

**Impact factor isi 1.892**

المجلة العربية للعلوم الإنسانية والاجتماعية  
مجلة عربية محكمة وفقاً لتصنيف قاعدة البيانات

EBSCO

العدد الرابع والثلاثون / كانون أول \_ 2025

**Ways to prevent the transmission of diseases**

**In several health centers affiliated with the Ministry of Health in  
Saudi Arabia**

Halimah Mohammed Almalayo, 2025

halima.almalayo@smartisland.university

halimahmo7ammed@gmail.com

Dr. Dalia younis

Dyounis1@aast.edu

Dalia\_younis1@yahoo.com

Dr. Sara Ahmed Adel

S\_Adel@alexu.edu.eg

drsara\_economic@yahoo.com

Dr. Walid A. S. Seddik

waseddik@iau.edu.sa

Smart Island University

**Abstract:**

The spread of infectious diseases indicates that the workplaces may be a center for the transmission of the disease, especially in healthy places if the necessary precautions are not taken. From the recommendations of the

Centers for Disease Control by setting several strategies and laws to reduce the spread of diseases in the workplace, including: enhancing hand hygiene, cleaning the work area and tools, wearing personal protection equipment. this research indicates an increase in instructions education and health awareness to implement work strategies, and behavioral interventions may be needed by the facility, employees and patients. This ,study investigates the health awareness of employees and visitors identifies the main challenges, and explains strategies, laws and solving the challenges after artificial intelligence ,educational information including identifying the gap and clarifying it with an effective (Ai) questionnaire, It provides recommendations for institutions to application protect employees and visitors. Mention the recommendations for future research.

**Key words:** transmission disease, hand hygiene, personal protection equipment, protect employees, health awareness, Artificial intelligence.

## **1. Introduction**

Commitment and loyalty to follow the guidelines of employees in the health facility, the guidelines of patients and all clinical procedures for the appropriate disinfection and sterilization approved by the Environmental Protection Agency and control of the necessary infection to ensure the health of patients. [1]

Professional cleansing and sterilization of medical practices from surgeries to medical procedures is performed. Where one of the studies indicated that surgical devices or surgical tools that are exposed to patient tissues or mucous membranes were examined. The main risks that result from all these procedures are to properly transmit pathogens and failure from cleansing or sterilizing equipment that carries a risk while breaching barriers on the surfaces as well. [2]

The transmission of emerging pathogens and the risk of a person who transports the disease to another person to one of the known diseases (such as hepatitis B virus). Hepatitis B: It is a virus that the patient has been exposed to, causing hepatitis B and weak immunity. It can be (short and ,severe) or (chronic and long-term). Chronic hepatitis B can cause death cirrhosis and liver cancer. It can be transmitted by touching infected body fluids such as blood, saliva and vaginal fluids, and is also transmitted through a pregnant woman to her child [3]

Commitment to cleaning is necessary before cleansing and sterilization at :the high level because pollution is removed from visible soils such as (organic and inorganic materials) and prevents their accumulation on things and surfaces by using distilled water and this is done manually or mechanically with cleaners or enzymatic products. The disinfection ,describes as a process that kills some or all pathogenic microorganisms with the exception of bacterial germs, using chemicals and alcoholic products approved by EPA, CDC and OSHA. Sterilization describes as a process of destroying or killing all microbial life, using physical and chemical methods. [4]

### **1.1 History of the Occupational Safety and Health Administration (OSHA)**

Established in 1970 under the Occupational Safety and Health Act signed by President Richard Nixon in the United State. The reason of created OSHA`s increasing workplace risks injuries, illnesses, and fatalities during the industrial expansion. OSHA`s mission is to assure safe and healthful working conditions for workers by setting and enforcing standards, as well as providing training, education and assistance to employers across various industries. Before OSHA, occupational safety regulations were limited,

and workplace hazards were common. Rosner and Markowitz (2020) explain that OSHA generated to set national standards and ensure that economic growth should not come at the expense of workers' health and safety. [5]

