Template for Evidence(s)
UI GreenMetric Questionnaire

University : Alexandria
Country : Egypt
Web Address : https://alexu.edu.eg/

[1] Setting and Infrastructure (SI)

[1.22] Health infrastructure facilities for students, academics and administrative staffs' wellbeing

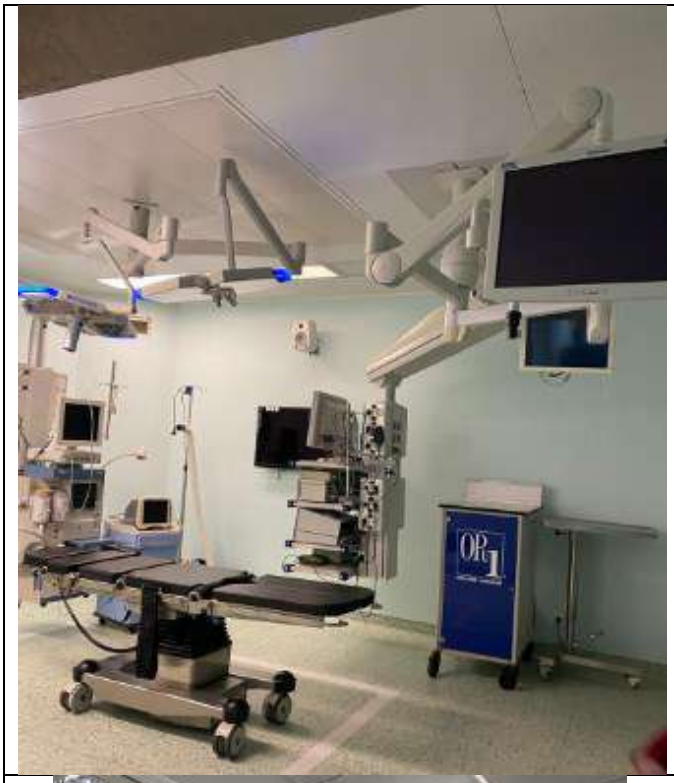
1. El-Mosaat hospital (Faculty of Medicine, Alexandria University)

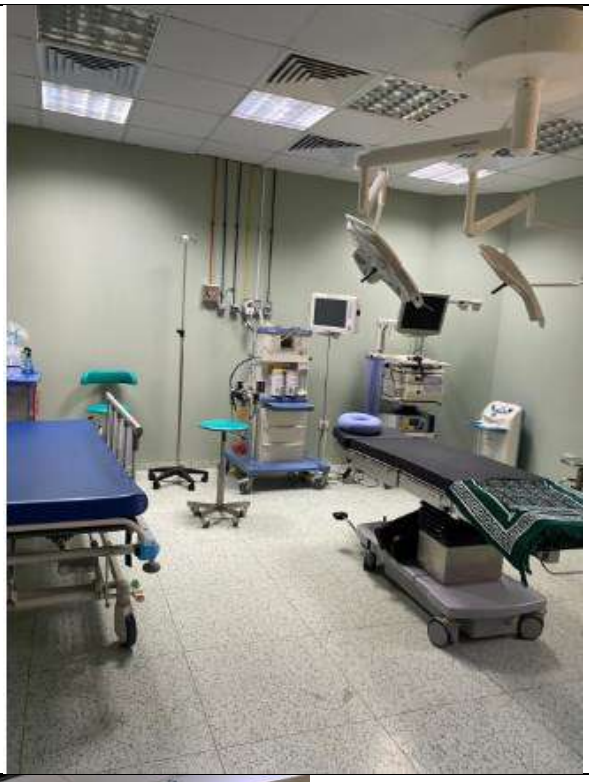
2. El Hadra Hospital (Faculty of Medicine, Alexandria University)

3. EL-shatby hospital (Faculty of Medicine, Alexandria University)

Main University Hospital

Healthcare Units at Alexandria University





Description:

1. The Faculty of medicine, Alexandria university has 12 hospitals, which is built on 225867 square meter surface area with all its different campuses including Main University Medical Complex, ELshatby, Elhadara, Smouha, Elmoassat and Borg Elarab campus. These hospitals are an integral part of the medical services provided by the university and play a crucial role in training students while offering healthcare to the local community.
2. Students teaching rooms compromise 12443.36 square meter from the faculty total surface area.
3. Alexandria University Medical Complex compromise seven buildings including Academic building, internal medicine building, Surgery building, conference center, Training center, Outpatient clinics, New university hospital building with total surface area 77154.
4. EL-shatby hospital compromise one building for obstetrics and gynecology department with total surface area 33288 square meter.
5. El Hadra Hospital compromise two buildings for orthopedics and neuropsychiatry with total surface area 21975 square meter.
6. Smouha hospital compromise two buildings for Emergency and pediatrics with total surface area 23691 square meter.
7. El-Mosaat hospital compromise eighteen teaching rooms with total surface area 23104 square meter.
8. The University Hospital contains 22 clinic as therapeutic units in all Faculties.

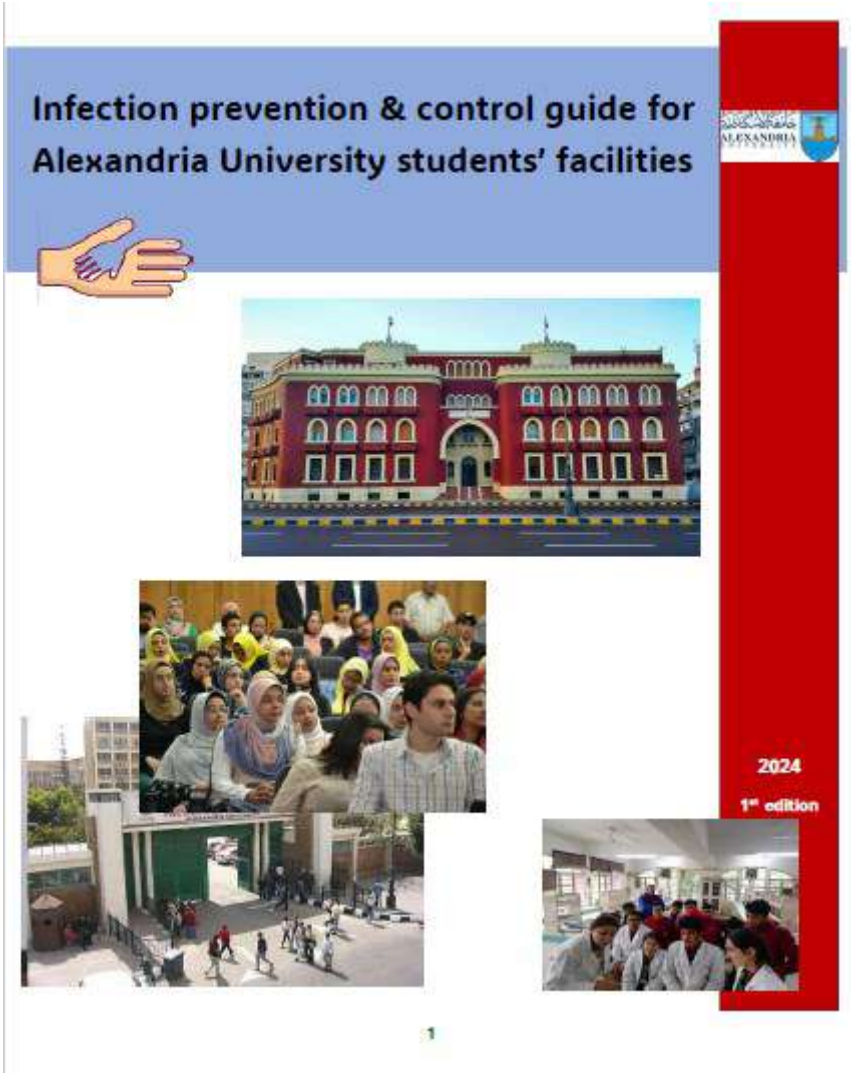
Alexandria University hosts several hospitals that provide a variety of medical services. Here's a list of the primary hospitals along with the services they offer:

1. **Main University Hospital (El Meery)**: This hospital serves as a comprehensive medical center offering a wide range of services including emergency care, surgeries, and specialized treatments.
2. **El Shatby Hospital for Obstetrics and Gynecology**: Specializes in women's health, particularly in pregnancy, childbirth, and postpartum care. It also includes a pediatric department catering to newborns and children.
3. **El Shatby Pediatric Hospital**: Focused on pediatric care, this hospital provides services for children, including general health check-ups, treatments for acute illnesses, and emergency care.
4. **Al Mowasat University Hospital**: Offers a wide array of medical services, including surgery, internal medicine, and specialty consultations.
5. **Smouha University Specialized Hospital**: Known for advanced treatments, including pediatric cardiac care and various surgical specialties, such as gynecological oncology and heart surgery.
6. **El Hadara Hospital (Queen Nariman Hospital)**: Focuses on orthopedics and neuropsychiatry, offering specialized services for musculoskeletal conditions and mental health.
7. **New University Hospital**: Equipped with modern facilities, it provides general medical services and specialized care across various fields.
8. **One-Day Medical Services Center**: Offers outpatient services and minor procedures that do not require overnight hospitalization.

These hospitals have seen significant development recently, enhancing their capacity and service offerings to better meet the healthcare needs of Alexandria and surrounding areas.

