Review Article

Life after lockdown: making workplaces safer

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ABSTRACT

Considering the relentless nature of spread of COVID-19 with no end in sight, many countries have now decided to lift off some restrictions and allow some non-essential services, at least in those areas which are not severely hit by COVID-19. Lack of planning for reopening can result in a cascade of failures as employers are not aware of how to address challenges of COVID-19 with limited resources under pandemic conditions. Undoubtedly this demands lots of modifications at the workplaces that will require various strategies including primarily development and implementation of the plan and maintaining and revising it from time to time. Thorough literature search was conducted for this purpose on varied search engines applying key terms as 'COVID-19' and 'return to work' and 'safe workplaces' and 'life after lockdown' which revealed different elaborate guidelines framed by various competent authorities in relation to reopening workplaces after lockdown of COVID-19 pandemic. The current review is an attempt towards combining and presenting broad guidelines for workplaces in a simplified manner.

Keywords: COVID-19, Safe workplaces, Life after lockdown, Return to work

INTRODUCTION

The current COVID-19 pandemic is spreading relentlessly ravaging country after country impacting several aspects of life and causing unprecedented morbidity, mortality and heavy financial losses all over the world. Majority of the countries including India have adopted measures such as home quarantine, lockdown, and complete shutdown of all non-essential services to contain the spread of the COVID-19 outbreak.[1] As a result, most of the world population is now confined to indoors except for healthcare workers and essential service providers.[1,2] The total lockdown for over two months now has created havoc across the country and transformed what was essentially a public health crises into an economic and humanitarian crises. Considering the relentless nature of spread of COVID-19 with no end in sight, many countries have now decided to lift off some restrictions and allow some non-essential services, at least

in those areas which are not severely hit by COVID-19.[1] Despite the lurking threat to life and economy, it is imperative to open up in a phased manner to prevent widespread bankruptcies, extended job losses and financial strains. Hence, it is the time for formulating a clear strategy on ways to reopen the work and public spaces keeping the risk of contracting the COVID-19 infection to a minimum. Lack of planning for reopening can result in a cascade of failures as employers are not aware of how to address challenges of COVID-19 with limited resources under pandemic conditions.[2] Thus many countries are now examining strategies to reopen their economies and are looking for evidence-based approach to return workers to their jobs in the safest way possible.[3]

Thorough literature search was conducted for this purpose on varied search engines applying key terms as 'COVID-19' and 'workers' and 'return to work' and 'safe workplaces' and 'life after lockdown' which revealed

different elaborate guidelines framed by various competent authorities in relation to reopening workplaces after lockdown of COVID-19 pandemic. The current review is an attempt towards combining and presenting broad guidelines for workplaces in a simplified manner.

GUIDELINES FOR WORKPLACE REGARDING COVID-19

The Occupational Safety and Health Administration (OSHA), Center for Disease Control and Prevention (CDC) and American Industrial Hygiene Association (AIHA) have developed COVID-19 planning guidance based on infection prevention and industrial hygiene practices.[1,2,4,5] Reopening of workplaces should be planned appropriately so that life after lockdown comes back to normal by making workplaces safer. Undoubtedly this demands lots of modifications at the workplaces that will require various strategies of which the important ones are development of plan, implementation, maintenance and revision.

DEVELOPMENT OF A PLAN

A frontline team of environmental service technicians and professionals should be formed, and it should be ensured that they are trained on personal hygiene protocols and are adequately supervised to promote ongoing quality control.[5] Guidance should be sought from a certified industrial hygienist (CIH), certified infection control professional, or any other qualified public health professional.[5,6]

Determine what needs to be cleaned

Workplaces, and industries must be evaluated to determine what kinds of surfaces and materials make up those places. For most surfaces and objects, regular routine cleaning with soap and water would suffice.[4] Besides, routine standard cleaning is sufficient for the following places i.e. outdoor areas; reopening of the workplaces and business places that has been unoccupied for seven days or more as the virus responsible for COVID-19 have not been shown to survive on surfaces more extended than this time.