## **1.2 Modern Developments and Responsibilities**

Study confirms of Howard and Hearl (2012) that OSHA faces new challenges from technological innovation, chemical exposure and the changing work environment The administration has responded by developing new standards. OSHA collaborates with government agencies, unions, and employers to promote shared responsibility in maintaining safety standards.[6]

## **1.3 Ongoing Challenges**

Despite these advancements, challenges remain. Park, Johnson, and Hong (2020) discovered significant noncompliance in certain businesses, underscoring the continued need for improved education and enforcement. Their results highlight the fact that although OSHA's presence has generally increased awareness and compliance, regular monitoring and updated safety training are necessary to successfully prevent workplace dangers.[7]

## **1.4 Introduction and Establishment of the CDC**

The Centers for Disease Control and Prevention (CDC) is a significant agency in the United Kingdom, created in 1946, that focuses on environmental and occupational health issues, global health hazards, and the control of global protection illnesses. (CDC, 2015).[8]

## **1.5 Role and Mission of the CDC**

The Centers for Disease Control and Prevention, part of the United States Department of Health and Human Services (HHS), conduct substantial epidemiological research and collaborate with hospitals and other organizations to prevent disease outbreaks and improve health outcomes.[9]

## **1.6 Contributions to Global Health Research**

In (2003), (CDC) played a role in controlling parasitic diseases such as cysticercosis, showing the Center's influence on a global scale as well as with the World Health Organization (WHO).[9]

## **1.7 Development of Health Guidelines and Standards**

in 2017 These guidelines give healthcare professionals current information on infection prevention, including how to use antibiotics appropriately, aseptic procedures, and environmental controls in surgical settings.[10]

## **1.8 Reaction to Worldwide Health Emergencies**

the H1N1 influenza outbreak in 2009, the Ebola virus outbreak in 2014-2016, the Zika virus outbreak in 2016, and the COVID-19 pandemic most recently. The CDC has acted as a national and international resource for data-driven tactics and testing procedures during these instances.[11]

## **1.9 Broader Public Health Initiatives**

The CDC's mandate also includes improving nutrition, preventing occupational injuries, and preventing environmental exposures. The

agency's initiatives include efforts to reduce tobacco use and encourage physical activity through programs such as the National Center for Chronic Disease Prevention and Promotion and the National Institute for Occupational Safety and Health (NIOSH). Health the CDC continues to influence public health behavior and policy.[12]

### **1.10 Public Health Education and Communication**

(CDC) Public Health Education and Communication. It works to raise awareness of health risks and preventive behaviors through campaigns, digital platforms, and community partnerships.[13]

## **2. protect employees and visitors from transmission disease in workplace**

vaccine agienst : such as hepatitis B vaccine it's safe and effective usually given to chaildren after birth with boosters a few weeks later additional doses may be needed for those with poor immune function and ,recommended to people are in medical staff workers, rescue teams policemen, patients receiving dialysis.etc. It offers nearly 100% protection against the virus. [CDC] [17][14 ][16]

### **2.1 Before any procedure**

Go over the patient and takemedical history to make sure of any special precautions personal protection equipment ,PPE making sure to wear gloves, masks, eye protection [OSHA] [15] if it's necessary for the employees in workplace also the visitor should be carefully for masks to .previent transmission diseaseAccording to CDC, the employees must make sure all instruments are sterilization. [17]

### **2.2 Hand cleaning**

before and after the procedure using sanitizer, soap, and water. Ensuring proper hand hygiene stands as the fundamental of infection control wash hands with soap and water or use alcohol-based hand sanitizers Hand hygiene in two ways, before, during, and after patient care .[18]

A- Hand wash technique (washing with soap and water) duration 40 to 60 seconds. (After washing, dry hands with tissues)

B- Hand rub technique (using gel sanitizer) duration 20 to 30 second (Let hands dry on their own) The five moments of hand hygiene (Before touching the patient - before performing a clean procedure - after touching the patient - after touching the patient's surroundings - after exposure to blood and body fluids)[ADA][18]

### **2.3 after procedure**

In every single use making sure to throw after use, get rid of these items are very important for safety and protection. [EPA][19]

After getting done the procedure, make sure to throw everything in the trash right away. [OSHA][15]

### **3. Management of waste and hazard**

office wastes are divided into 4 different colours yellow, red, white, and black.

