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How Should Work Environments Adapt During the COVID-19 Epidemic?

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[This document is part of a series of discussion notes addressing fundamental questions about the COVID-19 crisis and response strategies. These documents are based on the best scientific information available and may be updated as new information comes to light.]

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The European Union Roadmap towards lifting COVID-19 containment measures indicates that "**the re-start of the economic activity should be phased in**, thus ensuring that authorities and businesses can adequately adjust to increasing activities in a safe way. There are several models (jobs with low interpersonal contact, jobs suitable for teleworking, economic importance, shifts of workers, etc.), but not all the population should go back to the workplace at the same time, with an initial focus on less endangered groups and sectors that are essential to facilitate economic activity (e.g. transport). As social distancing should remain largely in place, **teleworking should continue to be encouraged**. At the work place, occupational health and safety rules imposed by the pandemic should be observed."

The newly-published document refers to this **adaptation in the work environment**. It is based on internal ISGlobal documents and corresponding documents from other agencies (see Bibliography), and should be reviewed as additional knowledge accumulates ●

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1. Work Related Health Effects Associated with COVID-19

"Previous epidemics such as SARS have clearly shown that workers in specific occupations such as nurses suffer profoundly from stress and burn-out and in some occasions are stigmatised in the home environment as potential carriers of the infection."

The primary health effect of interest is **infection with SARS-CoV-2** and development of life-threatening diseases. This is not equally distributed in different occupations. Previous epidemics such as SARS (severe acute respiratory syndrome in 2003) have clearly shown that workers in specific occupations such as nurses suffer profoundly from **stress** and **burn-out**, and in some occasions are **stigmatised** in the home environment as potential carriers of the infection. Studies from Taiwan during the SARS epidemic indicted that about a quarter of nurses considered leaving the job due to workload, stress, social stigma, and risk of infection.

Stress and anxiety can also be frequent symptoms in other work places that are not high risk. It can be related to risk perception or lack of measures (or perceived lack of measures) to contain the infection among workers. Indirect effects may be expected from working from home, with reduced active commuting and **less physical activity. Absenteeism** (staying away from work) may also increase because workers may be sick or infected (in quarantine), are caregivers for sick family members or children, or are simply afraid to go to work because of fear of possible infection

Box 1. Health effects associated directly or indirectly with the COVID-19 epidemic and the societal responses to control the epidemic:

- Primary risk: Infection with SARS-CoV-2
- Stress
- Burnout
- Stigma (as potential carrier of infection)
- Absenteeism from work
- Multiple indirect effects from working from home and limited physical activity (from reduced active commuting and confinement in general)

2. Occupations at High, Medium or Low Risk to Infection by SARS-CoV-2

"Occupational risk to SARS-CoV-2 depends on several factors including the type of industry and occupation and whether there is frequent or extended close contact with people infected (usually defined within two meters) with SARS-CoV-2."

Occupational risk to SARS-CoV-2 depends on several factors including the type of industry and occupation and whether there is frequent or extended close contact with people infected (usually defined within two meters) with SARS-CoV-2. Most employed persons will be at low risk of exposure. In this document we use a simple **three-level** risk grouping.

1) High Exposure Risk Occupations

High exposure risk jobs are those with **high potential for exposure to known or suspected sources** of COVID-19. They include **healthcare workers** such as doctors, nurses, dentists, and professions with frequent and close contact with the general population (e.g., security guards or taxi drivers) in high-frequency periods. Among the highest risk groups are those performing **aerosol-generating procedures** on known or suspected COVID-19 patients, including intubation, cough induction procedures, some dental procedures or invasive specimen collection, and collection or handling specimens from COVID-19 patients. Other health workers such as ambulance operators or hospital staff entering COVID-19 patients' rooms are also at high risk but usually at lower levels than the categories mentioned above.

2) Medium Exposure Risk

Medium exposure risk jobs are defined by OSHA (Occupational Safety and Health Administration) as those that require frequent and/or close contact with people who may be infected with SARS-CoV-2, but who are not known or suspected COVID-19 patients. There is a particular concern with areas where there is ongoing epidemic and community transmission, such as in Spain at the moment (spring 2020).

