.
- 88% (50/57) of the documented cases of occupational HIV transmission from 1985-2004 involved a percutaneous exposure. Of those, 45/57 involved a hollow-borne needle.
- 41% of sharp injuries occur during use; 40% after use/before disposal; 15% during/after disposal

https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6353a4.htm

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Steps for Prevention

- Needleless devices
- Single-hand recapping
- Handwashing stations
- Sharps containers
- Laundry
- Disposal of contaminated material
- Mask, eye protection, gloves, & face shields

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OSHA Bloodborne Pathogens Standard

- Employers must establish a written exposure control plan and provide annual training
- Mandates use of universal precautions (all body fluids assumed contaminated except sweat)
- Employers must utilize engineering and work practice controls to minimize/eliminate exposure

(e-CFR 1910.1013)

https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030

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OSHA Bloodborne Pathogens Standard

- Requires offering hepatitis B vaccine to persons with the potential for exposure
- Testing of exposed employees for Hepatitis B and HIV
- Post-exposure prophylaxis must be immediately available as per CDC guidelines
- All work-related needle stick injuries and cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material are OSHA-reportable regardless of the source patient disease status.

(e-CFR 1910.1013)

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Bloodborne Pathogens

- **Risk (percutaneous exposure)**
  - HBV
    - 22.0 – 30.0% ($HBeAG^+$)
    - 1.0 – 6.0% ($HBeAG^-$)
  - HCV
    - 1.8%
  - HIV
    - 0.3% (1 in 300)
- **Risk (mucous membrane)**
  - HBV
    - Yes (rate unknown)
  - HCV
    - Yes (rate unknown but very small)
  - HIV
    - 0.1% (1 in 1000)
    - < 0.1% (non-intact skin)

RISK

- Test source for hepatitis B (HBsAg), hepatitis C (HCV PCR), HIV (4th gen, HIV antibodies and p24 antigen)
- Provide hepatitis B prophylaxis, if indicated
- Provide follow-up for hepatitis C, if indicated
- If source HIV+ or at "high risk" for HIV, offer employee HIV prophylaxis per CDC protocol

CDC, 2003

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Post-exposure Pathway

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Infection Status of Source Patient ↓	Baseline Labs	2 Weeks	4 Weeks	6 Weeks	4 Months	6 Months
DATE: →	__/__/____	__/__/____	__/__/____	__/__/____	__/__/____	__/__/__
HIV positive	HIV test – 4th generation	Lab - only if baseline abnormal or clinical indication		HIV test - 4th generation	HIV test - 4th generation	
HBsAg positive	• If source positive and HCP unknown, need HBsAb. • If HBsAb ≥12 mIU/mL - testing complete. • If HBsAb <12 mIU/mL, need anti-HBc & HBsAg at baseline					• Anti-HBc • HBsAg
Hepatitis C RNA PCR positive	Anti-HCV (Hepatitis C antibody)	Lab - only if baseline abnormal or clinical indication		HCV RNA PCR	Anti-HCV (Hepatitis C antibody)	
Unknown source	• HIV test – 4th generation • If source unknown and HCP HBsAb unknown, need HBsAb. • If HBsAb ≥12 mIU/mL - testing complete. • If HBsAb <12 mIU/mL, need anti-HBc & HbsAg at baseline • HCV antibody	Lab - only if baseline abnormal or clinical indication		• HIV test – 4th generation • HCV RNA PCR	• HIV test – 4th generation • Anti-HCV (Hepatitis C antibody)	• Anti-HBc • HBsAg

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Current HIV PEP

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- 10A NCAC 41A .0202
- CONTROL MEASURES – HIV
  - When the source case is known, the attending physician or occupational health provider responsible for the exposed person shall notify the healthcare provider of the source case that an exposure has occurred.
  - This healthcare provider shall arrange HIV testing of the source person (unless known to be HIV+) and notify the OHS provider of the test results.
  - Source patient consent is **not required**

http://reports.oah.state.nc.us/ncac/title%2010a%20-%20health%20and%20human%20services/chapter%2041%20-%20epidemiology%20health/subchapter%20a/10a%20ncac%2041a%20.0202.html

