International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

INTERNATIONAL JOURNAL OF LAW, GOVERNMENT AND COMMUNICATION (IJLGC)
www.ijlgc.com

LAW PREPAREDNESS AND ENFORCEMENT FOR AIRBORNE AND DROPLET-BORNE INFECTIOUS DISEASES IN INDUSTRIES: A SYSTEMATIC REVIEW

Siti Munira Yasin[1*], Khairul Mizan Taib[2], Ely Zarina Samsudin[3], Mohamad Rodi Isa[3], Nik Nairan Abdullah[3], Nur Hasanah Ruslan[4], Nurul Ibtisyami Yasin[5], Noramira Nozmi[1], Mohd Ridzuan Anuar[6], Ahmad Fitri Abdullah Hair[6]

[1] Workplace Health and Safety Solution Hub, Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh, Malaysia
Email: smunira@uitm.edu.my, miranozmi@uitmpuncakalam.com
[2] College of Computing, Informatics and Mathematics, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia
Email: khairulmizan@uitm.edu.my
[3] Department of Public Health Medicine, Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh, Selangor, Malaysia
Email: elyzarina@uitm.edu.my, rodi@uitm.edu.my, nairan@uitm.edu.my
[4] Centre of Environmental Health & Safety, Faculty of Health Sciences, Universiti Teknologi MARA, Puncak Alam, Malaysia
Email: nur-hasanah@uitm.edu.my
[5] Faculty of Technology Management and Technopreneurship, Universiti Teknikal Malaysia Melaka, Malaysia
Email: n.ibtisyami@utem.edu.my
[6] Occupational Health Division, Department of Occupational Safety and Health, Putrajaya, Malaysia
Email: mridzuan.anuar@mohr.gov.my, ahmadfitri@mohr.gov.my
[*] Corresponding Author

Article Info:

Article history:
Received date: 30.10.2025
Revised date: 15.11.2025
Accepted date: 21.12.2015
Published date: 31.12.2025

To cite this document:

Yasin, S. M., Taib, K. M., Samsudin, E. Z., Isa, M. R., Abdullah, N. N., Ruslan, N. H., Yasin, N. I., Nozmi, N., Anuar, M. R., & Hair, A. F. A. (2025). Law Preparedness and Enforcement for Airborne and Droplet-Borne

Abstract:

Airborne and droplet-borne infectious diseases are a significant risk to industrial workers, where they communicate and work in the same contained areas or share equipment. The workers' interactions in industrial workplace settings may expose them to infectious diseases, such as influenza and COVID-19. This research aims to identify the laws and enforcement related to communicable diseases that involve airborne and droplet transmission, thereby enhancing preparedness. A systematic review was conducted via Scopus, four biomedical electronic databases (PubMed, Scopus, Web of Science, and Cochrane Library), and three occupational safety and health electronic databases (OSHLINE, NIOSHTIC2 and HSELINE). A total of 25 studies were included, of which 17 studies focused on law preparedness, one study focused on law enforcement, whereas seven studies included both law preparedness and enforcement. The majority of the study designs employed cross-sectional studies (n = 15), with qualitative studies (n = 5), a mixed-methods study (n =

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

Infectious Diseases in Industries: A Systematic Review. *International Journal of Law, Government and Communication, 10* (42), 384-423.

DOI: 10.35631/IJLGC.1042027

1), a cohort study (n = 2), a case-control study (n = 1), and a case study (n = 1). Studies on preparedness measures emphasise environmental interventions (e.g., traffic control, cleaning, and supply chain management), administrative actions (e.g., limiting visitors, regular disease screening, adequate personal protective equipment, training, and education), and comprehensive preparedness guidelines.

Keywords:

Law Preparedness, Law Enforcement, Infectious Disease, Airborne Disease, Droplet Borne Disease

Introduction

The industries and workplace play a significant role in emergency preparedness and respond to a range of threats, including natural and human-generated disasters (Koonin, 2020). Development and implementation of emergency plans, conducting preparedness drills and exercises for staff, coordinating volunteers to participate in responses, liaising with other governmental agencies, and communicating with the public are the critical roles they need to act on during a disease outbreak (Koonin, 2020).

The terms "law preparedness" and "law enforcement" refer to the proactive implementation of law, policies, and guidelines that enable immediate and effective measures, with a system in place to ensure laws are strictly adhered to. Legal preparedness may include the development of health standard operating procedures (SOPs), monitoring the practice of personal protective equipment (PPE), and disease screening (Policies and Procedures on Infection Prevention and Control, Ministry of Health Malaysia, 2019). Law enforcement includes regulatory supervision, inspections, and penalties for failure to comply with the laws (Ezri, 2024).

Airborne and droplet-borne infectious diseases have been the primary focus in clinical and public health settings, but not in legal aspects. Due to its essential role in guiding organizational response in industrial workplace settings and ensuring their compliance with the law and regulations, comprehensive information on current legal frameworks is necessary.

The recent pandemic, COVID-19, as well as previous SARS and H1N1, have highlighted the importance and vulnerability of workplaces, where confined spaces, close contacts, and shared equipment can lead to enhanced transmission of infectious diseases. Although advances in infection prevention and control in industrial settings have increased after COVID-19, the role of legal preparedness and enforcement remains underexamined. Hodge et al. (2009) and Jennings (2020) explain that legal preparedness refers to the health system's capacity to implement and enforce laws, including compliance monitoring and addressing breaches of regulations. During pandemic situations and outbreaks of infectious disease, law plays a vital role in guiding and ensuring that the responsibilities of employers, the rights of workers, interagency coordination and emergency protocols are in place. Previous studies on the occupational context have shown that policies such as surveillance systems, reporting obligations, and personal protective equipment (PPE) requirements have a significant impact on the outcome of an outbreak. (citation), (Groeneworld et al (2019) Nonetheless, the implementation of these policies varies across different sectors and industries, often revealing operational and legal gaps. This review, therefore, is timely, as it systematically synthesizes the legal frameworks in place Previous studies on the occupational context have shown that

International Journal of Law, Government and Communication
EISSN : 0128-1763
IJLGC
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

policies such as surveillance systems, reporting obligations, and personal protective equipment (PPE) requirements have a significant impact on the outcome of an outbreak. (citationduring the pandemic and enforcement practices, and also provides us with insights into global readiness and identifies areas for improvement.

As a result, this paper summarizes the relevant studies on law preparedness and enforcement by multiple countries in order to compare their legal action in preparing for disease outbreaks. Hence, this systematic review highlights the question of interest: 1) What are the laws and enforcement related to infectious diseases that involve airborne and droplet transmission, which will assist in a country's preparedness? The following is the structure of this paper: Section 2 highlights the methodology used in the investigation. Section 3 is the findings from the analysis. Section 4 provides the discussion, and Section 5 concludes the work with recommendations.

Methodology

Study Design

This systematic review was reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009). A structured, systematic review and qualitative synthesis of peer-reviewed publications was performed to explore law enforcement and preparedness for airborne and droplet-borne infectious diseases in industries. The qualitative approach is commonly used to evaluate and synthesise qualitative literature, and was applied here as it is considered appropriate for generating new insights or knowledge by systematically and transparently bringing together existing research findings (Mays et al., 2005).

Databases and Search Strategy

A comprehensive literature search was conducted in August 2021 using four biomedical electronic databases (PubMed, Scopus, Web of Science, and Cochrane Library) and three occupational safety and health electronic databases (OSHLINE, NIOSHTIC2, and HSELINE). The search aimed to identify relevant articles published in peer-reviewed journals written in English, with the assumption that most of the critical findings will be reported in English regardless of country of origin. Boolean search was performed on each database as illustrated in Table 1.

