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OUR PATIENTS. OUR UNION. OUR VOICE.

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Via Federal Register

November 1, 2025

The Honorable Amanda Wood Laihow, Acting Assistant Secretary of Labor
Occupational Safety and Health Administration
U.S. Department of Labor
200 Constitution Ave., NW
Washington, DC 20210

RE: Comments in Response to "Occupational Exposure to Covid-19 in Healthcare Settings" (Docket No. OSHA-2020-0004)

Dear Acting Assistant Secretary Wood Laihow:

On behalf of nearly 225,000 registered nurses (RNs) across the country, National Nurses United (NNU) submits these comments in response to the notice of proposed rulemaking to remove the Covid-19 recordkeeping and reporting provisions that are in 29 CFR § 1910 subpart U, specifically 29 CFR §§ 1910.502(q)(2)(ii), (q)(3)(ii)-(iv), and (r), (Docket No. OSHA-2020-0004). NNU appreciates the opportunity to comment on this important subject.

RNs work in every state and are routinely exposed to Covid-19 and other infectious disease hazards while providing direct patient care in their workplaces. However, health care employers across the country have continued to fail to protect RNs as evidenced by the dramatic toll RNs have endured during the Covid-19 pandemic, causing record numbers of RNs to leave the bedside and the profession entirely. An essential aspect of protecting workers at the worksite is recordkeeping and reporting. Removing this provision would significantly exacerbate the risks RNs already face from Covid-19. **NNU strongly urges OSHA to retain and strengthen the Covid-19 recordkeeping and reporting provisions. NNU also urges OSHA to expeditiously issue a broader, science-based infectious diseases standard that would protect all frontline health care workers from aerosol-transmissible diseases.** The Covid-19 pandemic clearly demonstrated that public health hinges on protecting health care and all frontline workers.

I. Mandatory tracking and reporting of occupational Covid-19 cases is critical for health care worker and patient safety.

RNs and other health care workers continue to be on the frontlines of the Covid-19 pandemic response. The Covid-19 pandemic has demonstrated the significant risk of occupational exposure and infection to health care workers because of their employers' failures to provide safe workplaces. Health care workers were 11.6 times more likely to have Covid-19 than the general population and health care workers who reported inadequate personal protective equipment

(PPE) were at greater risk.[1] Among health care workers, RNs have the highest rate of Covid-19 infections due to the nature of their work, as nurses tend to interact with patients more intimately and for longer periods of time than most other health care workers.[2] The health care industry had higher Covid-19 mortality rates than other groups of workers.[3]

SARS-CoV-2/Covid-19 is an airborne infectious disease that poses a significant hazard to health care workers.

SARS-CoV-2 is a highly transmissible, airborne infectious disease with Omicron having significantly higher immune evasion and effective reproduction number (R_e) than previous variants.[4,5,6,7,8,9] SARS-CoV-2 is transmitted via infectious aerosols emitted when infected individuals breathe, speak, sing, cough, or sneeze.[10,11,12,13] Infectious aerosol particles can travel long distances and remain suspended for several hours.[14,15] Studies have captured SARS-CoV-2

[1] Nguyen, Long H., et al. "Risk of COVID-19 among front-line health-care workers and the general community: a prospective cohort study." *The Lancet Public Health* 5.9 (2020): e475-e483

[2] Barrett, Emily S., et al. "Prevalence of SARS-CoV-2 infection in previously undiagnosed health care workers in New Jersey, at the onset of the US COVID-19 pandemic." *BMC Infectious Diseases* 20.1 (2020): 853.

[3] Gebreegziabher, Elisabeth, et al. "Temporal assessment of disparities in California COVID-19 mortality by industry: a population-based retrospective cohort study." *Annals of Epidemiology* 87 (2023): 51-59.

[4] Brazer, Noah, et al. "Differential immunity induced by Omicron sublineages in naïve and vaccine breakthrough infections." *Scientific Reports* 15.1 (2025): 23718.

[5] Planas, Delphine, et al. "Distinct evolution of SARS-CoV-2 Omicron XBB and BA. 2.86/JN. 1 lineages combining increased fitness and antibody evasion." *Nature Communications* 15.1 (2024): 2254.

[6] Figgins, Marlin D., and Trevor Bedford. "Inferring variant-specific effective reproduction numbers from combined case and sequencing data." *medRxiv* (2024).

[7] Arantes, Ighor, et al. "Comparative epidemic expansion of SARS-CoV-2 variants Delta and Omicron in the Brazilian State of Amazonas." *Nature Communications* 14.1 (2023): 2048.

[8] Liu, Ying, and Joacim Rocklöv. "The effective reproductive number of the Omicron variant of SARS-CoV-2 is several times relative to Delta." *Journal of Travel Medicine* 29.3 (2022): taac037.

[9] USDA National Institute of Food and Agriculture, "How the Omicron Subvariant BA.5 Became a Master of Disguise – and What It Means for the Current COVID-19 Surge," August 2022, https://www.nifa.usda.gov/about-nifa/impacts/how-omicron-subvariant-ba5-became-master-disguise-what-it-means-current-covid-19 (Accessed August 2025).

[10] Roy, Chad J., et al. "Human Source Severe Acute Respiratory Syndrome Coronavirus 2 Aerosol Transmission to Remote Sentinel Hamsters." *Open Forum Infectious Diseases*. Vol. 12. No. 4. US: Oxford University Press, 2025.

[11] Jimenez, Jose L., et al. "What were the historical reasons for the resistance to recognizing airborne transmission during the COVID-19 pandemic?" *Indoor Air* 32.8 (2022): e13070.

[12] Wang, Chia C., et al. "Airborne transmission of respiratory viruses." *Science* 373.6558 (2021): eabd9149.

[13] World Health Organization. "Coronavirus disease (COVID-19): How is it transmitted?" December 2021, https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-covid-19-how-is-it-transmitted (Accessed August 2025).

[14] Charness, Michael E., et al. "Evidence from whole genome sequencing of aerosol transmission of SARS-CoV-2 almost 5 hours after hospital room turnover." *American Journal of Infection Control* 52.7 (2024): 849-851.

[15] Bourouiba, Lydia. "Turbulent gas clouds and respiratory pathogen emissions: potential implications for reducing transmission of COVID-19." *JAMA* 323.18 (2020): 1837-1838.

virus in the air within 6.5 to 15.7 feet from Covid-19 patients in hospital rooms.[16,17] Other studies have also detected SARS-CoV-2 in air samples from clinics, nurses' stations, hallways, and other areas of health care facilities.[18,19,20,21]

Asymptomatic and pre-symptomatic cases also play a significant role in the spread of SARS-CoV-2/Covid-19.[22,23,24] Covid-infected individuals can unknowingly spread the virus in the absence of respiratory symptoms.[25] Studies estimate that approximately half of all Covid-19 transmission events come from cases that are asymptomatic or pre-symptomatic at the time of onward transmission.[26,27,28,29] A recent study found that, of the 33.6 percent of the adult population in Hong Kong that were infected with Omicron in 2022, nearly 1 in 2 were unrecognized or asymptomatic Covid-19 infections.[30] Covid-19 infections from individuals who are asymptomatic or not yet experiencing symptoms pose a significant risk to health care workers and patients. A recent study documented Covid-19 transmission from an asymptomatic

[16] Konatzii, Rafail, et al. "Exposure to airborne SARS-CoV-2 in four hospital wards and ICUs of Cyprus. A detailed study accounting for day-to-day operations and aerosol generating procedures." *Heliyon* 9.3 (2023).
[17] Lednicky, John A., et al. "Viable SARS-CoV-2 in the air of a hospital room with COVID-19 patients." *International Journal of Infectious Diseases* 100 (2020): 476-482.
[18] Frydas, Ilias S., et al. "SARS-CoV-2 airborne detection within different departments of a COVID-19 hospital building and evaluation of air cleaners in air viral load reduction." *Journal of Aerosol Science* 187 (2025): 106587.
[19] Li, Shanglin, et al. "Assessing airborne transmission risks in COVID-19 hospitals by systematically monitoring SARS-CoV-2 in the air." *Microbiology Spectrum* 11.6 (2023): e01099-23.
[20] Stern, Rebecca A., et al. "Concordance of SARS-CoV-2 RNA in aerosols from a nurses station and in nurses and patients during a hospital ward outbreak." *JAMA Network Open* 5.6 (2022): e2216176-e2216176.
[21] Grimalt, Joan O., et al. "Spread of SARS-CoV-2 in hospital areas." *Environmental Research* 204 (2022): 112074.
[22] Carreon, Joseph Daniel, et al. "SARS-CoV-2 secondary attack rates and risks for transmission among agricultural workers and their households in Guatemala, 2022–2023." *IJID Regions* (2025): 100676.
[23] Funk, Anna, et al. "Household transmission dynamics of asymptomatic SARS-CoV-2–infected children: a multinational, controlled case-ascertained prospective study." *Clinical Infectious Diseases* 78.6 (2024): 1522-1530.
[24] Shi, Chao, et al. "Infection Rates and Symptomatic Proportion of SARS-CoV-2 and Influenza in Pediatric Population, China, 2023." *Emerging Infectious Diseases* 30.9 (2024): 1809.
[25] Klompas, Michael, et al. "Transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) from asymptomatic and presymptomatic individuals in healthcare settings despite medical masks and eye protection." *Clinical Infectious Diseases* 73.9 (2021): 1693-1695.
[26] Joung, Sandy Y., et al. "Awareness of SARS-CoV-2 Omicron variant infection among adults with recent COVID-19 seropositivity." *JAMA Network Open* 5.8 (2022): e2227241-e2227241.
[27] Johansson, Michael A., et al. "SARS-CoV-2 transmission from people without COVID-19 symptoms." *JAMA Network Open* 4.1 (2021): e2035057-e2035057.
[28] Ng, Ta-Chou, et al. "Comparison of estimated effectiveness of case-based and population-based interventions on COVID-19 containment in Taiwan." *JAMA Internal Medicine* 181.7 (2021): 913-921.
[29] Padilla- Bórquez, Diana Lourdes, et al. "Seroprevalence of IgM/IgG and Neutralizing Antibodies against SARS-CoV-2 in Unvaccinated Young Adults from Mexico Who Reported Not Having Had a Previous COVID-19 Infection." *Canadian Journal of Infectious Diseases and Medical Microbiology* 2024.1 (2024): 8871439.
[30] Zhao, Shi, et al. "Inferring incidence of unreported SARS-CoV-2 infections using seroprevalence of open reading frame 8 antigen, Hong Kong." *Emerging Infectious Diseases* 30.2 (2024): 325.

patient to two other patients nearly 5 hours after hospital room turnover.[31] Another study identified multiple Covid-19 transmission events whereby health care workers and patients were infected by asymptomatic and pre-symptomatic staff and patients.[32]

OSHA's Recording and Reporting Occupational Injuries and Illnesses standard (29 CFR § 1904) insufficiently captures work-related Covid-19 illnesses and fatalities.

Since the beginning of the Covid-19 pandemic, studies have observed substantial heterogeneity in incubation periods for SARS-CoV-2.[33,34,35] Research indicates that the range of incubation period is from one to 14 days, with a median of 3 to 4 days for Omicron SARS-CoV-2 variants.[36,37,38] Some studies have found even longer incubation periods among older adults and immunocompromised individuals than younger adults.[39,40,41,42,43] Because of this, OSHA's Covid-19 Health Care Emergency Temporary Standard (hereinafter "Covid-19 Health Care ETS") requires employers to report work-related Covid-19 fatalities and in-patient hospitalizations regardless of the time that elapsed between the exposure and the reportable event. However, in OSHA's proposed rule, reporting requirements for Covid-19 would fall under

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[31] Charness, Michael E., et al. "Evidence from whole genome sequencing of aerosol transmission of SARS-CoV-2 almost 5 hours after hospital room turnover." *American Journal of Infection Control* 52.7 (2024): 849-851.
[32] Klompas, Michael, et al. "Transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) from asymptomatic and presymptomatic individuals in healthcare settings despite medical masks and eye protection." *Clinical Infectious Diseases* 73.9 (2021): 1693-1695.
[33] Owens, Katherine, Shadisadat Esmaeili, and Joshua T. Schiffer. "Heterogeneous SARS-CoV-2 kinetics due to variable timing and intensity of immune responses." *JCI Insight* 9.9 (2024): e176286
[34] He, Xi, et al. "Temporal dynamics in viral shedding and transmissibility of COVID-19." *Nature Medicine* 26.5 (2020): 672-675.
[35] Public Health Agency of Canada. "Evidence brief of SARS-CoV-2 incubation periods." August 2021, https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/canadas-reponse/summaries-recent-evidence/evidence-brief-sars-cov-2-incubation-periods.html (Accessed August 2025).
[36] Centers for Disease Control and Prevention. "Clinical Presentation." June 14, 2024, https://www.cdc.gov/covid/hcp/clinical-care/covid19-presentation.html (Accessed August 2025).
[37] Jansen, Lauren. "Investigation of a SARS-CoV-2 B. 1.1. 529 (omicron) variant cluster—Nebraska, November–December 2021." *MMWR. Morbidity and Mortality Weekly Report* 70 (2021).
[38] Takahashi, Kenichiro, et al. "Duration of infectious virus shedding by SARS-CoV-2 Omicron variant–infected vaccinees." *Emerging Infectious Diseases* 28.5 (2022): 998.
[39] Galmiche, Simon, et al. "SARS-CoV-2 incubation period across variants of concern, individual factors, and circumstances of infection in France: a case series analysis from the ComCor study." *The Lancet Microbe* 4.6 (2023): e409-e417.
[40] Zhang, Zhi-Jie, et al. "Epidemiological features of COVID-19 patients with prolonged incubation period and its implications for controlling the epidemics in China." *BMC Public Health* 21.1 (2021): 2239
[41] Li, Yu, et al. "Latent and incubation periods of Delta, BA. 1, and BA. 2 variant cases and associated factors: a cross-sectional study in China." *BMC Infectious Diseases* 24.1 (2024): 294.
[42] Tan, W. Y. T., et al. "Does incubation period of COVID-19 vary with age? A study of epidemiologically linked cases in Singapore." *Epidemiology & Infection* 148 (2020): e197
[43] Mancilla-Galindo, J. et al. "COVID-19 Patients with Increasing Age Experience Differential Time to Initial Medical Care and Severity of Symptoms." *Epidemiology & Infection* 149 (2021): e230

29 CFR § 1904 in lieu of the Covid-19 Health Care ETS recordkeeping and reporting provisions (29 CFR § 1910.502). Under OSHA's Recordkeeping Rule (29 CFR § 1904), health care employers are required to report a work-related Covid-19 incident only if the hospitalization or fatality occurs within 24 hours or 30 days, respectively, of an employee's exposure.