Determine what needs to be disinfected

Targeted use of disinfectants is recommended and can be done effectively, efficiently, and safely on outdoor hard surfaces and objects which are likely to be touched by many people.[1,4] The process of disinfection must be done in following steps i.e. first, clean object or surface with soap and water. Though virus survives on environmental surfaces for varied period of time, it is susceptible to chemical disinfection. Hence the guidelines issued by the authorities concerned are to be followed, especially in areas reporting COVID-19.[1,3,7-9]

If an approved disinfectant is unavailable, a self-made disinfectant can also be used by adding 1/3 cup of bleaching powder to 1 gallon of water, or 70% alcohol solutions to disinfect. Bleach or other cleaning and disinfection products should not be mixed.[1]

Cleaning or disinfecting hard and non-porous materials or items like glass, metal, or plastic

For hard surfaces like glass, metal, or plastic, only those disinfectants which are approved for such surfaces should be used.[1,10] Household bleach solutions can also be used if appropriate for the surface. A few examples of frequently touched surfaces and objects which need routine disinfection following reopening are: tables, light switches, doorknobs, handles, desks, phones, keyboards, toilets, faucets and sinks, touch screens etc.[1,2,4]

Cleaning or disinfecting soft and porous materials or items like carpets and seating

These cannot be easily disinfected like hard and non-porous surfaces. Soft and porous materials that are not frequently touched should only be cleaned or laundered at the warmest appropriate water setting possible.[1] If using vacuum cleaners, only HEPA (high-efficiency particulate air) filtered vacuum cleaners must be used. Unfiltered vacuum cleaners can release a significant amount of respirable dust, which may carry infectious pathogens.[4,5] Hot water injection that continually delivers water above 140ºF (60ºC) should be used to periodically deep clean carpeting. Cleaning carpet and upholstered furniture is a crucial step good to an efficient cleaning and disinfection program. This should ideally be done when employees are not present, preferably after regular working hours.[5]

Indoor environmental quality (IEQ) considerations

Employers and business owners may find that they have to deal with IEQ issues because workplaces have not been occupied or maintained in response to stay-at-home orders.[2,4,5,11-14] A few IEQ issues which are frequently found and play a significant role in employee comfort in office settings are:

Temperature and humidity

It should be ensured that temperature and humidity are set at the range which is comfortable for most people. Maintaining temperature at 68.5-75°F in the winter, and at 75-80.5°F in the summer and relative humidity at 40-60% is recommended.[12,13]

Odours

If odors are present before reopening, then facility management or a consultant should be contacted. Familiar sources of odors can be P-traps in the plumbing system, carpet and furnishings, gassing,

garbage/trash, rodents and pests, water intrusion, refrigerator malfunction, and drip pans, unattended plants, and spoiled foods.[5,11,12]

Water damage

Signs of water damage include stained ceiling tile, bubbling paint, carpet damage, and buckled floor. Water damage can lead to mold growth that can contribute to adverse health effects if employees are exposed.[5,14] If water damage is discovered, facilities management or a consultant should be contacted. If standing water is located, then water should be drained safely as soon as possible.[4,5]

Waste

If waste remained in or around the workplace during the shutdown, then rodents, pests, and opportunistic microbes may be present. Facilities management or a consultant should be notified to clean up infested waste while wearing the appropriate personal protection equipment (PPE). If odours produced from waste are present, then it is recommended to either adjust ventilation accordingly or open windows and doors. Employers are discouraged from attempting to "cover-up" odours using products that produce a fragrance as employees may have an adverse reaction upon exposure.[5,11-14]

Examine policies for leave, telework, and employee compensation

Leave policies should be flexible and non-punitive, and allow sick employees to stay home and away from co-workers. They should also account for employees who need to stay home with their children if there are school or childcare closures, or to care for sick family members. When possible, use flexible worksites (e.g., telework) and flexible work hours (e.g., staggered shifts) to help establish policies and practices for social distancing between employees and others, especially if social distancing is recommended by state and local health authorities. Review these policies with all employees and provide information about available employee assistance services.[3] The re-start of economic activity should be in a phased manner, thus ensuring that authorities and businesses can adequately adjust to increasing activities in a safe way.

Considerations for transitioning to return to workplace

Business operation decisions should be based on the level of disease transmission in the community, resilience of public health and health systems coupled with readiness to protect the safety and health of employees and customers. Businesses and employers are encouraged to coordinate with state and local health officials to obtain timely and accurate information

During initial phase, employers are recommended to follow five steps i.e. continue to encourage remote work and telework whenever possible and feasible; if possible, return to work in staggered manner; close common areas where personnel are likely to congregate and interact; or enforce strict social distancing protocols; minimize non-essential business travel and adhere to guidelines regarding isolation following travel and strongly consider special accommodations for workers who are members of a vulnerable population which include elderly individuals and those with serious underlying health conditions, including uncontrolled high blood pressure, uncontrolled diabetes, chronic lung disease, obesity, asthma, and those whose immune system is compromised such as by chemotherapy for cancer and other conditions requiring such therapy.[15] The phased approach is displayed in Table 1.