An initiative of the Infection Control Unit at the Faculty of Medicine, Alexandria University

Guideline for Infection Control in Student Facilities and Teaching Buildings at Alexandria University (attached Pdf)



As part of its commitment to sustainable development for improving environmental affairs and serving the community, Alexandria University has taken a pioneering role, being the first among Egyptian universities to adopt the idea of creating a comprehensive guide for correct procedures and practices that meet infection control recommendations within its facilities that serve students. This extends not only to the clinics in the colleges and institutes of the university but also to student residences, lecture halls, classrooms, laboratories, sports fields, and various other facilities frequented by students at Alexandria University.

The vision behind the university's initiative to develop this guide is to establish a framework for practices, behaviors, and requirements for all students and staff at Alexandria University, based on the principles and guidelines of infection control. This guide will serve as a reference for safeguarding the health and safety of students and staff, ensuring sustainability, and positively impacting the

community in Alexandria. It will also serve as a model in this regard, with the guide being made easily accessible to the target audience both in printed format and electronically for ease of use and review when needed by all students and staff.

The goal of making this guide available to those interacting with Alexandria University, regardless of their roles, is to promote proper health practices among students and staff to ensure infection control and reduce its risks. This will improve working conditions, reduce the spread of contagious diseases, and raise health awareness within the university's facilities. It also encourages the adoption of proper procedures for environmental cleanliness and personal hygiene within the university's campuses, faculties, and institutes.

This initiative was accomplished through a team formed to represent all academics specializing in infection control at Alexandria University, including faculty members from the Faculty of Medicine, the Medical Research Institute, the High Institute of Public Health, and the Faculty of Nursing. This guide highlights the university's supportive role in all pioneering and innovative ideas that have a positive impact in various fields: socially, by enhancing individual daily practices; health-wise, by promoting sustainable health culture; and economically, by reducing infection rates among students and staff, thus relieving the economic burden on the university and the state in terms of medical treatment costs.

The guide presents, in a simplified yet scientifically accurate manner, the essential recommendations that must be followed and the correct procedures to minimize the risk of exposure to infections in various university facilities. It also includes instructions on dealing with incidents such as spills (vomit, bleeding, etc.) and primary guidelines for unexpected situations like bites or injuries. The team behind the guide hopes that its dissemination will lead to maximum benefit, earn the approval of its readers, and contribute effectively to the development of our beloved country. We also hope that we have fulfilled the mission entrusted to us by the university leadership, achieving their satisfaction and meeting their expectations in supporting this pioneering initiative.

Additional evidence link: https://alexu.edu.eg/index.php/about-us-ar
Link for Sustainable Development: https://alexu.edu.eg/index.php/en/sustainable-development
https://alexu.edu.eg/index.php/en/2015-11-24-10-38-07/ranking?id=6011
http://sustainability.alexu.edu.eg/
Link for Green University:
https://alexu.edu.eg/index.php/?option=com_content&view=article&id=5932&catid=21&lang=ar-AA

Health Infrastructure facilities for students, academics, and administrative staffs' wellbeing

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Sincerely,

Prof. Said Mohamed Allam
Vice PRESIDENT
Community Service & Environment Development
Alexandria University

Infection prevention & control guide for Alexandria University students' facilities

2024

1st edition

Under the patronage of

Prof Dr Abdel Aziz Qonsouah, President of Alexandria University

&

Prof Dr Saeed Allam, Vice President of Alex. University for Community Service & Environmental Development

& with the support of

Prof Dr Ali Abdel Mohsen, Dean of Faculty of Medicine

Prof Dr Nefertiti Hassan Zaki, Dean of the Faculty of Nursing

Prof Dr Khaled Ali Al-Matrawy, Dean of Medical Research Institute

Prof Dr Heba Al-Qadi, Dean of the Higher Institute of Public Health

& under supervision of the Community Service Sector at the Faculty of Medicine,

Prof Dr Tamer Abdullah, *Vice Dean of the Faculty for Environmental Affairs & Community Service, a committee of those concerned with infection control at Alexandria University participated in writing this guide:*

Chair of the Committee & conceiver **Prof Dr Nesrine Fathi Hanafi**

Professor in Medical Microbiology and Immunology - Faculty of Medicine

General Supervisor of Infection Control at Alexandria University Hospitals

Administrative Member in Reference Lab at Supreme Council University Hospitals

Committee Members (according to seniority)

Prof Dr Eglal El-Sherbiny, *Professor in Microbiology - Research Institute Medical*

Prof Dr Salwa Al-Badri *Head of the Department of Internal Nursing, Faculty of Nursing*

Associate Prof Nashwa Azzam, Department of Microbiology, Higher Institute of Health

Reviewed, designed the guide & compiled the scientific materia: Elham Hassan - Samah Shabeer Infection Control Team members- Alexandria University Hospitals

Vision

Developing a curriculum for practices, behaviors and requirements for all students and employees at Alexandria University that is based on infection control principles and guidelines that serve as a reference for the health and safety of students and employees, ensuring sustainability and having a positive impact on the Alexandrian community and a model to be emulated in this regard.

Goal

Improving sound health practices among students and employees that ensure infection control while providing an appropriate reference to improve working conditions and reduce the chances of the spread of communicable diseases in addition to raising health awareness among those dealing with the university facilities while adopting the correct procedures for environmental cleanliness and personal hygiene within the university facilities, colleges and institutes

Index

General health procedures that must be followed in educational facilities

1- Hand hygiene:

• Ensure that hand washing basins equipped with clean running water and soap are available at close distances from students' locations such as: playgrounds, libraries ... and it is preferable to have paper to dry hands in them.

• Place educational posters on how and the steps of hand hygiene.

• It is preferable to provide hand sanitizers inside classrooms, study halls and libraries.

• It is necessary to direct people to avoid touching different surfaces such as walls and elevator walls, and it is preferable to disinfect hands afterwards to avoid exposure to infections transmitted by indirect contact.

• Direct people to reduce shaking hands and disinfect hands afterwards, especially in large gatherings.

• Direct people to carry a small bottle of hand sanitizer in their bag.

• Educate about the importance of hand hygiene through student activities, clinics and student homes.

2- Coughing and sneezing etiquette:

• Maintaining social distances during gatherings or attending lectures or classes.

• Avoiding shaking hands, hugging or kissing, especially in large gatherings.

• Guiding people to adhere to coughing and sneezing etiquette, including using the elbow or a tissue as a barrier to prevent the spread of droplets to those around them and disposing of the tissue immediately afterwards.

• Raising awareness to use a single-use mask when suspected of a cold or cough.

• Putting up awareness posters to remind people of coughing and sneezing etiquette.

• Raising awareness about coughing and sneezing etiquette through student activities, clinics and student homes.

3- Dealing with sudden vomiting and bleeding cases inside university facilities:

Use all chances to raise awareness through student activities about the general necessity for students to carry tissues and small plastic bags for those who have chronic diseases that sometimes can lead to accidental bleeding or vomiting.

• In the event of vomiting or bleeding from a student inside a lecture hall or classroom, those around should stay away from the surface that is contaminated with blood or vomit, etc. of body fluids.

• Go to seek help from the workers specialized in cleaning the lecture hall or inform the supervisor of the place.

• To reduce the splashing of the injured person's fluids, tissues should be placed over the blood or vomit to cover it completely until the worker arrives.

• Raising awareness about refraining from touching blood or vomit without a barrier, and if it happens, the skin should be washed with soap.

• The injured person should be directed to the medical clinic to receive assistance.

• Raising awareness for cleaning workers to deal with these infectious fluids using latex gloves and using a broom or piece of cardboard and not removing them directly with hands and placing them in heavy-duty bags.

• After dealing with an infected person or contaminated fluids, make sure to wash your hands with soap and water, even after removing the gloves.

4- Recommendations in case of accidental injury:

In case of injury from a sharp instrument or as a result of friction with a rough surface, it must be cleaned by washing with running water for at least one minute to reduce the bacterial burden contaminating the wound. Soap can be added during washing. Any available skin disinfectants and a soft towel can be used to clean the skin around the wound until medical advice is received.

In case of profuse bleeding, the main purpose is to stop the bleeding while protecting the wound from contamination. This is done by applying direct pressure to the wound with a clean piece of cloth or gauze urgently, then heading to receive medical care in emergency units.

In general, bleeding itself works to clean wounds, and most small wounds stop bleeding for a short period. As for head, face and mouth wounds, they need longer to stop the bleeding because they are areas full of capillaries.

To stop the bleeding, we need to gently press on the site with a clean cloth or clean or sterile gauze. If the gauze is saturated with blood, we add more of it and do not remove it from its place. We continue to press for a period ranging from 20 minutes. If the wound is in the arm or leg, raising the injured limb to a level higher than the level of the heart will help slow the blood flow to the injured area. For a small wound: (Press with your fingers to stop the flow)

For a large wound: Clean and press firmly to stop the bleeding

Seeking medical advice in the event of a wound is essential, whether the wound requires urgent or delayed intervention in the university's specialized clinics

Make sure to take a tetanus injection, which is a serious disease that occurs as a result of blood contamination through wounds, and one of its most common symptoms is: Jaw stiffness. This serum is received if the wound or its cause is contaminated, even if the wound is simple, especially if the cause of the wound is rusty metal or contaminated wood. The serum is available in the various emergency units affiliated with Alexandria University Hospitals.

5- Proper handling of animal bites or scratches (rabies):

Rabies is a viral animal disease that infects mammals such as dogs, cats, and others. It can also infect humans. The virus infects the central nervous system and if clinical symptoms appear, it often ends in death. Preventive measures after exposure to animal bites or scratches include:

First: Wash the wounds well and this must be done as soon as possible for a period of no less than 15 minutes with running water and soap. Then apply surgical antiseptics (Povidone iodine) and then perform regular daily washing. It is prohibited to

remove the edges of the wounds or make initial surgical stitches for them. Giving tetanus serum intramuscularly according to the established protocol.