- Needles, blades, and other tools will be thrown on the white waste. [FDA][18]
- Cotton, gauze, and bandages with blood, and tooth other tissue goes into the yellow bag. [EPA][19]

- Plastic contaminated item like syringe, gloves, tubes from drips, plastic suction tips or tube go into red container. [EPA][19]
- Personal protective equipment like masks and gowns will go to the yellow container, and all contaminated container with fluid and blood that contact with the patient will be labelled with biohazard. [EPA][19]

#### **4. List the steps of handling contaminated instruments post procedure.**

##### **4.1 Before disinfection or sterilization**

all instruments must be thoroughly cleaned and rinsed, ensuring that all debris is completely removed during the cleaning process. Ophthalmic instruments should be cleaned separately from other surgical tools, and contaminated instruments must be cleaned in an area distinct from where packaging and sterilization are performed. [20-21]

##### **4.2 Disinfection and sterilization**

important for patient care. Recommended chemical disinfectants for patient care instruments and instruments. Their selection based on concentration and exposure time depends on the risk of infection associated with use of the item.[20]

The rotational use of disinfectants in environments has been recommended in an attempt to prevent the emergence and development of resistant microbes. [22-23]

The definition of cleaning in medical is the physical removal of visible dirt, dust, blood, body fluids, and other contaminants from surfaces, equipment, and the environment manually or mechanically using water with or without detergents or enzymatic, and mechanical action (like wiping or scrubbing).

Disinfection and sterilization have three methods. First, critical items (contact sterile tissue) such as surgical instrument must be sterilized before use as it is Glutaraldehyde is one of the choice in high-level disinfect; second, semi critical items (contact mucous membranes or nonintact skin) must be high-level disinfected with chemicals such as Glutaraldehyde, hydrogen peroxide, OPA, peracetic acid, and peracetic acid with hydrogen peroxide, and a chlorine-based system have been cleared by the FDA; third, noncritical items (contact intact skin) should receive low-level disinfection. Start step prevention is cleaning removes germs and organic matter before disinfection or sterilization. Using scrubbing, brushing, flushing and ultrasonic bath for pre-cleaning treatment. The device contains a remote unit for magnetic mechanical washing and a container for ozone sterilization with a reactor based on dielectric barrier discharge. [24-25]

Step two: immerse contaminated substance in high-level disinfectant (or chemical sterilant such as enzymatic and make sure it's contact the internal channels disinfectant should contact all accessible channels, expose for a time recommended for specific products.

Step three: rinse all channels with sterile water high-quality potable water to high quality rains step or can use filtered water or tap water fewer quality rains but good.

Step four: to drying rinse the insertion tube and inner channels with alcohol if needed and dry with forced air recommended to use drying machine before storage.

Step five: store instrument in a way that prevents recontamination and promotes drying using sealing and pouch for covering before autoclave.

[26]

Last step: it's important to using autoclave machine for final sterilization before using for a patient.

## **5. Solving the challenges facing work in the health field with the presence of artificial intelligence AI**

Artificial intelligence has the potential to positively impact the working conditions of nurses and doctors. According to research done in an intensive care unit, AI increased autonomy, decreased stress, and boosted motivation and output. [27]