Table 1: Search Strategy

Database	Search Terms	Search Field Descriptor
PubMed	("law enforcement" OR "legal enforcement" OR "regulatory enforcement" OR "standard enforcement" OR "policy enforcement" OR "law preparedness" OR "legal preparedness" OR "legal readiness" OR "legal preparation" OR "preparedness policy" OR "preparedness plan" OR "emergency response plan" OR "disaster response plan" OR "preparedness	Title and abstract
Scopus		Titles, abstract and keywords
Web of Science		Abstract
Cochrane Library		Titles, abstract and keywords

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

	strateg*" OR "control policy" OR "prevention policy" OR "disease surveillance") AND (infection OR "infectious disease" OR "communicable disease" OR outbreak OR epidemic OR pandemic OR COVID-19 OR SARS OR MERS OR coronavirus OR influenza OR adenovirus OR enterovirus OR rotavirus OR measles OR mumps OR smallpox OR tuberculosis OR diphtheria OR anthrax OR legionellosis OR meningococcus OR pneumococcus OR Bordetella OR aspergillosis OR blastomycosis OR cryptococcosis) AND (industr* OR workplace OR organization OR organisation OR compan*)	
OSHLINE (via OSH References) HSELINE (via OSH References) NIOSHTIC-2 (via OSH References)	(enforcement OR preparedness OR policy OR "response plan" OR surveillance) AND (infection OR "infectious disease" OR "communicable disease" OR outbreak OR epidemic OR pandemic OR COVID-19 OR SARS OR MERS OR coronavirus OR influenza OR adenovirus OR enterovirus OR rotavirus OR measles OR mumps OR smallpox OR tuberculosis OR diphtheria OR anthrax OR legionellosis OR meningococcus OR pneumococcus OR Bordetella OR aspergillosis OR blastomycosis OR cryptococcosis) AND (industry* OR workplace OR organization OR organisation OR company*)	Subject

The terms included in the Boolean search were chosen after careful consideration and consensus on terms identified from the literature review, considering the variation in keywords of interest. The first combination of keywords encompasses various terms related to all aspects of infectious disease legislation enforcement and preparedness, including any action regarding its preparation, awareness, surveillance, prevention, and control (Groenewold et al., 2019). The second combination of keywords includes key terms related to infectious disease and common

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027
pathogens that may spread via droplets and airborne transmission (Ather et al., 2021). Finally, the third combination of keywords includes terms that specify workplace settings. The search was conducted by one reviewer and was performed without restriction to date or publication. All searches were concluded by 1st September 2021.

Selection Criteria and Study Selection

After searches were performed, articles were then organised into EndNote 20 Software and duplicates were identified and removed. This was accomplished by one reviewer, initially using the "Find and Remove Duplicate References" function, followed by manual screening, as some of the same articles were entered into different databases with slight variations. After duplicates were removed, articles were assessed for eligibility independently by two reviewers in two stages.

Both stages of the study selection were performed independently by two reviewers and cross-validated to assess for disagreements. The percentage agreement and Cohen's Kappa were 99.6% and 0.977, respectively, for stage one, and 96.9% and 0.751, respectively, for stage two of the study selection process, indicating excellent interrater reliability. Attempts to contact authors for articles that were not available in full text were made, and only full-text articles were included in the review to enable quality assessments. Hand searching was not attempted due to resource limitations.

Quality Assessment

The methodological quality of the included studies was assessed by examining the level of evidence according to the Table of Evidence Levels from Cincinnati Children's Hospital Medical Center (CCHMC) (2012) and quality of study according to the Joanna Briggs Institute (JBI) tools (Joanna Briggs Institute, 2022) and Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2018). The CCHMC classifies the level of evidence for individual studies by domain, study design, and quality, with level 1 representing the highest level and signifying the most substantial evidence, and level 5 representing the lowest level and indicating the weakest evidence (Cincinnati Children's Hospital Medical Center, 2012).

Additionally, studies at each level are further subclassified into either "a" or "b" according to the JBI tools and MMAT, which denote a good-quality study and a lesser-quality study, respectively, in terms of methodological quality.

a) Cohort studies: 11 maximum stars and a final rating of 0-2 stars as "poor", 3-5 stars as "moderate", 6-8 stars as "good" and 9-11 stars as "excellent"
b) Case-control studies: 10 maximum stars and a final rating of 0-2 stars as "poor", 3-5 stars as "moderate", 6-7 stars as "good", and 8-10 stars as "excellent"
c) Analytical cross-sectional studies: 8 maximum stars and a final rating of 0-2 stars as "poor", 3-4 stars as "moderate", 5-6 stars as "good", and 7-8 stars as "excellent"
d) Prevalence studies: 9 maximum stars and a final rating of 0-2 stars as "poor", 3-5 stars as "moderate", 6-7 stars as "good", and 8-9 stars as "excellent"
e) Case reports: 8 maximum stars and a final rating of 0-2 stars as "poor", 3-4 stars as "moderate", 5-6 stars as "good", and 7-8 stars as "excellent"
f) Qualitative studies: 10 maximum stars and a final rating of 0-2 stars as "poor", 3-5 stars as "moderate", 6-7 stars as "good", and 8-10 stars as "excellent"

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

g) Mixed method studies: 5 maximum stars and a final rating of 0-1 stars as "poor", 2-3 stars as "moderate", 4 stars as "good", and 5 stars as "excellent"
h) Economic evaluation studies: 11 maximum stars and a final rating of 0-2 stars as "poor", 3-5 stars as "moderate", 6-8 stars as "good", and 9-11 stars as "excellent"
i) Text and opinion papers: 5 maximum stars and a final rating of 0-1 stars as "poor", 2-3 stars as "moderate", 4-5 stars as "good", and 6 stars as "excellent"

The quality assessment was performed independently by two reviewers. Data extraction and analysis were cross-validated to identify any discrepancies. For any disagreement that was present, consensus was sought where possible. In cases where that was not possible, a third reviewer was assigned.

Data Extraction and Analysis

For each of the included study, data on author, year of publication, study design, type of infectious disease, study population, location of study, number of participants included, study instruments used, study variables examined, law enforcement findings, law preparedness findings, and study conclusion were extracted. The data extraction was performed independently by two reviewers. For any disagreement that was present, consensus was sought where possible, and in cases where that were not possible, a third reviewer was assigned. Data was analysed qualitatively due to the heterogeneity of studies included in the systematic review, and meta-analysis was not attempted. Where applicable, data was analysed using descriptive statistics using Statistical Package of Social Science Version 27. The numerical data was analysed using mean and standard deviation, while the categorical data was analysed using frequency and percentage (Figure 1).

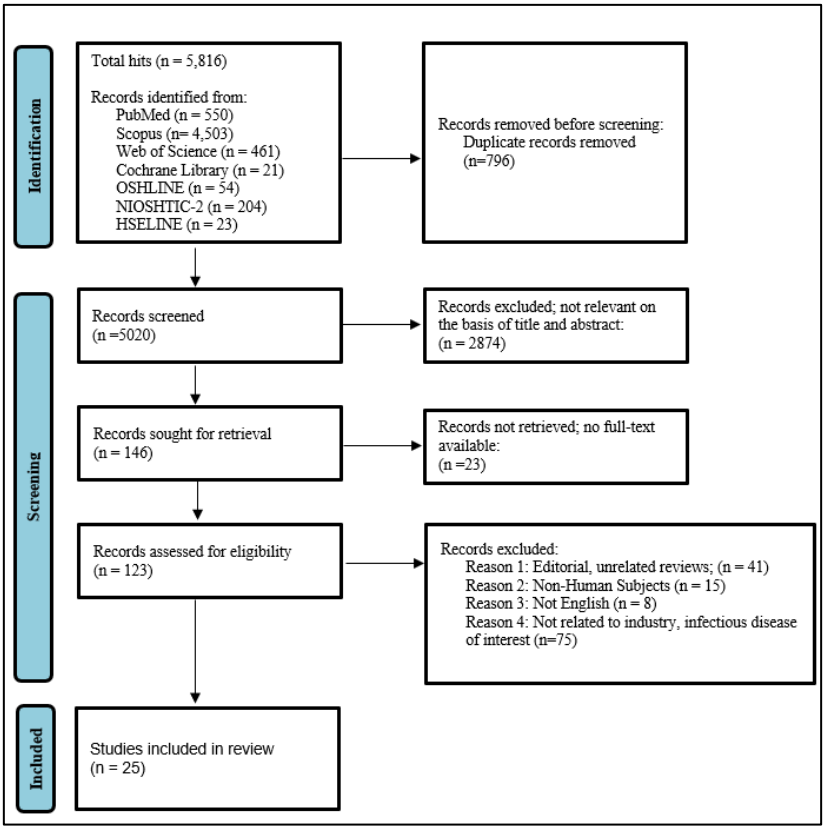

Figure 1: Flow Diagram of the Systematic Review Based on The PRISMA Statement

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

Results

Study Characteristics and Methodological Quality

A total of 5,816 articles were initially identified, and after removing duplicates, 5,020 articles were screened. 2,874 articles were excluded due to not being relevant based on title and abstract. 23 articles were then excluded due to full-text unavailability. A total of 98 articles did not meet the inclusion criteria, and 25 articles were finally included in this review. The flow chart of the study search and selection is illustrated in Figure 1, using the PRISMA format.