Second: Rabies Vaccine on the day of the bite by going to the vaccination center in Alexandria such as Ras El Tin Hospital or East City Hospital or Al-Hamayat. This is given to cases of bites, scratches, or contamination of the mucous membranes or unhealthy skin with saliva from an animal suspected of being infected with rabies in five doses by injection. The first dose: Day zero "the day of the bite", then the third day, then the seventh day. Then the fourteenth day and finally the twenty-eighth day. The vaccination process can be stopped if the rabies animal is observed in the case of a bite from a dog or cat and does not show any symptoms within 10 days from the date of the bite or if it is proven that the animal is not infected with rabies through a negative laboratory result according to the approved tests.

Third: Rabies Immunoglobulin: A bite or scratch accompanied by bleeding in the head and neck or deep or lacerated wounds, especially if they are multiple wounds. The dose of immunoglobulin is given once (on the day of the bite).

6- Dispose of any sharp objects such as syringe tips, glass ampoules or broken glass in a safe manner in the waste.

For scalpels, syringes and glass ampoules when receiving injection treatment or for diabetics such as lancets and insulin pen weapons: Directions are given to use a thick plastic can or empty bottles and place the sharp object in them and write the word "sharp dangerous" on them with a sticker, then dispose of them in a waste bag. If this is inside college facilities, the sharp object is handed over to a cleaning worker so as not to put it directly in the waste bags to avoid puncture accidents for cleaning workers.

For broken glass: A piece of cotton can be wetted to collect the fragments, or a piece of soft clay or dough made from flour and water can be used to wipe the surface to collect small and scattered pieces of glass, then place this inside any plastic bottle or cardboard box and close it tightly.

Hygienic handling of drinking water tanks

- Overhead water tanks must be at least 3 meters above the building's surface, and there must be a ladder for cleaning them. They must be made of non-rusting containers and are not allowed to be painted from the inside. With a substance that affects the properties of water or is from buildings lined from the inside with Qahishani tiles or lined with epoxy.

- The tank must be provided with a filling hole and another for emptying that is 15 cm above the bottom and an opening to drain the washing water at the level of the bottom of the tank, with a ventilation hole in the form of a twisted and downward-curved pipe equipped with a wire mesh to prevent the entry of insects and the tank opening must be tightly closed.

Tank disinfection:

Tanks of educational facilities are confined to be washed and disinfected once a month and health supervision of washing and disinfecting them with chlorine compounds 20 parts / million / m3 for a period of 2 - 4 hours, and washing is done as follows:

• The water is emptied from the tank and rough brushes are used to remove impurities stuck to the walls of the tank and the bottom using detergents or soap, then it is washed and the water is emptied from the discharge pipe. It is washed with clean water several times and the water is emptied from it.

• The tank volume is calculated in cubic meters. To calculate the amount of calcium hypochlorite or sodium hypochlorite powder, the calculated amount is added to a container of water, stirred and added to the tank.

• The tank is filled with water and a chlorine compound solution is added to it at a dose of 20 parts/million/m3 and left for 2-4 hours with the valve leading to the network open. At the same time, the tank is emptied and the network is washed. The network washing valves are then closed. The tank is refilled and the water is used after measuring the chlorine content in the water.

• The necessary water samples are taken from the tank after disinfection and sent for analysis to ensure that they comply with the decision of the Minister of Health No. 458 of 2007

Recommendations regarding ventilation in university facilities

• Ventilation must be good through windows (window area is not less than 1/6 of the room area) and there are two types: natural through windows and unnatural through exhaust fans and air conditioners.

• It is not preferable to use fans in places with a high density of individuals as they contribute to the dispersion of microbes inside the auditorium or classroom.

• In the event of relying on fixed fans in small halls and offices, the fan must be cleaned of dust well monthly and covered during the winter months or during maintenance periods or periods of non-use, it must be cleaned and covered with heavy-duty bags (unfixed fans are stored in cabinets or covered warehouses during periods of non-use)

• Attention must be paid to the cleanliness and disinfection of air conditioners by contracting with maintenance companies that adhere to the maintenance schedule stipulated by the supervisors of cleaning and disinfecting the auditoriums.

• Air conditioning filters must be cleaned by removing them from their place and washing them with soap and water, then drying them, then spraying them with alcohol and leaving them to dry.

General procedures for cleaning the university facilities environment:

The cleanliness of the lecture halls and classrooms must be taken care of periodically to prevent the spread of infection among students, following the following instructions:

• A known and announced schedule must be set for those responsible for cleaning to review and follow up with the cleaning supervisors.

• Cleaning workers must be protected by providing suitable work uniforms to cover all parts of the body (overalls) and closed shoes or boots.

• Cleaning workers must be trained on cleaning methods to start from the cleanest to the least clean, such as the lecture halls first and the bathrooms last.

• They must also be trained to start from the high places down to the floors.

• Dry sweeping is strictly prohibited, as this helps the dust and microbes in it to fly away and helps the infection spread, but the floors must be cleaned by wiping them with a damp mopping cloth to collect the dust by sticking it to the mopping cloth.

• The lecture halls must be cleaned at least once a day and the classrooms twice a day.

• A comprehensive inventory of the stands and classrooms must be made on Fridays and official holidays, using the floor cleaners available at the companies contracted with the university for cleaning.

• Towels must be allocated for each level of cleanliness, meaning bench towels, wall towels, and floor towels, and it is preferable that they are all microfiber.

• It is recommended to prohibit eating and drinking inside the stands to reduce bacterial contamination and the spread of insects.

• In general, it is preferable to use cleaning carts with two buckets, one for water and one for disinfectant, and that they have all the cleaning equipment, and wiping must be from one point to the next without returning to the first and in one direction.

• Wooden benches:

• It is preferable to gradually replace them with others made of plastic, metal, or non-porous synthetic plastics.

• Wooden benches should be wiped with a substance that helps disinfect without damaging them, such as quaternary ammonium compounds or Dettol, while reducing the amount of disinfectant liquid used to help damage or crack them, as this causes the growth of microbes inside the wood, which makes it difficult to clean and disinfect them well.

• They should be wiped with soft, slightly damp towels to get rid of dust, followed by drying them with dry towels.

• Cleaning ceramic and marble surfaces:

• It is preferable for the ceramic to be without joints (Laser Cut) so that microbes do not hide in the joints.

• When using marble, it is preferable for it to be artificial marble and not natural types because it interacts with microbes and helps them grow and multiply.

• The wet wiping method should be used instead of dry, and cleaning should be done first with soap and water. Marble surfaces can be disinfected with chlorine. It is preferable to dry the surfaces well to prevent the growth of microbes

Cleaning & Disinfection in bathrooms and toilets

• Wall tiles: Clean using pieces of cloth soaked in water mixed with detergent, rinse them. Then dry them. The tiles can be cleaned by rubbing them well weekly. Disinfection is done when contamination with body fluids occurs. When removing contamination from the walls, the wiping direction should be from top to bottom

• Hand washing basin: Spray or wipe the entire basin with detergent/disinfectant (Clorox) by rubbing it and washing the faucet handles with detergent/disinfectant for an appropriate contact period, then dry them.

• Toilet seat: Toilets should be cleaned regularly, and the seats should be cleaned with a detergent such as soap, then the toilet seats should be disinfected using a chlorine solution at a concentration of 1000 parts per million, rinsed and dried with a towel, while wearing disposable gloves and washing hands after removing them.

• Toilet bowl: Apply phenolics, chlorine or Dettol detergent generously and leave it for 5 to 10 minutes before scrubbing with a toilet brush with stiff bristles.

• Bathroom floors: Wash with water and detergents, rinse and dry well.

• Bathtub cleaning: The bathtub should be cleaned with water / detergents and dried.

• Exhaust fan: It is preferable to vacuum the dust from the fan grill or remove it and soak it in soapy water, and clean the rest with a soapy water solution, taking care not to let water reach the internal parts, then dry.

• Clean the surrounding area of drains, use chemical disinfectants when necessary.

• Cleaning bathroom cleaning tools: Hold the brush handle between the seat that has already been cleaned and the bowl; then pour the disinfectant onto the bristles. Leave it for a few minutes, then submerge it in clean water. Next, fill the brush holder with warm, soapy water and leave it; then empty the dirty water into the toilet. Also, wash the cleaning bowls after use, rinse them and keep them dry.

substances used for cleaning bathrooms:

• Liquid soap

• Disinfection with chlorine at a concentration of 1000 parts per million (1:49) diluted with water from 5% chlorine concentration and left for a suitable contact period (5-10 minutes) and is valid for 24 hours only after dilution

• Phenic can be used to get rid of drain worms

Safety precautions for cleaning bathrooms:

• Ensure adequate ventilation by opening windows or using exhaust fans

• Wear. Disposable latex gloves instead of heavy-duty gloves. In the event of water or liquid splashing, additional personal protection should be worn.

• Cleaning should start from the least dirty areas to the most dirty areas.

• Avoid mixing disinfectants with detergents (chlorine and ammonia) to avoid causing harmful fumes.