### **5.1 The role of AI in early disease diagnosis**

Transforming artificial intelligence's potential for diagnosing and predicting the spread of infectious diseases has heralded a new age in healthcare. The introduction of AI technologies is revolutionizing various aspects of medical practice, significantly advancing innovations in early detection, personalized treatment, and efficient management of public health systems, resulting in better patient outcomes and more effective public health interventions. [28] The paper emphasizes how AI is used in healthcare, especially in the diagnosis and treatment of infectious diseases. It implies that AI improves the expertise of healthcare professionals, lessens weariness, and frees up more time for patient care. The results suggest that AI will play a bigger role in medicine in the future, with patients interacting with technology before seeing doctors. [29] AI models created to safeguard data sources' privacy can assist in resolving data security issues. Furthermore, incorporating AI into wearable equipment such as fitness trackers and smartwatches holds great promise for improving preventative healthcare and facilitating earlier disease detection. By improving the prediction of illness risk and progression, artificial intelligence (AI) is becoming a more significant part of genomics.

Through the integration of large-scale genomic data with clinical and environmental factors, AI systems can identify individuals predisposed to conditions such as Alzheimer's disease, diabetes, various forms of cancer, thereby supporting early intervention and personalized medicine, [30] and early detection of ectopic pregnancies, assisting gynaecologists in providing timely treatment options.[31] In this review, cardiac and respiratory monitoring were identified to be the two most clinically mature applications utilizing smart textiles [32] AI technologies have the ability to detect apnea, hypoventilation, and irregular breathing patterns with a reliability similar to standard breathing belts. [33]

## **5.2 Harnessing Innovation and Gaining Competitive Advantage with AI in Human Resource Management within Health Ecosystems**

The health sector has witnessed significant technological improvement, with artificial intelligence being merged with function of human resource management is a strategic development that fosters innovation and enhances competitive advantage. It increases the speed and efficiency of HR activities and reshapes the mechanism for strategic decision making. The development of AI applications in medical practice. AI impacts clinical, diagnostic, rehabilitative, surgical, and predictive practices. In clinical decision making and disease diagnosis, AI plays a key and strong role, allow accuracy and efficiency. AI's ongoing development extends to robotics, where it helps in surgeries, medication delivery, and patient therapy, personalizing care through predictive analytics. [34]

## **5.3 success studies of AI in healthcare management**

The Cleveland Clinic in Ohio, in collaboration with IBM, has integrated artificial intelligence AI into its healthcare planning processes to enhance the personalisation of patient care. This initiative enables the aggregation and analysis of extensive datasets to develop individualised healthcare

plans that address each patient's unique medical profile. By moving beyond traditional standardised treatment models, the AI driven approach facilitates more precise diagnostics, optimised treatment strategies, and improved patient outcomes. This partnership underscores the transformative potential of AI in advancing a patient centric and data driven model of healthcare delivery. Johns Hopkins Hospital in Maryland, in collaboration with GE, has adopted predictive artificial intelligence techniques to enhance the efficiency of hospital operations and patient management. This partnership focuses on leveraging AI driven predictive analytics to forecast patient flow, optimize resource utilization, and minimize waiting times. As a result, hospital visits have become more streamlined and time efficient, improving both operational performance and patient satisfaction. Advanced AI integration enables the organization to tackle significant administrative and logistical issues in healthcare delivery, encouraging proactive hospital resource management and based on data selection. This project is a prime example of how AI applications can promote efficiency, cut down on systemic delays, and improve the general experience of patients, all of which can lead to significant improvements for medical operations. [35]

#### **5.4 AI risk management in healthcare**

In healthcare, artificial intelligence has become growing in importance, especially in the areas of disease screening, diagnosis, management, and treatment. By lowering errors and enhancing decision-making across the care method, its applications support medical risk management. Artificial intelligence (AI)-powered solutions, like statistical apps and machine-learning voice recognition, help detect illnesses like tumors as well as stroke promptly to prevent medical delays. In addition, electronic checks when intelligent clinical decision support (CDS) systems enhance

adherence to clinical guidelines and best practices, reducing the possibility of poor outcomes and incorrect measures. [36]