NNU strongly opposes the proposed rule. As OSHA acknowledges in the notice of proposed rulemaking, this "reversion is likely to reduce the number of Covid-19 cases reported to OSHA because the incubation time for Covid-19 would make it uncommon to cause hospitalization within 24 hours of exposure." Indeed, studies have found differences in interval times between symptom onset and hospitalization for Covid-19.[44,45,46] For example, the duration from symptom onset to hospitalization among patients symptomatically infected with Omicron ranged from 2 to 4 days.[47] A case series of 138 Covid-hospitalized patients found a median duration of 7 days from symptom onset to hospital admission.[48] An analysis of more than 14,000 Covid-hospitalized patients from 114 Belgian hospitals found that 75 percent of the hospitalizations occurred within 8 days after symptom onset, with the largest difference observed among the working age population.[49] Further, the time between symptom onset and mortality from Covid-19 can range from 2 to 8 weeks,[50] far exceeding OSHA's recordkeeping and reporting provisions under 29 CFR § 1904. Notably, mild and asymptomatic Covid-19 infections can also lead to Covid-19-associated mortality[51,52] which are unlikely to be recorded as being caused by Covid-19 work-related exposure.

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[44] Faes, Christel, et al. "Time between symptom onset, hospitalisation and recovery or death: statistical analysis of Belgian COVID-19 patients." *International Journal of Environmental Research and Public Health* 17.20 (2020): 7560.
[45] Sisay, Gizaw, Bahru Mantefardo, and Aster Beyene. "Time from symptom onset to severe COVID-19 and risk factors among patients in Southern Ethiopia: a survival analysis." *Journal of International Medical Research* 50.8 (2022): 03000605221119366.
[46] Shao, Jiasheng, et al. "Clinical progression and outcome of hospitalized patients infected with SARS-CoV-2 omicron variant in Shanghai, China." *Vaccines* 10.9 (2022): 1409.
[47] Ibid.
[48] Wang, Dawei, et al. "Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus–infected pneumonia in Wuhan, China." *JAMA* 323.11 (2020): 1061-1069
[49] Faes, Christel, et al. "Time between symptom onset, hospitalisation and recovery or death: statistical analysis of Belgian COVID-19 patients." *International Journal of Environmental Research and Public Health* 17.20 (2020): 7560.
[50] Office for National Statistics (ONS). "Coronavirus (COVID-19) Infection Survey technical article: waves and lags of COVID-19 in England, June 2021." June 29, 2021, https://www.ons.gov.uk/releases/coronaviruscovid19infectionsurveytechnicalarticlewavesandlagsofcovid19inenglandjune2021 (Accessed August 2025).
[51] Patel, Mahesh C., et al. "Asymptomatic SARS-CoV-2 infection and COVID-19 mortality during an outbreak investigation in a skilled nursing facility." *Clinical Infectious Diseases* 71.11 (2020): 2920-2926
[52] Keane, Gerard, and Tony Dorman. "Fatal pulmonary thromboembolism in asymptomatic COVID-19." *Irish Journal of Medical Science (1971-)* 191.4 (2022): 1777-1783

Compounding the high risk of Covid-19 infection is the concomitant risk of post-acute sequelae of SARS-CoV-2, or long Covid.

In addition to the risk of hospitalization and death, Covid-19 renders vulnerable a significant portion of people to disabling long-term health effects, known as long Covid. Studies estimate that about 17 million U.S. adults have long Covid and as many as 4 million are struggling to return to work or perform day-to-day activities.[53,54] Nurses and other health care workers who have disproportionately borne the risk of occupational Covid-19 exposures due to insufficient protections are subject to the risk of long-term sequelae of Covid-19. One study found that health care workers with nosocomially-acquired Covid-19 infections had a three-fold increased risk of developing long Covid over 90 days compared to those with community-acquired infections.[55]

A recent systematic review and meta-analysis demonstrates the substantial burden of long Covid among health care workers worldwide, estimating a global prevalence of 40 percent.[56] The most prevalent long Covid symptoms reported were fatigue (35 percent), neurologic symptoms (25 percent), loss of sense of smell and/or taste (25 percent), myalgia (22 percent) and shortness of breath (19 percent).[57] This is consistent with other studies. For example, a 2024 study of more than 5,000 health care workers in the UK found that nearly a third reported long Covid symptoms.[58] The most persistent symptoms reported by UK health care workers were fatigue, tiredness and shortness of breath, which impacted their day-to-day and work-related activities.[59] Among Japanese health care workers, 25 percent experienced long Covid during Omicron predominant waves.[60] A study of more than 7,000 Brazilian health care workers found that 27 percent developed long Covid after a confirmed symptomatic Covid-19 infection.[61] These estimates are likely an underestimate as the majority of long Covid cases are in individuals who

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[53] Burns, Alice. "As recommendations for isolation end, how common is long COVID?" *KFF*, April 9, 2024, https://www.kff.org/covid-19/as-recommendations-for-isolation-end-how-common-is-long-covid/ (Accessed August 2025).

[54] Bach, Katie. "New Data Shows Long Covid Is Keeping as Many as 4 Million People out of Work." *Brookings Institution*, August 24, 2022, www.brookings.edu/articles/new-data-shows-long-covid-is-keeping-as-many-as-4-million-people-out-of-work/ (Accessed August 2025).

[55] Gruber, Rosalie, et al. "Long-term symptoms after SARS-CoV-2 infection in a cohort of hospital employees: duration and predictive factors." *BMC Infectious Diseases* 24.1 (2024): 119.

[56] Al-Oraibi, Amani, et al. "Global prevalence of long COVID and its most common symptoms among healthcare workers: a systematic review and meta-analysis." *BMJ Public Health* 3.1 (2025).

[57] Ibid.

[58] Foulkes, Sarah, et al. "Prevalence and impact of persistent symptoms following SARS-CoV-2 infection among healthcare workers: a cross-sectional survey in the SIREN cohort." *Journal of Infection* 89.4 (2024): 106259.

[59] Ibid.

[60] Li, Yunfei, et al. "Long COVID during the Omicron predominant waves among Japanese healthcare workers." *Journal of Medical Virology* 95.12 (2023).

[61] Marra, Alexandre R., et al. "Risk factors for long coronavirus disease 2019 (long COVID) among healthcare personnel, Brazil, 2020–2022." *Infection Control & Hospital Epidemiology* 44.12 (2023): 1972-1978.

had a mild, non-hospitalized acute Covid infection, making it difficult to diagnose or link their symptoms to work-related long Covid.[62,63]

Long Covid, also known as post-acute sequelae of SARS-CoV-2 (PASC), is an infection-associated chronic condition characterized by ongoing, relapsing, or progressive symptoms that occur for several weeks, months, or years following acute Covid-19 infection.[64] Long Covid can occur among previously healthy individuals, across all age groups, including children.[65,66] It is a multifaceted, disabling condition that can impact nearly every organ system for which there is no treatment or cure.[67] Long Covid can disrupt people's ability to work or participate in their daily lives. NNU's January 2024 Covid-19 survey documented significant impacts, including tiredness or fatigue, memory or concentration difficulties, joint or muscle pain, headaches or migraines, difficulty breathing or shortness of breath, and other symptoms.[68] For nearly half of nurses with long Covid (41.3 percent), these symptoms lasted longer than six months. A majority of RNs who had Covid-19 at least once required time off to recover from post- Covid symptoms (58.4 percent). More than half of RNs who had Covid (53.1 percent) reported that their long Covid symptoms have affected their ability to work.[69]

[62] Global Burden of Disease Long COVID Collaborators et al. "Estimated Global Proportions of Individuals With Persistent Fatigue, Cognitive, and Respiratory Symptom Clusters Following Symptomatic COVID-19 in 2020 and 2021." *JAMA* vol. 328,16 (2022): 1604-1615.
[63] O'Mahoney, Lauren L., et al. "The prevalence and long-term health effects of Long Covid among hospitalised and non-hospitalised populations: A systematic review and meta-analysis." *EClinicalMedicine* 55 (2023).
[64] National Academies of Sciences, Engineering, and Medicine, "Federal Government, Clinicians, Employers, and Others Should Adopt New Definition for Long COVID to Aid in Consistent Diagnosis, Documentation, and Treatment," June 11, 2024, https://www.nationalacademies.org/news/2024/06/federal-government-clinicians-employers-and-others-should-adopt-new-definition-for-long-covid-to-aid-in-consistent-diagnosis-documentation-and-treatment (Accessed August 2025).
[65] Ibid.
[66] Rao, Suchitra, et al. "Postacute sequelae of SARS-CoV-2 in children." *Pediatrics* 153.3 (2024): e2023062570.
[67] Al-Aly, Ziyad, et al. "Long COVID science, research and policy." *Nature Medicine* 30.8 (2024): 2148-2164.
[68] National Nurses United. "Nurses face worsening working conditions amid winter surge in Covid and other respiratory viruses, as CDC looks to weaken infection control guidance." January 17, 2024, https://www.nationalnursesunited.org/ninth-covid-survey-nurses-face-worsening-working-conditions (Accessed August 2025).
[69] Ibid.

The risk of long Covid and of organ and tissue damage as well as immune dysregulation increases with each subsequent infection.[70,71,72,73] For example, one study found that each subsequent Covid-19 infection, regardless of disease severity, contributes to twice the risk of all-cause mortality, three times the risk of hospitalization, and twice the risk of long Covid at six months after reinfection.[74] Covid-19 reinfections can also additionally worsen the risk for diabetes, gastrointestinal, kidney, mental health, musculoskeletal, and neurologic disorders.[75] An international survey of more than 3,300 patients found that, compared to controls, those with multiple Covid-19 infections had higher odds of severe fatigue, post-exertional malaise, menstrual health issues and other long Covid symptoms.[76]

Covid-19 vaccines have been shown to protect against severe disease, hospitalization, and death, and decrease the risk of long Covid.[77,78] One study found that the 2024 – 2025 Covid-19 vaccine was 33 percent effective in preventing Covid-related emergency department or urgent care visits among adults aged ≥18 years and about 46 percent protective against hospitalizations among immunocompetent older adults.[79] Another study found that Covid-19 vaccine boosters were associated with a 75.1 percent reduction in severe disease.[80] In the notice of proposed rulemaking, OSHA cites that the Covid-19 Health Care ETS "recordkeeping and reporting provisions are of lesser utility, especially now that Covid-19 vaccines are widely available." However, the Food and Drug Administration's (FDA) recent approvals of updated Covid-19

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[70] Kuang, Sianne, et al. "Experiences of Canadians with long-term symptoms following COVID-19." *Statistics Canada* (2023). https://publications.gc.ca/site/eng/9.931251/publication.html (Accessed August 2025)
[71] Bowe, Benjamin, et al. "Acute and Postacute Sequelae Associated with SARS-CoV-2 Reinfection." *Nature Medicine* 28.11 (2022): 2398-2405.
[72] Klein, Jon., et al. "Distinguishing features of long COVID identified through immune profiling." *Nature* 623.7985 (2023): 139-148.
[73] Yin, Kailin, et al. "Long COVID manifests with T cell dysregulation, inflammation and an uncoordinated adaptive immune response to SARS-CoV-2." *Nature Immunology* 25.2 (2024): 218-225
[74] Bowe, Benjamin, Yan Xie, and Ziyad Al-Aly. "Acute and postacute sequelae associated with SARS-CoV-2 reinfection." *Nature Medicine* 28.11 (2022): 2398-2405.
[75] Ibid.
[76] Soares, Letícia, et al. "Long COVID and Associated Outcomes Following COVID-19 Reinfections: Insights from an International Patient-Led Survey." *Research Square* (2024).
[77] Xie, Yan, Taeyoung Choi, and Ziyad Al-Aly. "Postacute sequelae of SARS-CoV-2 infection in the pre-delta, delta, and omicron eras." *New England Journal of Medicine* 391.6 (2024): 515-525
[78] Hedberg, Pontus, Suzanne Desirée van der Werff, and Pontus Nauclér. "The Effect of COVID-19 Vaccination on the Risk of Persistent Post–COVID-19 Condition: Cohort Study." *The Journal of Infectious Diseases* 231.5 (2025): e941-e944.
[79] Link-Gelles, Ruth, et al. "Interim Estimates of 2024–2025 COVID-19 Vaccine Effectiveness Among Adults Aged ≥18 Years — VISION and IVY Networks, September 2024–January 2025." *MMWR Morbidity and Mortality Weekly Report* 2025;74:73–82.
[80] Chemaitelly, Hiam, et al. "Long-term COVID-19 booster effectiveness by infection history and clinical vulnerability and immune imprinting: a retrospective population-based cohort study." *The Lancet Infectious Diseases*. 23.7 (2023): 816-827

vaccines severely restrict access to individuals over 65 years or at high risk for severe disease,[81,82,83] which erroneously assumes that Covid-19 only impacts elderly and high-risk populations. Similarly, HHS Secretary, Robert F. Kennedy Jr., announced that the CDC would no longer recommend Covid-19 vaccines for healthy children and pregnant people.[84] To the contrary, Covid-19 continues to cause hospitalizations, morbidity, and mortality across all age groups in the United States, even among those without underlying conditions.[85] Preliminary estimates from the CDC found that between 260,000 and 430,000 Covid-19-associated hospitalizations and nearly 47,000 Covid-19-deaths occurred since 2024, across all age groups including pediatric populations.[86,87]

Waning immunity from Covid-19 vaccines and the emergence of new variants renders people vulnerable to severe disease, long-term health complications, and death. Limiting access to and availability of lifesaving Covid-19 vaccines ignores the increased occupational exposure risk that RNs and other health care workers continue to face, most especially work-related long Covid. Removing vaccine protection together with employers' providing of insufficient protections means health care workers have increased exposure, infection, and disease. Reporting and tracking of work-related Covid-19 cases, hospitalizations, and deaths are therefore even more critical at this moment.