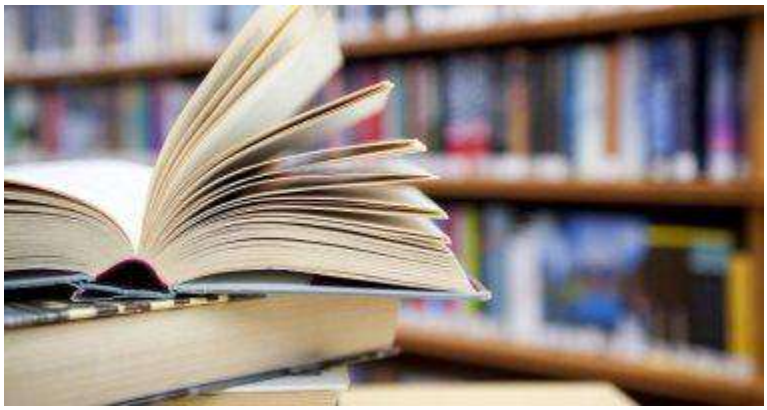
Additional recommendations:

• Recommend raising awareness and placing signs urging the importance of hand hygiene in enhancing everyone's role in stopping the spread of germs, while paying attention to maintaining bathrooms and keeping them equipped with sufficient quantities of soap and drying paper.

• It is preferable to assign more than one worker to clean bathrooms, as they need to be cleaned and disinfected several times a day.

• Assign a supervisor to ensure that bathrooms are constantly clean and have sufficient containers to prevent splashing. Used paper towels

Procedures to reduce the incidence of infection in libraries and study halls in university facilities



1- Directing facility officials to the importance of disinfecting and removing dust from surfaces, including walls, floors, tables and shared tools, periodically using disinfectants that are compatible with the materials that will be disinfected. The instructions shown on the packages must be followed, and it is preferable that they be quaternary ammonium compounds. This includes door handles, tables, seat cushions, computers and their accessories.

2- It is preferable to provide hand sanitizer pumps for visitors to the place, with an instructional board placed to encourage frequent hand disinfection inside the facility.

3- A safe distance of about one and a half meters must be maintained between individuals in libraries and university facilities, while avoiding placing rows of tables opposite each other unless there is a physical barrier.

4- Ensure good ventilation in libraries, whether natural or through central or separate air conditioning units. It is also necessary to ensure that air conditioning units, whether central or separate, are periodically maintained by specialized companies, with maintenance dates recorded and follow-up on changing or cleaning air filters and ventilation ducts every three months. 5- It is preferable to check for any symptoms of infection among those who frequent the shared halls by asking the librarian or hall supervisor for the visitor in case of apparent suspicion, and requesting anyone who reports that they have symptoms of a respiratory infection not to use the facility until they are completely recovered or to use a thermometer as a precautionary measure if available.

Infection control procedures in administrative offices in university facilities

Due to the large number of visitors to administrative offices in all university facilities, it is recommended to adhere to the following instructions to reduce the chances of transmission of infection through contact with carriers of any communicable diseases in administrative offices

1- It is recommended to conduct awareness activities in coordination with those responsible for infection control to educate and raise awareness among employees and students about the importance of hand hygiene and personal health practices and how to prevent infection. It is also recommended to provide alcohol-based hand sanitizer in offices or to provide means of washing and drying hands in a facility near the office.
2- Periodic cleaning of frequently touched surfaces with periodic removal of dust, keys, computers and furniture. It is also recommended to provide small waste containers equipped with bags with regular follow-up of waste removal at the end of each working day
3- Ensure good ventilation, whether natural by opening windows to improve air circulation inside the office or providing artificial ventilation through air conditioners, etc.
4- It is recommended to keep the office not crowded with visitors, and to gently direct people to maintain social distancing and a safe distance of one and a half meters when dealing with others, and to hang a sign directing people to wear a mask in case of suspected respiratory infection, with this being implemented by those in charge of work in the office.

Precautions to reduce the risks of transmission of infection in simulation and skills labs

Labs that have models that students are trained on, such as training mannequins and plastic models for practical training, which are usually found in practical colleges such as the College of Medicine, Physical Therapy and Nursing.

• It is recommended to create a regular schedule for cleaning and disinfecting the walls, floors and tables of the skills lab from dust and dirt and to follow up with the lab supervisor.

• The number of trainees must be determined in proportion to the area of the lab to avoid overcrowding.

• It is preferable to use air conditioning as a ventilation system for the skills lab to control the temperature and humidity to preserve the models.

• It is preferable for the lab to be equipped with glass, stainless steel or PVC cabinets (it is preferable to avoid wood because it is an organic material that helps the growth of microbes) to protect the models from the growth of fungi and microbes and to preserve them and protect them from exposure to dust, wetness or moisture.

• There should be a number of seats for students that are proportional to the area of the laboratory, taking into account the distances between one seat and another to help maintain privacy and prevent the transmission of infection from one student to another.

• It is preferable that the laboratory be served by a unit for washing hands with running water, liquid soap and paper to dry hands. At least two bottles of hand sanitizer should be hung in the laboratory for students to use after touching any of the surfaces in the laboratory.

• Models should be disinfected with disinfectants recommended by the manufacturer and at the recommended rate.

• It is preferable for workers to wear non-sterile gloves while handling training models to protect them from workers' hands during cleaning operations.

• It is preferable to clean models with quaternary ammonium compounds or according to the instructions of the manufacturers of these models.

• It is prohibited to eat or drink or bring any organic materials into the laboratory.

Infection control precautions in computer labs at university facilities

• Raising awareness and placing signs on the importance of hand hygiene when using computers, with the provision of hand sanitizers in places close to device users.

• Cleaning and disinfecting shared surfaces and tools periodically using effective disinfectants to reduce the spread of germs and viruses, focusing on places where contact is most likely, such as door handles, seat cushions, computers and accessories.

• Computers and accessories must be disinfected continuously and a worker must be assigned to do so. He must be trained in the disinfection process and the keyboard of the devices must be disinfected using wet wipes or small pieces of cotton soaked in a quaternary ammonium disinfectant or a disinfectant designated for monitors and electrical devices, after reviewing the specialists.

• Ensuring that there is good ventilation in the room, whether through natural or artificial ventilation.

• Raising awareness and placing signs on the importance of wearing a mask in the computer hall when respiratory symptoms are suspected.

• Directing the facility supervisor to avoid crowding and maintain a safe distance between those present.

• Prohibiting the consumption of food and drinks inside computer halls to avoid contamination and the spread of insects.

Infection prevention& control precautions in lecture halls\large classrooms

Holding preparatory meetings for all members of the administrative bodies and cleaning workers two weeks before the start of the academic year, to determine the work mechanism to implement the following procedures:

1- Distributing special tasks to all employees concerned with the cleanliness of the college\institute from lecture halls\hall officials - administrative affairs - cleaning workers on the cleanliness checklist application.

2- Cleaning and disinfecting lecture halls\halls before and after each school day.

3- Ensuring adequate ventilation.

4- Ensuring that air conditioning systems are working, if any, and that their maintenance work is regular and their channels and filters are cleaned.

5- Installing a base for each hand sanitizer bottle in the lecture halls\hall and placing the bottles inside it.

6- Redistributing the study seats in the halls to ensure physical/social distancing and safe distance (two meters between students).

7- Providing awareness panels on the importance of adhering to health precautions such as social distancing, hand hygiene, whether washing or disinfecting. 8- Commitment to applying physical/social distancing (1 meter) between students in the lecture halls.

9- Commitment to maintaining the approved distance for physical/social distancing while students are in the college by placing stickers on the ground to determine the places to stand when implementing any administrative interest such as being in the student affairs offices .... etc.

10- Commitment for the student and any of the service providers in the college not to go to the college when feeling any symptoms of respiratory microbes.

11- Commitment of students and all members of the administrative and teaching team and service providers to wear masks when there are any possible symptoms of respiratory microbes that require an emergency visit to the college.

12- Emphasizing the student's commitment to positive behaviors from hand hygiene - adherence to sneezing etiquette and ensuring physical/social distancing during practical training.

13- Emphasizing students' commitment to all precautionary measures and ensuring the use of these measures.

14- Holding awareness workshops for students and employees for proper training on implementing precautionary measures.

15- Preventing the exchange of personal items such as pens and other tools between students and employees.

16- Educating students on the need to wash hands with soap for at least twenty seconds or use hand sanitizer after each lecture or work lesson

Precautions to reduce risks of infection transmission in students' dormitories

First, the student's responsibility:

1. Maintain personal hygiene by following the procedures listed below:

• Maintaining hand washing - showering - brushing teeth regularly and when needed.

• Maintaining dry skin using a clean towel - especially any folds in the skin and between the toes constantly.

• Maintaining short and trimmed nails.

• Maintaining hair cleanliness and grooming.

• Following etiquette when urinating.

• Maintaining not sharing personal tools with others when cleaning such as toothbrushes - soap - towels and shaving tools for young men and dental tools.

• Maintaining hygiene during menstruation for girls.

2. Commitment of students and all members of the administrative team and service providers to wearing masks when there are any possible symptoms of respiratory microbes.

3. Emphasizing the student's commitment to positive behaviours such as hand hygiene - adherence to sneezing etiquette and ensuring physical/social distancing during gatherings in university housing while reducing crowding as much as possible.

4. Maintaining natural air renewal by opening windows daily.

Second, the responsibility of housing management:

1. Providing a suitable residential environment with devices such as heaters - soap pumps ..etc...

2. Directing the importance of installing a mesh wire on the windows to prevent insects and rodents from entering the housing and using means of protection to ensure their spread and resorting to specialists in this regard.

3. Providing guidance and awareness panels on the importance of complying with health procedures and precautions such as hand hygiene - coughing etiquette - physical/social distancing - seasonal vaccinations.

4. Reducing the number of visitors except in cases of necessity.

5. Following up on the cleanliness of the rooms by removing dust daily in the proper way using dust suction (vacuum cleaner) and avoiding dry sweeping.