The growing combination of artificial intelligence in healthcare introduces notable ethical and safety challenges. Major concerns include patient safety, data privacy, and regulatory ambiguity. Additionally, the blurred nature of many AI models, often functioning as “black boxes”, creates difficulties for clinicians in understanding and trusting AI driven decisions.[37-38]

There are significant risk and moral problems related to the expanding application of AI in healthcare. Patient safety, data privacy, and regulatory ambiguity are major issues. Additionally, clinicians find it challenging to comprehend yet have faith in AI-driven choices because of the unclear structure of many AI models, which frequently operate as "black boxes." [39-40]

## **5.5 More application of AI**

Convolutional neural networks (CNNs), for instance, are employed in medical imaging. For instance, CNN- powered diagnostic tools for MR imaging tumor detection frequently do not provide explicit justifications for their estimations, which makes it challenging for medical professionals to understand or have faith in their decision-making processes. [41]

## **5.6 The future of AI in healthcare**

Artificial intelligence is a key element in advancing precision medicine and modern healthcare. With rapid progress in imaging and recognition technologies, AI is increasingly used in radiology, pathology, and patient communication. However, widespread adoption requires regulatory approval, system integration, standardization, physician training, financial

support, and ongoing updates. Although these challenges are significant, it is believed that they will be gradually solved as technology develops. [29

## 6. Methodes:

Study questioners can be fined the challenges that face the researcher.

A random was chosen In several health centers affiliated with the Ministry of Health In Kingdom of Saudi Arabia group of employees working in health and visitors to make this questionnaire. The study used the questionnaire tool, to achieve the goals of research in science with the awareness of the community with health culture in the workplace to reduce risks to employees and visitors. The questionnaire date 5 October 2025.

## 7. Result:

Table1 show the result of questionnaire studied on employees and visitor

Quaestion	Yes	No	Sometime	Qulcolation
Have you attended any awareness program or workshop on disease prevention	%69.6	%30.4		%100
Do you adhere to using personal protective equipment when needed(masks/gloves)	%65.2		%34.8	%100
Do you wash your hands / before and after working meeting with patients	%73.9		%26.1	%100
Are hand sanitizers sufficiently available in healthcare facilities	%87	%13		%100
Are medical waste disposal containers clearly and easily accessible	%100			%100

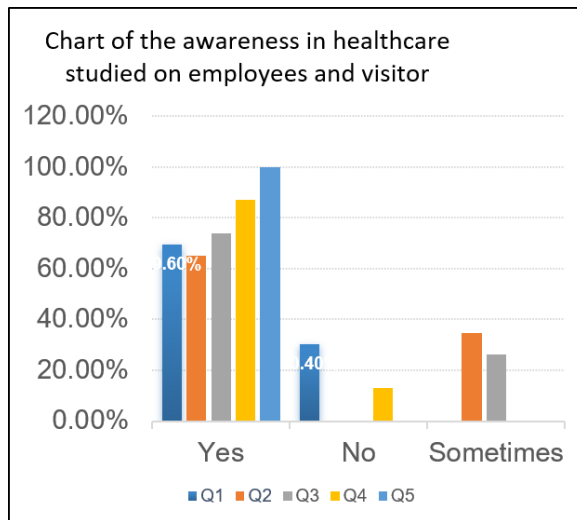


Fig1. showing the Chart of the awareness in healthcare studied on employees and visitor

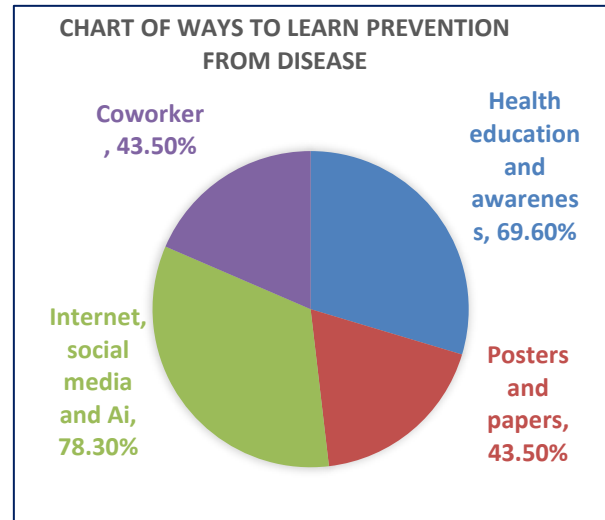


Fig2. Showing the deferint ways to learning prevention from diseases studied on employees

