NATIONAL SAFETY COUNCIL

Position/Policy Statement

Infectious Pathogen Standard and Countermeasures

In 2020, the World Health Organization (WHO) data indicated that among communicable diseases, lower respiratory infections are the most deadly and rank as the 4th leading cause of death.[1] Similarly, tuberculosis is the world's leading cause of death from an infectious pathogen.[2] Infectious diseases are a leading cause of death. In response to this, the National Safety Council (NSC) has outlined in the policy position steps to mitigate the impact of outbreaks of infectious pathogens. NSC supports and urges the Occupational Safety and Health Administration (OSHA) to move forward with a risk-based infectious pathogens standard to combat biological pathogens in the workplace and protect worker safety and health. Additionally, in the absence of a national standard, NSC supports the development of infectious pathogen standards in states with state plans.

In the interim, the current National Emphasis Program (NEP), coupled with use of the General Duty Clause, existing OSHA standards, and guidelines from the Centers for Disease Control and Prevention (CDC) and OSHA, provide some guidance for workplaces on steps to take to keep workers safe and healthy. While additional details can be found within the policy position, recommendations for employers include:

1. Identifying and classifying employee exposure and risk levels:
2. Developing a written program including risk-based pandemic preparedness specific to the operations of their organization, which should include:
    a. An individual at the site who would serve as the Infectious Pathogen Coordinator.
    b. Reviews of disease rates in the community.
    c. Hazard assessment to identify workplace conditions, worker practices and employer policies that could increase the risk of infectious pathogen transmission
    d. Reevaluation of existing company infectious pathogen procedures and retrain the workforce on any updates (e.g., new variants) as necessary
    e. Implementation of contact tracing
    f. Screening workers for any infectious pathogen symptoms and potential pathogen exposure.
    g. Utilizing and developing flexible sick leave and supportive policies
    h. Implementation and following guidelines, laws, rules and/or regulations from CDC, other federal agencies

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[1] https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death
[2] World Health Statistics 2021. https://apps.who.int/iris/bitstream/handle/10665/342703/9789240027053-eng.pdf

      i.   Enforcing the use of physical distancing measures
      j.   If available, facilitating and encouraging the vaccination of workers
      k.   Training on correct use of personal protective equipment (PPE) and related training
      l.   Scheduling regular cleanings and sanitizing of high occupancy areas

Background: *What is an infectious pathogen?*

Infectious diseases are a leading cause of illness and death throughout the world. The CDC National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) states that infectious diseases are illnesses caused by infectious pathogens such as bacteria, viruses, fungi or other germs that enter and multiply in the body causing an infection.[3] Infectious pathogens can spread in various ways: people, vectors such as biting insects and animals, as well as germs carried in the air, water, food, or soil.[4] In particular, emerging infectious diseases (EID) are infections that have increased recently or are threatening to increase in the near future. Infectious pathogens, which cause infectious diseases, including EIDs, can evolve and adapt, creating a significant challenge in preventing and controlling disease.

Prevalence of Infectious Pathogen Outbreaks

In 2017, the Congressional Research Service noted EIDs have increased since 1980 resulting in more frequent outbreaks and higher numbers of human infections.[5] In recent years, outbreaks of infectious pathogens other than COVID-19 have included Severe Acute Respiratory Syndrome (SARS), Avian Influenza H5N1 (2005), Pandemic Influenza H1N1 (2009), Middle East Respiratory coronavirus (MERS-CoV, 2013), Ebola Virus Disease in West Africa (2014), Zika (2015), Central Africa Yellow Fever (2016) and South America Yellow Fever (2016-2017).[6] In Central Africa in 2016, a yellow fever outbreak emerged that impacted urban areas for the first time at unexpected rates; in this outbreak, the number of people affected quickly surpassed hospital and laboratory capacities.[7]

SARS-CoV-2[8]