6. Follow up on the cleanliness of the environment, whether the surfaces that are frequently touched (bed sides - door handles - electrical switches -) - the surface that is not touched (walls and ceiling) using the checklist

7. Electricity - table surfaces

8. Commitment to disinfecting the rooms in case of suspected infection in the residence.

9. Providing waste containers in all rooms and housing facilities, using white or black waste bags, considering the liter capacity appropriate to the amount of waste and cleaning them daily.

10. Follow up on the regular lifting of waste bags at least twice a day.

11. Providing small waste containers to collect dry solid waste inside the rooms - Providing larger containers to collect organic waste outside the rooms to prevent the proliferation of insects inside the rooms.

How to maintain general hygiene in the dormitory environment?

• Small waste containers must be provided to collect dry solid waste inside the rooms, and larger containers must be provided to collect organic waste outside the rooms to prevent the proliferation of insects inside the rooms. It is also recommended to lift organic waste bags four times a day and disinfect their containers once daily.

• Directing to remove the garbage bags in the rooms daily and not to throw any organic waste in them.

• Cleaning the common public areas of the housing requires environmental surfaces. It is preferable to use a cleaning cart equipped with two separate buckets and a wringer, and one of the buckets contains water and cleaning solution.

Instructions to prevent the transmission of infection through the refrigerator

• Use tightly sealed plastic containers with the name written on them to store food inside the refrigerator.

• It is recommended to clean the refrigerator at least once a month with soap and water and to ensure that there are no insects in it.

• There should be enough space between food items to allow air circulation.

• Perishable foods such as milk and eggs should not be stored in the refrigerator door.

• Move all perishable items to the middle shelves, as the doors and the upper shelf are the first areas to heat up during a power outage.

Additional procedures when a student carrier of a transmissible infection is detected.

1- Housing workers must be aware of the need to quickly detect students with respiratory infections or any infection such as smallpox or meningitis, etc. upon their arrival to the residence in order to prevent the transmission of infection to the rest of the students and to detect epidemics early and deal with them quickly.

2- The need for those responsible for the residence to pass to check the good health of the students and to take the necessary measures when discovering any disease. It is preferable to pass while wearing a mask and a non-contact thermometer can be used.

3- In the event of any disease being detected, measures are taken to keep the patient in a separate room, while ensuring that the patient wears a surgical mask and cleans his hands after coughing or sneezing, by washing his hands with soap and water, or by rubbing with hand sanitizers, while helping him go to the university's comprehensive clinics to receive medical care and follow up with him to implement the treatment and reduce his movement in the residence and disinfect the bathrooms after using them and disinfect any facility he may use until the symptoms disappear.

General procedures for sports arenas and courts

1- Hanging signs to wash hands with soap and water or rub them with an alcohol solution in visible places in the stands, changing rooms and bathrooms.
2- Placing guidance boards explaining respiratory health precautions and coughing etiquette so that they are visible, readable and simplified so that it is easy to understand what is meant by them and implement the necessary precautions.
3- Hand washing basins, hand washing supplies, and hand sanitizer pumps should be provided in proportion to the number of students, with coloured signs leading students to hand washing areas.
4- Direction from field supervisors and coaches to refrain from spitting on the field.
5- Direction from field supervisors and coaches to prohibit throwing any waste or food on the field.
6- Direction to eat snacks outside the playing area.

7- Inspect equipment and tools such as balls, rackets, etc. to ensure their cleanliness before using them. In the event of stains or dirt, they should be cleaned and disinfected appropriately.
8- In the event of sudden vomiting or bleeding, the treatment is as previously mentioned in the general procedures chapter.
9- The coach must ask if the players are suffering from any medical condition, especially contagious respiratory infections, to direct the players not to participate in the game until the symptoms disappear and receive medical assistance.
10- Field supervisors must pass by the fields daily to ensure their cleanliness, the absence of waste accumulation, the cleanliness of the surrounding waiting areas, and the absence of any water accumulations or any growth. For fungi or algae from moisture accumulations and taking the necessary measures and directing those responsible for cleaning to remove dirt, dust and waste.
11- Providing waste containers in nearby places and in a size appropriate to the density of visitors and ensuring their cleanliness and removing the waste collected in them daily.

Special procedures for indoor sports arenas

1- Directing the provision of natural and artificial ventilation air
2- Directing the avoidance of crowding and congestion in stadiums and stands as much as possible.
3- Determining separate entry and exit points and creating alternating training schedules to prevent crowding.
4- environmental cleaning schedules are set and followed accurately using appropriate disinfectants according to the different materials, and it is preferable to use environmentally friendly quaternary ammonium compounds.
5- Using garbage containers equipped with plastic bags and placed outside the playing area, and it is preferable that they be fixed and covered, with the removal of waste and washing of garbage containers in the stadium daily
6- It is preferable to use a vacuum cleaner to get rid of dust as an alternative to dry sweeping of carpeted floors such as gymnastics halls and wooden floors, with the completion of cleaning and disinfection of the floors using water wiping and approved environmentally friendly disinfectants daily, such as quaternary ammonium compounds.
7- Use soap and water when cleaning the stands' chairs and table surfaces from sticky spills and crumbs, as wet cleaning is done manually using a damp cloth (preferably made of antibacterial microfiber and preferably disinfected with Dettol or quaternary ammonium compounds to rubbing

Special procedures for outdoor sports courts

1- Ensure that the grass is cut and watered periodically

2- A comprehensive examination of the fields' surfaces, corners, corners and stands is carried out daily to ensure that no dirt or water accumulates on the field floor

3- Training must be stopped until the ground is completely dry in the sun

Additional procedures to avoid the spread of infection. The person responsible for training must identify students who may have a respiratory infection (cough/shortness of breath with or without a high temperature). This is to request that players suspected of having any contagious infection do not participate to prevent the transmission of infection to the rest of the students and to detect epidemics early and deal with them quickly and direct them to the university's comprehensive clinic, with advice to wear a surgical mask and repeat washing Hand sanitization

General precautions to reduce the incidence of infection among users of university swimming pools

Special procedures for swimming pool goers before going into the pool

1. Adhere to the maximum number of swimmers allowed in the pool.

2. Place signs indicating that the pool is not allowed to be used in the event of sore throat, eye or ear diseases, influenza, and infectious skin diseases, as well as in the event of diarrhoea, for a period of two weeks until the diarrhoea stops completely, to avoid transmitting the infection to others.

3. Do not go into the water in the event of a wound (especially surgical), and if necessary, waterproof bandages should be used to cover the entire wound.

4. You must shower and wash your body with soap before going into the pool.

5. You must wear a head cover (bonnet) in the event that female and male students with long hair go into the pool.

6. You are not allowed to enter the pool except in the appropriate clothing and stay away from cotton clothing, which represents a fertile environment for bacteria and germs to stick to it

7. It is necessary to use suitable shoes when walking around the pool to prevent foot infections.

8. Do not share swimwear and personal items such as towels, goggles and earplugs with others.

9. Do not spit or cough in the pool while following respiratory hygiene precautions and cough etiquette.

10. Keep snack areas separate from the pool area.

Instructions for students using the pool

1. Pay attention to the smell of the pool as a strong chemical smell indicates a maintenance problem.

2. Do not urinate or defecate in the water.

3. Do not swallow pool water at all, or even allow it to enter the mouth.

4. Dry the ears well immediately after leaving the pool.

5. After leaving the pool, the individual should shower with warm running water &soap.

6. Change clothes immediately after finishing swimming with dry, clean clothes.

7. Dry the vaginal area well after finishing showering and swimming

Special procedures for swimming pool officials

1. Remove any waste or organic materials from the surface of the water or the surroundings of the outdoor pool periodically
2. . Emphasize adherence to the controls and precautionary measures for the use of swimming pools.
3. . Divide each swimming pool into several lanes, ensuring safe distancing between practitioners and trainees.
4. Complete sterilization using disinfectants approved by the Ministry of Health, and continue the disinfection process with follow-up schedules throughout the period of opening the swimming pools, and during and after training and use.
5. Take into account the requirements of water cleanliness in accordance with the instructions of preventive medicine. It is preferable to contract with a company specialized in cleaning and disinfection and appoint officials to monitor and document the contracted disinfection steps.
6. Determine places for entry and exit to prevent crowding during the training period in a successive manner, which ensures that there is no overcrowding, congestion, or contact between trainees and visitors, especially if the pool is

covered. In this case, it is necessary to determine the number of people allowed to be inside the pool at one time and appoint an official to monitor that the number is not exceeded.

7. Adherence to the opening and closing times of the pools and activities in them.

Hygienic maintenance of swimming pool water

There are different types of chlorine designated for maintaining hygiene of swimming pool water, such as:

- Sodium hypochlorite (liquid bleach).

- Calcium hypochlorite (granules or tablets).

- Lithium hypochlorite or chlorinated isocyanurates

Never mix two different types of chlorine, but rather add each one separately. The instructions of the manufacturer of disinfectants used in swimming pools must be adhered to, with the condition that they are harmless and non-irritating to swimmers and attendees, and that they are active in small concentrations and for a long period.

Swimming pool chemicals must be stored in a cool, dry and shaded place to avoid damage.

Procedures for swimming pool water disinfection

1. Check the pH of the swimming pool

2. Routine disinfection: This is done every day by adding chlorine regularly to the pool water and testing it, due to the ability of the routine chlorine process to kill microbes that can cause health problems, such as gastroenteritis, Legionnaires' disease, ear infections and athlete's foot.