## 8. Conclusion:

The researcher was used to process the data mentioned in the research statistical means (Celsius) and Charting by Excel program. From data there are two biggest challenges compliance with the use of PPE:34.8% said sometimes do so and compliance with handwashing: 26.1% said they never wash their hands regularly. According to the analysis of the questionnaire results regarding health culture and risk reduction among employees and visitors, it can be concluded that the organization demonstrates strong effectiveness in establishing and maintaining the necessary safety infrastructure. However, significant challenges remain in ensuring consistent behavioral compliance and achieving comprehensive training coverage across all personnel.

## 9. Recommendations:

- Mandatory Health Awareness Education:

It is recommended that all visitors be required to complete a health awareness course prior to their scheduled appointments. Findings from the survey indicate

that digital platforms specifically the internet, social media, and artificial intelligence applications constitute the most effective mediums for disseminating information related to disease prevention and control. Integrating these tools into previsit education initiatives can substantially improve public understanding and compliance with infection prevention measures.

- **Institutionalization of Behavioral Compliance:**

Compliance with personal protective equipment (PPE) usage and hand hygiene protocols should be established as a mandatory and measurable behavioral competency for both employees and visitors. This competency should be systematically evaluated, and instances of non-compliance should be linked to corrective or disciplinary procedures. Such an approach promotes accountability and reinforces the organizational culture of safety.

- **Strengthened Monitoring and Enforcement Mechanisms:**

To ensure sustained adherence to infection prevention standards, regular and unannounced supervisory inspections should be implemented. These random audits will serve as an objective mechanism to evaluate compliance, identify areas requiring improvement, and uphold a consistent standard of protection across all organizational levels.

## **10. Recommendation for Future Research**

Future research should include precise measures of knowledge, such as correct handwashing duration, and use qualitative methods to explore reasons for non-compliance. Expanding the sample to different employee levels and assessing training effectiveness over time are also recommended. Collaboration between researchers and management is essential to identify and address factors influencing compliance.

## Reference:

- 1- Centers for Disease Control and Prevention, 2008. *Guideline for disinfection and sterilization in healthcare facilities*, 2008. <https://www.cdc.gov/infectioncontrol/pdf/guidelines/disinfection-guidelines.pdf> (19.12. 2017)
- 2- Monarca, S., Grottolo, M., Renzi, D., Paganelli, C., Sapelli, P., Zerbini, I and Nardi, G., 2000. *Evaluation of environmental bacterial contamination and procedures to control cross infection in a sample of Italian dental surgeries Occupational and environmental medicine*, 57(11), pp.721-726
- 3- WHO publishes new guidelines on HIV, hepatitis and stis for key populations (no date) World Health Organization. Available at: <https://www.who.int/news/item/29-07-2022-who-publishes-new-guidelines-on-hiv-hepatitis-and-sti-for-key-populations>.
- 4- Guideline for .Introduction, Methods, Definition of Terms CDC.gov *Disinfection and Sterilization in Healthcare Facilities 2008* <https://www.cdc.gov/infectioncontrol/guidelines/disinfection/introduction.html>
- 5- Rosner, D., & Markowitz, G. (2020). *A short history of occupational safety and health in the United States*. American Journal of Public Health, 110(5), 622–628.
- 6- Howard, J., & Hearl, F. (2012). *Occupational safety and health in the USA: Now and the future*. Industrial Health, 50(2), 80–83.
- 7- Park, S., Johnson, M. D., & Hong, O. (2020). *Analysis of Occupational Safety and Health Administration (OSHA) noise standard violations over 50 years: 1972 to 2019*. American Journal of Industrial Medicine, 63(7), 616–623.
- 8- Centers for Disease Control and Prevention. (2015). *Centers for Disease Control and Prevention–CDC*.