Of the 25 included studies, seventeen focused on law preparedness, one on law enforcement, whereas seven included both law preparedness and enforcement. The majority of the studies were conducted in the United States (n = 17), while other studies were conducted in various countries, including Malaysia, South Africa, England, the Netherlands, Iran, Canada, and Hong Kong. The study designs employed mainly were cross-sectional studies (n = 15). Other study designs included a qualitative study (n=5), a mixed methods study (n=1), a cohort study (n=2), a case control study (n=1) and a case study (n=1). In terms of measures used, among the quantitative research studies (n = 20), fourteen studies utilised secondary data from national databases, while six studies employed primary data collection through surveys (Table 2).

Most of the studies were collected primarily during the occurrence of an epidemic or pandemic. Eleven studies were observed during influenza outbreaks, four during the recent COVID-19 pandemic, and one during the Ebola outbreak.

Statistical Analysis

Data was analysed using IBM SPSS version 24. A descriptive analysis was performed to determine the characteristics of all the variables studied, including the status of psychological well-being and depression, anxiety and stress. The results are displayed in an aggregate manner using numbers, percentages, tables and charts.

Inferential statistical analysis includes a chi-square test and multiple logistic regression. A value of $P< 0.05$ will be considered statistically significant with alpha = 0.05, and 95% CI was used to determine level of significant.

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

Table 2. Summary Of Included Studies Examining Law Enforcement and Preparedness During Infectious Disease Outbreaks in Industries

Title/ Author (Year) / Location	Industry	Type of Infectious Disease	Study Design	Study Population (N)	Study Variables	Study Instruments	Results	
							Law Preparedness	Law Enforcement
1. Tuberculosis mortality by industry in the United States, 1990–1999 (Bang, Weissman, Wood, & Attfield, 2005) Country: US	Industries from 15 states in US and 13 different industries.	Tuber-culosis	Cross-sectional Study: Secondary data of TB mortality from US census between 1990 and 1999	7686	Proportionate mortality ratios (PMRs), adjusted for age, sex, and race,	US census occupation and industry classifications.	• Increased risk of TB among long- term exposure to silica, such as mining (metal, non-metal, and coal) and metal processing (foundries and metal processing). • Increased risk of TB among construction workers due to exposures to silica. • High risk groups: health care industry, agricultural production, personal services, and industries associated with silica dust exposure • Other factors- environmental, socioeconomic status, (e.g., non-paid workers or non-workers, agricultural workers, sanitary workers, etc. • Also increased TB risk workers with HIV	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

							• Use general guidelines for CDC • Availability of descendant's usual industry in database • However, there is lack of detail from the National TB Surveillance data on (i.e., HCWs, migrant workers). • More detailed job information is required, this means lack of information to classify high risk groups.	
2. Workplace interventions associated with influenza vaccination coverage among health care personnel in ambulatory care settings during the 2013-2014 and 2014-2015 influenza	Healthcare industry (among healthcare workers)	Influenza	Cross-sectional study	866	Influenza vaccination status, workplace vaccination policies and interventions, and their attitudes toward vaccination	Online surveys: 1) vaccination status 2) workplace policies and interventions related to vaccination.	• 65.7% reported receiving influenza vaccination for the previous influenza season. **1)** Increased vaccination coverage was independently associated with: **2)** free onsite vaccination for 1 day **3)** employers sending personal vaccination reminders **4)** age ≥65 years old	Vaccination coverage increased with increasing numbers of workplace interventions.

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

seasons (2017)(Yue et al., 2017) Country: US							**5)** working as a clinical professional **6)** clinical non-professionals **7)** were also associated with higher coverage.	
3. Workplace Interventions and Vaccination-Related Attitudes Associated With Influenza Vaccination Coverage Among Healthcare Personnel Working in Long-Term Care Facilities, 2015–2016 Influenza Season(Yue et al., 2019) Country: US	Healthcare Personnel: - clinical occupations, including physicians, nurse practitioners, physician assistants, nurses, allied health practitioners, and clinical technical professionals	Influenza	Cross-sectional study	2258		Online survey of healthcare personnel conducted in April 2016	77% of healthcare personnel working in LTC facilities reported receiving influenza vaccination in the 2015–2016 influenza season. **a)** Influenza vaccination was independently associated with an employer vaccination requirement (prevalence ratio (PR) [95% confidence interval] 1⁄4 1.28 [1.11, 1.47]), **b)** being offered free onsite vaccination (PR 1⁄4 1.20 [1.04, 1.39]), and **c)** employers publicising vaccination coverage level to employees (PR 1⁄4 1.24 [1.09, 1.41]). **d)** vaccination was most highly associated with a	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

							combination of 3 or more workplace interventions.	
4. Tdap Vaccination Among Healthcare Personnel—21 States, 2013(O'Halloran et al., 2018) Country: US	Healthcare Personnel	Tetanus, diphtheria, and acellular pertussis	Cross-sectional study-		Tetanus, diphtheria, and acellular pertussis (Tdap) vaccination status was self-reported by healthcare personnel along with their occupation, healthcare setting/industry, demographics, and access to care factors.	Secondary data from The Behavioural Risk Factor Analysis. Data from 21 states in the US State based telephone survey	• Among all healthcare personnel, 47.2% were vaccinated for Tdap. Physicians had higher Tdap coverage (66.8%) compared with all other healthcare personnel except nurse practitioners and registered nurses (59.5%). • Healthcare personnel who were younger, who had higher education, higher annual household income, a personal healthcare provider, and health insurance had higher Tdap vaccination coverage compared with reference groups.	
5. Initiation of a Ring Approach to Infection Prevention and Control at Non-Ebola Health Care Facilities —		Ebola virus	Cross-sectional study	3 cluster groups involving 52 health care workers of Ebola virus disease at non-Ebola	Case study of Ring IPC approach IPC- Infection prevention and control		• Training targeted key individuals • Triage support • Intensive IPC approach (identify contacts and tracing, alert healthcare workers • Provided emergency of 1 month supply of PPE	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

Liberia, January–February 2015(Nyenswah et al., 2015) Country: US				treatment units.	Ring target based on risk assessment of individuals		• NGO partners assessed the constructed triage system.	
6. Influenza vaccination among workers—21 U.S. states, 2013(O'Halloran et al., 2017) Country: US	20 industries	Influenza	Cross-sectional study	87,591 respondents secondary data	Influenza vaccination coverage was reported by select industry and occupation groups, including health care personnel (HCP) and other occupational groups who may have first priority to receive influenza vaccination during a pandemic (tier 1).	Data from 21 states using the 2013 Behavioural Risk Factor Surveillance System industry-occupation module	• Influenza vaccination coverage varied by industry and occupation. • with high coverage among persons in health care industries and occupations. • Approximately half of persons classified as tier 1 received influenza vaccination, and vaccination coverage among tier 1 and HCP groups varied widely by state.	• Intervention on - site, free of charge, • Actively promote vaccine at respective company
7. Excess lung function decline in	Gold miners	Pulmonary tuberculosis	Retrospective cohort design	185 miners	South African gold miners who had undergone a	Pulmonary function test and follow-up.	• Pulmonary TB during the follow-up period was associated with a mean	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

gold miners following pulmonary tuberculosis (2010)(Ross, Ehrlich, Hnizdo, White, & Churchyard, 2010) Country: South Africa					pulmonary function test (PFT) between January 1995 and August 1996. The 'exposed' group comprised 185 miners treated for pulmonary TB after the initial PFT and the 'unexposed' group comprised 185 age-matched miners without TB.		excess loss of 40.3 ml/year in FEV_1 (95% CI 25.4 to 55.1) and 42.7 ml/year in FVC (95% CI 27.0 to 58.5). • Lung function loss was greater among those with more severe or later clinical presentation of TB. Breathlessness was twice as common among TB cases (OR 2.20, 95% CI 1.18 to 4.11). Requires: • Greater clinical recognition of the long-term respiratory consequences of treated pulmonary TB. • Early detection of TB would help to reduce these sequelae and remains a priority, particularly in a workforce already subject to silica dust disease.	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