3. Shock disinfection: Once a week, a larger amount than the normal amount (5 parts or more of free chlorine) is added. This additional dose destroys organic pollutants and oxidizes ammonia and nitrogen compounds to rid the pool of the irritating chloramine smell for the eyes and skin. Depending on the rate of use and temperature, this may be repeated three times a week or more in public swimming pools. Using chlorine in this way not only ensures complete disinfection of the water but also completely eliminates algae and bacteria that may be hidden in filters and places that are difficult to disinfect.

4. Frequently clean areas of hand contact with water and soap solution such as seats and handrails.

5. Conduct a microbiological examination of the swimming pool once a month to detect some bacteria such as coliform bacteria and take a sample from the swimming pool. It

must be from all corners and from the deepest points in the pool. The bottle must also be sterile and contain an agent that neutralizes the swimming pool disinfectant.

General precautions to reduce risks of infection transmission within warehouses and storage areas

1- Consider the suitability of the warehouse space and size to the nature and size of the inventory.

2- Consider that the ceilings and walls are made of a smooth, non-porous material, preferably easy to clean and disinfect, and withstand cleaning, disinfecting and antibacterial materials.

3- Consider that there are no gaps between the tiles on the floors.

4- Provide warehouse equipment that is compatible with the nature of the inventory (it has high shelves to place the contents of the clean inventory - provide machines and equipment used in spills of some materials).

5- Provide a good source of lighting and ventilation in the warehouse.

6- Provide wash basins, hand washing supplies and disinfectant pumps.

7- Separate the nature of the inventory and allocate independent storage areas so that chemicals are kept away from medical supplies and paper supplies.

8- Provide a safe storage method according to the nature of the inventory, such as refrigerators.

9- Place the necessary labels on all stored items, stating the name and degree of danger of the inventory.

10- Periodically clean warehouses using a checklist.

11- Vacuuming dust using vacuum cleaners equipped with high-efficiency filters.

12- Wet cleaning of surfaces to control dust is done by wiping work surfaces with warm water and cleaning solution, and in the case of disinfection, it is done using 1000 parts per million chlorine.

13- Consider the storage outlets in a way that facilitates access to them by transport vehicles.

14- Consider providing the warehouse with a means of drainage inside the room, with the necessity of placing a barrier to prevent liquids from exiting the room during the cleaning and disinfection process.

15- Consider that the warehouse door is tightly closed to prevent the spread of dust and the entry of insects and is made of a material that can be repeatedly cleaned and disinfected.

16- Consider containing warehouse waste in tightly sealed containers.

Precautions and instructions for warehouse workers:

1- Providing guidance and awareness panels for warehouse workers on the importance of complying with health precautions such as social distancing, hand hygiene, whether washing or disinfecting.

2- Training warehouse workers on how to apply precautionary measures when working, such as:

- hand hygiene
- wearing protective clothing appropriate to the nature of the work
- how to clean and disinfect to protect against infection.

3- Urging workers to comply with all possible types of vaccination to protect against any infection.

General hygienic recommendations

1- The size of the storage room must be proportional to the amount of materials stored in it
2- It should be as close as possible to the exits and easily accessible by transport vehicles.
3- It should be equipped with a means of drainage to clean it inside the room, with the necessity of placing a barrier to prevent liquids from exiting the room during the cleaning and disinfection process.
4- Storage areas should be equipped with a good source of lighting and ventilation with a wallmounted hygro and thermometer.
5- Storage area should be secured from the entry of insects and animals by placing iron bars and a narrow-weave mesh wire on the ventilation outlets.
6- Different types of materials should be stored separately eg Separate the chemical store from the book stores
7- Storage area door should be tightly closed to prevent the spread of dust and made of a material that can be repeatedly disinfected.

8- Workers are required to wear special work clothes that are changed before leaving the warehouse
9- Vacuuming dust with vacuum cleaners equipped with high-efficiency filters.
10- Wet cleaning of surfaces is carried out to control dust and wipe work surfaces with warm water and cleaning solution. Disinfection with chlorine 1000 ppm
11-Containing warehouse waste in tightly sealed containers.
12- Air sampling is carried out if necessary
13- Floors, ceilings and walls must be made of smooth, non-porous material, preferably antibacterial, easy to clean and disinfect and able to withstand disinfectants and cleaning materials
14-There must be no wide gaps between tiles on the floors
15-Hand washing basins, hand washing supplies and sterilizer pumps must be provided.
16- Storage conditions and different temperatures must be taken into account according to the manufacturer's instructions and good storage rules must be followed - avoid moisture and sunlight
17-Do not place stored materials directly on the floor and place them on shelves or insulating bases made of fire-resistant material.
18- All stored materials shall be provided with item cards with the name written on them.
19-Availability of refrigerators with a freezer to store materials that require low temperatures, with the provision of thermometers in fixed locations to record temperatures at fixed intervals during working hours.

General precautions to reduce risks of infection in food courts

General Requirements for Ensuring Food Safety

1 The site must be selected and maintained in a manner that prevents contamination: the surrounding environment must be clean with no accumulation of garbage, no excessive flies/rodents, no accumulation of stagnant water near the site, and no open sewage lines.

2 The floors must be smooth to reduce the accumulation of dirt and dust and must not contain cracks or gaps, and the walls and partitions must have a smooth surface and without damage to the wall paint.

3 The windows and ventilation devices must be easy to clean and have a sound wire mesh without leakage to prevent the entry of insects. Ensure that the glass on the windows is free of any breaks.

4 The doors must be smooth and easy to clean and provide adequate storage facilities to maintain a safe product.

5 The drainage systems must not allow any stagnation or backflow of water.

6. Adjust the temperature of the place between 20-30 to ensure the safety and suitability of food through ventilation, natural or mechanical, suitable for food, and ventilation systems must ensure that air does not flow from unclean areas to clean areas, and systems must be maintained and cleaned periodically.

7. Reusable equipment and containers that come into contact with food must be appropriately designed to reduce food safety risks and be easy to clean.

8. It is preferable that storage unit platforms be made of plastic or stainless steel, and if wooden platforms are used, they must not have signs of fungal growth, insects such as termites, etc.

9 Facilities for workers should be designed to prevent the risk of food contamination: such as adequate means for washing and drying hands in a hygienic manner, including sinks and providing them with suitable water of potable quality (preferably non-manual taps).

10 Appropriate standards for the cleanliness of the place environment, food preparation platforms and storage units should be maintained and disinfected frequently daily and according to a written schedule, and effective disinfection methods should be provided with monitoring by individuals assigned to do so, ensuring that chemical disinfectants do not cause food contamination.

11 A five-stage water filter should be provided on the water source feeding the cafeteria to ensure the quality of water, including ice and steam, especially those that come into contact with food.

12 Appropriate systems should be put in place to collect and dispose of waste and ensure that it does not accumulate inside the cafeteria. Waste containers should be in

areas away from beverage preparation areas and should be covered and the cleanliness of the containers should be maintained by disinfecting and cleaning them daily.

13 Appropriate programs should be put in place to ensure that the spread of pests, rodents, insects and cats is prevented in the cafeteria. The cafeteria and eliminate them immediately upon their appearance. Including flies, cockroaches and rats. It must be ensured that the chemicals used do not cause food contamination.

14 Personal hygiene must be adhered to and appropriate protective clothing must be worn during work and medical examination: such as cutting nails and refraining from spitting and smoking in beverage preparation areas. A periodic medical examination must also be conducted with the submission of a health certificate to cafeteria workers.

15 The temperature of workers must be measured daily and it must be ensured that there are no symptoms of suspected respiratory infection. If any of them are present, the worker must refrain from entering the cafeteria or dealing with the public. It is also necessary to adhere to wearing a mask at all times.

16 New workers must be continuously trained on the correct methods of washing hands and disinfecting the cafeteria environment and periodically monitoring this while adhering to healthy methods such as not blowing into plastic bags, wrappers or containers used to present items to prevent contamination.

requirements to ensure the quality of food in the cafeteria that prepares meals

• Checking the raw materials from which the item is prepared, for example, milk, checking the package, whether it is liquid or dried

and writing the name of the manufacturing company and the amount of sugar and fat, etc., coffee, sugar, cream to ensure that they are valid and not spoiled and do not contain insects.

• Checking the machine and tools used in preparation, such as the coffee machine or tea kettle, periodically to ensure that they are clean and free of rust or salt deposits.

• The cafeteria that prepares meals must have a sink dedicated to handling vegetables, a sink for washing hands, and a separate sink for handling meat.

• Vegetable cutters and surfaces must be separated from meat and a third surface for cheese to prevent the transfer of bacteria from one type to another.

• Periodic inspection by someone designated by the management to inspect serving utensils, plates, and single-use cups to ensure that they are not reused, and to inspect multi-use utensils and plates to ensure their cleanliness.

• A mechanism must be put in place to receive complaints from those dealing with the cafeteria.

• The applicant must provide electrical appliances for the safety of product preparation, such as a refrigerator to store milk and juices and a coffee maker. Tea kettle and microwave, their maintenance and commitment to cleanliness. It is preferable to use automatic dishwashers, where washing is done at a temperature of 90 degrees for at least an hour, and this is considered a high-level disinfection degree.

• It is necessary to adhere to using food materials approved by the Ministry of Health and valid, with periodic inspection of this. Checking the expiration dates of the displayed products, with permission to conduct a visual and sensory test on perishable food materials such as dairy products.

• All raw materials and ingredients, including ice, must be known and reliable.

• Water used for drinking and preparing hot or cold drinks and ice must be issued from a five-stage filter, and the applicant is obligated to perform periodic maintenance of the filter and change its candles.