- 9- Schantz, P. M., & Tsang, V. C. (2003). *The US Centers for Disease Control and Prevention (CDC) and research and control of cysticercosis*. *Acta Tropica*, 87(1), 161–163.
- 10- Berríos-Torres, S. I., Umscheid, C. A., Bratzler, D. W., Leas, B., Stone, E. C., Kelz, R. R., ... & Schechter, W. P. (2017). *Centers for Disease Control and Prevention guideline for the prevention of surgical site infection, 2017*. *JAMA Surgery*, 152(8), 784–791.
- 11- CDC, A. W. (2020). *Centers for Disease Control and Prevention*.
- 12- Centers for Disease Control and Prevention. (2024). *About chronic diseases*. U.S. Department of Health and Human Services. Retrieved from <https://www.cdc.gov/chronic-disease/about/index.html>
- 13- Centers for Disease Control and Prevention. (2024). *Crisis and Emergency Risk Communication (CERC): About CERC*. U.S. Department of Health and Human Services. Retrieved from <https://www.cdc.gov/cerc/php/about/index.html>
- 14- World Health Organization. (2025). *Hepatitis B*. WHO. <https://www.who.int/news-room/fact-sheets/detail/hepatitis-b>
- 15- Occupational Safety and Health Administration (OSHA). *Bloodborne Pathogens Standard (29 CFR 1910.1030)*. <https://www.cdc.gov/dental-infection-control/hcp/dental-ipc-faqs/index.html>
- 16- Centers for Disease Control and Prevention (2024). *Guidelines for Infection Control in Dental Health-Care Settings*. CDC. <https://www.cdc.gov/dental-infection-control/hcp/dental-ipc-faqs/index.html>
- 17- American Dental Association. (2022). *Infection Control Recommendations*. ADA. <https://adanews.ada.org/ada-news/2022/august/infection-control-guide-from-ada-revised-for-a-post-covid-world/>
- 18- Environmental Protection Agency. (2016). *Dental Waste Management Guidelines*. EPA. <https://www.epa.gov/eg/dental-effluent-guidelines>

- 19- Food & Drug Administration. (2023). *Best Way to Get Rid of Used Needles and Other Sharps*. FDA. [www.fda.gov/safesharpsdisposal](http://www.fda.gov/safesharpsdisposal)
- 20- Kim, J. H. (1987). *Intraocular inflammation of denatured viscoelastic substance in cases of cataract extraction and lens implantation*. *Journal of Cataract & Refractive Surgery*, 13(5), 537-542.
- 21- Herwaldt, L. A., & Rutala, W. A. (1996). *Disinfection and sterilization of patient-care items*. *Infection Control & Hospital Epidemiology*, 17(6), 377-384.
- 22- Murtough, S. M., Hiom, S. J., Palmer, M., & Russell, A. D. (2001). *Biocide rotation in the healthcare setting: is there a case for policy implementation?*
- 23- Murtough, S. M., Hiom, S. J., Palmer, M., & Russell, A. D. (2002). *A survey of rotational use of biocides in hospital pharmacy aseptic units*. *Journal of Hospital Infection*, 50(3), 228-231.
- 24- Rutala, W. A., & Weber, D. J. (2016). *Disinfection and sterilization in health care facilities: an overview and current issues*. *Infectious disease clinics of North America*, 30(3), 609.
- 25- Patiño-Marín, N., García, L. D. V., López, E. C. A., Medina-Solís, C. E., Zumarán, A. M., Rider, R. M., ... & Salas Sr, M. (2025). *Sterilization and Disinfection: Ensuring Infection Control in Dental Practices*. *Cureus*, 17(2).
- 26- Rutala, W. A., & Weber, D. J. (2019). *Guideline for disinfection and sterilization in healthcare facilities*, 2008. update: May 2019.
- 27- Bacha, A. (2025). *Unveiling Frontiers: Hybrid Algorithmic Frameworks for AI-Driven Mental Health Interventions*. *AlgoVista: Journal of AI and Computer Science*, 2(1), 1-8
- 28- Hudu, S. A., Alshrari, A. S., Abu-Shoura, E. A. J. I., Osman, A., & Jimoh, A. O. (2025). *A Critical Review of the Prospect of Integrating Artificial Intelligence in Infectious Disease Diagnosis and Prognosis*. *Interdisciplinary Perspectives on Infectious Diseases*, 2025(1), 6816002.
- 29- Wani, S. U. D., Khan, N. A., Thakur, G., Gautam, S. P., Ali, M., Alam, P., ... & Shakeel, F. (2022, March). *Utilization of artificial intelligence in disease prevention: Diagnosis, treatment, and implications for the healthcare workforce*. In *Healthcare* (Vol. 10, No. 4, p. 608). MDPI.