							• Strategies such as dust control, worker education about TB and dust and TB preventive therapy are also needed to avert the disease itself.	
8. Excess Risk of Head and Chest Colds Among Teachers and Other School Workers (2010) (Tak, Groenewold, Alterman, Park, & Calvert, 2011) Country: US	Teachers in education sector	Colds	Cohort study	228,092 respondents	• Head, chest and cold • the number of family members. • school years	Seven years (1998-2004) of National Health Interview Survey data.	• Increasing the rate of timely vaccinations among teachers, other school workers, and students can reduce the risk of influenza • Poorly ventilated indoor air may be an issue in the school environment, thus improving ventilation may play a role in reducing respiratory morbidity at the population level • In addition, since the risk of head/chest cold is highest among smokers, public health intervention efforts to reduce smoking • Training should be provided to school staff, students, and parents on the importance of staying home when ill, hand washing, and respiratory etiquette.	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

							• all school areas should be regularly cleaned; however, additional disinfection beyond routine cleaning is not considered necessary for infection control. • School service workers should be trained to use appropriate personal protection equipment (e.g., chemical-resistant gloves) when using disinfectants.	
9.Work-Related Lung Disease Surveillance Report 2007 (2008) (US)(NIOSH., 2008) Country: US	Industries: Porters and bellhops, labours, garbage collectors, mining machine operators, payroll timekeepers, labourers. Housewife/ housemakers	Pneumonia and Influenza, Legionnaire's diseases	Cross-sectional study: secondary data	20,412	• Number of employees reporting respiratory illnesses • Types of respiratory illness • Types of industries • Smoking status • Other respiratory illnesses	• Data from: Bureau of Labour Statistics (BLS) • Nearly all industries covered by OSHA (1970) are covered • Integrated Management Information System (OSHA) industrial	• Among the industries associated with significantly elevated proportionate tuberculosis mortality in the 1990–1999 period were the healthcare industries (offices and clinics of health practitioners; hospitals; and miscellaneous personal services); industries also associated with significantly elevated silicosis mortality (nonmetallic mining and quarrying, except fuel; metal	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

						hygiene samples	mining; other primary metal industries; and coal mining); carpets and rugs; automotive services, except repair; miscellaneous repair services; and agricultural production, crops	
10. Influenza-associated Hospitalizations by Industry, 2009–10 Influenza Season, United States (2012)(Luckhaupt et al., 2012) Country: US	26 types of industries	Influenza	-Cross sectional study -Secondary data		- employment status was compared with expected proportions in the US population - Age - Type of industries - Hospitalisation	• EIP Data for Hospitalized Influenza Case-Patients	• Bodies issued guidelines for Influenza in US for workplaces: o OSHA, Department of Labor o NIOSH o CDC • Request more information is needed for: **1)** specific group of workers and high-risk groups. **2)** prioritising of groups to receive vaccines **3)** school closing policies **4)** appropriate PPE use **5)** more case studies among specific workers.	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

11. Surveillance for respiratory and diarrheal pathogens at the human-pig interface in Sarawak, Malaysia (2018)(Borkenhagen et al., 2018) Country: Malaysia	Iivestock operation	Pathogens adenovirus (ADV), coronavirus (CoV), encephalomyocarditis virus (EMCV), enterovirus (EV), influenza A-D (IAV, IBV, ICV, and IDV), porcine circovirus 2 (PCV2), and porcine rotaviruses A and C (RVA and RVC),	Cross-sectional study took place in Sarawak, Malaysia	11 pig farms, 2 abattoirs, and 3 animal markets 55 pig faecal, 49 pig oral or water, 45 bioaerosol, and 78 worker nasal wash samples were collected across 16 sites.	Data obtained: 1) potential predictors of positivity of virus 2) bioaerosols detection 3) perceptions of efficacy of personal protective equipment (PPE) at preventing cross-species infection	1) survey about their perceptions of cross-species infection risks and personal protective equipment (PPE) usage 2) oral secretion or water trough samples 3) bioaerosol sampling 4) DNA/RNA extraction and RT-PCR.	• PCV2 was detected in 21 pig faecal, 43 pig oral or water, 3 bioaerosol, and 4 worker nasal wash samples. • one or more bioaerosol or pig samples were positive for EV, IAV, and RVC, and one or more worker samples were positive for ADV, CoV, IBV, and IDV. • nucleic acids from a number of targeted viruses were present in pig oral secretions and pig faecal samples, and that several viruses were detected in bioaerosol samples or in the nasal passages of humans with occupational exposure to pigs.	
12. Legionnaires' Disease Outbreak in an Automobile Engine	Plant manufacturing cast-iron engine components	Legionnaire's disease	Case-control studies	-4 case studies -568 workers -197 Environmental sampling	- symptoms - time spent inside and outside plant - illness among family members - environmental samples (43 sites	1) Self-administered questionnaire asking about symptoms experienced from February 14 to March 23	• Visiting a specific cleaning line (odds ratio, [OR], 7.29; 95% confidence interval [CI], 2.31–23.00) and working in the cleaning region of the plant (OR, 3.22; 95%	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

Manufacturing Plant (2002)(Fry et al., 2003) Country: US					in the core area, 19 in the melting area, 48 in the cleaning area, and cooling towers, powerhouse and locker rooms)	2) Select without symptoms from master list of plant employees.	CI, 1.11–9.38) were associated with LD. • LD can be transmitted in industrial settings in which aerosols are produced. Recommendations for: Clinical practice: • Legionella that can result in serious illness among high-risk workers, provides fur- their evidence that LD should be considered in the differential diagnosis of persons who work in industrial settings and present with an acute febrile respiratory illness with systemic symptoms, especially those with chronic diseases and a smoking habit.	
13.Health-Related Workplace Absenteeism Among Full-Time Workers —	Household survey for all workers- 10 occupational groups	Influenza	Cross-sectional study	60,000 workers	NIOSH secondary data on sociodemographic characteristics and occupational groups in 2017-		• 2017-2018: absenteeism increased sharply in November and peaked in January, at a level significantly higher than the average during the previous five seasons.	Vaccination and nonpharmaceutical interventions recommended for everyday use, such as: 1) staying home when sick,

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

United States, 2017–18 Influenza Season(Matthew R Groenewold et al., 2019) Country: US					2018. Data include workplace absenteeism.		• Workers who were male, aged 45–64 years, and working in certain U.S. Census regions and occupations were more affected than were other subgroups.	2 covering coughs and sneezes, 3) practicing hand hygiene, and 4) routinely cleaning frequently touched surfaces, are the most effective ways to prevent influenza transmission during seasonal epidemics, both in the community and in the workplace • NIOSH made surveillance absenteeism data available online. • Analysis of aggregated absenteeism data from multiple seasons might also help identify occupational groups at higher risk for influenza transmission.