Insufficient workplace injury and illness data impede efforts to improve working conditions for frontline nurses and other health care workers.

Mandatory and timely reporting of occupational Covid-19 cases initiates investigation, notification, and response efforts to interrupt and prevent the spread of the virus in health care

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[81] Lawrence, Lizzy, and Harper, Matthew. "FDA Issues Narrower Approvals for Covid Boosters, Revokes Emergency Authorizations." *STAT*. August 27, 2025, https://www.statnews.com/2025/08/27/fda-covid-vaccines-kennedy-rescinds-emergency-use-authorization/ (Accessed August 2025).

[82] Moderna, "Moderna Receives U.S. FDA Approval for COVID-19 Vaccine mNEXSPIKE," May 31, 2025, https://investors.modernatx.com/news/news-details/2025/Moderna-Receives-U-S--FDA-Approval-forCOVID-19-Vaccine-mNEXSPIKE/ (Accessed August 2025).

[83] Novavax, "U.S. FDA Approves BLA for Novavax's COVID-19 Vaccine," May 19, 2025, https://ir.novavax.com/press-releases/2025-05-19-U-S-FDA-Approves-BLA-for-Novavaxs-COVID-19Vaccine (Accessed August 2025).

[84] Apoorva Mandavilli, and Christina Jewett. "U.S. Will No Longer Recommend Covid Shots for Children and Pregnant Women." *The New York Times*, May 27, 2025, www.nytimes.com/2025/05/27/health/covid-vaccines-children-pregnant-women-rfk-jr.html (Accessed August 2025).

[85] Havers, Fiona. "Epidemiology and risk factors for COVID-19 hospitalizations." *Centers for Disease Control and Prevention*. April 15, 2025, https://www.cdc.gov/acip/downloads/slides-2025-04-15-16/03-Havers-COVID-508.pdf (Accessed August 2025).

[86] Centers for Disease Control and Prevention. "Preliminary Estimates of COVID-19 Burden for 2024-2025." December 6, 2024, https://www.cdc.gov/covid/php/surveillance/burden-estimates.html (Accessed August 2025).

[87] Centers for Disease Control and Prevention. "COVID Data Tracker." May 22, 2025, https://covid.cdc.gov/covid-data-tracker (Accessed August 2025).

settings. By contrast, insufficient data impedes efforts to improve working conditions for nurses and other health care workers who continue to be on the frontlines of the Covid-19 pandemic response. Since the beginning of the Covid-19 pandemic, RNs and other health care workers have experienced high rates of Covid-19 infection and death due to repeated occupational exposures and the nature of their work.[88] The impact of these infections is stark—at least 499 RNs died from Covid-19 as of May 19, 2023.[89,90] Early in the Covid-19 pandemic, national surveillance did not require the reporting of occupational status of infections, leading to a drastic undercount in reporting compared to data analyzed by NNU from public sources.[91]

The right to a safe workplace includes the right to information. Lack of transparency on the part of the hospital and health care industry engenders a dangerous lack of accountability and is an unaddressed threat to public health. This lack of transparency only aids and abets the hospital industry's continuing efforts to evade accountability for its ongoing failures to adequately protect nurses and other health care workers in the face of the Covid-19 pandemic. Tracking which infectious diseases occur due to exposures in the workplace is critical not only to identify and mitigate workplace hazards and ensure safe working environments but also is a basic and essential commitment to protect public health.

II. A broader, science-based infectious diseases standard is necessary to protect health care workers from a wide range of infectious disease hazards encountered in the workplace.

RNs are also routinely exposed to a wide range of infectious disease hazards while providing direct patient care in their workplaces. When health care employers fail to provide necessary protections, health care workers can be exposed to and infected with these pathogens. The absence of a nationwide occupational surveillance system for infectious diseases has impeded

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[88] National Nurses United. "Covid-19 and Infectious Diseases Surveys." https://www.nationalnursesunited.org/covid-19-and-infectious-disease-surveys

[89] Ibid.

[90] For methodology, see National Nurses United. "Sins of Omission: How Government Failures to Track Covid-19 Data Have Led to More Than 3,200 Health Care Worker Deaths and Jeopardize Public Health." March 2021, https://www.nationalnursesunited.org/sites/default/files/nnu/documents/0321_Covid19_SinsOfOmission_Data_Report.pdf (Accessed August 2025).

[91] At least 5,752 health care workers, including 499 RNs, died from Covid, as of May 12, 2023, when many data sources were discontinued. This is an unpublished update of National Nurses United. "Sins of Omission: How Government Failures to Track Covid-19 Data Have Led to More Than 3,200 Health Care Worker Deaths and Jeopardize Public Health." March 2021, https://www.nationalnursesunited.org/sites/default/files/nnu/documents/0321_Covid19_SinsOfOmission_Data_Report.pdf.
By contrast, the CDC reports just 1,656 Covid-19 health care worker deaths as of July 21, 2021. U.S. Centers for Disease Control and Prevention. "Cases & Deaths among Healthcare Personnel." July 21, 2021, https://stacks.cdc.gov/view/cdc/108188

capture of the true magnitude of injuries and illness among health care workers in the United States. Several studies provide estimates of work-related injuries and illness from infectious diseases in health care that highlight the high risk that health care workers face. For example:

- Health care workers sustain work-related influenza infections each year. Researchers have estimated the number of symptomatic influenza infections acquired by health care workers from patients is between 34,150 and 151,300 annually, resulting in at least 13,617 health care workers seeking ambulatory care, 605 seeking emergency care and 91 hospitalizations of health care workers per year.[92] Given the large proportion (up to 75 percent) of asymptomatic influenza infections,[93] this study likely underestimates work-related exposures and infections.

- Health care workers with influenza reported impairment of activities of daily living and missed work (average 12.1 hours).[94]

- Health care workers are at risk of pertussis exposure and infection as multiple outbreaks have been documented in health care settings.[95,96] In fact, one study found that health care workers in Canada were at a 1.7 times higher risk of pertussis infection than the general population.[97]

- Health care workers are at higher risk of acquisition and transmission of rhinovirus infections (37.7 percent in flu negative samples among health care workers at one hospital over a two-year period).[98]

[92] Jones, Rachael M., and Yulin Xia. "Annual Burden of Occupationally-Acquired Influenza Infections in Hospitals and Emergency Departments in the United States." *Risk Analysis* 38.3 (2018): 442-453.
[93] Hayward, Andrew C., et al. "Comparative community burden and severity of seasonal and pandemic influenza: results of the Flu Watch cohort study." *The Lancet Respiratory Medicine* 2.6 (2014): 445-454.
[94] Henkle, Emily, et al. "Comparison of laboratory-confirmed influenza and noninfluenza acute respiratory illness in healthcare personnel during the 2010–2011 influenza season." *Infection Control & Hospital Epidemiology* 35.5 (2014): 538-546.
[95] Petridou, Christina, et al. "Outbreak of pertussis among healthcare workers in a hospital maternity unit." *Journal of Infection Prevention* 18.5 (2017): 253-255.
[96] Calugar, Angela, et al. "Nosocomial pertussis: costs of an outbreak and benefits of vaccinating health care workers." *Clinical Infectious Diseases* 42.7 (2006): 981-988.
[97] De Serres, Gaston, et al. "Morbidity of pertussis in adolescents and adults." *The Journal of Infectious Diseases* 182.1 (2000): 174-179.
[98] Bellei, Nancy, et al. "Influenza and rhinovirus infections among health-care workers." *Respirology* 12.1 (2007): 100-103.

- Health care workers are estimated to be at 25 times greater risk of developing meningococcal disease than the general population.[99]

- Health care workers face an increased risk of tuberculosis. Between 2001 and 2014, six percent of TB cases in New York City occurred among health care personnel.[100] Health care personnel with TB were more likely than other adults to have an isolate with multidrug resistance and to report a previous history of latent TB infection.

- Even in a hospital with few admissions due to TB, health care worker conversions occurred.[101] Health care workers in wards treating TB patients were over six times more likely to convert than those working on wards with no TB patients. In the Emergency Department, which treated the greatest number of TB patients, at least 5 percent of staff converted. In instances where conversions were associated with exposure to a specific TB patient, the involved patients had been in the hospital for at least four days prior to being isolated.

- Health care workers are at risk of measles exposure and infection, especially as outbreaks continue to grow in the U.S. and around the world.[102] Multiple measles outbreaks have been documented in health care settings, including among vaccinated health care workers.[103,104]

- Health care workers can become colonized with drug-resistant organisms. For example, nurses are at higher risk (2.58 times) of colonization with methicillin-resistant *Staphylococcus aureus* (MRSA) compared to other health care staff and the general population.[105] While colonization itself is asymptomatic, it places individual health care

[99] Gilmore, Anna, James Stuart, and Nick Andrews. "Risk of secondary meningococcal disease in health-care workers." *The Lancet* 356.9242 (2000): 1654-1655.
[100] Proops, D. C., et al. "Epidemiology of tuberculosis among healthcare personnel in New York City." *The International Journal of Tuberculosis and Lung Disease* 24.6 (2020): 619-625.
[101] Liss, Gary M., et al. "Tuberculosis infection among staff at a Canadian community hospital." *Infection Control & Hospital Epidemiology* 17.1 (1996): 29-35.
[102] Rosenbluth, Teddy, and Jonathan Corum. "Measles Cases Hit Record High since U.S. Eliminated Disease." *The New York Times*, July 9, 2025, www.nytimes.com/2025/07/09/well/us-measles-record-outbreaks.html (Accessed August 2025).
[103] Hubiche, Thomas, et al. "Measles transmission in a fully vaccinated closed cohort: data from a nosocomial clustered cases in a teenage psychiatric unit." *The Pediatric Infectious Disease Journal* 38.9 (2019): e230-e232.
[104] Hahné, Susan JM, et al. "Measles outbreak among previously immunized healthcare workers, the Netherlands, 2014." *The Journal of Infectious Diseases* 214.12 (2016): 1980-1986.
[105] Dulon, Madeleine, et al. "MRSA carriage among healthcare workers in non-outbreak settings in Europe and the United States: a systematic review." *BMC Infectious Diseases* 14.1 (2014): 363.

> workers at higher risk of infection and can transmit to others, including patients, other staff, and health care workers' families.

The consequences of these and other work-related infections among health care workers can include severe illness and death in some cases. But even where illness is not severe, these work-related infections can result in meaningful and serious consequences, including lost time from work, long-term health effects, and disruption of the immune system. For example, a literature review found that, on average, health care workers miss 0.5 to 3.2 workdays due to influenza and influenza-like illness.[106] Infection with certain pathogens, such as measles and SARS-CoV-2/Covid-19, can disrupt the immune system, placing individuals at higher risk of infection, including more severe infection, with other pathogens in the future.[107,108,109,110]

Based on available data, it is clear that RNs and other health care workers face high rates of occupational infections with a variety of pathogens and that an enforceable, permanent OSHA standard is necessary to ensure protection from infectious diseases in health care settings.

Health care employers are failing to implement essential workplace measures to protect health care workers from infectious diseases.

RNs and other health care workers provide fundamental elements of day-to-day infection prevention and frontline response to disease outbreaks, epidemics, and pandemics. Protecting health care workers in these situations requires a multiple-measures approach where multiple prevention measures are combined to reduce the risk of exposure and infection, in accordance with the hierarchy of controls. However, available data indicate that health care employers neglect essential protections.

Throughout the Covid-19 pandemic, NNU has conducted multiple surveys with responses from nearly 90,000 nurses across the country to track trends in health care employers' preparedness

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[106] Blanchet Zumofen, Marie-Hélène, Jeff Frimpter, and Svenn Alexander Hansen. "Impact of influenza and influenza-like illness on work productivity outcomes: a systematic literature review." *Pharmacoeconomics* 41.3 (2023): 253-273.

[107] Petrova, Velislava N., et al. "Incomplete genetic reconstitution of B cell pools contributes to prolonged immunosuppression after measles." *Science Immunology* 4.41 (2019): eaay6125.

[108] Mina, Michael J., et al. "Measles virus infection diminishes preexisting antibodies that offer protection from other pathogens." *Science* 366.6465 (2019): 599-606.

[109] Ryan, Feargal J., et al. "Long-term perturbation of the peripheral immune system months after SARS-CoV-2 infection." *BMC Medicine* 20.1 (2022): 26.