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Current HIV PEP

- Three-drug regiment
  - Tenofovir-emtricitabine (Truvada) + raltegravir (Isentress) for 4 weeks (28 days)
  - Other regiments are available for known HIV-source patients with specific drug resistance but these cases are rare.
  - Start within 72 hours
  - Baseline HIV, 6 weeks, 4-6 months

Kuhar, D. T., Henderson, D. K., Struble, K. A., Heneine, W., Thomas, V., Cheever, L. W., Gomaa, A., Panlilio, A. L., & US Public Health Service Working Group. (2013). Updated US Public Health Service Guidelines for the Management of Occupational Exposures to Human Immunodeficiency Virus and Recommendations for Postexposure Prophylaxis. *Infection Control and Hospital Epidemiology*, *34*(9), 875–892. https://doi.org/10.1086/672271

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Hepatitis B

- Universal; HCP with potential blood exposure (OSHA required or HCP may decline)
  - No need to routinely obtain Hep B titers if an employee has documented vaccine series and a positive titer
  - In practice, we usually titer and give a booster if titer is < 10 mIU/mL
  - For known non-responders, with exposure they should get Hepatitis B Immune Globulin (HBIG) within 24 hours (up to 7 days after exposure)

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Hepatitis B

	HBsAg	Anti-HBc	HBsAb*
Acute infection	Positive	IgM positive	Negative
Infection resolved	Negative	IgG Positive	Positive
Chronic infection	Positive	IgG Positive	Negative
Vaccinated	Negative	Negative	Positive
Susceptible	Negative	Negative	Negative

Otero, William, Parga, Julián, & Gastelbondo, Johanna. (2018). Serology of hepatitis B virus: multiple scenarios and multiple exams. *Revista colombiana de Gastroenterología*, 33(4), 411-422. https://doi.org/10.22516/25007440.327

Postexposure Management of Health Care Personnel after Occupational Exposure to Blood and Body Fluids, by Health Care Personnel HepB Vaccination and Response Status

HepB Vaccination and Response Status	Postexposure testing results for source patient (HBsAg)	Postexposure testing results for HCP (anti-HBs)	HBIG* postexposure prophylaxis	Vaccination postexposure prophylaxis	Postvaccination Serologic Testing†
Documented responder§ after complete series (3 or more doses)	No action needed	No action needed	No action needed	No action needed	No action needed
Documented nonresponder¶ after 2 complete series	Positive/ unknown	**	2 doses HBIG separated by 1 month	No action needed	No action needed
	Negative	No action needed	No action needed	No action needed	No action needed
Response unknown after a complete series	Positive/ unknown	less than 10 mIU/mL**	1 dose HBIG	Initiate revaccination	Yes
	Negative	less than 10 mIU/mL	None	Initiate revaccination	Yes
	Any result	greater than or equal to 10 mIU/mL	No action needed	No action needed	No action needed
Unvaccinated/ incompletely vaccinated or vaccine refusers	Positive/ unknown	**	1 dose HBIG	Complete vaccination	Yes
	Negative	No action needed	None	Complete vaccination	Yes

*HBIG should be administered intramuscularly as soon as possible after exposure when indicated. The effectiveness of HBIG when administered greater than 7 days after percutaneous, mucosal, or nonintact skin exposures is unknown. HBIG and HepB vaccine should be administered in separate anatomic injection sites.

†Should be performed 1 to 2 months after the last dose of the HepB vaccine series (and 4 to 6 months after administration of HBIG to avoid detection of passively administered anti-HBs) using a quantitative method that allows detection of the protective concentration of anti-HBs (greater than or equal to 10 mIU/mL).

§A responder is defined as a person with anti-HBs greater than or equal to 10 mIU/mL after 3 or more doses of HepB vaccine.

¶A nonresponder is defined as a person with anti-HBs less than 10 mIU/mL after 2 complete series of HepB vaccine.