Table 1: Phased approach recommended with strong focus on phase 1.

Key considerations	Phase 1	Phase 2	Phase 3
Who returns to work	Individuals who by returning to work provide critical support to essential teams	Individuals who by returning to work can now perform their role to the full scope	All individuals with the exception of those who self-identify as high-risk or who by medical standards are deemed high-risk
Social distancing	Strict	Heightened	Relaxed
PPE	Location specific	Location specific	Location specific
Cleaning and hygiene	Rigorous	Rigorous	Enhanced
Gate/entry protocol	Temp screening, questions etc	Temp screening, questions etc	Moderate
Common areas such as cafeterias	Closed or Take-n-Go only	Take-n-Go or Staggered approach to limit occupancy	Staggered approach to limit occupancy, if needed
Conference rooms	Limited to those rooms where physical distancing can be observed	Limited to those rooms where physical distancing can be observed	Open
Visitors	Severely restricted	Restricted	Monitored

IMPLEMENTATION OF THE PLAN

During a COVID-19 outbreak, when it may not be possible to eliminate the hazard, the most effective protection measures are (listed from most effective to least effective): engineering controls, administrative controls, safe work practices (a type of administrative control), and PPE.[2]

Consider the resources and equipment's needed

The availability of cleaning and disinfection products and appropriate PPE should be kept in mind.[1] PPE includes gloves, goggles, face shields, face masks, and respiratory protection when appropriate.[2] All types of PPE must be selected based upon the type of hazard to the worker; properly fitted and periodically replaced, as applicable; consistently and appropriately worn when required; regularly inspected, maintained, and replaced as necessary; properly cleaned, and stored or disposed of, as applicable, to avoid contamination of self, others, or the environment.

In specific situations, personnel with specialized training and equipment can be approached for applying certain disinfectants such as fumigants or fogs. PPE being used for protection against COVID exposure, under no circumstances should substitute PPE for protection against occupational hazards. These should be used as mutually complementary PPE.[11,15]

Clean surfaces with soap and water followed by appropriate disinfectant product

Routine cleaning with soap and water alone reduces the risk of exposure and is a necessary step before disinfecting dirty surfaces. Always wear PPE appropriate for the chemicals being used for cleaning and disinfecting.[1,2] After cleaning, it is essential to wash both the hands thoroughly with soap and water.

Always follow the directions on the label

For safe and effective use of the disinfectant follow the instructions on the label to know the exact details of concentration, dilution, method of application, contact time and any other special considerations when applying.[6-10] Most of the product labels recommend keeping the surface wet for a specific amount of time. The label also lists precautions such as wearing gloves and also make sure there is good ventilation when using the product. All disinfectants should be kept out of the reach of children.[6-8]

Workplace audit

Review the workplaces and consider whether staff can maintain a six feet physical distance between each other in workplaces. How to manage meetings, interviews and other interactions and distancing to be maintained in communal areas such as canteens and kitchens should also be contemplated. Carry out adaptations to the layout of the workplace and the organisation of work that will reduce COVID-19 transmission before resuming work fully and before all workers return to the workplace. Consider resuming work in stages to allow adaptations to be carried out.[15]

Ensuring workplace readiness

Have key stakeholders been engaged in return to workplace plans/planning (businesses, local government, unions/works councils, tenants, contractors, etc.)? Is there a plan for routine monitoring of return to workplace? Is there a plan for periodic status updates to employees and key stakeholders? Is there a plan for responding to any new reported COVID-19 cases on site? Have critical roles/skills, functions or requirements been identified for return to workplace? Have safety plans and expectations been established that align with the return to workplace plan?[15]

MAINTENANCE AND REVISION OF THE PLAN

Routine cleaning and disinfection are an essential part of reducing the risk of exposure to COVID-19.[1,2,4,5] A disinfection routine should be established, and all contact surfaces should be disinfected regularly daily, including individual workspaces between each shift, common area contact surfaces between each use, commonly touched surfaces in office settings include: door handles, elevator buttons, bathroom surfaces, kitchen appliances, and surfaces, sign-in areas, and standard office electronics (e.g., phone, printer, keyboard, mouse, and personal devices). Usage of a checklist or audit system to track when and how cleaning is being conducted is highly required. It should be made sure that there is enough supply of gloves and appropriate PPE.[1,5]

Maintain safe behavioral practices

People should make significant behavioral changes to reduce the spread of COVID-19. Following practices must be continued strictly even after reopening the working places so that they can be kept open.[1,2] Social distancing maintained (mainly, staying 6 feet away from others especially when going into a shared space). Frequently washing hands or use alcohol-based (at least 60% alcohol) hand sanitizer when soap and water are not available. Wearing cloth face coverings, avoiding touching eyes, nose, and mouth, staying home when sick, cleaning and disinfecting frequently touched objects and surfaces.