[110] Wang, Lindsey, et al. "Association of COVID-19 with respiratory syncytial virus (RSV) infections in children aged 0–5 years in the USA in 2022: a multicentre retrospective cohort study." *Family Medicine and Community Health* 11.4 (2023): e002456.

and protections for health care workers.[111] Survey after survey shows health care employers' failures to prepare for and respond to the Covid-19 pandemic to protect the health and safety of nurses, other health care workers, and patients. Specifically, NNU's most recent survey, released in January 2024, found that only 61.2 percent of hospital RNs report wearing a respirator for every encounter with a Covid-positive patient,[112] despite ample scientific evidence that SARS-CoV-2 is aerosol transmitted and a respirator is necessary PPE.[113] NNU's survey also found that only 31.2 percent of RNs report that all nurses are informed of exposures in a timely fashion. In fact, the proportion of nurses reporting patient/visitor screening and timely exposure notification have remained consistently low throughout the Covid-19 pandemic, indicating that health care employers continue to neglect these important prevention measures.[114]

NNU's findings are consistent with data from studies examining protections related to other infectious diseases. For example, a NIOSH-funded study that evaluated respiratory protection programs for airborne-transmitted infectious diseases in acute care hospitals, which was conducted before the Covid-19 pandemic, found that a significant number of hospitals conducted hazard assessments only for tuberculosis, neglecting risks for other airborne-transmitted diseases.[115] This likely resulted in unidentified exposure scenarios in these facilities where health care workers needed, but were not provided, respiratory protection, jeopardizing their health and safety.

Another study analyzed health care worker exposures to and cases of pertussis over a ten-year period and found that a substantial proportion of health care worker infections were neither reported nor investigated and were likely associated with missed occupational exposures.[116] Another study found that 77.2 percent of patients with pulmonary tuberculosis experienced at

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[111] National Nurses United. "Covid-19 and Infectious Diseases Surveys." https://www.nationalnursesunited.org/covid-19-and-infectious-disease-surveys

[112] National Nurses United. "Nurses face worsening working conditions amid winter surge in Covid and other respiratory viruses, as CDC looks to weaken infection control guidance." January 17, 2024, https://www.nationalnursesunited.org/ninth-covid-survey-nurses-face-worsening-working-conditions (Accessed August 2025).

[113] Brosseau, Lisa M., et al. "COMMENTARY: Wear a respirator, not a cloth or surgical mask, to protect against respiratory viruses." *CIDRAP*, February 23, 2023, https://www.cidrap.umn.edu/covid-19/commentary-wear-respirator-not-cloth-or-surgical-mask-protect-against-respiratory-viruses.

[114] National Nurses United. "Nurses face worsening working conditions amid winter surge in Covid and other respiratory viruses, as CDC looks to weaken infection control guidance." January 17, 2024, https://www.nationalnursesunited.org/ninth-covid-survey-nurses-face-worsening-working-conditions (Accessed August 2025).

[115] Brosseau, Lisa M., et al. "Evaluation of Minnesota and Illinois hospital respiratory protection programs and health care worker respirator use." *Journal of Occupational and Environmental Hygiene* 12.1 (2015): 1-15.

[116] Kuncio, Danica E., et al. "Health care worker exposures to pertussis: missed opportunities for prevention." *Pediatrics* 133.1 (2014): 15-21.

least one missed diagnostic opportunity,[117] which represents a significant but unidentified exposure risk to health care workers.

It is clear that health care employers are failing to implement measures necessary to protect health care workers from infectious diseases and that an enforceable, permanent OSHA infectious diseases standard is necessary to ensure that health care workers are afforded their right to a safe and healthful workplace.

III. To craft a protective infectious diseases standard, OSHA must follow the best science to meaningfully protect health care workers and materially hold health care employers accountable.

Since the beginning of the Covid-19 pandemic, NNU has repeatedly urged OSHA to recognize updated science on aerosol transmission of infectious diseases in the agency's rulemaking and other efforts to protect workers from Covid-19.[118,119,120,121,122] NNU urges OSHA to expeditiously issue an enforceable, permanent infectious diseases standard that is based on the latest available scientific research regarding infectious disease transmission and prevention. NNU cautions the agency that it cannot uphold its statutory obligations if it defers to outdated, inaccurate guidance that constitutes the current infection control paradigm, such as that represented in CDC guidance. Indeed, given extensive political influence over science-based guidance and policy decisions by the current administration at the CDC, OSHA cannot rely on

[117] Miller, Aaron C., et al. "Incidence, duration and risk factors associated with delayed and missed diagnostic opportunities related to tuberculosis: a population-based longitudinal study." *BMJ Open* 11.2 (2021): e045605.
[118] Castillo, B., Letter to Secretary of Labor and Federal OSHA. "RE: National Nurses United Petitions OSHA for an Emergency Temporary Standard on Emerging Infectious Diseases in Response to COVID-19." March 4, 2020, https://www.nationalnursesunited.org/sites/default/files/nnu/graphics/documents/NNUPetitionOSHA03042020.pdf (Accessed August 2025).
[119] National Nurses United. "Nurses urge that OSHA adopts permanent Covid-19 and infectious disease protections for health care workers." November 3, 2021, https://www.nationalnursesunited.org/press/nurses-urge- osha-adopts-permanent-covid-19-and-infectious-disease-protections (Accessed August 2025).
[120] National Nurses United. "Citing new Omicron variant, nurses say permanent OSHA Covid-19 standard for health care workers badly needed." December 2, 2021, https://www.nationalnursesunited.org/press/nurses-say-permanent-osha-covid-19-standard-needed-for-health-care-workers (Accessed August 2025).
[121] National Nurses United. "Unions, public health, and occupational safety organizations call for permanent OSHA Covid-19 standards for health care and other workers." December 16, 2021, https://www.nationalnursesunited.org/press/unions-public-health-and-occupational-safety-organizations-call-for-permanent-osha-standards (Accessed August 2025).
[122] National Nurses United. "National Nurses United testifies at OSHA's hearing on occupational exposure to Covid-19 in healthcare settings." April 28, 2022, https://www.nationalnursesunited.org/press/nnu-testifies-at-osha-hearing-on-occupational-exposure-covid-19 (Accessed August 2025).

the CDC in this current moment to issue objective guidance and must weigh the science on its own merit.[123,124,125]

OSHA has a legal obligation to weigh the best and latest available evidence when developing new standards.

The Occupational Safety and Health Act (OSH Act) directs OSHA's work to develop new standards, which are a key piece of OSHA's ability to uphold its mission to protect the health and safety of working people in the United States. The OSH Act includes specific considerations that OSHA must weigh when developing standards dealing with "toxic materials or harmful physical agents,"[126] or health hazards, including pathogens that transmit infectious diseases. When promulgating such health standards, OSHA:[127]

> …shall set the standard which most adequately assures, to the extent feasible, *on the basis of the best available evidence,* that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life. Development of standards under this subsection *shall be based upon research, demonstrations, experiments, and such other information as may be appropriate*. In addition to the attainment of the highest degree of health and safety protection for the employee, other considerations shall be the *latest available scientific data* in the field, the feasibility of the standards, and experience gained under this and other health and safety laws… [emphasis added].

The OSH Act requires that, when developing health standards, OSHA must base such standards on the "best available evidence." Indeed, the courts have upheld that "so long as they are supported by a body of reputable scientific thought, the Agency is free to use conservative assumptions in interpreting data," with respect to health hazards, "risking error on the side of overprotection rather than underprotection."[128]

It is also clear that OSHA is required to consider the "latest available scientific data in the field" when developing such standards.[129] The D.C. Circuit has stated that when there is

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[123] Fiore, K. "There's a Major Publishing Slowdown at CDC's Flagship Journal—Each MMWR article now requires clearance by the HHS secretary, sources say." July 25, 2025, https://www.medpagetoday.com/special-reports/exclusives/116670 (Accessed August 28, 2025).
[124] Cirruzzo, C., Cueto, I., et al. "RFK Jr. names new members of CDC's vaccine advisory panel." STAT+, June 11, 2025, https://www.statnews.com/2025/06/11/rfk-jr-names-new-acip-members-replaces-cdc-vaccine-experts-he-just-fired/ (Accessed August 28, 2025).
[125] Payne, D. "Inside the CDC director's ouster: Kennedy demanded acceptance of new vaccine policies; Susan Monarez refused." STAT+, August 28, 2025. https://www.statnews.com/2025/08/28/cdc-director-fired-behind-the-scenes-look/ (Accessed August 28, 2025).
[126] 29 USC §655(b)(5)
[127] 29 USC §655(b)(5)
[128] *AFL-CIO v. Am. Petroleum Inst.,* 448 U.S. 607, 656, 100 S. Ct. 2844, 65 L. Ed. 2d 1010 (1980) ("Benzene")
[129] 29 USC §655(b)(5)

disputed scientific evidence in the record, OSHA must review the evidence on both sides and "reasonably resolve" the dispute.[130] OSHA's health standards must also attain the "highest degree of health and safety protection for the employee." As a result of these statutory obligations, OSHA cannot simply defer to CDC guidance on infection control and prevention in health care settings because such guidance is outdated and based on flawed and disproven science.

The current dominant infection control paradigm is outdated and based on flawed and disproven science on infectious disease transmission and prevention.

The current dominant infection control paradigm is clearly outlined in multiple guideline documents from the CDC that address infection control and prevention programs for hospitals and other health care facilities. Several of these documents describe an understanding of mechanisms and modes for infectious diseases transmission, which informs the precautions and recommendations included in the guideline. Chief among them, the CDC's 2007 *Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings* (2007 Isolation Precautions Guideline) reviews scientific data regarding the transmission of infectious agents in health care settings, discusses fundamental elements of infection control and prevention programs, and provides specific recommendations for health care facilities to prevent transmission of infectious diseases between staff and patients.[131] The 2007 Isolation Precautions Guideline serves as a resource regarding the CDC's understanding of infectious disease transmission mechanisms and application of measures to prevent transmission in health care settings. It describes three principal routes of transmission—contact, droplet, and airborne—and prescribes the types of PPE to be used to protect against each type of transmission, amongst other measures:

- **Contact transmission** – CDC states that contact transmission occurs when a microorganism is transferred from one infected person to another, either directly or via an intermediate object or person. Contact precautions include use of gown and gloves by health care workers for all interactions that may involve contact with the patient or potentially contaminated areas in the patient's environment.

- **Droplet transmission** – CDC states that droplet transmission occurs when "respiratory droplets [defined as being >5 μm in size] carrying infectious pathogen transmit infection when they travel directly from the respiratory tract of the infectious individual to susceptible mucosal surfaces of the recipient, generally over short distances…." A distance of three to six feet from the infectious source has been defined as the "area of defined risk" for droplet transmission. Droplet precautions include use of "a mask (a

[130] *Pub. Citizen Health Research Grp. V. Tyson,* 796 F.2d 1479, 1500 (D.C. Cir. 1986)
[131] Siegel, J.D., E. Rhinehart, et al, "2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings," last updated July 2023, https://stacks.cdc.gov/view/cdc/134941 (Accessed August 2025).

respirator is not necessary) for close contact with infectious patient," and no special air handling or ventilation.[132]

- **Airborne transmission** – CDC states that airborne transmission occurs "by dissemination of either airborne droplet nuclei or small particles in the respirable size range containing infectious agents that remain infective over time and distance." Airborne precautions include patient placement in an airborne infection isolation room (AIIR), and use of a mask or respirator by health care workers, depending on disease-specific recommendations, donned prior to room entry.

CDC also maintains additional guidance documents that pertain to infection prevention and control, including *Infection Control in Healthcare Personnel: Infrastructure and Routine Practices for Occupational Infection Prevention and Control Services, updated in 2019,*[133] *and Environmental Infection Control Guidelines*, published in 2003.[134] CDC's *Environmental Infection Control Guidelines* includes a chapter on "Air," which describes droplet and airborne transmission similarly to the 2007 Isolation Precautions Guideline.

CDC's description of transmission modes and precautions was written decades ago and last updated over 15 years ago. Even prior to publication of the 2007 Isolation Precautions Guideline, there was research into aerosol generation, particle dynamics, and infectious disease transmission that called into question the accuracy of CDC's transmission modes and droplet and airborne precautions.[135,136,137] In the intervening years, research has emerged that indicates that the CDC's distinction between droplet and airborne transmission is incorrect and based on historical errors and inaccurate assumptions. For a detailed description of this history, see the articles, *What were the historical reasons for the resistance to recognizing airborne transmission during the COVID-19 pandemic?*, published in 2022 in Indoor Air[138] and *How did we get here: what are droplets*

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[132] Ibid.
[133] Kuhar, D.T., R. Carrico, et al., "Infection Control in Healthcare Personnel: Infrastructure and Routine Practices for Occupational Infection Prevention and Control Services," October 25, 2019, https://www.cdc.gov/infection-control/media/pdfs/Guideline-Infection-Control-HCP-H.pdf (Accessed August 2025).
[134] Sehulster, L., R.Y.W. Chinn, et al. "Guidelines for Environmental Infection Control in Health-Care Facilities (2003)," Centers for Disease Control and Prevention, June 6, 2003 https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5210a1.htm (Accessed August 2025).
[135] Roy, Chad J., and Donald K. Milton. "Airborne transmission of communicable infection-the elusive pathway." *New England Journal of Medicine* 350.17 (2004): 1710-1712.
[136] Tang, J. W., et al. "Factors involved in the aerosol transmission of infection and control of ventilation in healthcare premises." *Journal of Hospital Infection* 64.2 (2006): 100-114.
[137] Li, Yuguo, et al. "Role of air distribution in SARS transmission during the largest nosocomial outbreak in Hong Kong." *Indoor Air* 15.2 (2005).
[138] Jimenez, Jose L., et al. "What were the historical reasons for the resistance to recognizing airborne transmission during the COVID-19 pandemic?" *Indoor Air* 32.8 (2022): e13070.

and aerosols and how far do they go? A historical perspective on the transmission of respiratory infectious diseases, published in 2021 in Interface Focus.[139]

Briefly, investigation to understand the mechanisms of infectious disease transmission dates back thousands of years. The development of germ theory in the second half of the 19th century was a significant advancement in explaining how diseases spread, including through the air. In the following decades, research into infectious disease transmission intensified. A prominent epidemiologist, Charles Chapin, had lasting influence on how much of this research was interpreted—inaccurately.