**HCP who have anti-HBs less than 10 mIU/mL, or who are unvaccinated or incompletely vaccinated, and sustain an exposure to a source patient who is HBsAg-positive or has unknown HBsAg status, should undergo baseline testing for HBV infection as soon as possible after exposure and follow-up testing approximately 6 months later. Initial baseline tests consist of total anti-HBc; testing at approximately 6 months consists of HBsAg and total anti-HBc.

https://www.cdc.gov/vaccines/pubs/pinkbook/hepb.html#Epidemiology

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Hepatitis C

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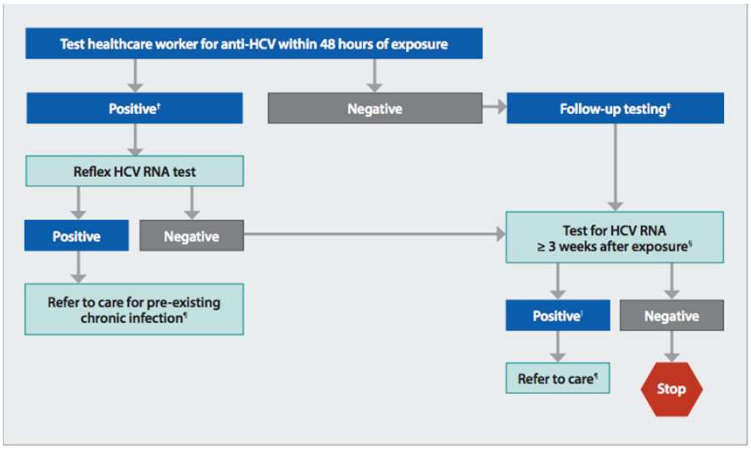
- No post-exposure prophylaxis
- Source patients should be tested by Hep C PCR



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Follow-up Testing

- Hepatitis B
  - Not required if employee has immunity
- HIV
  - Dependent on source patient and available testing
- Hepatitis C
  - Dependent on source patient, test for HCV antibodies and HCV RNA

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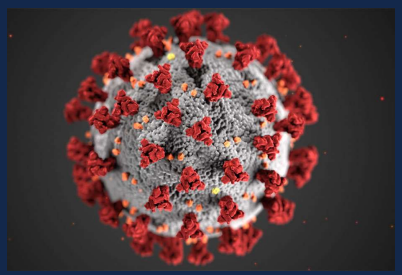
Occupational Health and COVID



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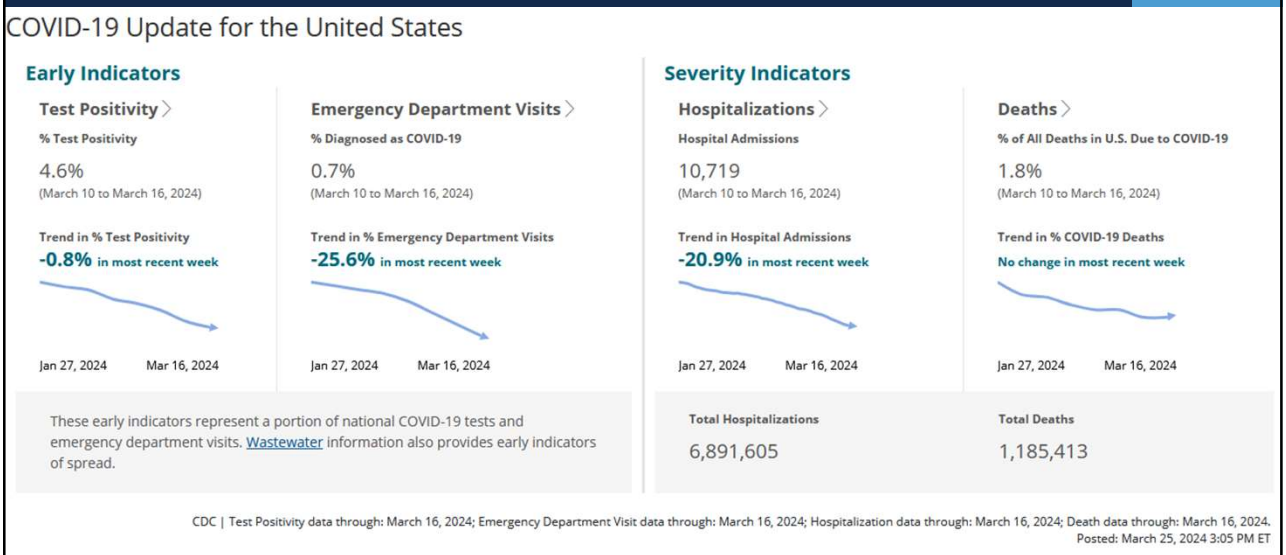
COVID in the US March 2024



https://covid.cdc.gov/covid-data-tracker/#datatracker-home

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COVID Control Recommendations