Procedures for disinfecting tables and chairs in the cafeteria in university facilities

1- Use chemical disinfectants: Effective for disinfecting tables and chairs. Alcohols such as ethanol, isopropyl alcohol, Dettol, or quaternary ammonium compounds are a good choice for disinfection, following the instructions of the disinfectant manufacturer and ensuring their appropriate concentration, as well as ensuring a sufficient contact period for the disinfectant to have an effective effect.

2- Cleaning dirt and residues: Before using disinfectants, tables and chairs must always be cleaned well from dirt and residues so that disinfection is effective, using soap and water, as dirt prevents efficient disinfection and contributes to protecting microbes from the effect of disinfectants, while adhering to drying after cleaning so that wetness does not cause the disinfectant to be diluted and reduce its effectiveness.

3- Spacing: Tables and chairs must be placed at an appropriate distance to maintain social distancing.

4- Awareness and training: Workers must be educated and trained periodically on the importance of adhering to infection control procedures and disinfecting tables and chairs.

5- Awareness and commitment to washing hands well with soap and water after handling tables and chairs.

6- Use of personal protective equipment: Workers must use appropriate personal protective equipment, such as gloves and masks, while cleaning tables and chairs.

Procedures for dealing with regular (non-hazardous) waste inside university facilities

1- Waste containers:

• Waste containers must be provided in designated places inside the university facility, with the necessity that the materials, colors and liter capacity of the container be appropriate to the nature of the place where it is placed, with the importance that its design allows waste to be placed in it without the waste inside being exposed by being equipped with a movable cover or a small side entry opening

• It is preferable to use garbage collection bags inside waste collection containers.

• Containers should be fixed in their designated places and moved only by a mechanism available only to waste removal workers.

• In line with environmentally friendly recycling requirements, it is preferable that containers have a color code and signs to separate waste into plastic, paper and metal.

• It is preferable to wash containers with detergents at least once a week to keep them clean and avoid unpleasant odors.

• Damaged containers should be replaced immediately to maintain environmental safety and public health.

• It is preferable to have waste and waste baskets that operate without the need to touch.

2- Collecting waste from containers:

• It is recommended to provide mobile carts with a capacity of 300 liters to collect waste bags from various places in each facility and transport them to the waste storage until they are lifted by a specialized company or transported to public containers.

• Collection should be done twice a day, at least once at the end of the working day so that waste does not remain in the sub-areas during the night hours

• Collection and transportation should be carried out by individuals trained to do so properly, using a special uniform for this task and heavy-duty gloves

• Waste collection carts should be cleaned and disinfected at least once a week

• If there is a waste collection warehouse inside the facility, the warehouse should be covered, well-ventilated and locked to prevent tampering with the waste, and the ventilation openings should be equipped with wire to prevent rodents from reaching it, and the floor of the warehouse should be flat and washable and disinfected repeatedly, with a drain at its entrance to prevent contaminated water from settling outside it. There should also be a hand washing basin inside the warehouse and a low faucet designated for washing waste containers, carts and the floor of the warehouse

• It is recommended to always collect waste in tightly tied bags

3- Awareness and education:

It is recommended to educate students and university facility members about the importance of separating waste from the source for recycling and the importance of proper disposal of waste for the safety of visitors to the facility and the community through seminars and student activities.

Infection control procedures in medical clinics facilities in university facilities

Outpatient clinics are one of the places where the patient is present before his illness is diagnosed. This may cause the transmission of infection to many of those present in the clinics, including patients and health service providers, routinely through the air or spray in the event of non-compliance with wearing a mask or overcrowding or because of invasive or interventional procedures. Infection of blood-borne diseases. Therefore, it is necessary to seek the help of infection control supervision at Alexandria University Hospitals to conduct training and reviews on safe injection procedures and other correct practices for infection control procedures in various interventions and periodic training on them, with a commitment to conduct central training for all newly appointed medical staff in the clinics of the sub-colleges on infection control procedures In contact with the Central Infection Control Unit

1- Hand hygiene and care: Wash hands with soap and water or rub them with alcohol before and after the procedure

2- Use of personal protective equipment: Health service providers in outpatient clinics must wear appropriate personal protective equipment such as (surgical mask, eye and face shield, gloves, gowns and single-use plastic aprons...) when performing procedures, with changing protective equipment between one patient and another.

3- Safe injection: It is necessary to adhere to the World Health Organization's requirements for safe injection during the procedures for preparing treatment or giving it to the patient (washing hands, determining the injection site, preparing the skin at the injection site, using sterile medications and solvents and sterile single-use syringes. Infection control supervision must be sought to conduct training and reviews on safe injection procedures and periodic training on them, with a commitment to conduct central training for all newly appointed medical staff on infection control procedures centrally.

4- Reprocessing multi-use machines: Multi-use machines for examination and treatment, such as blood sugar meters, spare parts and tools after use, must be reprocessed between uses according to their classification based on the degree of Its risk (high risk, medium risk, low risk for Spaulding classification) and according to the manufacturer's instructions and infection control

5- Handling textiles and furnishings:

• Training of clinic staff on collecting and transporting furnishings and also committing to wearing the necessary personal protective equipment when doing this

• Examination bed sheets in outpatient clinics must be changed and reprocessed between each patient, and used furnishings must be treated as contaminated even if there are no visible contaminants, and it is prohibited to leave contaminated furnishings On chairs and examination beds, etc.

• Dirty furniture should be carefully lifted and then placed in heavy-duty, liquid-proof bags. No steps are taken to reprocess furniture in examination areas in the clinic

6- Cleaning and disinfection of the environment and work surfaces: This includes daily cleaning and disinfection, periodic cleaning and disinfection, with cleaning schedules being made and followed up by those in charge. Awareness and training should also be provided on the need to deal immediately with blood and body fluid spills.

It is necessary to use approved cleaning and disinfecting materials with known concentration and source. It is not necessary to use disinfectants for environmental cleaning on a routine basis. Cleaning and disinfectants should be kept in closed containers and in appropriate storage conditions, taking into account the expiration date. Cleaning should include storage areas and air conditioning filters. Cleaning tools should be cleaned after use and stored dry in a proper manner.

7- Waste handling: Commitment to separating waste from the source with safe disposal of sharp waste in safety boxes. Non-sharp hazardous waste (contaminated with pus and body fluids) is disposed of by placing it in leak-resistant infectious waste bags (red bags) and commitment to disposing of regular waste by placing it in black bags.

• Ensure that all waste containers are tightly closed before leaving the outpatient clinic to the temporary storage room, with labels attached to all waste collection containers indicating their type and source.

8- Training the medical team in outpatient clinics: Medical service providers in clinics must be trained on standard precautions for infection control and precautions based on the method of transmission of infection, and on procedures specific to the nature of

work, upon their commencement of work and annually in coordination with the Infection Control Unit at Alexandria University Hospitals.

Environmental disinfection procedures for elevators inside university facilities

1- Surface cleaning:

The internal surfaces, doors, buttons, surfaces and ceilings must be cleaned regularly on a regular schedule three times a day or when needed in the event of spills using soap and water to remove dirt and stains in limited quantities by wiping with clean cloths followed by removing the dirt and disinfection.

2- Disinfection: After cleaning the dirt, if any, the surfaces must be disinfected using disinfectants that are safe for metals, electrical circuits and electronic boards, such as using clean cloths moistened in a limited amount with diluted Dettol or diluted quaternary ammonium compounds and refraining from using alcohols or chlorine as they may cause rust to wires and metals or damage to electronic circuits or ignition with the use of alcohol.

3- Ventilation: It is important to ensure that there is good ventilation in elevators to reduce the spread of germs. Through artificial ventilation such as fans and extractors

4- Hand disinfection: Elevator workers must disinfect their hands regularly, such as washing their hands with soap and water or using hand sanitizer

5- Awareness and education: Elevator operators in university facilities must be educated about the importance of environmental disinfection and adherence to health procedures, the most important of which is frequent hand disinfection.

It is preferable to write instructions for infection control instructions when using the elevator and raise awareness of them through wall hangings or social media, including:

• Avoid using the elevator when it is crowded

• It is preferable to leave the elevator if the safe distance between individuals is not achieved

• It is preferable to wear a mask when riding the elevator to avoid the transmission of respiratory infections in its surroundings.

• It is preferable not to touch the elevator buttons directly with the hand to avoid the transmission of any contact infection. A barrier can be used to press the button, such as a clean paper tissue or the elbow (elbow) or the back of the fingers of the left hand

Disinfecting the hand with a disinfectant after using the elevator prevents hands from being contaminated with microbes

General infection prevention precautions in teaching & research laboratories

Individuals in laboratories may be exposed to the risk of infection with microbes (bacterial, viral, and fungal) that are transmitted through:

• Inhalation

• Percutaneous (needle and syringe, cuts or abrasions from contaminated materials)

• Contact with mucous membranes and contaminated materials (hands, eyes, or surfaces)

• Ingestion/oral (suction through a pipette, smoking, or eating)

• In addition, bacterial culture procedures increase the chance of exposure to infection within the laboratory during culture, mixing, and centrifugation

Examples of diseases resulting from infections in laboratories through blood. (Such as viral hepatitis B, C, and HIV or through the respiratory system (microbes that cause meningitis, tuberculosis, and corona)

Therefore, workers in this facility must use safe methods to deal with infectious agents in their work environment by taking standard precautions and environmental safety measures to reduce the risk of infection. These safe precautions begin from the beginning of handling samples.

Sample collection (sampling)

- It must be in a place designated for this purpose. With commitment to washing or disinfecting hands before withdrawing the sample and wearing clean gloves and changing them between each patient and another, in addition to following the procedures to prevent contamination when withdrawing Samples.