The outbreak of COVID-19 further demonstrates the global impacts of infectious pathogens. Late in 2019, a novel coronavirus, which is an infectious pathogen, was first identified in Wuhan, China. It was called "novel" because it is a new coronavirus for humans. It is abbreviated as SARS-CoV-2 and causes the disease COVID-19 (CO=corona VI=virus D=disease and 19 refers to the year it was identified).[9] On March 11, 2020, COVID-19 was declared a pandemic.[10] As of September 6, 2022, the pandemic is still ongoing, with 603,711,760 cases and 6,484,136 deaths worldwide.[11]

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[3] https://www.cdc.gov/ncezid/who-we-are/index.html
[4] Ibid (https://www.cdc.gov/ncezid/who-we-are/index.html)
[5] https://crsreports.congress.gov/product/pdf/IF/IF10603/6
[6] Ibid (https://crsreports.congress.gov/product/pdf/IF/IF10603/6)
[7] Ibid (https://crsreports.congress.gov/product/pdf/IF/IF10603/6)
[8] As of September 7, 2022, the following information is the most recent regarding SARS-CoV-2, the virus that causes COVID-19 or coronavirus. Given this, the National Safety Council has developed policy positions reflecting the most recent data and information. These may change over time as more information is learned.
[9] https://www.cdc.gov/coronavirus/2019-ncov/faq.html#Coronavirus-Disease-2019-Basics
[10] https://www.eeoc.gov/laws/guidance/pandemic-preparedness-workplace-and-americans-disabilities-act
[11] https://covid19.who.int/

Since the emergence of SARS-CoV-2 in 2019, several variants of concern have been identified.[12] Virus mutations are a common occurrence, especially if a virus is widely circulating.[13] Emerging variants with higher transmissibility can increase transmissibility of a pathogen.[14]

One of the biggest threats of infectious pathogens is overloading the healthcare system, which we saw with the COVID-19 pandemic. In the U.S., the COVID-19 pandemic overwhelmed many hospitals and healthcare systems, causing unprecedented illness and deaths. COVID-19 has also disrupted many other businesses (restaurants, manufacturing and the retail industry), schools, travel, recreational activities and other closures were experienced on a world-wide basis.

Infectious pathogen outbreaks are a growing problem[15] that will only continue to be present and increase.[16] Some of the causes of this increasing trend are people moving into previously uninhabited areas and disturbing animals with the potential for zoonotic disease transmission and increasing temperatures creating more favorable climates for disease transmission.[17] Given the high transmission rates of some infectious pathogens, a national standard is critical to limit workplace exposure and support worker safety and health. A 2004 report from the World Health Organization advised that the impact of globalization on infectious pathogens supports the need for appropriate forms of global governance to improve systems for prevention, control and treatment.[18] It noted that national level efforts and international cooperation are the most effective methods for infectious pathogen policy.[19]

Workplace Impact of Infectious Pathogens

Workers in certain occupations are at higher risk for exposure to infectious pathogens. While healthcare is recognized as an industry with a high risk of exposure to illnesses, recent research found 81.1% of non-healthcare occupational groups included in the study were exposed to respiratory tract pathogens, a category of infectious diseases spread through the air.[20] The study found many of these pathogens are easily transmitted where workers congregate.[21]

Between Feb. 18-22, 2022, NSC conducted a survey of 1,004 workers in the U.S. and found strong correlations between the type of environments respondents work in and their history of COVID-19 infections. Those who work in healthcare settings had the highest percentage of previous infection (38.7%), followed by those in in-person education settings (38.3%). Almost a

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[12] https://www.cdc.gov/coronavirus/2019-ncov/variants/variant-info.html#Consequence

[13] https://www.cdc.gov/coronavirus/2019-ncov/variants/variant.html

[14] https://covid.cdc.gov/covid-data-tracker/?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fcases-updates%2Fcases-in-us.html#trends_dailycases

[15] Smith, Katherine F et al. "Global rise in human infectious disease outbreaks." Journal of the Royal Society, Interface vol. 11,101 (2014): 20140950. doi:10.1098/rsif.2014.0950

[16] Houlihan, Catherine F, and James Ag Whitworth. "Outbreak science: recent progress in the detection and response to outbreaks of infectious diseases." Clinical medicine (London, England) vol. 19,2 (2019): 140-144. doi:10.7861/clinmedicine.19-2-140

[17] Ibid.