Consider practices that reduce the potential for exposure

It is essential to change the methods of using public spaces by people to work, live, and play. One should continue to think about their safety and the safety of

others. To reduce the exposure to or the risk of spreading COVID-19 after reopening, people should make long-term changes to their practices and procedures. These could include reducing unnecessary touching of certain surfaces or materials, wiping public surfaces before and after touching them, reducing the use of porous materials used for seating, keeping some doors left open to reduce touching by people, opening windows to improve ventilation, or removing objects in the common areas, like coffee creamer containers.[1,2,4,5] Successful implementation of these behavioral adjustments can help reduce the spread of COVID-19. Many other steps can be put into practice e.g., reorganizing general office space configuration.[4]

Prior to re-occupancy, a detailed review of the configuration of the workspaces should be performed, and the following changes must be done. Elimination of reception seating areas and requesting that guest's phone ahead or installing a plastic partition at the reception area. Reconfiguration of workstations so that employees do not face each other.

Temporarily replacing amenities that are handled with high contact frequency, such as water coolers, vending machines, coffee makers etc., with alternatives. Employees should be encouraged to use virtual meeting tools, including phone and virtual teleconference, instead of in-person meetings, whenever possible. Lingering and socializing before and after meetings should be discouraged. Usage of disposable products wherever possible.

The plan should be regularly updated based on the recent guidelines and the current circumstances.

ENTRY POINT HEALTH ASSESSMENT

Best practice for safe return to work after COVID-19 requires daily mandatory temperature testing implemented on a non-discriminatory basis: Use non touch infrared thermometers or thermal scanners. The identity of employees exhibiting fever (>100.4 ^{0}F / 38 ^{0}C) or other COVID-19 symptoms should only be shared with members of company management with a true need to know; process of self-assessment and declaration at the entrance of the site; list of comorbidities should be decided by the enterprise, indicative one would be uncontrolled diabetes mellitus, uncontrolled hypertension, heart diseases, lung diseases (COPD, asthma), cancer, conditions with immunosuppression (HIV AIDS, bone marrow transplant), dialysis and kidney diseases, liver disease etc., a consent for data sharing with company for complying with government directive and a disclaimer, should be included in the form to be signed by the person.

Organizations must ensure compliance to requirements of data storage and access while implementing this process.[15,16]

RE-ORIENTATION/RE-INDUCTION PROCESS

Addressing mental health issues

It will be important for every employer to ensure that the organization culture is inclusive, and that every employee feels they are returning to a supportive and caring environment and managers are sensitive to any underlying tensions or anxieties and confident about dealing with them. Some of the fears and reactions spring from realistic dangers, but many reactions and behaviours are also borne out of lack of knowledge, rumours and misinformation.[15]

Creating and maintaining a mentally healthy work environment means having a culture conducive to conversations.[17]

Communication strategy

It would be a good idea to constantly communicate with employees, through the lockdown, and even share with them return to workplace plan to gain trust.

Maintain clear communication around the health and safety measures the company will be putting in place.

Solicit the cooperation of the workers' union in preparedness planning. Communicate with them about the preventive steps being taken by the company towards mitigating the consequences of the pandemic at workplace. This will send a message of participatory management of the crisis. Invite their suggestions and respect their views. Active and collaborative participation from workers' union will help in smooth and seamless start up activities and stabilisation of operations. It will go a long way in instilling confidence and maintaining discipline in the workforce.

Providing regular updates to workers about the status of COVID-19 will help them to feel informed and well supported, and in return, stay motivated to assist and adapt through this challenging time.

Risk assessment and management

Employers will need to consider detailed health and safety risk management approaches in close collaboration with safety and occupational health teams and advisories by state health authorities.

Risk assessment of the changed workplace scenario should factor probabilities of COVID risk in daily workplace operations.

Involve workers and their representatives in the risk assessment. Risk assessment can be process risk evaluation or task-based health risk assessment.

Pay special attention to workers who are at high risk and be prepared to protect the most vulnerable and pregnant workers.