The number of workers classified as medium risk increases considerably since it includes those working in frequent **contact with the general public**, along with schools, high-density work environments, environments with frequent turnover of persons, such as **banks** and **retail settings** like shopping centers.

3) Low Exposure Risk

Low exposure risk includes jobs that **do not require contact with people known to be, or suspected of being infected** with SARS-CoV-2, nor having frequent close occupational contact with the general public and other co-workers.

4) Mixed exposure risks and increased vulnerability

Many offices and other work environments may include a **mix of Low and Medium exposure risk groups** and a mix of workers with higher or lower vulnerability to the disease. A mix of exposure risks may result in potential increase in risk for all workers if prevention measures are not taken. An example would be a bank office having first line of workers in continuous contact with the public, while other office workers may not be.

Some workers may be at an increased vulnerability, for example, older workers and workers with underlying medical conditions, such as hypertension and heart disease. Vulnerability may also depend on co-exposures to factors such as air-pollutants, but robust evidence has not yet been established ●

3. Workplace Preparedness

"It is essential that employers and companies develop an Infectious Disease Preparedness and Response Plan that parallels the government's pandemic planning to help guide protective actions against COVID-19 in the workplace."

Workplace preparedness should be applied to all workplaces and should address risk both during a high-risk epidemic period and during the prolonged post-lockdown periods. Disease preparedness for COVID-19 depends on **the way of transmission, the prevalence of disease, and the degree of immunity** in a population.

When someone who has the SARS-CoV-2 virus coughs, sneezes, or exhales, they release droplets and aerosols of infected fluid. People standing within one or two meters away from the infected individual could easily catch the virus. This is the principal way of getting infected. People could also catch COVID-19 by touching contaminated surfaces or objects (e.g., desks, telephones, tools) and then touching their nose, mouth, or eyes.

Essentially, all non-pharmacologic/non-vaccine measures of preparedness are based on preventing the two ways of infection: breathing droplets of infected fluid or touching infected surfaces. Virus transmission patterns are ultimately determined by how people adhere to the **hygiene recommendations**.

3.1. Infectious Disease Preparedness and Response Plan

It is essential that employers and companies develop an **Infectious Disease Preparedness and Response Plan** that parallels the government's pandemic planning to help guide protective actions against COVID-19 in the workplace. Conflicts may occur when government plans are not perceived as adequate, such as limited disease testing as is the case in Spain, less coherent communication in the post-lockdown phase and emerging (scientific or political) dissent.

Plans should consider and address the **level of risk associated with each worksite** and tasks the employees perform. Factors that should be considered include whether and how employees are in contact with the general public, customers, and co-workers; whether the workforce includes employees at particularly high risk of infection (e.g., business travellers or healthcare workers); non-occupational risk factors at home and in community settings (e.g., baseline prevalence in a population); individual risk factors (e.g., older age); presence of chronic medical conditions (e.g., immunocompromising conditions); and pregnancy.

Plans should also take into account possibilities of **work interruptions** caused by a new outbreak, increased rates of worker absenteeism, options for conducting essential operations in a lab or other units, and interrupted supply chains or delayed deliveries.

It is essential that **preventive measures** are established in workplaces, with **physical distancing, handwashing facilities, and respiratory etiquette** in place.

It is also essential that employees have a voice as a community of workers, and are informed, engaged, and willing to participate in the transition.

Multiple psychological, societal, and cultural factors changing on an ongoing basis increase the complexity of planning for COVID-19 response transitioning. Risk perceptions influence individuals' judgments and evaluations of threats, and can adversely affect compliance by the workers and response to information communicated by authorities.

The pandemic and its restrictions may have affected **mental and physical well-being**, social cohesion, economic stability, as well as individual and community resilience and trust. In this complex context, the voices of individuals and work communities are a valuable resource for transition planning.

Box 2. Essentials of returning to work

- **Preventive measures** should be established in workplaces, with physical distancing, handwashing facilities, and respiratory etiquette in place.
- Employees should be informed, engaged, willing to participate in the transition, and **have a voice** as a community of workers.
- **Flexibility** should be prioritized in the way the workforce is prepared, regulated, and mobilized.