[18] https://www.who.int/tdr/publications/documents/seb_topic3.pdf

[19] Ibid (https://www.who.int/tdr/publications/documents/seb_topic3.pdf)

[20] Acke S, Couvreur S, Bramer WM, et al. Occup Environ Med. 2022;79:63–71.

[21] Ibid (Acke S, Couvreur S, Bramer WM, et al. Occup Environ Med. 2022;79:63–71.)

third of people who worked in public-facing settings, such as retail and food service, reported previous infection (32.2%), as well as those who work in indoor, industrial settings such as manufacturing and food processing (30.4%). Lower percentages of infection were reported by those who work in non-public facing offices (26.5%), work remotely from home (21.0%) or in outdoor industrial settings, such as construction (20.7%).

Although healthcare occupational groups are especially susceptible, other worker groups are also affected, especially by respiratory tract pathogens. This includes meat and food processing workers, airline personnel, armed forces, cleaners, farm workers and laborers, plant and machine operators and assemblers, teachers, retail workers, warehousing and waste collectors.[22] These data are likely underreported. Evidence from the Netherlands and the UK indicate work-related sickness is under-reported, which is likely due to the difficulties of identifying the link between the sickness and the workplace exposure.[23]

Additionally, the impact of infectious pathogens on employers goes beyond the necessary time away for workers to recuperate. Prior to COVID-19, a World Bank analysis estimated there were six major outbreaks of infectious pathogens between 1997 and 2009 resulting in at least an $80 billion (USD) in economic losses.[24] In a microeconomic level, unexpected outbreaks have financial impacts on businesses by affecting their operating, investing and financing activities.[25] NSC has previously spoken out to support improved collection of safety and health data in policy position #137 to better inform decisions and supports improvements to the collection of occupational illness data.[26]

The Need for Federal Action

OSHA responded to the emergence of COVID-19 by issuing two emergency temporary standards (ETS) in 2021. On the federal level, these two standards have faced judicial hurdles resulting in ceased enforcement by the agency. In response, OSHA is moving forward with rulemaking to promulgate a final healthcare-focused ETS with a goal to issue it later in 2022.

Employers are required under the Occupational Safety and Health (OSH) Act to provide a safe and healthy work environment for workers. Through the OSHA NEP on COVID-19, OSHA has already identified high-risk industries. The identified industries can be used as a foundation to understand and quickly identify industries at risk in future outbreaks of infectious disease pathogens. NSC believes any infectious pathogen standard should be applied using a risk-based approach, providing flexibility to add or remove industries from high-risk status depending on the risk of exposure to workers. When removing or adding industries to a high-risk status, NSC encourages OSHA to coordinate directly with CDC and its National Institute for Occupational Safety and Health (NIOSH). OSHA used this approach with the Tuberculosis (TB) NEP which addressed exposure to TB in the workplace (Enforcement Procedures and Scheduling for Occupational Exposure to Tuberculosis), OSHA Directive CPL 02-02-078).[27] The TB NEP restricts enforcement to five CDC identified industries.