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

14. Exploring National Surveillance for Health-Related Workplace Absenteeism: Lessons Learned From the 2009 Influenza A Pandemic (Groenewold et al., 2013). Country: US	Workplace national survey	Influenza	Population based and sentinel-based surveillance	1) National data census 2) Sentinel surveillance data	Absenteeism done one week, sampled monthly. Sentinel: 19 sentinel worksites were chosen	1) Standardised questionnaire were used and taken from national survey. 2) Absenteeism questionnaire obtained from company from passive sentinel worksite surveillance • Household surveys on whole population. • National survey, linked. Done monthly, chosen randomly and asked for 1 week absenteeism. • Enhanced passive surveillance of	• Nationally, the pandemic's impact on workplace absenteeism was small. Estimates of 1-week absenteeism prevalence did not exceed 3.7%. • However, peak workplace absenteeism was correlated with the highest occurrence of both influenza-like illness and influenza-positive laboratory tests.	Systems for monitoring workplace absenteeism should be included in pandemic preparedness planning. Recommendations: 1) Systems for monitoring workplace absenteeism should be included in pandemic preparedness planning; with consideration given to the lessons learned in this feasibility study. 2) Networks comprising corporate health units and individual occupational health professionals could provide an infrastructure for the rapid collection of workplace absenteeism data. 3) The use of permanent, ongoing systems to monitor workplace absenteeism should be considered one way to detect early community outbreak and conduct

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

						absenteeism was conducted using weekly data from a convenience sample of sentinel worksites. • Data entered in form and returned by e-mail.		occupational health surveillance.
15. Exploring Infection Prevention: Policy Implications from a Qualitative Study (Uchida et al., 2011) Country: US	Hospital based	Any form of healthcare associated infections (HAI)	Qualitative study (in dept interview)	Twenty-three in-depth, semi-structured interviews were conducted at six acute care hospitals	A qualitative approach was used to obtain dense description and gain insights about the current practice of infection prevention in California.		• numerous policy changes have recently taken place including mandatory reporting and lack of reimbursement for HAIs. • 4 major interconnected themes: **1)** impacts of mandatory reporting; **2)** impacts of technology on HAI surveillance. **3)** infection preventionists' role expansion; and **4)** impacts of organisational climate.	Mandatory reporting requirements are having both intended and unintended consequences on HAI prevention.

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

							• Personnel reported that interdisciplinary collaboration was a major facilitator for implementing effective infection prevention, and organisational climate promoting a shared accountability is urgently needed.	
16. Estimation of differential occupational risk of COVID-19 by comparing risk factors with case data by occupational group (2020) (Zhang, 2021) Country: US	22 Occupational groups	COVID-19	Cross-sectional study	10,850 cases of COVID-19		(Occupational Information Network) O*NET database	• The highest risk occupations are in healthcare, particularly dental, but many non-healthcare occupations are also vulnerable.	Predictors of COVID-19 risk: 1) Contact with others 2) Cramped workspace, awkward positions 3) Duration of typical work week 4) Exposed to disease or infections 5) Face-to-face discussions 6) Physical proximity

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

17. Work-related infectious disease reported to the Occupational Disease Intelligence Network and The Health and Occupation Reporting network in the UK (2000–2003) (Turner et al., 2005) Country: England	Various industries	Occupational infections	Cross-sectional study	5606 cases reported	Infectious disease categories, Types of industries, number of outbreaks, distribution of cases within outbreaks	Cases of infectious disease reported by occupational and specialist physicians to the UK-based schemes: 1) Occupational Disease Intelligence Network (ODIN) and 2) The Health and Occupation Reporting (THOR) network 3) Specialist Infectious Disease Surveillance of At-Risk Workers (SIDAW) 4) Occupational Physicians reporting Activity (OPRA) 5)Epidemiological and Reporting of Occupational Skin Diseases (EPIDERM)	• Reporting rates were much higher in OPRA, SWORD and EPIDERM (ranging from 86 to 96%). • The most frequently reported industrial sectors were social care (39.5%) and health (29.4%); while the manufacture of chemical products contributed 4.3% overall, but 33.8% to estimated cases in OPRA.	THOR-GP will be a UK-wide scheme that aims to collect information on the wide range of work-related disease seen by GPs. It will involve electronic (rather than paper- based) collection methods, and should provide valuable information that can be used to compare with data obtained from the extant schemes, involving occupational and specialist physicians. The reporting schemes also provide an important means of alerting peers about potential novel causes, precipitating factors, or industrial sectors associated with occupational disease.

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

18. Coronavirus Disease among Workers in Food Processing, Food Manufacturing, and Agriculture Workplaces (2021) (Waltenburg et al., 2021) Country: US	Food manufacturing	COVID-19	Cross sectional	32 states in US 28,364 workers		cumulative aggregate data from state health departments on workers in US food processing, food manufacturing, and agriculture workplaces who had laboratory-confirmed COVID-19		• Reducing workplace exposures is critical for pro- tecting workers in US food processing, food manu- facturing, and agriculture workplaces and might help reduce health disparities among disproportionately affected populations. • Adherence to workplace-specific intervention and prevention efforts, including engineered controls, such as physical distancing; administrative controls, such as proper sanitation, cleaning, and disinfection; and providing personal protective equipment likely would protect both workers and

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

								surrounding communities • requirement of risk assessment to whole industry to clarify and address additional risk factors
19. Comparing national infectious disease surveillance systems: China and the Netherlands (2017) (Vlieg et al., 2017) Country: Netherlands	In both countries, being compared. Not limited to industries	Any infectious disease, not limited to industries	Qualitative Study	35 articles reviewed with systematic review methods, 5 experts were interviewed		Literature search and semi structured interviews	• Infectious disease surveillance is almost similar between the 2 countries. • The thresholds and automatically top-down disseminated SMS signals in China for validation purposes, which might be more efficient and perhaps better accepted in a large country. • This contrasts with a more qualitative and exploratory approach in the Netherlands, probably due to its small size and short communication lines.	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

20. Developing a hospital preparedness checklist to assess the ability to respond to the COVID-19 pandemic (2021), Iran(Seyedin, Moslehi, Sakhaei, & Dowlati, 2021) Country: Iran	Hospital preparedness	COVID-19	Qualitative (Semi-structured interviews from expert panels)	33 experts developed the guideline		Literature searches, face-to-face interviews	• The final checklist had 2 main domains: measures at national and measures at hospital level. • Preparedness at the national level was categorised into 3 aspects that are implemented by the Health Ministry. Preparedness at the hospital level was categorised into 24 subgroups.	
21. COVID-19 in Paediatric Long-Term Care: How Infection Control and Prevention Practices Minimised the Impact of the Pandemic on Healthcare Providers	Hospital	COVID-19	Case study	Team of experts who experienced the events	described how Sunshine Children's Home and Rehabilitation Center responded to federal and state infection control and prevention mandates in LTC for COVID-19	Literature review/ 4 aspects were considered: 1) Visitor restrictions 2) Essential workers only 3) Staff Screening 4) Mask mandate 5) Community transmission	Measures for preparedness: 1) Limiting visitors 2) Training and education - enhanced evaluation of residents twice daily vital signs - morning conference with interdisciplinary team review clinical status of residents daily - nursing staff trained with appropriate PPE usage.	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

and Residents (2021) (Neu et al., 2020) Country: US							3) Environmental Interventions: - limitation of personnel, enhanced traffic control in the building, environmental cleaning, PPE supplies, and the supply chain will also be addressed. - Covid-19 unit established for residents.	
22. Preventing Occupational Tuberculosis in Health Workers: An Analysis of State Responsibilities and Worker Rights in Mozambique (Garcia et al., 2020)	All workers	Occupational Tuberculosis	Mixed method approach			Examined international, constitutional, regulatory, and policy frameworks. also: 1) recorded and analysed the content of a workshop and policy discussion group on the topic to elicit the perspectives of health workers and officials	Implementation barrier persisted: 1) Lack of legal codification of TB as an occupational disease. 2) Absence of regulations assigning specific responsibilities to employers; 3) Failure to deal with privacy and stigma fears among health workers; and 4) Limited awareness among health workers of their legal rights, including that of collective action.	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

Country: Canada						responsible to implement policy. 2) Conducted 1 day workshop and observe another day of policy workshop. 3) follow-up small discussion groups guided by questions to capture participants' experience of facilitators of and barriers to legal implementation	While all these elements require attention to protect health workers from occupational TB, a stronger emphasis on their human and labour rights is needed alongside their perceived responsibilities as caregivers.	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