"Employers should promote and provide facilities for frequent and thorough hand washing, and provide facilities for this and encourage respiratory etiquette, such as covering coughs and sneezes."

Measures, such as massive screening with PCR or antibody tests, are not recommended although **these tests should become widely available** for easy and rapid testing of workers with potential symptoms or those who may have been in contact with an infected individual. The use of massive testing has been employed by several big companies but these should be perceived more as a psychological means to boost confidence rather than an efficient way to prevent future outbreaks. This is clearly an insufficient measure if conditions for work are not adequate to prevent infection. However, regular testing would need to be done to reduce infection risk from asymptomatic people.

3.2. Implement Workplace Control Measures

Workplace control measures include:

a) **Engineering controls** that reduce employee exposure to work-related hazards, such as increasing ventilation rates in the work environment or installing physical barriers.

b) **Administrative controls** that change work policies, such as minimizing contact among workers, clients, and customers by replacing face-to-face meetings with virtual meetings, or implementing rotation of days of work in a team/workplace. Promoting Safe work practices are part of administrative controls and include measures such as encouraging thorough hand washing.

Implementing basic **Infection Prevention Measures** is a key component of pandemic planning and preparation. Employers should promote and provide facilities for frequent and thorough hand washing and encourage respiratory etiquette, such as covering coughs and sneezes.

Depending on the type of work and contacts, **face masks** should be provided to employees and customers, and regular training on how to use PPE should be done. Policies and practices should be established to increase the physical distance among employees, including flexible worksites (e.g., telework) and flexible work hours.

Workers should be discouraged from using other workers' phones, desks, offices, or other work tools and equipment as much as possible.

Regular housekeeping practices should be maintained, including routine cleaning and disinfecting of surfaces, equipment, and other elements of the work environment.

Use of Personal Protective Equipment (PPE)

While use of PPE is widely regarded as efficient means for prevention, in most workplaces, engineering and administrative controls should have higher priority. Nevertheless, PPE such as **gloves, goggles, face shields, and face masks**, may still be needed to prevent certain exposures. While the correct use of PPE can help prevent some exposures, it **should not substitute other prevention strategies**.

Workplace Flexibilities and Information

Flexible policies should be implemented to permit employees to stay at home to care for sick family members or confined children. Employers should be aware of the workers' concerns about pay, leave, safety, health, and other issues that may arise during infectious disease outbreaks. Appropriate training, education, and informational materials should be provided: informed workers who feel safe at work are more likely to adhere to recommended best practices.

"Prompt identification and isolation of potentially infectious individuals is a critical step in protecting workers, customers, visitors, and others at a worksite."

3.3. Facilitate Policies and Procedures for Prompt Identification and Isolation of Sick People

Prompt identification and isolation of potentially infectious individuals is a **critical step** in protecting workers, customers, visitors, and others at a worksite. Identification and testing are—in principle—a responsibility of the national health care system, including primary health care and occupational health services of each company.

Employees should be encouraged to self-monitor for signs and symptoms of COVID-19 if they suspect possible exposure, as well as any contact with SARS-CoV-2-positive persons. Sick employees should be actively encouraged to stay at home. Sick leave policies should be flexible and consistent with public health guidance.

3.4. Other measures

Consideration should be given to prevent risk of **transmission to non-employees** in certain workplaces (e.g., nursing homes, prisoners at increased vulnerability by age, crowdedness, respectively). This may require regular testing of all employees.

Para-occupational household exposures do not form part of workplace preparedness but should be taken into account, especially that there may be risk of infection from the worker to other household members (which may include vulnerable persons) ●

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• Measures/considerations published by WHO-EURO

• A comprehensive statement by the Collegium Ramazzini: PREVENTION OF WORK-RELATED INFECTION IN THE COVID-19 PANDEMIC

• Joint European Roadmap towards lifting COVID-19 containment measures

TO LEARN MORE

• COVID-19: How to Manage the Reopening of Schools? (ISGlobal COVID-19 Policy Brief #7

• Mobility & COVID-19: How Should We Redesign Transport for a New Future? (ISGlobal COVID-19 Policy Brief #6

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