[22] Ibid (Acke S, Couvreur S, Bramer WM, et al. Occup Environ Med. 2022;79:63–71.)
[23] Haagsma JA, Luqman T, Heederik DJ, Havelaar AH. Infectious disease risks associated with occupational exposure: a systematic review of the literature. 2011
[24] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6330263/
[25] https://www.who.int/choice/publications/d_economic_impact_guide.pdf
[26] https://www.nsc.org/getattachment/c7e76283-b5a4-4b69-a893-be2732a3caaf/G-Research-Data-Collection-137
[27] https://www.osha.gov/enforcement/directives/cpl-02-02-078

The State Plan States[28]

OSHA has the statutory authority to promulgate, modify and revoke occupational health and safety standards applying to private sector employers, ensuring the health and safety of workers. The OSH Act provides for individual states to establish their own OSH oversight programs and preempt federal OSHA standards, provided these state plans are approved by OSHA and have a program in place establishing safety and health programs and standards that are "at least as effective" as OSHA's programs and standards.[29] In some states, this has allowed for more stringent workplace standards, and it has also prevented fewer protective standards from being implemented. [30]

In 2021, OSHA promulgated two separate ETSs for the prevention of the transmission of SARS-CoV-2: one for health care employment settings and the other for employers with 100 or more workers. These two standards, coupled with ETSs from several state plans, have created a patchwork of requirements for employers with facilities in multiple states. For example, prior to OSHA issuing the two ETSs, California, Michigan, Virginia and Oregon, as state plan states, issued their own COVID-19 ETSs to prevent the spread of COVID-19.[31] For businesses with multistate operations, ensuring compliance and understanding the nuances between Federal OSHA standards and those of state plan states can be difficult.

Infectious Pathogen Prevention Plan or Program

OSHA has addressed worker protections against a variety of infectious pathogens since the issuance of the Bloodborne Pathogens standard (29 CFR 1910.1030). Since the early 1990s, OSHA similarly developed a variety of resources addressing worker protections for infectious pathogens (smallpox, SARS, MERS, COVID-19, pandemic flu and Ebola virus disease). For example, OSHA released the *Guidance on Preparing Workplaces for an Influenza Pandemic[32]* in 2009 and recently *Protecting Workers: Guidance on Mitigating and Preventing the Spread of COVID-19 in the Workplace*.[33]

State and federal guidance documents and NSC SAFER resources can help employers create an infectious pathogen prevention plan or program.[34] As part of these workplace plans, employers should identify and classify employee exposure and risk according to the categories below:
- **Very high** - Occupations with potential exposure to high concentrations of known or suspected sources of the relevant pathogen during specific medical or laboratory procedures.
- **High** - Occupations with a high potential for exposure to known or suspected sources of the relevant pathogen.

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[28] State plans are OSHA-approved workplace safety and health programs operated by individual states. These must be at least as effective as OSHA in protecting workers and preventing work-related injuries, illnesses and deaths.
[29] https://crsreports.congress.gov/product/pdf/R/R46288/39
[30] https://www.everycrsreport.com/files/20170418_R43969_351d485608a0c12658dd589d7373797cf89df680.pdf
[31] https://crsreports.congress.gov/product/pdf/R/R46288/39
[32] https://www.osha.gov/sites/default/files/publications/OSHA3327pandemic.pdf
[33] https://www.osha.gov/coronavirus/safework
[34] www.nsc.org/safer

- **Medium** - Occupations that require frequent, close contact exposure to other people such as coworkers, the general public, outpatients, school children, or other such individuals or groups.
- **Low** - Occupations that do not require contact with people known to be infected with the relevant pathogen nor frequent close contact with the public. Even at lower risk levels, however, employers should be cautious and develop preparedness plans to minimize employee infections.

Exposure risk to the relevant pathogen can be determined on a site or at an industry level by CDC and/or local and state governmental health agencies. The type of workspace can predict transmission risk due to factors such as the proximity and number of workers, airflow and ventilation, and the vaccination rate of the workforce as well as the surrounding community if a vaccine is available. NSC *SAFER* surveys on workplace coronavirus responses found organizations with in-person work environments that modified airflow and ventilation, added time between shifts so that fewer workers came in contact with each other and utilized at-home or onsite testing tended to have the lowest case rates. Community exposure risk should also be considered.[35]