Specifically, Chapin conceptualized "contact infection," where transmission occurred between people through direct contact or close proximity. He hypothesized that droplet spray better explained transmission in close proximity, and that contact was more important than other modes of transmission. Chapin frequently downplayed the importance of airborne transmission, which was possible in close contact, but which he denied with no supporting evidence, conflating lack of evidence with evidence of absence. Ultimately, Chapin never proved his hypothesis that ease of infection in close proximity should be taken as proof of transmission by sprayed droplets, and yet his views were embraced by leadership at the newly formed CDC and became dominant over the next century.

William Wells, an engineer, and physician Mildred Wells were the first to rigorously study the behavior of spray-borne droplets vs airborne aerosols. In the first part of the 20th century, Wells and Wells conducted multiple studies that built clear evidence for airborne transmission of multiple diseases. In 1962, Wells, Cretyl Mills, and Richard Riley demonstrated airborne transmission of tuberculosis (TB) in a study of guinea pigs exposed to air from a hospital TB ward. This study led to TB being the first disease to be accepted as airborne in modern times. And yet there remained resistance to the idea of airborne transmission overall. There were disparate standards of evidence for different routes of transmission with many diseases being accepted as droplet without any substantive proof while establishing airborne transmission required extensive research on a case-by-case basis for each disease.

In the 1930's, Wells correctly identified 100 microns as the boundary between particles that fall to the ground quickly (>100 microns) versus those that remain aloft (<100 microns). However, CDC and other public health agencies have long held 5 microns as the boundary— a major error. The scientists who uncovered these historical errors describe the source of these errors as follows:[140]

> In sum, tracing the origins of the 5 μm threshold, as cited in public health literature ultimately revealed a conflation between various understandings and definitions of

[139] Randall, Katherine, et al. "How did we get here: what are droplets and aerosols and how far do they go? A historical perspective on the transmission of respiratory infectious diseases." *Interface Focus* 11.6 (2021): 20210049.
[140] Ibid.

> 'aerosols.' Most contemporary sources use this threshold only to explain which particles stay suspended in the air for longer times, yet the 5 μm distinction is clearly *not* based on what *stays airborne* but on what *reaches deepest in the lungs, irrespective of a pathogen's tropism*. It is this conflation of particle transport through the air and particle deposition in the lungs that appears to be the source of the error in distinguishing between droplet and aerosol transmission routes as defined by a 5 μm threshold.

The source of this error originates in the 1960s when TB was the only accepted airborne infection, which led CDC leadership to incorrectly conflate the particle size that penetrates deep into the lungs, and is necessary for TB infection, with that which falls to the ground quickly. The persistence of this error continues through to the 21st century and has had multiple negative consequences that have inhibited the effectiveness of dominant infection prevention and control paradigms, including those of the CDC:

> The problems created by this conflation are many. First, it fosters a misunderstanding among health professionals about most infectious particles (such as those carrying SARS-CoV-2) not remaining airborne. Second, it codifies a particle size based on the pathogenesis for TB that research shows does *not* apply to other infectious diseases. Viral receptors for SARS-CoV-2 are located throughout the respiratory tract for example, and initiation of infection in the nose and upper respiratory tract is thought to be important. Therefore, unlike for TB, aerosols of sizes all the way up to the inhalable limit of 100 μm are capable of initiating infection. Third, the size of a droplet upon emission is not necessarily the size upon inhalation and is not a size that necessarily remains constant after exhalation and inhalation, due to evaporation and rehydration. If a reference to a specific droplet size needs to be made, a standardized procedure for such measurement is key. A size cut-off and dichotomy are useful for general conceptualization and broad understanding of the route of exposure and control measures. However, a detailed understanding of the droplet size physics, the flow dynamics (in space and time), and their measurement are critical to providing sound scientific underpinning of interventions and to eliminating inconsistencies in public health guidelines and associated false debates.[141]

Thus, it is clear that the droplet/airborne paradigm that is currently used by many infection prevention and control practitioners to describe infectious disease transmission modes between people and to prescribe the precautions necessary to prevent transmission is outdated and based on significant scientific errors. To craft a protective standard, it is essential for OSHA to follow the science on infectious disease transmission and prevention, instead of relying on this outdated and inaccurate paradigm.

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[141] Randall, Katherine, et al. "How did we get here: what are droplets and aerosols and how far do they go? A historical perspective on the transmission of respiratory infectious diseases." *Interface Focus* 11.6 (2021): 20210049.

IV. OSHA must follow the best and latest available evidence on infectious disease transmission mechanisms, which differ substantially from the current dominant infection control paradigm and CDC's current infection control guidance.

Ample scientific evidence indicates that infectious disease transmission cannot be split into two distinct modes (droplet vs airborne) but exists along a continuum. Consensus among scientific experts in a variety of disciplines is that a more accurate depiction of the evidence on infectious disease transmission would be a single category of aerosol transmission or inhalation transmission through the air.

Indeed, the World Health Organization (WHO) assembled a group of scientific experts to formulate a new terminology and description of infectious disease transmission through the air. This group, which was comprised of experts in diverse fields including epidemiology, microbiology, clinical management, infection prevention and control, bioengineering, physics, air pollution, aerosol science, aerobiology, public health and social measures, occupational health, and social science, authored a global technical consultation report that was published on April 18, 2024.[142] The report reviews updated science on infectious diseases transmission and proposes a new terminology for infectious diseases that transmit through the air.

The WHO report represents significant progress in recognizing the science on aerosol transmission of infectious diseases and, importantly, finally leaves behind the faulty, disproven droplet-airborne dichotomy. Specifically, the WHO report proposes a new descriptor, "through the air," to characterize an infectious disease where the main mode of transmission involves the pathogen traveling through or being suspended in the air— similar to the use of the terms waterborne and bloodborne to describe general transmission modes for infectious diseases. Under this new umbrella term, there are two descriptors:

- Airborne transmission/inhalation transmission occurs when infectious respiratory particles—which are generated by an infected individual when they breathe, speak, sing, cough, sneeze, etc.—enter the respiratory tract of another person and cause infection, regardless of the size of the particles or distance travelled.

- Direct deposition describes when infectious particles are deposited directly on the exposed facial mucosal surfaces (i.e., eyes, nose, mouth) of another person and then cause infection, again regardless of particle size.

These terms explicitly move away from the size-based droplet-airborne paradigm, which is an essential step forward in recognizing the most up-to-date scientific research on infectious

[142] World Health Organization. "Global technical consultation report on proposed terminology for pathogens that transmit through the air." April 18, 2024, https://www.who.int/publications/m/item/global-technical-consultation-report-on-proposed-terminology-for-pathogens-that-transmit-through-the-air (Accessed August 2025).

disease transmission. While the WHO report does not deal with how the new terminology should shape protective measures, such as what types of PPE should be used by health care workers caring for patients infected with pathogens that transmit through the air, the WHO report does better recognize the scientific research that has found that respiratory particles are emitted in a wide range of sizes and can remain suspended in and travel through the air for long times and distances. The WHO report also provides better recognition of the multitude of factors that can influence transmission through the air, such as temperature, humidity, time, dose/concentration, and ventilation or removal rate. Additionally, many organizations have weighed in on the issue as it applies to SARS-CoV- 2/Covid-19 because it became clear early in the Covid-19 pandemic that the CDC's droplet-airborne paradigm and underlying assumptions led them to recommend inadequate protective measures for the virus. Organizations that have advocated for better recognition of aerosol/inhalation transmission include:

- In 2021, National Nurses United and 44 allied unions and organizations sent a petition urging the CDC to update its Covid-19 guidance to fully reflect the latest scientific evidence regarding SARS-CoV-2 transmission through aerosols that infected people emit when they breathe, speak, cough, sneeze, or sing.[143] Over 12,000 individuals signed this petition.

- A group of experts sent a letter in 2021 urging the White House, CDC, and National Institutes of Health (NIH) to take immediate action to address SARS-CoV-2 inhalation exposure.[144]

- The American Industrial Hygiene Association (AIHA) published a joint consensus statement[145] to call on the CDC and OSHA to issue guidance preventing occupational exposures due to aerosol transmission of SARS-CoV-2. Below are co-sponsors of the statement.
    - American Conference of Governmental Industrial Hygienists
    - American Association of Aerosol Research
    - Association of Occupational Health Professionals in Healthcare
    - American Thoracic Society
    - Association of Schools & Programs of Public Health

[143] National Nurses United. "Nurses, Unions, Allies Urge CDC to Acknowledge Covid-19 Aerosol Transmission to Help Bring Virus Under Control." February 23, 2021, https://www.nationalnursesunited.org/press/nurses-unions-allies-urge-cdc-to-acknowledge-covid-19-aerosol-transmission (Accessed August 2025).
[144] Bright, R., L.M. Brosseau, et al., "Re: Immediate Action is Needed to Address SARS-CoV-2 Inhalation Exposure," February 15, 2021, https://aiha-assets.sfo2.digitaloceanspaces.com/AIHA/uploads/PressReleases/Immediate-Action-to-Address-Inhalation-Exposure-to-SARS-CoV-2_2142021.pdf (Accessed August 2025).
[145] Brosseau, L.M., A.H. Mitchell, and J. Rosen, "Joint Consensus Statement on Addressing the Aerosol Transmission of SARS CoV-2 and Recommendations for Preventing Occupational Exposures," American Industrial Hygiene Association, February 1, 2021, https://www.aaar.org/AAARORG/assets/File/Joint-Consensus-Statement-on-Addressing-the-Aerosol-Transmission-of-SARS-CoV-2-Fact-Sheet.pdf (Accessed August 2025).

  - National Association of Occupational Health Professionals
  - Occupational Health Clinics for Ontario Workers, Inc.
  - Organization for Safety Asepsis and Prevention
  - Society of Critical Care Medicine

- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) released new guidance in 2021 to address control of airborne infectious aerosol exposure.[146]

- The American Public Health Association (APHA) sent a letter to the U.S. Subcommittee on Workforce Protections on March 10, 2021, urging the CDC to update its guidelines that are consistent with the scientific evidence of inhalation risk. "The best scientific evidence indicates that inhalation is the primary route of transmission of SARS-CoV-2. OSHA standards and CDC guidelines must be updated to fully recognize the significant risk of exposure to the virus through inhalation."

- In October 2023, multiple organizations cosponsored a workshop examining the science on aerosol transmission and discussing the need for CDC to fully recognize that science in order to protect health care workers.[147] Sponsoring organizations include:
  - AFL-CIO
  - AIHA
  - APHA-Occupational Health and Safety Section
  - Association of Occupational and Environmental Clinics
  - Association of Occupational Health Professionals in Healthcare
  - Canadian Aerosol Transmission Coalition
  - Center for Infectious Disease Research and Policy (CIDRAP)
  - Health Watch USA
  - National Emerging Special Pathogens Training & Education Center
  - People's CDC
  - University of Maryland School of Public Health

- In 2023, National Nurses United and over 50 allied unions and organizations sent a petition urging the CDC's Healthcare Infection Control Practices Advisory Committee (HICPAC) to fully recognize the science on aerosol transmission of

[146] ASHRAE Epidemic Task Force, "Core Recommendations for Reducing Airborne Infectious Aerosol Exposure," January 6, 2021, https://www.ashrae.org/file%20library/technical%20resources/covid-19/core-recommendations-for-reducing-airborne-infectious-aerosol-exposure.pdf (Accessed August 2025).
[147] Rutgers School of Public Health, "Preventing Aerosol Transmissible Diseases: The Need for Protective Guidelines and Standards," October 13, 2023, https://rutgerstraining.sph.rutgers.edu/PreventATD/ (Accessed August 2025).

SARS- CoV-2 and other respiratory pathogens.[148] Over 10,000 individuals signed this petition.

- In 2024, a group of nearly 500 experts and 57 organizations endorsed a Joint Consensus Statement urging the CDC's HICPAC to follow the science on aerosol transmission and respiratory protection and protect health care workers.[149]

It is clear that there is scientific consensus that the outdated, flawed airborne-droplet paradigm must be replaced with an updated understanding of the available scientific evidence on aerosol/inhalation transmission of infectious diseases.

Furthermore, OSHA has a statutory obligation to review the best available evidence in crafting an infectious diseases standard. Below is a survey of some key publications to support OSHA's review. This list is not exhaustive; rather it centers literature reviews, studies, and other articles that focus on the general concepts of aerosol/inhalation transmission and particle dynamics and which provide a coherent synthesis of some of the best available research on these topics.

- Wang et al. provide a coherent overview of the available evidence supporting airborne transmission of multiple respiratory viruses, including aerosol generation, transport, and deposition. The article also discusses factors affecting the relative contributions of droplet-spray deposition versus aerosol inhalation.[150]

- Drossinos, Weber, and Stilianakis discuss technical issues with the droplet-airborne dichotomy, including multiple important factors that impact transmission risk that are ignored in this paradigm.[151]

- Tang, Tellier, and Li review evidence for aerosol transmission of different respiratory viruses and the implications of this evidence for infection control.[152]

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[148] National Nurses United. "RE: HICPAC and the CDC Must Fully Recognize Aerosol Transmission and Protect Health Care Workers and Patients." August 21, 2023, https://www.nationalnursesunited.org/sites/default/files/nnu/documents/NNU_petition_to_HICPAC_aerosol_transmission_and_HCW_and_patient_protections_08212023.pdf (Accessed August 2025).