- 30- Zaman, Q. (2024). The role of artificial intelligence in early disease detection: transforming diagnostics and treatment. *Multidisciplinary Journal of Healthcare (MJH)*, 1(2), 43-54.
- 31- Aamir, A., Iqbal, A., Jawed, F., Ashfaque, F., Hafsa, H., Anas, Z., ... & Mansoor, T. (2024). Exploring the current and prospective role of artificial intelligence in disease diagnosis. *Annals of Medicine and Surgery*, 86(2), 943-949.
- 32- Karim, M. R., & Sarker, M. T. H. (2024). *Prospect Of Using AI-Integrated Smart Medical Textiles For Real-Time Vital Signs Monitoring In Hospital Management & Healthcare Industry*. *American Journal of Advanced Technology and Engineering Solutions*, 4(03), 01-29.
- 33- Ghaffar Nia, N., Kaplanoglu, E., & Nasab, A. (2023). Evaluation of artificial intelligence techniques in disease diagnosis and prediction. *Discover Artificial Intelligence*, 3(1), 5.
- 34- Temjanovski, R., Loku, A., & Bezovski, Z. (2025). Transforming Human Resource Management in Healthcare: The Role of Artificial Intelligence and Industry 5.0. *Journal of Economics*, 10(1), 54-71.
- 35- Bhagat, S. V., & Kanyal, D. (2024). Navigating the future: the transformative impact of artificial intelligence on hospital management-a comprehensive review. *Cureus*, 16(2).
- 36- Ferrara, M., Bertozzi, G., Di Fazio, N., Aquila, I., Di Fazio, A., Maiese, A., ... & La Russa, R. (2024, February). Risk management and patient safety in the artificial intelligence era: a systematic review. In *Healthcare* (Vol. 12, No. 5, p. 549). MDPI.
- 37- Babic, B., Gerke, S., Evgeniou, T., & Cohen, I. G. (2021). Beware explanations from AI in health care. *Science*, 373(6552), 284-286.
- 38- Goktas, P. (2024). Ethics, transparency, and explainability in generative ai decision-making systems: A comprehensive bibliometric study. *Journal of Decision Systems*, 1-29
- 39- Rudin, C. (2019). Stop explaining black box machine learning models for high stakes decisions and use interpretable models instead. *Nature machine intelligence*, 1(5), 206-215.
- 40- Tonekaboni, S.; Joshi, S.; McCradden, M.D.; Goldenberg, A. What clinicians want: Contextualizing explainable machine learning for clinical end

use. In Machine Learning for Healthcare Conference; PMLR: Cambridge MA, USA, 2019; pp. 359–380.

41- Hung, L. H., Wu, Z. J., Yan, C. H., & Chen, C. L. (2025). *Internet of Things and Autonomous Robots to Develop Intelligent Solutions for Sterilization and Disease Prevention*. *Engineering Proceedings*, 89(1), 25.