Updated May 8, 2023

- Encourage all employees to remain up to date on COVID-19 vaccines, including provision of resources
- Establish a process to identify and manage individuals with suspected or confirmed COVID
- Implement source control measures (changed from earlier recommendations)
- Implement universal use of personal protective equipment for HCP
- Optimize use of engineering controls and indoor air quality
- Perform SARS-CoV-2 viral testing
- Create a process to respond to COVID exposures among HCP and others

https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html

https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html

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COVID Control Recommendations

- Encourage all employees to remain up to date on COVID-19 vaccines, including provision of resources
  - Recall that we discussed earlier that this is no longer mandatory for federal regulations but can be mandatory if your employer decides to make it

https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html

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COVID Control Recommendations

- Establish a process to identify and manage individuals with suspected or confirmed COVID
  - For HCPs, they should report any of the following three criteria to your Occupational Health:
    - Positive test for COVID
    - Symptoms of COVID
      - HCPs with even mild symptoms need a test!
      - Positive antigen test (like a home test) is sufficient; no need to retest with PCR
      - Negative antigen test is NOT sufficient and needs confirmatory PCR
      - Don't forget about flu and RSV!
      - Should not be working until at least 24 hrs without fever of any cause off antipyretics
    - Close contact to COVID

https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html

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COVID-19+ HCP Return to Work

HCP with mild to moderate illness who are *not* moderately to severely immunocompromised could return to work after the following criteria have been met:

- At least 7 days have passed *since symptoms first appeared* if a negative viral test* is obtained within 48 hours prior to returning to work (or 10 days if testing is not performed or if a positive test at day 5-7), **and**
- At least 24 hours have passed *since last fever* without the use of fever-reducing medications, **and**
- Symptoms (e.g., cough, shortness of breath) have improved.

*Either a NAAT (molecular) or antigen test may be used. If using an antigen test, HCP should have a negative test obtained on day 5 and again 48 hours later

HCP who were asymptomatic throughout their infection and are *not* moderately to severely immunocompromised could return to work after the following criteria have been met:

- At least 7 days have passed since the date of their first positive viral test if a negative viral test* is obtained within 48 hours prior to returning to work (or 10 days if testing is not performed or if a positive test at day 5-7).

*Either a NAAT (molecular) or antigen test may be used. If using an antigen test, HCP should have a negative test obtained on day 5 and again 48 hours later

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What about quarantines for exposures?

Work restriction is not necessary for most asymptomatic HCP following a higher-risk exposure, regardless of vaccination status. Examples of when work restriction may be considered include:

- HCP is unable to be tested or wear source control as recommended for the 10 days following their exposure;
- HCP is moderately to severely immunocompromised;
- HCP cares for or works on a unit with patients who are moderately to severely immunocompromised;
- HCP works on a unit experiencing ongoing SARS-CoV-2 transmission that is not controlled with initial interventions;

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Asymptomatic HCPs w COVID exposures

Following a higher-risk exposure, HCP should:

- Have a series of three viral tests for SARS-CoV-2 infection.
  - Testing is recommended immediately (but not earlier than 24 hours after the exposure) and, if negative, again 48 hours after the first negative test and, if negative, again 48 hours after the second negative test. This will typically be at day 1 (where day of exposure is day 0), day 3, and day 5.
  - Due to challenges in interpreting the result, testing is generally not recommended for asymptomatic people who have recovered from SARS-CoV-2 infection in the prior 30 days. Testing should be considered for those who have recovered in the prior 31-90 days; however, an antigen test instead of NAAT is recommended. This is because some people may remain NAAT positive but not be infectious during this period.
- Follow all recommended infection prevention and control practices, including wearing well-fitting source control, monitoring themselves for fever or symptoms consistent with COVID-19, and not reporting to work when ill or if testing positive for SARS-CoV-2 infection.
- Any HCP who develop fever or symptoms consistent with COVID-19 should immediately self-isolate and contact their established point of contact (e.g., occupational health program) to arrange for medical evaluation and testing.