[149] "Joint Consensus Statement: Public Health Experts Urge CDC's Advisory Committee on Healthcare Infection Control Practices (HICPAC) to Follow the Science and Protect Health Care Workers and Patients," April 18, 2024, https://www.nationalnursesunited.org/sites/default/files/nnu/documents/0424_APHA-AIHA_workgroup_on_HICPAC_final_statement_with_endorsements_04182024.pdf (Accessed August 2025).

[150] Wang, Chia C., et al. "Airborne transmission of respiratory viruses." *Science* 373.6558 (2021): eabd9149.

[151] Drossinos, Yannis, Thomas P. Weber, and Nikolaos I. Stilianakis. "Droplets and aerosols: An artificial dichotomy in respiratory virus transmission." *Health Science Reports* 4.2 (2021): e275.

[152] Tang, Julian W., Raymond Tellier, and Yuguo Li. "Hypothesis: All respiratory viruses (including SARS-CoV-2) are aerosol-transmitted." *Indoor Air* 32.1 (2022): e12937.

- Drossinos and Stilianakis provide a brief overview of aerosol physics and its application to pathogen transmission through the air, which "are in conflict with the standard demarcation of the three respiratory pathogen transmission modes used in the medical literature [contact/droplet/airborne], whereby droplet transmission is viewed as distinct from airborne transmission."[153]

- Sun et al. discuss research into how human thermal plumes impact the dispersion and transport of aerosols in indoor spaces and likely impact transmission of infectious diseases through the air.[154] The research into human thermal plumes clearly illuminates the ways in which the CDC's description of transmission modes (droplet/airborne) are inaccurate in describing transmission dynamics.

- Bourouiba outlines research that has found that respiratory emissions are comprised both of mucosalivary particles and a multiphase turbulent gas cloud, which has significant implications for how and to where infectious particles may be transported.[155] Specifically, the author states that, "the locally moist and warm atmosphere within the turbulent gas cloud allows the contained droplets to evade evaporation for much longer than occurs with isolated droplets. Under these conditions, the lifetime of a droplet could be considerably extended by a factor of up to 1,000, from a fraction of a second to minutes." The settling out and transport of respiratory particles depends on a multitude of factors, not just their size, but also the degree of turbulence, speed of the gas cloud, and ambient environmental factors.

- Rezaei and Netz provide a detailed overview of factors impacting water evaporation from respiratory droplets, which impacts the length of time they remain suspended in the air and has implications for transmission modes through the air for infectious diseases.[156]

- Zuo, Uspal, and Wei review the pathway of airborne transmission, including the mechanisms by which aerosols disperse through the air as well as lung deposition and related mechanics.[157] While the article has a focus on SARS-CoV-2, much of the science applies to other pathogens.

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[153] Drossinos, Yannis, and Nikolaos I. Stilianakis. "What aerosol physics tells us about airborne pathogen transmission." *Aerosol Science and Technology* 54.6 (2020): 639-643.
[154] Sun, Shiyi, Jing Li, and Jie Han. "How human thermal plume influences near-human transport of respiratory droplets and airborne particles: a review." *Environmental Chemistry Letters* 19.3 (2021): 1971-1982.
[155] Bourouiba, Lydia. "Turbulent gas clouds and respiratory pathogen emissions: potential implications for reducing transmission of COVID-19." *JAMA* 323.18 (2020): 1837-1838.
[156] Rezaei, Majid, and Roland R. Netz. "Airborne virus transmission via respiratory droplets: Effects of droplet evaporation and sedimentation." *Current Opinion in Colloid & Interface Science* 55 (2021): 101471.
[157] Zuo, Yi Y., William E. Uspal, and Tao Wei. "Airborne transmission of COVID-19: aerosol dispersion, lung deposition, and virus-receptor interactions." *ACS Nano* 14.12 (2020): 16502-16524.

- Scheuch provides a review of the evidence regarding spread of viruses via patient's exhalations via breathing (in absence of cough or sneeze).[158]

- Gralton et al. reports on results finding that a majority of individuals with symptomatic respiratory infections, including influenza A and B, and human metapneumovirus, produced both large (>5 um) and small (≤5 um) particles containing viral RNA.[159]

- Jones and Brosseau analyze the literature and propose a category of "aerosol transmission," which would more accurately reflect the scientific evidence than the droplet-airborne paradigm.[160] They propose criteria to establish biological plausibility for aerosol transmission of pathogens.

- Wei and Li discuss the research on the production and release of respiratory aerosols, their transport and dispersion in indoor environments, and exposure to susceptible hosts.[161]

There is ample scientific literature underlining the need to redefine transmission of infectious diseases to replace the droplet-airborne dichotomy. Such a redefinition is essential to formulating effective control measures to protect worker health and safety.

V. Preventing occupational exposures to and infections from infectious diseases is both feasible and necessary through a multilayered approach to infection control in health care settings.

OSHA has an obligation to establish new health standards "on the basis of the best available evidence."[162] It is clearly established that the current infection control paradigm and CDC's current description of transmission modes for infectious diseases (droplet-airborne paradigm) does not reflect the best available evidence regarding infectious disease transmission and, indeed, are contradicted by much of it. When the best available science on aerosol/inhalation transmission is recognized, the following control measures are necessary—in combination—to prevent exposures to and transmission of infectious diseases to health care workers:

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[158] Scheuch, Gerhard. "Breathing is enough: for the spread of influenza virus and SARS-CoV-2 by breathing only." *Journal of Aerosol Medicine and Pulmonary Drug Delivery* 33.4 (2020): 230-234.
[159] Gralton, Jan, et al. "Respiratory virus RNA is detectable in airborne and droplet particles." *Journal of Medical Virology* 85.12 (2013): 2151-2159.
[160] Jones, Rachael M., and Lisa M. Brosseau. "Aerosol transmission of infectious disease." *Journal of Occupational and Environmental Medicine* 57.5 (2015): 501-508.
[161] Wei, Jianjian, and Yuguo Li. "Airborne spread of infectious agents in the indoor environment." *American Journal of Infection Control* 44.9 (2016): S102-S108.
[162] 29 USC §655(b)(5)

- Ventilation and air cleaning in all areas of the facility, in addition to airborne infection isolation rooms—to reduce concentration of infectious aerosols.

- Source control, including robust procedures to proactively identify and promptly isolate infectious/potentially infectious individuals—to reduce and prevent emission of infectious aerosols into the air.

- PPE, including the importance of NIOSH-approved, fit-tested respirators used within an OSHA-compliant respiratory protection program—to protect health care workers who may be exposed to infectious aerosols while providing patient care or performing other job duties.

- Exposure surveillance and notification and contact tracing—to promptly identify cases among employees to enable action to prevent onward transmission and to provide employees the ability to promptly access treatment.

- Paid sick leave and medical removal benefits—to ensure that employees who are infected are able to remain out of the workplace to prevent onward transmission without loss of pay or other benefits.

- Access to vaccinations, which may reduce the risk of infection, transmission, and serious illness (depending on the type of vaccine)—to ensure that employees are able to access this protection free of charge.

Further, when the best available science is applied in the selection of control measures to prevent infectious diseases exposures and transmissions to health care workers, it becomes clear that the CDC's current infection control and prevention guidance falls far short of achieving "the attainment of the highest degree of health and safety protection for the employee"—the standard to which OSHA is held.[163]

As described as follows, the current dominant infection control paradigm, including CDC's current infection prevention and control guidance, does not adequately address these prevention measures. Thus, OSHA cannot simply rely upon CDC's current infection prevention and control guidance and uphold the agency's statutory obligations.

Ventilation is an essential prevention measure, but CDC's guidance on ventilation to prevent infectious disease transmission is outdated and inadequate.

Ventilation is an important prevention measure because it can significantly reduce the concentration of infectious aerosols in indoor spaces, which reduces transmission risk.

[163] 29 USC §655(b)(5)

Ventilation provides clean air, either outdoor air or air that has been cleaned via filtration or other methods, which dilutes air contaminated with infectious aerosols and/or other contaminants. Higher concentrations of infectious aerosols can increase the risk of transmission, especially in health care settings where there are, by default, populations vulnerable to infection and serious disease (e.g., patients who are immunocompromised, patients who have received organ transplants, patients undergoing cancer treatment, etc.). Many health care workers may also be at higher risk of infection or severe disease due to age, immunocompromise status, or other factors.

Studies have documented the importance of ventilation to controlling infectious disease transmission. For example:

- A systematic review conducted by a multidisciplinary panel of medical and engineering experts evaluated the literature and concluded that "there is strong and sufficient evidence to demonstrate the association between ventilation and the control of airflow directions in buildings and the transmission and spread of infectious diseases such as measles, TB, chickenpox, anthrax, influenza, smallpox, and SARS."[164]

- One study modeled short-range airborne transmission of SARS-CoV-2, which has been generally accepted as a major contributor to transmission of the virus.[165] They found that ventilation was an essential component for minimizing infection risk in indoor spaces, especially those with high-intensity activity or densely populated spaces.

- Another modeling study found that, where ventilation is poor and/or the environment is crowded, airborne transmission can occur at longer distances than would occur with good ventilation.[166] The study utilized exposure models and applied them to multiple case studies of SARS-CoV-2 outbreaks. Essentially, they found that poor ventilation can, in effect, put people in close contact with each other via air even if they are physically far apart.

CDC's current guidance that addresses ventilation for infection control is insufficient and outdated. The main CDC guidance document that addresses ventilation—*Guidelines for Environmental Infection Control in Health-Care Facilities*—was last updated in 2003.[167] In this

[164] Li, Yiping, et al. "Role of ventilation in airborne transmission of infectious agents in the built environment–a multidisciplinary systematic review." *Indoor Air* 17.1 (2007).
[165] Jia, Wei, et al. "Exposure and respiratory infection risk via the short-range airborne route." *Building and Environment* 219 (2022): 109166.
[166] Chen, Wenzhao, et al. "Extended short-range airborne transmission of respiratory infections." *Journal of Hazardous Materials* 422 (2022): 126837.
[167] Sehulster, Lynne, et al. "Guidelines for Environmental Infection Control in Health-Care Facilities." *Centers for Disease Control and Prevention, Healthcare Infection Control Practices Advisory Committee* (2003), https://www.cdc.gov/infection-control/hcp/environmental-control/index.html (Accessed August 2025).

document, the CDC takes a very narrow view of which pathogens are transmissible through air. Additionally, this document recommends that health care facilities follow guidance on ventilation that was published in 2001 by the American Institute of Architects (AIA). This reference is out of date and no longer applicable. AIA no longer publishes these guidelines—the Facility Guidelines Institute (FGI) does.[168] FGI has updated the document five times in the intervening years. Beginning in 2010, FGI incorporates ASHRAE's Standard 170 - Ventilation of Health Care Facilities, which addresses health care ventilation standards and is continuously updated.[169,170] CDC's current guidance regarding ventilation for preventing and controlling infectious disease transmission is outdated and inadequate.

Source control, including screening, isolation, and masks, is essential to prevent infectious disease transmission, but CDC's current guidance is inadequate.

Effective source control in health care facilities involves multiple measures to identify infectious/potentially infectious cases and prevent emission of infectious aerosols into air shared with susceptible individuals. Source control includes measures like patient and visitor screening, isolation, and mask use. The consequences of inadequate source control can be significant for patients and health care workers. For example, a study examining a large dataset from the UK found that hospital-onset patient Covid-19 cases resulted in substantially more onward transmission compared to community-acquired cases among hospitalized patients.[171] Timely and thorough patient and visitor screening is essential to promptly identify infectious/ potentially infectious cases, which is necessary to enable implementation of measures to prevent onward transmission, such as isolation. Experiences in health care facilities throughout the Covid-19 pandemic have underlined the importance of prompt identification and isolation. Transmission has occurred frequently where infectious Covid-19 cases were not promptly identified. For example, epidemiologic analysis and genome sequencing found that unidentified cases—such as health care workers or asymptomatic patients—were important vectors of transmission in health care settings.[172] Similarly, another study found that a third of hospital-acquired Covid-19 cases

[168] Facility Guidelines Institute. "FGI Guidelines Documents." https://fgiguidelines.org/guidelines/editions/ (Accessed August 2025).
[169] Facility Guidelines Institute. "Major Additions and Revisions." (2022) https://fgiguidelines.org/wp-content/uploads/2022/10/2022-Hosp-Major-additions-and-revisions.pdf (Accessed August 2025).
[170] ANSI/ASHRAE/ASHE Standard 170-2017, "Ventilation of Health Care Facilities." https://www.ashrae.org/technical-resources/standards-and-guidelines/standards-addenda/ansi-ashrae-ashe-standard- 170-2017-ventilation-of-health-care-facilities (Accessed August 2025).
[171] Lindsey, Benjamin B., et al. "Characterising within-hospital SARS-CoV-2 transmission events using epidemiological and viral genomic data across two pandemic waves." *Nature Communications* 13.1 (2022): 671.
[172] Snell, Luke B., et al. "Combined epidemiological and genomic analysis of nosocomial SARS-CoV-2 infection early in the pandemic and the role of unidentified cases in transmission." *Clinical Microbiology and Infection* 28.1 (2022): 93-100.

were traceable back to cases where acquisition was from a community Covid-19 case where the diagnosis had not been made within 48 hours of admission to the hospital.[173]

This issue does not exist solely with Covid-19. In fact, for TB, there are likely many unrecognized exposures to both patients and health care workers because cases are not always identified in a timely fashion. One study found that 15.9 percent of newly diagnosed TB patients had a prior respiratory-related visit to a hospital or emergency department within the previous 30 days in California and 25.7 percent had a visit in the previous 90 days.[174]

An important consideration for patient and visitor screening is that symptom screening alone will not detect all cases for at least some common pathogens. Asymptomatic and presymptomatic cases and transmission occur frequently with SARS-CoV-2/Covid-19, influenza, and respiratory syncytial virus (RSV).[175,176,177,178,179] Exposure history and other risk factors should also be screened.