23. Infection Control Preparedness for Human Infection with Influenza A H7N9 in Hong Kong (2015) (Cheng et al., 2015) Country: Hong Kong	University setting	Influenza A H7N9	Qualitative study and semi structured interview	70 HCW		• Infection control preparedness • Investigation for possible nosocomial infections • Laboratory diagnosis	• Active and enhanced surveillance were conducted to quickly detect cases of influenza • Enhanced infection control strategies were employed • A total of 10 sessions of open staff forum, with an overall 1,532 hospital staff attendance, were held to update the medical knowledge of infection control concerning influenza A H7N9. Video demonstrations of gowning and degowning of personal protective equipment were provided for all isolation wards and were also uploaded to the hospital intranet for review by frontline HCWs. A bedside audit of gowning and degowning by infection control nurses was performed to ascertain compliance. Hand hygiene compliance demon- strates an increase in all clinical	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

							departments from 23% (2007 baseline) to 66% (2010) and to 75% (2013). • In addition to the usual practice of hand hygiene and environmental cleanliness, infection control measures in general and high-risk clinical areas were enhanced after confirmation of the first imported case of influenza A H7N9 in Hong Kong on 2 December, 2013. • High-risk areas included triage stations of outpatient clinics and emergency departments, and isolation rooms. • Aerosol-generating procedures included endotracheal intubation, cardiopulmonary resuscitation, bronchoscopy, and open suction of respiratory tract, sputum induction, use of nebuliser therapy, non- invasive positive pressure ventilation, and	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

							high-frequency oscillatory ventilation.	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

24. National Pandemic Influenza Preparedness Planning (2009)(Azziz-Baumgartner et al., 2009) Country: US	Pandemic all levels including workplace	Influenza	Qualitative	Stakeholders and experts	Process of drafting the Pandemic influenza preparedness plan for developing countries that conforms to the International Health Regulations of 2005 and recommendations of the World Health Organization.		• Stakeholders from many sectors should be involved in drafting a comprehensive pandemic influenza plan that addresses all levels of preparedness. Based on outcome, the draft of preparedness must include sections on: 1) Objectives and principles 2) Incident management structure 3) Surveillance 4) Communication 5) Case management 6) Community mitigation 7) Pharmaceutical investigations 8) Maintenance of essential services 9) Agenda to address gaps in knowledge 10) Review, testing and revision plans	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

25. Local public health workers' perceptions toward responding to an influenza pandemic (2006) (USA) (Balicer, Omer, Barnett, & Everly, 2006) Country: US	Healthcare	Influenza	Cross sectional study	308 respondents surveyed.	Perception of existing, knowledge about public health impact of pandemic influenza, Confidence in personal safety, Family preparation, Health Department's perceived ability to provide timely information, Perception of the capacity to effectively communicate risk, Familiarity with one's role-specific response requirements, Perception of the importance of one's role in the agency's overall response,		• The data suggest that nearly half of the local health department workers are likely not to report to duty during a pandemic. • The stated likelihood of reporting to duty was significantly greater for clinical (Multivariate OR: 2.5; CI 1.3–4.7) than technical and support staff, and the perception of importance of one's role in the agency's overall response was the single most influential factor associated with the willingness to report (Multivariate OR: 9.5; CI 4.6–19.9)	

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

					Perceived importance of preparedness training and education			

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

Table 3: Quality of Included Studies According to CCHMC Table of Evidence Levels, JBI Tools, and MMAT

Author (Year)	Study Design	LOE	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Overall Quality
Azizz-B (2015)	TO	4a	*	*	*	*	*	*	N/A	N/A	N/A	N/A	N/A	Excellent
Balicer (2006)	ACS	4a	*	*	*	*	*	*	*	*	N/A	N/A	N/A	Excellent
Bang (2005)	ACS	4a			*	*	*	*	*	*	N/A	N/A	N/A	Good
Borkenhagen (2018)	ACS	4a	*	*	*	*			*	*	N/A	N/A	N/A	Good
CDC (2019)	ACS	4a	*	*	*	*	*	*	*	*	N/A	N/A	N/A	Excellent
Cheng (2015)	ACS	4a	*	*	*	*		*	*	*	N/A	N/A	N/A	Excellent
Fry (2003)	CCS	4a			*		*	*	*	*	*	*	N/A	Good
Garcia (2020)	MMS	3a	*	*	*	*	*	N/A	N/A	N/A	N/A	N/A	N/A	Excellent
Groenewold (2013)	ACS	4a	*	*		*		*	*	*	N/A	N/A	N/A	Good
Luckhaupt (2012)	PS	3a	*	*	*	*	*	*	*	*		N/A	N/A	Excellent
Neu et al (2020)	CR	5a	*	*	*	*	*	*		N/A	N/A	N/A	N/A	Excellent
NIOSH US (2007)	ACS	4a			*	*	*	*	*	*	N/A	N/A	N/A	Good
Nyenswah (2015)	CR	5a				*	*	*	*	*	N/A	N/A	N/A	Good
O'Halloran (2013[a])	PS	3a	*	*	*	*	*		*	*		N/A	N/A	Good
O'Halloran (2013[b])	PS	3a	*	*	*	*	*		*	*		N/A	N/A	Good
Ross (2010)	CS	4a	*	*	*	*	*		*	*	*		*	Excellent
Seyedin (2021)	QS	2a	*	*	*	*	*	*	*	*	*	*	N/A	Excellent
Tak (2011)	ACS	4a	*	*	*	*	*	*		*	N/A	N/A	N/A	Excellent
Turner (2005)	ACS	4b	*	*		*					N/A	N/A	N/A	Moderate
Uchida (2011)	QS	2a	*	*	*	*	*	*	*	*	*		N/A	Excellent
Vlieg (2017)	QS	2a	*	*	*	*	*	*	*	*	*	*	N/A	Excellent
Waltenburg (2021)	ACS	4b	*	*		*					N/A	N/A	N/A	Moderate
Yue (2017)	ACS	4a	*	*		*	*	*		*	N/A	N/A	N/A	Good
Yue (2019)	ACS	4a	*	*		*	*	*		*	N/A	N/A	N/A	Good
Zhang M (2020)	CS	4b		*	*	*		*		*	*	*	*	Good

Note: ACS = analytical cross-sectional; CCS = case control study; CR = Case report; CS = Cohort study; QS = qualitative study; LOE: level of evidence; MMS = mixed methods study; N/A = not applicable; PS = prevalence study; TO = text and opinion

Quality of Study

In the final quality rating, studies under the categories "excellent" and "good" were rated as "a" and those under the categories "poor" and "moderate" were rated as "b". The majority of studies (n = 25) were assigned either a level of 4a or 4b according to the CCHMC's Table of Evidence Levels, with 4a indicating a better-quality study than 4b, although it is of weaker evidence than 2a/2b and 3a/3b. On the other hand, one study (prospective cohort) was assigned either a level of 3a or 3b and one study (case study) was assigned either a level of 5a or 5b. A summary of the methodological quality of included studies is illustrated in Table 3.

Law Preparedness for Airborne and Droplet-Borne Infectious Diseases in Industries

Preparedness of industries for infectious disease were identification of high-risk groups as an initial phase, factors involved with preparedness plans include environmental, socioeconomic status (n=1). Other requirements for successful plans include more detailed job information is required for the categories in many national databases (n=1).

For diseases like tuberculosis, greater clinical recognition is required of the epidemiological of disease (n=1), early detection is essential (n=1). Other strategies suggested included dust control (n=1), TB preventive therapy and education (n=1), and silicosis control (n=2).

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

With regards to implementation of vaccinations studies mentioned coverage increased with increased number of workplace vaccinations and activities associated with it (n=2), priorities to groups to receive vaccination (n=1), Requirements for hospital settings were training of targeted individuals (n=1), provide emergency PPE supplies (n=1), triage support (n=1).

Law Enforcement for Airborne and Droplet-Brone Infectious Diseases in Industries

Among studies that covered laws, vaccination coverage increases with increasing number of workplace interventions (n=2), the intervention needs to be on site (n=1) and free of charge (n=1) (O'Halloran et al., 2017). Various interventions and enforcements were suggested for workplaces which include frequent cleaning and staying at home when sick. Analysis of data at aggregates of absenteeism data by authorities is required (n=2) (Matthew et al., 2013).

Mandatory reporting of cases of infectious disease has also been highlighted, with penalties for a lack of reimbursement (Uchida et al., 2011). Electronic collection methods for reporting were suggested with regard to industrial involvement (Turner et al., 2005).