Workplace risk assessment for exposure to COVID and planning for preventive measures for jobs should be as follows low jobs or work tasks without frequent, close contact with the general public and other co-workers, visitors, clients or customers, or contractors, and that do not require contact with people known to be or suspected of being infected with COVID-19; medium jobs or work tasks with close, frequent contact with the general public, or other co-workers, visitors, clients or customers, or contractors, but that do not require contact with people known to be or suspected of being infected with COVID-19 and high jobs or work tasks with high potential for close contact with people who are known or suspected of having COVID-19, as well as contact with objects and surfaces possibly contaminated with the virus.

Risk assessment should be carried out for each specific work setting and each job or group of jobs.

Some critical functions require manning by vulnerable personnel who can be accommodated by special isolated work cabins, accommodation on campus or other similar living arrangements proximate to workplace with fully employed risk mitigation measures.[15]

EMPLOYEE TRAINING

Provide training in a language that is readily understandable by all employees on the following topics i.e. general description of COVID-19, symptoms, when to seek medical attention, how to prevent its spread, and the employer's procedures for preventing its spread at the workplace; how an infected person can spread COVID-19 to others even if they are not sick; how to prevent spread of COVID-19 by using mask, hand hygiene, social distancing etc.; cough and sneeze etiquette; avoiding touching eyes, nose, and mouth with unwashed hands; avoiding sharing personal items with co-workers (i.e., dishes, cups, utensils, towels); providing tissues, no-touch disposal trash cans and hand sanitizer for use by employees.[18]

SOCIAL DISTANCING AND MODIFICATIONS AT WORK

Designate six feet of distance between people where queues are likely to form, such as near entrances, time clocks and in cafeterias.

Remote meeting facilities and video conferences should be encouraged wherever possible to minimize the need for staff to travel. Limit in-person meetings to a small number of attendees.[15,19]

Curtail visitor access to the workplace. If possible, deliver services remotely instead of in person.

If possible, ask vulnerable workers to work from home. Eliminate, and if not possible limit, physical interaction with and between customers. When delivering goods, do so through pick-up or delivery outside the premises. Manufacturers may consider staggering shift times and meal and rest breaks while maintaining compliance with law requirements. Facilitate workers' use of individual rather than collective /pool transport using bicycles and encouraging workers to walk to work, if possible. Require employees to practice social distancing at work. This can include staying at least six feet apart, limiting the number of occupants in offices and/or elevators, requiring office doors to remain closed when occupied, closing lunch and break areas, and restricting occupancy and spacing.[20,15]

Portion of the tables or chairs in a cafeteria may need to be rearranged/removed. Closing certain stalls/urinals in the restroom to create adequate distance between individuals. Prop open doors to reduce touching of handles. Install glass or plexiglass barriers where people have to meet to talk and exchange documents or materials.[15]

HYGIENE MEASURES

Employees should be advised to wash their hands and wear masks before leaving their residence, during travel and at work.

Identify and procure PPE. Calculate number of people, daily requirement for 6 days a week for 6 weeks - stocks have to be there accordingly.

Supply soap and water or appropriate hand sanitizer at convenient places and maintain sufficient supply. Display posters promoting hand-washing.

Put sanitizing hand rub dispensers in prominent places around the workplace. Make sure these are regularly refilled.[21]

Provide training to all cleaning /housekeeping staff on-site.

Schedule frequent and regular cleaning of high-traffic areas like shared equipment, kitchens and cafeterias, water coolers, doors, bathrooms and copy machines.[22]

Avoid excessive workload on cleaning staff by taking appropriate measures, such as assigning additional staff to the tasks and asking workers to leave their workspace tidy.[15,23]

Provide workers with tissues and waste bins lined with a plastic bag so that they can be emptied without contacting the contents.[24]

For electronics-such as tablets, touchscreens, keyboards, remote controls etc., consider using wipeable covers. If there are no manufacturer's instructions for this, use

alcohol-based wipes or sprays containing at least 70% alcohol and dry the surfaces thoroughly.[10,15]

Ensure workers are trained on the hazards of the cleaning chemicals being used in the workplace.[15]

CONCLUSION

In the current scenario, with no end in sight, living with COVID-19 is a harsh reality that needs to be accepted. Subject to nature of transmission of the disease in the area, the degree of any relaxation of restrictions needs to be phased, well planned and properly implemented. Organisations must consider all the available options and develop capability to mitigate the risks involved. For the reopening of workplaces after lockdown, various competent authorities have framed different elaborate guidelines. An amalgamation of these is presented in this article in a simplified and comprehensive manner. However, the successful implementation is solely dependent on the level of cooperation between the employers and employees.

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