Once patients who are or may be infectious are identified, then measures need to be put in place to prevent emission of infectious aerosols into air shared with other patients, visitors, and health care workers. These measures include isolation and implementation of transmission-based precautions, including PPE for health care workers providing care for the infectious/potentially infectious patient. Engineering controls exist to aid in source control, including airborne infection isolation rooms (AIIRs), portable HEPA filters, and others. AIIRs are specially designed rooms with ventilation systems that provide negative pressure to surrounding areas and either exhaust room air directly outdoors or filter air through a HEPA filter prior to recirculation. These measures help contain infectious aerosols and prevent spread to other areas of the facility, though continued maintenance and verification of negative pressure are important.

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[173] Khonyongwa, Kirstin, et al. "Incidence and outcomes of healthcare-associated COVID-19 infections: significance of delayed diagnosis and correlation with staff absence." *Journal of Hospital Infection* 106.4 (2020): 663-672.
[174] Miller, Aaron C., et al. "Missed opportunities to diagnose tuberculosis are common among hospitalized patients and patients seen in emergency departments." *Open Forum Infectious Diseases*. Vol. 2. No. 4. Oxford University Press, 2015.
[175] Arons, Melissa M., et al. "Presymptomatic SARS-CoV-2 infections and transmission in a skilled nursing facility." *New England Journal of Medicine* 382.22 (2020): 2081-2090.
[176] Cohen, Cheryl, et al. "Asymptomatic transmission and high community burden of seasonal influenza in an urban and a rural community in South Africa, 2017–18 (PHIRST): a population cohort study." *The Lancet Global Health* 9.6 (2021): e863-e874.
[177] Elder, Alexander G., et al. "Incidence and recall of influenza in a cohort of Glasgow healthcare workers during the 1993–4 epidemic: results of serum testing and questionnaire." *BMJ* 313.7067 (1996): 1241-1242.
[178] Moreira, Luciana Peniche, et al. "Respiratory syncytial virus evaluation among asymptomatic and symptomatic subjects in a university hospital in Sao Paulo, Brazil, in the period of 2009-2013." *Influenza and Other Respiratory Viruses* 12.3 (2018): 326-330.
[179] Inkster, Teresa, et al. "Consecutive yearly outbreaks of respiratory syncytial virus in a haemato-oncology ward and efficacy of infection control measures." *Journal of Hospital Infection* 96.4 (2017): 353-359.

During the Covid-19 pandemic, additional engineering controls have received increased attention. Portable HEPA filters can provide additional air cleaning to remove infectious aerosols from shared air to reduce the risk of onward transmission. For example, studies have found that the use of portable HEPA filters can effectively decrease the particle concentration and spread in hospital wards.[180,181] Another study found significantly reduced invasive aspergillosis infections among hospitalized patients in wards with portable HEPA filters compared to those without (adjusted odds ratio 0.49, 95% CI 0.28-0.85).[182] Ventilated headboards have been evaluated by the National Institute for Occupational Safety and Health (NIOSH) and can help capture infectious aerosols near the site of generation (i.e., near the patient's respiratory tract).[183]

Additionally, use of masks to aid in source control has gained recognition throughout the Covid-19 pandemic as an effective strategy. Indeed, evidence has grown to support the effectiveness of mask-use by all individuals present in a shared space to reduce emissions of infectious aerosols in order to reduce transmission risk. For example:

- Transmission in hospitals occurred more frequently when there was prolonged close contact with unmasked, unrecognized infectious individuals.[184]

- Use of face masks by health care workers reduced respiratory infections among hospitalized neonates.[185]

- A systematic review found that patient mask use decreased detection of SARS- CoV-2 aerosols in air and on surfaces in a hospital setting.[186]

- A study found that requiring all staff to wear masks during influenza season led to reduced influenza transmission when there were at least three influenza patients in the

[180] Qian, Hua, et al. "Particle removal efficiency of the portable HEPA air cleaner in a simulated hospital ward." *Building Simulation* 3, 215–224 (2010).
[181] Buising, Kristy L., et al. "Use of portable air cleaners to reduce aerosol transmission on a hospital coronavirus disease 2019 (COVID-19) ward." *Infection Control & Hospital Epidemiology* 43.8 (2022): 987-992.
[182] Salam, Zakir-Hussain Abdul, et al. "The impact of portable high-efficiency particulate air filters on the incidence of invasive aspergillosis in a large acute tertiary-care hospital." *American Journal of Infection Control* 38.4 (2010): e1-e7.
[183] Mead, Kenneth. "NIOSH ventilated headboard provides solution to patient isolation during an epidemic." April 14, 2020, https://blogs.cdc.gov/niosh-science-blog/2020/04/14/ventilated-headboard/ (Accessed August 2025).
[184] Smith, Leigh, et al. "Severe acute respiratory coronavirus virus 2 (SARS-CoV-2) exposure investigations using genomic sequencing among healthcare workers and patients in a large academic center." *Infection Control & Hospital Epidemiology* 44.5 (2023): 798-801.
[185] Altmann, T., et al. "Use of face masks reduces the rate of neonatal respiratory infections." *Journal of Hospital Infection* 138 (2023): 94-96.
[186] Ribaric, Noach Leon, et al. "Hidden hazards of SARS-CoV-2 transmission in hospitals: a systematic review." *Indoor Air* 32.1 (2022): e12968.

ward at the same time. Years with strict universal masking had about 50 percent reduction in nosocomial influenza rates and 85 percent reduction in nosocomial mortality.[187]

- Comparison of secondary attack rates with Covid-19 after masked and unmasked exposures found that mask use by both parties reduced the secondary attack rate by about half.[188]

- Close contacts with unmasked exposure had about 40 percent higher odds of infection compared to those with only masked exposures.[189]

- Masks reduced the exhaled viral load in subjects infected with SARS-CoV-2.[190] N95 respirators provided superior source control to cloth and surgical masks.

- Lab studies have also found that mask use reduces aerosol emissions.[191]

CDC's 2007 Isolation Precautions guidance falls far short of what is needed to adequately address source control. The current guidance includes a discussion of the importance of surveillance for health care-associated infections, including case-finding of single patients or clusters who are infected or colonized with "epidemiologically important organisms" for which transmission-based precautions may be required.[192] There is also a recommendation for health care facilities to "develop and implement systems for early detection and management… of potentially infectious persons at initial points of patient encounter… and at times of admission."[193] These are important considerations, but the current guidance is primarily focused

[187] Ambrosch, A., et al. "A strict mask policy for hospital staff effectively prevents nosocomial influenza infections and mortality: monocentric data from five consecutive influenza seasons." *Journal of Hospital Infection* 121 (2022): 82-90.
[188] Riley, Jacob, et al. "Mask effectiveness for preventing secondary cases of COVID-19, Johnson County, Iowa, USA." *Emerging Infectious Diseases* 28.1 (2022): 69.
[189] Rebmann, Terri, et al. "SARS-CoV-2 Transmission to masked and unmasked close contacts of university students with COVID-19—St. Louis, Missouri, January–May 2021." *MMWR. Morbidity and Mortality Weekly Report* 70 (2021).
[190] Lai, Jianyu, et al. "Relative efficacy of masks and respirators as source control for viral aerosol shedding from people infected with SARS-CoV-2: a controlled human exhaled breath aerosol experimental study." *EBioMedicine* 104 (2024).
[191] Lindsley, William G., et al. "Efficacy of universal masking for source control and personal protection from simulated cough and exhaled aerosols in a room." *Journal of Occupational and Environmental Hygiene* 18.8 (2021): 409-422.
[192] Siegel, J.D., E. Rhinehart, et al, "2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings," last updated July 2023, https://stacks.cdc.gov/view/cdc/134941 (Accessed August 2025).
[193] Ibid.

on symptom screening and does not fully recognize the important role that asymptomatic/ presymptomatic transmission plays for multiple common pathogens, such as Covid-19, influenza, RSV.

CDC's current guidance makes recommendations for placement of patients who may pose a transmission risk to others.[194] The CDC's guidance states that infectious patients should be placed in a single room, if one is available, and provides considerations for cohorting if a single room is not available. For pathogens categorized as droplet-transmitted, current CDC guidance recommends that facilities ensure that cohorted patients are physically separated by a curtain and at least three feet. These recommendations are clearly insufficient to reduce transmission given evidence on transmission of pathogens through the air discussed above.

Similarly, the CDC's current guidance only recommends AIIR use for a limited set of pathogens classified as airborne-transmitted. Recommendations on other engineering controls, such as portable HEPA filters, are limited or non-existent. The scientific evidence discussed above underlines the ability of many more pathogens to transmit through the air than have been identified by the CDC, necessitating expanded use of engineering controls beyond current, limited CDC recommendations.

Additionally, current CDC guidance recommends respiratory hygiene/cough etiquette/source control, which is aimed only at patients with signs and symptoms of a respiratory infection and is mostly focused on covering coughs and sneezes.[195] CDC's recommendations around mask use for source control are inadequate, especially to respond to the role that asymptomatic/ presymptomatic transmission plays in transmission of multiple pathogens. CDC's guidance on source control, including patient and visitor screening, isolation, and mask use, are not based on the best available science and are inadequate to meet OSHA's standard to prevent "material impairment of health or functional capacity."[196]

Respiratory Protection and Other PPE are essential to protect health care workers from infectious diseases, but CDC's current guidance is outdated and inadequate.

PPE is commonly used in health care settings to prevent health care worker exposures to infectious diseases. There are multiple types of PPE available, such as gloves, gowns, coveralls, respirators, and masks. The best available science regarding aerosol/inhalation transmission of infectious diseases underlines the particular importance and necessity of utilizing respirators to prevent exposure to infectious aerosols to health care workers.

[194] Ibid.
[195] Ibid.
[196] 29 USC §655(b)(5)

Respirators are designed to filter the air breathed in by the wearer. There are different levels of respirators that are approved by NIOSH to meet required performance criteria.[197] Importantly, surgical and medical masks are designed to provide facial protection from splashes and sprays, not respiratory protection.[198] Surgical/medical masks do not provide the fit and filtration levels that are necessary to provide protection against inhaling infectious aerosols. For example, a case-control study found that no surgical masks passed fit tests on a group of male and female nurses.[199] Studies have found that surgical masks do not provide filtration of aerosols at comparable levels to respirators.[200] Surgical/medical masks cannot be used to protect health care workers from infectious aerosols; NIOSH- approved respirators are required.

Robust exposure and risk assessments are required to determine the situations in which respirators are necessary to prevent exposure and transmission risk to health care workers. Such assessments should evaluate multiple factors, such as what other control measures are in place (e.g., ventilation, how patients and visitors are being screened for infectious diseases and whether some infections, such as asymptomatic or presymptomatic infections, are likely to be missed, isolation protocols, etc.) and when, how, and for how long health care workers may be exposed to infectious aerosols. Respirators are needed to protect health care workers from inhaling infectious aerosols where there may be high enough concentrations to cause infection in workers, including workers who may be more vulnerable to infection/severe disease (e.g., older age, immunocompromised, pregnant, etc.).

Many health care employers are not conducting effective exposure and risk assessments. For example, one study evaluated respiratory protection programs at 28 hospitals in the Midwest.[201] Many hospitals' programs were missing a comprehensive risk assessment for aerosol/inhalation transmission of infectious diseases, with tuberculosis often being the only pathogen addressed. Plans also lacked adequate details about medical evaluation, fit testing, training, and program administrators. When health care employers do not conduct robust exposure and risk assessments, it means that protections, including respirators, are not effectively implemented and health care workers are not fully protected.

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[197] National Institute for Occupational Safety and Health, National Personal Protective Technology Laboratory (NPPTL). "Respirator Approval Program." https://www.cdc.gov/niosh/rap/index.html (Accessed August 2025).
[198] Food and Drug Administration. "N95 Respirators, Surgical Masks, Face Masks, and Barrier Face Coverings." October 21, 2024. https://www.fda.gov/medical-devices/personal-protective-equipment-infection-control/n95-respirators-surgical-masks-face-masks-and-barrier-face-coverings (Accessed August 2025).
[199] De-Yñigo-Mojado, Borja, et al. "Fit factor compliance of masks and FFP3 respirators in nurses: A case–control gender study." *Journal of Advanced Nursing* 77.7 (2021): 3073-3082.
[200] Oberg, Tara, and Lisa M. Brosseau. "Surgical mask filter and fit performance." *American Journal of Infection Control* 36.4 (2008): 276-282.
[201] Brosseau, Lisa M., et al. "Evaluation of Minnesota and Illinois hospital respiratory protection programs and health care worker respirator use." *Journal of Occupational and Environmental Hygiene* 12.1 (2015): 1-15.

Yet, there is clear evidence of the need for respirators to protect heath care workers from inhaling infectious aerosols. A recently published meta-analysis provides an excellent overview of randomized control trials (RCTs) examining the use of respirators in health care settings.[202] This meta-analysis, which utilized a more robust approach to account for methodological concerns in reviewed studies than existing analyses, found that incidence of influenza-like illness among health care workers was significantly lower with use of an N95 respirator than a surgical mask (relative risk 0.80, 95% CI 0.65-0.99). Notably, continuous N95 respirator use—that is use during all possible exposures—was substantially more protective against clinical respiratory illness than medical masks (relative risk 0.48, 95% CI 0.35-0.65).