Employers should develop a written program including risk-based pandemic preparedness specific to the operations of their organization. After creation of the program, employers should also periodically review the plan. Depending on the type of infectious pathogen and the risk of exposure to workers, the program/plan may include the following elements:
1. Identify and establish an individual at the site who would serve as the Infectious Pathogen Coordinator.
2. Periodically review disease rates in the community.
3. Conduct a hazard assessment to identify workplace conditions, worker practices and employer policies that could increase the risk of infectious pathogen transmission, and then update the control measures in place and implement new controls as appropriate.
4. Reevaluate existing company infectious pathogen procedures and retrain the workforce on any updates (e.g., new variants) as necessary when deficiencies in the program are detected.
5. Implement contact tracing to ensure employees who worked near someone who tested positive for the infectious pathogen, and/or that developed signs and symptoms of infection by the pathogen, are informed of their potential exposure to the pathogen, encouraged to quarantine and excluded from the facility until they meet the requirements for returning to work per CDC guidelines, if relevant.[36] If CDC guidelines are not available, occupational health care providers and other occupational health and safety professionals are good sources of information about safe return-to-work practices.[37]
6. Screen workers for any infectious pathogen symptoms and potential pathogen exposure. Workers who appear to have symptoms upon arrival at work, or who become sick during the day, must immediately separate from other employees, customers and visitors, and go home to seek medical attention. The employer must have a procedure in

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[35] https://www.nsc.org/faforms/safer-year-one-final-report
[36] https://www.nsc.org/getattachment/d54c0575-4af3-4ebf-92e8-0834b501c552/hc-contact-tracing-161
[37] The "contact tracing" hyperlink links to the NSC policy position on contract tracing that outlines helpful information for employees establishing a program, including reviewing privacy and other concerns.

place for the safe isolation of workers who become sick while at work as they may need to be transported home or to a healthcare provider.

7. Utilize and develop flexible sick leave and supportive policies and procedures.
8. Follow and implement guidelines, laws, rules and/or regulations from CDC, other federal agencies (e.g., Department of Homeland Security, Cybersecurity and Infrastructure Security Agency), and state and local health departments for exposed employees to quarantine, self-monitor for symptoms and telework (if possible).
9. Enforce the use of physical distancing measures to ensure everyone in the workplace maintains the appropriate distance. Install transparent, impermeable barriers at locations where physical distancing is not possible. Provide and require workers to wear masks unless their work task requires a respirator or other personal protective equipment (PPE).
10. If available, facilitate and encourage the vaccination of workers by granting paid time off for employees to get vaccinated and recovery time for any side effects.
11. Provide training, education and informational material about business-essential job functions and worker health and safety, including proper hygiene practices and the use of any PPE to be used in the workplace. Ensure informational material is available in a usable format for individuals with sensory disabilities and/or limited English proficiency. Encourage workers to take actions to keep up good health, such as obtaining seasonal influenza vaccinations. Providing vaccine incentives can help accomplish this goal.
12. Protect workers through the use and implementation of appropriate engineering controls, work practice controls, PPE, and sanitation and hygiene. These may include:
    o Provide resources and a work environment that promotes personal hygiene. For example, provide tissues, no-touch trashcans, hand soap, hand sanitizer, disinfectants, disposable towels and other cleaning supplies for workers to clean their work surfaces.
    o Establish regular schedules for cleaning and sanitizing high occupancy areas.
    o Install physical barriers, such as clear plastic sneeze guards. For example, install a drive through window for customer service.
    o Increase room ventilation and air flow: bring in a higher percentage of outside air, use air filter ventilation systems with HEPA filters and ensure "dead spots" do not exist in conference rooms, team rooms, offices and more.
    o In some limited healthcare settings, airborne infection isolation rooms may be used.[38]
    o Provide PPE including gloves, goggles, face shields, surgical masks and respirators for workers to use (for example, NIOSH-approved N95 or equivalent or higher-level respirators).

This position statement reflects the opinions of the National Safety Council but not necessarily those of each member organization.

Adopted by the National Safety Council, September 2022

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