Discussions

In the current situation, where the COVID-19 pandemic is no longer a global emergency, and the world is still facing other pandemics or epidemics such as the influenza virus, it is pertinent that this issue should be tackled with the best possible means. Most of the literature comes from the United States. This does not necessarily mean that the US has the best law enforcement in terms of infectious disease. However, it does reflect a certain level of readiness in the country to face subsequent epidemics. Nonetheless, the previous pandemic has caused a paradigm shift whereby countries have started to emphasize the importance of legal regulations to ensure effective control of infectious diseases during an epidemic. Although most studies published focused on healthcare workers, other groups of workers were also given special attention, especially those from the manufacturing and service sectors.

Furthermore, we found that response plans should test the limits of emergency plans. This may create resource and staff shortages while increasing service demands. As such, experts in the field must be consulted in preparation for further waves of the pandemic. This includes shifting from a reactive response to a proactive planning strategy. Workplaces should consider implementing flexible work arrangements, particularly for officers and staff in high-risk groups.

Finally, we found that some barriers exist, such as poor communication and a lack of trust between organisations (e.g., due to competing strategic interests), which can delay or impede necessary collaboration between different agencies. Workplaces should identify shortcomings of cooperation as well as opportunities for joint training and exercise after a pandemic to improve for future emergencies. Future research should investigate concrete, practical considerations that are unique to a particular country, as each country has its own laws and regulations that relate to sociodemographic and cultural characteristics. Any shortcomings or areas highlighted in this review, as identified in previous literature, can serve as a basis for subsequent research.

The findings from our review, identified a critical gap between enforcement, preparedness, and planning especially in locations with lower income settings. While the United States dominates the evidence in the review, this may be related to the earlier extensive surveillance conducted

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

and sound occupational health systems, while low, middle-, and high-middle-income countries like Malaysia still lack a legally enforceable mechanism linking IPC measures and statutory workplace mandates. These imbalances may also reflect differences in the regulatory maturity and research-related transparency. Law preparedness measures like triage system training, vaccination campaign, IPC guidelines were commonly reported but concentrated particularly in healthcare settings [17]. Manufacturing, agricultural, and food processing industries, on the other hand, have shown poor regulatory coverage, although they have high transmission of infectious disease. This review also found that enforcement was seldom discussed in detail, on its mechanisms, therefore highlighting a vital policy gap. Effective enforcement comprises clarity in legal mandates, the availability of required resources, and, most importantly, interagency involvement. In many cases, there is an absence of clear legal obligations in this earlier phase of the pandemic, which led to poor voluntary compliance and varied across different industries.

With this, there is an urgent need for a harmonised global international standard of occupational IPC legal frameworks. Hence, future preparedness plans must include legal audits or surveillance in pandemic preparedness planning, which involves legal experts in occupational health formulation [18]. This framework should consider the vulnerable industries and their workforces. As COVID-19 fades from pandemic spotlights, the risk of complacency in legal aspects grows. Hence, embedding a sustainable legal preparedness framework into occupational health and safety governance, in collaboration with other related agencies, is essential.

Conclusion

In conclusion, this systematic review emphasizes the vital role of legal preparedness and enforcement in facing airborne and droplet-borne infectious diseases within industrial settings. These findings support proactive planning between agencies and authorities based on localized legal frameworks that consider local socio-cultural contexts and regulations.

Acknowledgement

We want to thank the Department of Occupational Safety and Health (DOSH) Malaysia and all collaborators of this project for their support during the development phase of the project. The authors gratefully acknowledge MIC3ST 2025 for providing a valuable platform for the dissemination of this work and for supporting its publication.

References

Ather, B., Mirza, T. M., & Edemekong, P. F. (2021). *Airborne precautions*. https://www.ncbi.nlm.nih.gov/books/NBK531468/

Azziz-Baumgartner, E., Smith, N., González-Alvarez, R., Daves, S., Layton, M., Linares, N., Mounts, A. (2009). National Pandemic Influenza Preparedness Planning. *Influenza Other Respiratory Viruses*, 3(4), 189-196. doi: 10.1111/j.1750-2659.2009.00091.x

Balicer, R. D., Omer, S. B., Barnett, D. J., & Everly, G. S. (2006). Local public health workers' perceptions toward responding to an influenza pandemic. *BMC Public Health*, 6(1), 1-8. doi: 10.1186/1471-2458-6-99

Bang, K., Weissman, D., Wood, J., & Attfield, M. (2005). Tuberculosis Mortality by Industry in The United States, 1990–1999. *International Journal of Tuberculosis and Lung Disease,* 9(4), 437–442. Retrieved from http://docserver.ingentaconnect.com/deliver/connect/

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027

iuatld/10273719/v9n4/s13.pdf?expires=1637464022&id=0000&titleid=3764&checksum=B5688DD4DEF143ED025B2DA89015C761

Borkenhagen, L. K., Mallinson, K. A., Tsao, R. W., Ha, S. J., Lim, W. H., Toh, T. H., Chong, K. S. (2018). Surveillance for Respiratory and Diarrheal Pathogens at The Human-Pig Interface in Sarawak, Malaysia. *PloS One,*13(7), e0201295. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6063427/pdf/pone.0201295.pdf

Cheng, V. C., Tai, J. W., Lee, W, Chan, W., Wong, S. C., Chen, J. H., & Ho, P. (2015). Infection control preparedness for human infection with influenza A H7N9 in Hong Kong. *Infection Control and Hospital Epidemiology,* 36(1), 87-92. Doi:10.1017/ice.2014.2

Cincinnati Children's Hospital Medical Center. (2012). Table of Evidence Levels: Levels of Individual Studies by Domain, Study Design, & Quality. In. Ohio, USA: Cincinnati Children's Hospital Medical Center.

Ezri, M. A. W. Press Release | The Prevention and Control of Infectious Diseases (Amendment) Act 2024. Malaysian Bar, 24 December 2024. Retrieved from https://www.malaysianbar.org.my/article/news/press-statements/press-statements/press-release-the-prevention-and-control-of-infectious-diseases-amendment-act-2024

Fleiss, J. L., Levin, B., & Paik, M. C. (1981). *Statistical methods for rates and proportions* (2nd ed.). New York: John Wiley & Sons.

Fry, A. M., Rutman, M., Allan, T., Scaife, H., Salehi, E., Benson, R., Carpenter, J. (2003). Legionnaires' Disease Outbreak in an Automobile Engine Manufacturing Plant. *Journal of Infectious Diseases*,187(6), 1015–1018. doi: 10.1086/368171

Garciam R., Spiegel, J. M., Yassi, A., Ehrlich, R., Romão, P., Nunes, E. A., Mabhele, S. (2020). Preventing Occupational Tuberculosis in Health Workers: An Analysis of State Responsibilities and Worker Rights in Mozambique. *International Journal of Environment Research and Public Health,*17(20), 7546. Doi:10.3390/ijerph17207546

Gershon, R. R. M., Magda, L. A., Qureshi, K. A., Riley, H. E. M., Scanlon, E., Carney, M. T., Sherman, M. F. (2010). Factors Associated with the Ability and Willingness of Essential Workers to Report to Duty During A Pandemic. *Occupational Environmental Medicine,* 52(10), 995-1003. doi: 10.1097/jom.0b013e3181f43872

Groenewold, M. R., Burrer, S. L., Ahmed, F., Uzicanin, A., & Luckhaupt, S. E. (2019). Health-related workplace absenteeism among full-time workers – United States, 2017–18 Influenza season. *Morbidity and Mortality Weekly Report,* 68(26), 577–582. doi:10.15585/mmwr.mm6826a1

Groenewold, M. R. (2019). Health-related workplace absenteeism among full-time workers—United States, 2017–18 influenza season. MMWR. Morbidity and mortality weekly report, 68

Groenewold, M. R., Konicki, D. L., Luckhaupt, S. E., Gomaa, A., & Koonin, L. M. (2013). Exploring National Surveillance for Health-Related Workplace Absenteeism: Lessons Learned from The 2009 Influenza A Pandemic. *Disaster Medicine and Public Health Preparedness,* 7(2), 160–166. doi:10.1017/dmp.2013.8

Hannes, K., Lockwood, C., & Pearson, A. (2010). A Comparative Analysis of Three Online Appraisal Instruments' Ability to Assess Validity in Qualitative Research. *Qualitative Health Research*, 20(12), 1736–1743. doi:10.1177/1049732310378656

Hodge, J.G., Gebbie, K.M., & Hartsfield, K.M. (2009). *Legal preparedness for public health emergencies: A framework for action*. J Law Med Ethics, 35, 27–32.