CDC's current guidance fails to recognize this evidence. CDC's 2007 Isolation Precautions guidance only recommends use of respirators for a small number of select pathogens classified as airborne—primarily measles, varicella zoster, and TB. Surgical masks are recommended for pathogens that are classified as droplet-transmitted, such as influenza and pertussis, even though there is clear evidence for aerosol/inhalation transmission for these pathogens.[203,204] There are even some respiratory infectious diseases that the CDC has classified as contact-transmitted with no mask or respirator recommendation, such as RSV, despite evidence on aerosol/inhalation transmission and potential to cause severe disease.[205,206] It is abundantly clear that many more pathogens are capable of transmitting through the air, and thus require a respirator to fully protect health care workers, than CDC currently recognizes.

Fundamentally, CDC's recommendation to use a surgical mask to protect health care workers from droplet-transmitted pathogens fails to account for the best available science. CDC's conceptualization of droplet transmission occurs at close range and focuses exclusively on large aerosols or particles emitted by infectious individuals. Scientific research indicates that droplet transmission (i.e., the impaction of large particles on a susceptible individual's mucous membranes, which can only occur at close range) does not occur in the absence of inhalation of smaller aerosols.[207] CDC's recommendation to use surgical masks in these situations fails to account for that science and ignores the fact that surgical masks are not designed to provide

[202] Greenhalgh, Trisha, et al. "Masks and respirators for prevention of respiratory infections: a state of the science review." *Clinical Microbiology Reviews* 37.2 (2024): e00124-23.
[203] Tellier, Raymond. "Aerosol transmission of influenza A virus: a review of new studies." *Journal of the Royal Society Interface* 6.suppl_6 (2009): S783-S790.
[204] Warfel, Jason M., Joel Beren, and Tod J. Merkel. "Airborne transmission of Bordetella pertussis." *The Journal of Infectious Diseases* 206.6 (2012): 902-906.
[205] Kulkarni, Hemant, et al. "Evidence of respiratory syncytial virus spread by aerosol. Time to revisit infection control strategies?" *American Journal of Respiratory and Critical Care Medicine* 194.3 (2016): 308-316.
[206] Belongia, Edward A., et al. "Clinical features, severity, and incidence of RSV illness during 12 consecutive seasons in a community cohort of adults≥ 60 years old." *Open Forum Infectious Diseases*. vol. 5, no. 12. (2018).
[207] Chen, Wenzhao, et al. "Short-range airborne route dominates exposure of respiratory infection during close contact." *Building and Environment* 176 (2020): 106859.

inhalation protection to the wearer. CDC's current guidance fails to recognize the best available science regarding respiratory protection.

Exposure surveillance, notification, and follow-up are essential to prevent infectious disease transmission, but CDC's current guidance is inadequate.

Exposure surveillance, notification, and follow up are important to ensure that health care workers who are exposed to infectious diseases are able to isolate, get tested, and access treatment as appropriate. Exposure surveillance and notification needs to include exposures to infectious patients, visitors, and other health care workers. The importance of exposure surveillance and contact tracing has been underlined during the Covid-19 pandemic, where transmission within hospitals has contributed substantially to onward transmission and pandemic burden.[208]

NNU members have observed significant issues when it comes to exposure surveillance and notification, which can result in onward transmission. Specifically, NNU members have frequently observed a lack of follow up when patients are identified as infectious after they have been in the health care setting for some time. Nurses report that their employers often do not officially inform the nurse they were exposed to the patient, even though they provided care to the patient while the patient was infectious. It is often only through word-of-mouth from other coworkers that nurses learn about these exposures. This can result in transmission to the nurse and onward transmission to other patients, health care workers, and the nurse's family if the employer fails to notify them of the exposure promptly.

Additionally, paid sick leave and maintenance of pay and benefits if a worker is removed from the workplace due to an exposure or infection are important measures to ensuring the health and safety of health care workers. Transmission can occur between patients and from patient to health care worker as well as between health care workers. Paid sick leave and medical removal benefits are important to preventing onward transmission to others because they enable health care workers to stay out of work without penalty when exposed or infected.

CDC's current guidance on exposure surveillance, notification, and follow up is inadequate.[209] While CDC's guidance includes important considerations that employers develop sick leave policies that encourage and enable employees to use them and to establish non-punitive reporting processes, the CDC's guidance does not sufficiently address the importance of conducting

[208] Cooper, Ben S., et al. "The burden and dynamics of hospital-acquired SARS-CoV-2 in England." *Nature* 623.7985 (2023): 132-138.

[209] Centers for Disease Control and Prevention. "Infection Control in Healthcare Personnel: Infrastructure and Routine Practices for Occupational Infection Prevention and Control Services." October 25, 2019, https://www.cdc.gov/infection-control/hcp/healthcare-personnel-infrastructure-routine-practices/index.html (Accessed August 2025).

investigations to identify exposures when a patient is identified as infectious and notifying health care workers of those exposures. Additionally, CDC's guidance does not provide for the fact that, if a health care worker is exposed at work, the employer must pay them lost time if they are restricted from the workplace due to exposure.

It is clear that CDC's current guidance does not adequately address exposure surveillance, notification, follow-up, or other measures which are necessary to prevent infectious disease transmission in health care facilities.

VI. Health care employers are not effectively protecting health care workers from infectious diseases. Action—not deregulation—is required to hold health care employers accountable.

Data from multiple sources indicates that health care employers are not effectively protecting health care workers from infectious diseases. In the spring of 2024, NNU conducted a nationwide survey regarding infectious disease practices in health care facilities.[210] This survey found that health care employers across the country are neglecting essential elements of infection prevention. For example:

- Only 12.5 percent of RNs report that patients are always screened for respiratory infectious disease at the point of entry to their health care facilities (e.g., TB, influenza, Covid-19, RSV, etc.). Nearly one in six RNs report that patients are never screened.

- A majority of RNs report inconsistent isolation of patients who have or might have a respiratory infectious disease; only 38.5 percent of RNs report that infectious/potentially infectious patients are always isolated.

- Many RNs report inadequate PPE usage at their health care facilities. Only 67.2 percent of RNs report that their facility uses a respirator for patients with TB, even though TB is well-recognized as aerosol transmitted and that a NIOSH-approved respirator is necessary for protection. Similarly, only 63.3 percent of RNs report that their facility uses a respirator for patients with Covid-19, which is aerosol- transmitted and requires a respirator.

- A very low proportion of nurses (15.4 percent) report that they are always notified of exposures to infectious diseases in a timely fashion.

[210] National Nurses United. "NNU Infectious Diseases Survey Final Results (March - April 2024)." May 2024, https://www.nationalnursesunited.org/nnu-infectious-diseases-survey-final-results-march-april-2024 (Accessed August 2025).

As a result, RNs have experienced a high rate of work-related infections—64.9 percent of RNs report that they have sustained at least one infection from work, including the common cold, influenza, Covid-19, methicillin-resistant *Staphylococcus aureus* (MRSA), TB, other respiratory illnesses, shingles, norovirus, and other infections.

NNU's survey also found that RNs who work in California—the only state in the nation with an enforceable Aerosol Transmissible Diseases Standard—report higher utilization of protective measures and lower work-related infections than RNs working in other states. For example, RNs in California report more consistent screening (67.8 percent report "always," "often," or "sometimes") than in other states (61.3 percent) and more consistent isolation practices (84.2 percent report "always," "usually," or "sometimes") than other states (78.5 percent). Significantly higher proportions of RNs in California report respirator usage than in other states for TB (78.0 vs 62.6 percent), measles (40.0 vs 26.9 percent), Covid-19 (74.2 vs 58.4 percent), and pertussis (23.7 vs 13.4 percent). Only 60.7 percent of RNs working in California report ever having sustained an infection at work compared to 68.2 percent in other states. It is clear that having an enforceable standard in California has contributed to improved protections for health care workers, though ongoing enforcement in California is still required.

In addition, underreporting continues to be a significant issue in health care, especially related to infectious disease exposures and infections. The lack of exposure surveillance and notification in health care limits health care workers' ability to establish connections between their work-related exposures and infections, including for workers compensation cases. It is highly likely that the true toll of work-related infections on health care workers is much higher than the available data indicate.

Further, inadequate responses to the Covid-19 pandemic by health care employers have illuminated multiple issues in infection prevention and control in health care settings that must be addressed. NNU has conducted multiple national surveys of RNs regarding their working conditions during the Covid-19 pandemic. These surveys have repeatedly identified the failures of health care employers to effectively prepare for and respond to surges in Covid-19 patients requiring health care.[211]

In fact, many of the ways in which health care employers have failed to protect health care workers and patients from Covid-19 can be traced to inadequate CDC guidance that ignored available science and the lack of enforceable OSHA standards. Early in 2020, CDC changed its infection prevention and control guidance for Covid-19 in health care settings and introduced the

[211] National Nurses United. "Covid-19 and Infectious Diseases Surveys." https://www.nationalnursesunited.org/covid-19-and-infectious-disease-surveys

crisis and contingency standards.[212] It was abundantly clear, even at this early juncture, that the CDC's guidance was not based on the best available science, which had already begun to indicate that SARS- CoV-2 was aerosol transmitted. Subsequently, NNU members across the country witnessed their employers gathering up all available PPE, locking it up, and restricting RNs' access to it. In many cases, RNs who were caring for known Covid-positive patients were denied access to respirators, despite the employer reporting an adequate supply. When pressed, employers reported that CDC guidance allowed it.[213,214] OSHA encountered significant challenges in enforcement due to the lack of an infectious disease-specific standard.[215]

The toll of the failures of health care employers to protect health care workers from Covid-19 is staggering. There has been widespread resistance on the part of the health care industry to transparently provide information on health care worker infections and fatalities due to Covid-19. At the same time, federal, state, and local governments have failed to compel heath care facilities to provide this data. Studies have found that health care workers have experienced higher infection and severe illness rates than the general population.[216,217] As mentioned, NNU tracked health care worker fatalities due to Covid-19 using publicly available data sources. As of May 19, 2023, at least 5,752 health care workers, including 499 RNs, have died from Covid-19.

The health care industry has experienced high turnover rates in recent years.[218] Many health care workers have cited working conditions, including lack of protections at work, and disregard for

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[212] National Nurses United. "As CDC further weakens COVID-19 guidance, nurses outraged by failed federal, state, local, employer efforts stage day of action Wednesday to demand protections for nurses, patients, public." March 10, 2020, https://www.nationalnursesunited.org/press/cdc-further-weakens-covid-19-guidance-nurses-outraged-failed-federal-state-local-employer (Accessed August 2025).

[213] Testimony of Pascaline Muhindura, RN, on behalf of National Nurses United, Before the Subcommittee on Workforce Protections, Committee on Education and Labor, March 11, 2021, https://democrats-edworkforce.house.gov/hearings/clearing-the-air-science-based-strategies-to-protect-workers-from-covid-19-infections (Accessed August 2025).

[214] National Nurses United. "Deadly Shame: Redressing the Devaluation of Registered Nurse Labor Through Pandemic Equity." December 2020, https://www.nationalnursesunited.org/campaign/deadly-shame-report (Accessed August 2025).

[215] Government Accountability Project. "Workplace Safety and Health: Data and Enforcement Challenges Limit OSHA's Ability to Protect Workers during a Crisis." May 25, 2022. https://www.gao.gov/products/gao-22-105711 (Accessed August 28, 2025).

[216] Nguyen, Long H., et al. "Risk of COVID-19 among front-line health-care workers and the general community: a prospective cohort study." *The Lancet Public Health* 5.9 (2020): e475-e483.

[217] Mutambudzi, Miriam, et al. "Occupation and risk of severe COVID-19: prospective cohort study of 120,075 UK Biobank participants." *Occupational and Environmental Medicine* 78.5 (2021): 307-314.

[218] For methodology, see National Nurses United. "Sins of Omission: How Government Failures to Track Covid-19 Data Have Led to More Than 3,200 Health Care Worker Deaths and Jeopardize Public Health." March 2021, https://www.nationalnursesunited.org/sites/default/files/nnu/documents/0321_Covid19_SinsOfOmission_Data_Report.pdf (Accessed August 2025).

their health and safety by their employers as major reasons contributing to their decisions to leave their jobs.[219]

It is clear that infectious diseases place a tremendous burden on health care workers as a result of health care employers' neglect of prevention measures. Yet, OSHA's current proposal would take steps backwards in protecting health care workers from infectious diseases. For these reasons, NNU urges OSHA to rescind the proposal and, instead, to uphold its statutory obligation to craft standards based on the best available science in order to protect health care workers from infectious diseases.

Conclusion

Hospitals and other health care settings play a critical role in caring for patients with infectious diseases and in preventing the spread of infection. Hospitals should be centers of healing, with nurses safely providing optimal, therapeutic care for every patient at the bedside. To provide such care, nurses themselves must be protected at the worksite. Recordkeeping and reporting systems are an essential aspect of worker protection. NNU strongly urges OSHA to retain and strengthen the Covid-19 recordkeeping and reporting provisions to hold health care employers accountable and prevent the spread of the virus in health care settings.

NNU also strongly urges OSHA to expediently issue an enforceable, permanent, science-based infectious diseases standard that would protect all frontline health care workers from aerosol-transmissible diseases. OSHA has a clear statutory obligation when setting standards dealing with toxic materials or harmful physical agents to "set the standard which most adequately, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of [their] working life."[220] OSHA must evaluate the best available evidence and require robust protections for health care workers based on the data, including ventilation, source control, respiratory protection, and exposure surveillance and notification.

Sincerely,

Mary Turner, RN
President, National Nurses United

[219] Minnesota Nurses Association. "Why We Left: Nursing Workforce Report." (2023) https://mnnurses.org/issues-advocacy/issues/why-we-left-nursing-workforce-report/ (Accessed August 2025).
[220] 29 USC §655(b)(5)