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Employee Well-being

- Could be its own lecture
- Taking good care of employees benefits all: patients, employees, and the business (safer environment, lower turnover, less staffing shortages)
- Physical and mental well-being
  - Living wages and robust benefits
  - Parental leave
  - Comprehensive DEI (diversity, equity and inclusion) trainings and meaningful reflections in workplace policies/practices, not just lip service
  - Safety from workplace violence
  - Fair PTO policies that disincentivize presenteeism
  - Access to resources for burnout, moral injury

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Presenteeism: Threat to Healthcare

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- Presenteeism is a major threat to patient and employee health

"Stay home, save lives": Characterizing sickness presenteeism among healthcare personnel during the COVID-19 pandemic

Background

Extreme demands on healthcare systems and services due to the SARS-CoV-2 pandemic have altered the workplace environment, potentially affecting sickness presenteeism, defined as presenting to work with symptoms of illness.

Previous literature on presenteeism has focused on chronic illness, job performance and/or economic costs for organizations. Little is known about upstream motivators for infectious illness presenteeism.

Methods

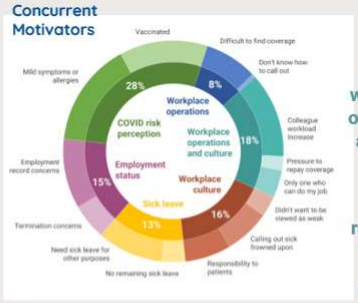
We surveyed 586 healthcare personnel (HCP) at a large, academic medical center in North Carolina about their experiences, perceptions and behaviors related to sickness presenteeism during the COVID-19 pandemic.

We measured frequency of and motivators for reported presenteeism with any symptoms of infectious illness as well as upper respiratory infection (URI) symptoms specifically. Using chi square statistics and logistic regression modeling, we compared these reports between demographic groups.

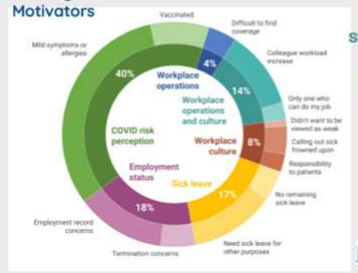
Study population

Respondents to the survey were mostly:
- Female (85%)
- White (64%), Black (11%), or >1 race (16%)
- Worked as direct patient care providers (60%)
- Bachelor's (43%) or Master's degree (25%) holders
- Reported age categories 30 - 59 (77%)

Concurrent Motivators



Primary Motivators



Results

60% of HCP reported working with any symptoms of infectious illness at least once since March 2020.

Of them, 84% reported more than one motivation.

Perceived low risk of COVID-19 (primarily mild symptoms) was the primary motivator for 40% of people working with any symptoms.

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Civic Health - Voting

NORTH CAROLINA STATE BOARD OF ELECTIONS

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Multipartisan Assistance Team (MAT)

A multipartisan assistance team, or "MAT," is a group appointed by a county board of elections to assist with mail-in absentee voting and other services to voters living at facilities such as hospitals, clinics, and nursing homes.

A MAT includes, at a minimum, two people who have different party affiliations (or, in the alternative, persons who were unanimously appointed by a bipartisan county board of elections). If you request help from a MAT, you should receive impartial, professional assistance. Their job is to help you vote, but your voting choices will remain confidential.

MATs are authorized to help voters in the following ways, with specific legal requirements:

- Providing voter registration services.
- Requesting an absentee ballot.
- Serving as an absentee witness.
- Marking the absentee ballot.
- Sealing the ballot and completing the absentee application.
- Mailing the voted absentee ballot in the closest U.S. mail depository or mailbox, if the voter has a disability.

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Thank You!

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