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027
Hong, Q. N., Pluye, P., Fabregues, S., Bartlett, G., Boardman, F., Cargo, M., Vedel, I. (2018). Mixed Methods Appraisal Tool (MMAT), version 2018.

Jennings, W. G. & Perez, N. M. (2020). The immediate impact of COVID-19 on law enforcement in the United States. *American Journal of Crime Justice*, 45(4), 690–701. doi:10.1007/s12103-020-09536-2

Joanna Briggs Institute. (2022). Critical appraisal tools.

Koonink L. M. (2020). Novel Coronavirus Disease (COVID-19) Outbreak: Now is the Time to Refresh Pandemic Plans. *Journal of Business Continuity & Emergency Planning*, 13(4), 1–15.

Luckhaupt, S. E., Sweeney, M. H., Funk, R., Calvert, G. M., Nowell, M., D'Mello, T., Arnold, K. E. (2012). Influenza-associated hospitalizations by industry, 2009–10 influenza season, United States. *Emerging Infectious Disease*, 18(4), 556. doi: 10.3201/eid1804.110337

Ma, L. L., Wang, Y. Y., Yang, Z. H., Huang, D., Weng, H., & Zeng, X.T. (2020). Methodological Quality (Risk Of Bias) Assessment Tools for Primary and Secondary Medical Studies: What Are They and Which Is Better? *Military Medical Research*, 7(7). doi:10.1186/s40779-020-00238-8

Malinen, S. K., Wong, J. H. K., & Naswall, K. (2020). Effective Workplace Strategies to Support Employee Wellbeing During A Pandemic. *New Zealand Journal of Employment Relations,* 45(2), 17–32. doi:10.24135/nzjer.v45i2.24

Maysm, N., Pope, C., & Popay, J. (2005). Systematically reviewing qualitative and quantitative evidence to inform management and policy-making in the health field. *Journal of Health Services Research & Policy*, 10, 6–20. doi:10.1258/1355819054308576

Ministry of Health, Malaysia. (2019). Policies and Procedures on Infection Prevention and Control, Third Edition. Retrieved from https://www.moh.gov.my/moh/press_releases/KKM%20Policies%20&%20Procedures%20on%20Infection%20Prevention%20and%20Control%202019.pdf

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA statement. *Annals of Internal Medicine,* 151(4), 264–269. doi: 10.7326/0003-4819-151-4-200908180-00135

Neu, N., Nee, M., Savitt, J., Schneider-Connelly, L., Choi, J., & Mosiello, L. (2020). COVID-19 in Pediatric Long-Term Care: How Infection Control and Prevention Practices Minimized The Impact Of The Pandemic On Healthcare Providers and Residents. *Journal of Pediatric Infectious Diseases Society*, 9(5), 626–629. doi:10.1093/jpids/piaa122

National Institute of Occupational Safety and Health (NIOSH). (2008). The work-related lung disease surveillance report, 2007. In: US Department of Health and Human Services, Centers for Disease Control and https://www.cdc.gov/niosh/docs/2008-143/default.html

Nyenswah, T., Massaquoi, M., Gbanya, M. Z., Fallah, M., Amegashie, F., Kenta, A., Soro, L. (2015). Initiation of a ring approach to infection prevention and control at non-Ebola health care facilities—Liberia, January–February 2015. Morbidity and Mortality Weekly Report, 64(18), 505. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4584827/pdf/505-508.pdf

O'Halloran, A. C., Lu, P. J., Williams, W. W., Schumacher, P., Sussell, A., Birdsey, J., Black, C. L. (2017). Influenza vaccination among workers—21 US states, 2013. American Journal of Infection Control, 45(4), 410–416. doi: 10.1016/j.ajic.2017.01.005

International Journal of Law, Government and Communication
EISSN : 0128-1763
Volume 10 Issue 42 (December 2025) PP. 384-423
DOI 10.35631/IJLGC.1042027
O'Halloran, A. C., Lu, P. J., Meyer, S. A., Williams, W. W., Schumacher, P. K., Sussell, A. L., Luckhaupt, S. E. (2018). Tdap vaccination among healthcare personnel—21 states, 2013. American Journal of Preventive Medicine, 54(1), 119–123.

Ross, J., Ehrlich, R., Hnizdo, E., White, N., & Churchyard, G. (2010). Excess lung function decline in gold miners following pulmonary tuberculosis. *Thorax,* 65(11), 1010–1015. doi: 10.1136/thx.2009.129999

Rutkow, L., Paul, A., Taylor, H. A., & Barnett, D. J. (2017). Perceived Facilitators and Barriers to Local Health Department Workers' Participation in Infectious Disease Emergency Responses. *Journal of Public Health Management and Practice,* 23(6), 644. doi: 10.1097/PHH.0000000000000574

Seyedin, H., Moslehi, S., Sakhaei, F., & Dowlati, M. (2021). Developing a hospital preparedness checklist to assess the ability to respond to the COVID-19 pandemic. East Mediterranean Health Journal, 2,131–141. doi: 10.26719/2021.27.2.131

Tak, S., Groenewold, M., Alterman, T., Park, R. M., & Calvert, G. M. (2011). Excess risk of head and chest colds among teachers and other school workers. J of School Health, 81(9), 560–565. doi: 10.1111/j.1746-1561.2011.00627.x

Turner, S., Lines, S., Chen, Y., Hussey, L., & Agius, R. (2005). Work-related infectious disease reported to the occupational disease intelligence network and the health and occupation reporting network in the UK (2000–2003). *Occupational Medicine*, 55(4), 275–281. doi:10.1093/occmed/kqi109

Uchida, M., Stone, P. W., Conway, L. J., Pogorzelska, M., Larson, E. L., & Raveis, V. H. (2011). Exploring Infection Prevention: Policy Implications from a Qualitative Study. *Policy, Politics, & Nursing Practice,* 12(2), 82–89. doi: 10.1177/1527154411417721

Vlieg, W. L., Fanoy, E. B., van Asten, L., Liu, X., Yang, J., Pilot, E., van der Sande, M. A. (2017). Comparing national infectious disease surveillance systems: China and the Netherlands. *BMC Public Health,* 17(1), 1–9. doi: 10.1186/s12889-017-4319-3

Waltenburg, M. A., Rose, C. E., Victoroff, T., Butterfield, M., Dillaha, J. A., Heinzerling, A., Fedak, K. M. (2021). Coronavirus disease among workers in food processing, food manufacturing, and agriculture workplaces. *Emerging Infectious Disease*, 27(1), 243. doi: 10.3201/eid2701.203821

Wong, E., Ho, K. F., Wong, S. Y., Cheung, A. W., & Yeoh, E. (2020). Workplace safety and coronavirus disease (COVID-19) pandemic: Survey of employees. *Bulletin of the World Health Organization.* doi: 10.2471/BLT.20.255893

Yue, X., Black, C., Ball, S., Donahue, S., De Perio, M. A., Laney, A. S., & Greby, S. (2017). Workplace interventions associated with influenza vaccination coverage among health care personnel in ambulatory care settings during the 2013-2014 and 2014-2015 influenza seasons. *American Journal of Infection Control*, 45(11), 1243–1248. doi: 10.1016/j.ajic.2017.05.016

Yue, X., Black, C., Ball, S., Donahue, S., de Perio, M. A., Laney, A. S. & Greby, S. (2019). Workplace interventions and vaccination-related attitudes associated with influenza vaccination coverage among healthcare personnel working in long-term care facilities, 2015–2016 influenza season. *Journal of American Medical Directors Association*, 20(6), 718–724. doi: 10.1016/j.jamda.2018.11.029

Zhang, M. (2021). Estimation of differential occupational risk of COVID-19 by comparing risk factors with case data by occupational group. *American Journal of Industrial Medicine*, 64(1), 39–47. doi:10.1002/ajim.23199