-Keep the outer surface of the sample containers clean and. -Tightly seal them

Transporting samples to the laboratory

• Wear clean gloves

• Avoid touching the contents of the container

• Place samples in special holders inside tightly sealed containers. To combat infection

Handling samples in the laboratory

• All materials resulting from the human body such as blood, other fluids, and tissues should be treated as potential sources of infection

• Wear clean gloves before handling samples and- Wear face and eye protection when performing laboratory procedures that may result in the spraying of blood or other infectious aerosols.

• Samples should be opened carefully

The “biological hazard” symbol must be placed at the entrance to the laboratory, in addition to affixing this sign - if possible - to the equipment or devices used to store hazardous biological materials.

Containment of laboratory-related infections

• Mechanical pipettes should be used, and oral pipettes should not be used, for handling all laboratory fluids.

• Safety precautions or biocontainment devices should be used during laboratory procedures that result in aerosolization, such as mixing, pouring liquids, or blending tissues.

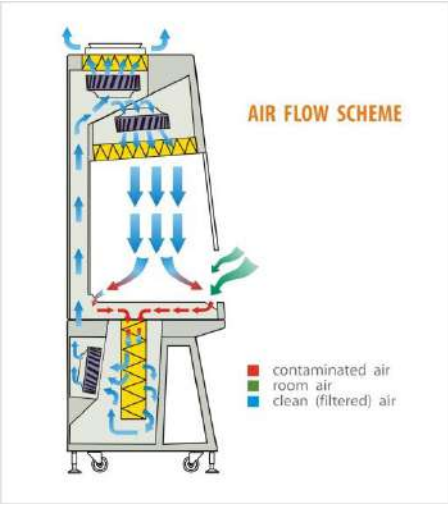
* A biological safety cabinet is a device to prevent the spread of infection. It is designed to draw air inside by mechanical means and is used to prevent the dispersion of infectious aerosols emitted from some laboratory procedures. There are three categories of biological safety cabinets.

* A centrifuge safety vessel is a closed vessel that prevents the leakage of aerosols during the centrifugation process. Any centrifugation process must be carried out in tightly sealed tubes.

Mechanical pipettes*

Centrifuge safety vessel

Biosafety cabin



Workers must be trained and prevented from engaging in the following activities:

• It is prohibited to use mouth straws to handle liquids in the laboratory.

• It is prohibited to eat, drink or smoke in the laboratory.

• It is prohibited to keep any food or drink in the laboratory refrigerators

Workers must be trained and ensured that they adhere to the following:

• Use mechanical straws to handle liquids in the laboratory.

• Wear shoes that cover the fingers and feet without holes and are impermeable to liquids to protect against injury from sharp tools or contaminated splashes.

• Disposable plastic aprons must be worn in procedures that involve the possibility of exposure to volatile liquids

It is recommended to perform regular trainings and monitor adherence of personnels working in the laboratory to the following standard precautions:

Hand hygiene

Wash hands thoroughly with soap and water after completing work or after removing protective clothing and before leaving the laboratory. Hands must also be washed immediately after contamination with blood or other body fluids.

Use of Personal protective equipments:

1- It is recommended that all workers be vaccinated against hepatitis B.

2- Personal protective equipment for laboratory workers

A- Laboratory clothing and coats: Laboratory clothing and coats must be worn upon entering the laboratory and must be removed before leaving. It is preferable to use long sleeves with tight wrists to protect workers.

B- Face protection: Protective glasses, surgical masks or face shields are used to protect against the risk of potential exposure of the face to spray from hazardous or infectious materials when dealing with microbes outside of biosafety cabinets.

C- Disposable gloves:

• They must be worn to avoid skin exposure to blood, other fluids, surfaces, or tools contaminated with such fluids.

• Gloves must be removed in a safe manner and hands must be washed after completing laboratory tasks and before performing non-laboratory activities such as using the telephone or performing any office work.

• Gloves are disposed of when they are clearly contaminated and must be removed in a safe manner when work with infectious materials is finished or when a hole occurs in the glove. Hands must be washed immediately after removing them.

Proper management in case of accidental splash of organic matter or sharps accidental injuries:

• The specialist must be informed immediately after the accident occurs, such as cases of punctures with sharp tools or liquids splashed on the face,

• The affected areas must be washed well with running water in eye wash basins and in the event of exposure to large spills in multiple areas of the body and clothing, a safety shower is used.

• Review whether the worker has been vaccinated against hepatitis B before and take the necessary steps to protect him from infection

Spill bag Eye wash basins

• Procedures for cleaning up spilled materials in the laboratory:

A spill bag must be provided in the laboratory, containing the necessary items to deal with spills, such as: a concentrated disinfectant such as chlorine, preferably chlorine powder, a box of drying papers, cloth towels, disposable latex gloves, tweezers, a brush and a shovel to collect broken glass.

• Warning signs are placed to alert individuals in the area to prevent passage in the area

• Any contaminated clothing is disposed of, and skin areas are washed Contaminated with soap and water

• Wear gloves, a plastic apron, goggles and foot protectors. Place blotting paper on the spill site to absorb the spilled liquid and dispose of it in a hazardous waste container.

• If the spilled liquid contains glass pieces, chlorine powder must be placed to absorb the spills, then use a brush and a shovel or tweezers or cardboard strips to lift the contaminated glass and place it in a safety box

• Disinfect with chlorine at a concentration of 5000 parts per First, remove the million and then remove it

Procedures for dealing with body fluid spills in the biosafety cabinet

The walls and floors of the cabin, work surfaces and equipment used are cleaned and disinfected with the manufacturer's disinfectant, with the necessity of wearing gloves and a lab coat. With towels and disposing of them after use.

Safe disposal of microbe culture tubes and dishes:

Microbes must be eliminated from the dishes, tubes and samples before throwing them in the waste as follows:

• First, if they are glass:

- Insert these tubes and dishes into the autoclave to sterilize them and eliminate microbes.

- Dispose of the food media and samples after sterilization by emptying them into red infectious hazardous waste bags, and if they contain strain materials, they are emptied into spill basins.

- After that, the pipes and dishes are washed with soap and disinfected by soaking them in chlorine 1000 parts per million, then rinsed and left to dry, and they can then be used again.

- Broken pipes or dishes are disposed of in safety boxes so as not to expose workers to the risk of injury.

• Second, if they are single-use plastic:

- The pipes and dishes containing microbes are immersed in a quantity of chlorine 5000 parts per million.

- They are left for 5 to 10 minutes to eliminate the effectiveness of the microbes present.

- The dishes and pipes are disposed of in red infectious hazardous waste bags.

If they contain liquid materials, they are emptied into spill basins or floor drains, followed by disinfecting the basin or drain with chlorine.

For single-use plastic ends of the mechanical pipette:

The plastic part of the end must be safely disposed of by providing a large container sufficient for a working day next to the technician responsible for this work so that he can remove this part after using it by pressing the release button from the pipette into this container that contains a quantity of diluted chlorine 5000 parts per million so that this quantity of disinfectant liquid covers all these plastic covers.

• After finishing the work on the evening of the month, shake the container well after closing it.

• Empty the liquid into the spill basin.

• Dispose of the plastic covers inside the contaminated hazardous waste bag.

• Clean the container after emptying it and disinfecting the container with diluted chlorine, then rinse it well and leave it to dry.

Refrences

1. **European Agency for Safety and Health at Work**
2. **Association for Professionals in Infection Control and Epidemiolog "APIC" (2014): APIC Text of Infection Control and Epidemiology.**
3. **https://www.lenntech.ae/processes/disinfection/swimming-pool-/swimming-pool-disinfection.htm#ixzz8QJaZ50hq**
4. **Hot Tubs | Healthy Swimming | Healthy Water | CDC**
5. **Association for Professionals in Infection Control and Epidemiology "APIC"(2014): APIC Text of Infection Control and Epidemiology, 4th Edition**
6. **CDC Guidelines for Environmental Infection Control Last update: July 2019.**
7. **World Health Organization»WHO» (2009): WHO Guidelines on Hand Hygiene in Health Care.**
8. **Centers for Disease Control and Prevention "CDC" (2007/2019 Update):**
9. **Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings**

10. **Center For Disease Control(CDC) cover your cough 20109http: www. edu.goyflu/ protedt/cover cough.hm**

11. ***WASH@Work: a Self-Training Handbook*** **(PDF). Geneva: International Labour Office. 2016. ISBN 9789221285236. Archived (PDF) from the original on 15 November 2017. Retrieved 14 November 2017.**

12. **CDC guidelines for environmental infection control Last updated : july 2019**

13. **CDC's Cleaning and Disinfecting Guidance" (2021), downloaded fromhttps://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-buildingfacility.html on April 27, 2021**

14. **الشباب والرياضة وزارة** ومراكز الشباب في زمن كورونا شروط نزول حمامات السباحة بالأندية تفاصيل الوطن - أخبار مصر (elwatannews.com)

15. http://www1.kfupm.edu.sa/departments/ehs/Pages/ar

16. https://mawdoo3.com

17. https://www.beatona.net/ar/knowledge-hub/article/content-40284

18. **Biosafety. In Biomedical and Microbiological Laboratories (BMBL) 5thEdition 2009 last reviewed (24, October2018)**

19. **Laboratory Safety Guidance , Occupational Safety and Health Administration U.S. Department of Labor OSHA 3404-11R 2011**

20. **Centers for Disease Control and Prevention. Immunization of Healthcare Personnel: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 2011 Nov 25:60(RR-7):1-45**

21. **CDC's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings Last Reviewed: November 29, 2022**