

Biological Hazards

In the Extractive Sector

The COVID-19 example

What can be a biological hazard?



Bacteria Fungi
and viruses



Blood and other
body fluids



Human waste



Animal and bird
feces



Insects and
animal bites



Biological Hazards - Control Measures

Potential Hazard	Engineering Control	Administrative Control	Personal Protective Equipment
Exposure to blood-born pathogens through contact with contaminated items and surfaces	Vaccines	Compliance with all infection prevention and control (IPC) practices. Immunization program. Worker education	Gloves, protective clothing, eye and face protection.
Exposure to airborne biological agents through contact with secretions from infectious clients (coughing, sneezing, etc.) or air contaminated with infectious biological agents	Early detection of infection status. Isolation. Vaccines.	Compliance with all infection prevention and control practices. Immunization program. Worker education	PPE based on the risk assessment may include eye protection, respiratory protection and other protective clothing

The Law: Directive 2000/54/EC - biological agents at work



on the protection of workers from risks related to exposure to biological agents at work



Minimum provisions



(a) "biological agents" shall mean micro-organisms, including those which have been genetically modified, cell cultures and human endoparasites, which may be able to provoke any infection, allergy or toxicity



(b) "micro-organism" shall mean a microbiological entity, cellular or non-cellular, capable of replication or of transferring genetic material



(c) "cell culture" shall mean the in-vitro growth of cells derived from multicellular organisms

Directive 2000/54/EC, Article 3

1

In the case of any activity likely to involve a risk of exposure to biological agents, the nature, degree and duration of workers' exposure must be determined in order to make it possible to assess any risk to the workers' health or safety and to lay down the measures to be taken

2

In the case of activities involving exposure to several groups of biological agents, the risk shall be assessed on the basis of the danger presented by all hazardous biological agents present

3

The assessment must be renewed regularly and in any event when any change occurs in the conditions which may affect workers' exposure to biological agents

4

The employer must supply the competent authorities, at their request, with the information used for making the assessment

Risk Groups of biological agents according to level of infection Directive 2000/54/EC

- **group 1** biological agent means one that is **unlikely to cause human disease**
- **group 2** biological agent means one ***that can cause human disease*** and might be a hazard to workers; it is ***unlikely to spread to the community***; there is usually effective prophylaxis or treatment available;
- **group 3** biological agent means one that ***can cause severe human disease*** and present a serious hazard to workers; it ***may present a risk of spreading to the community***, but there is usually effective prophylaxis or treatment available;
- **group 4** biological agent means one that ***causes severe human disease*** and is a ***serious hazard to workers***; it ***may present a high risk of spreading to the community***; there is usually no effective prophylaxis or treatment available.

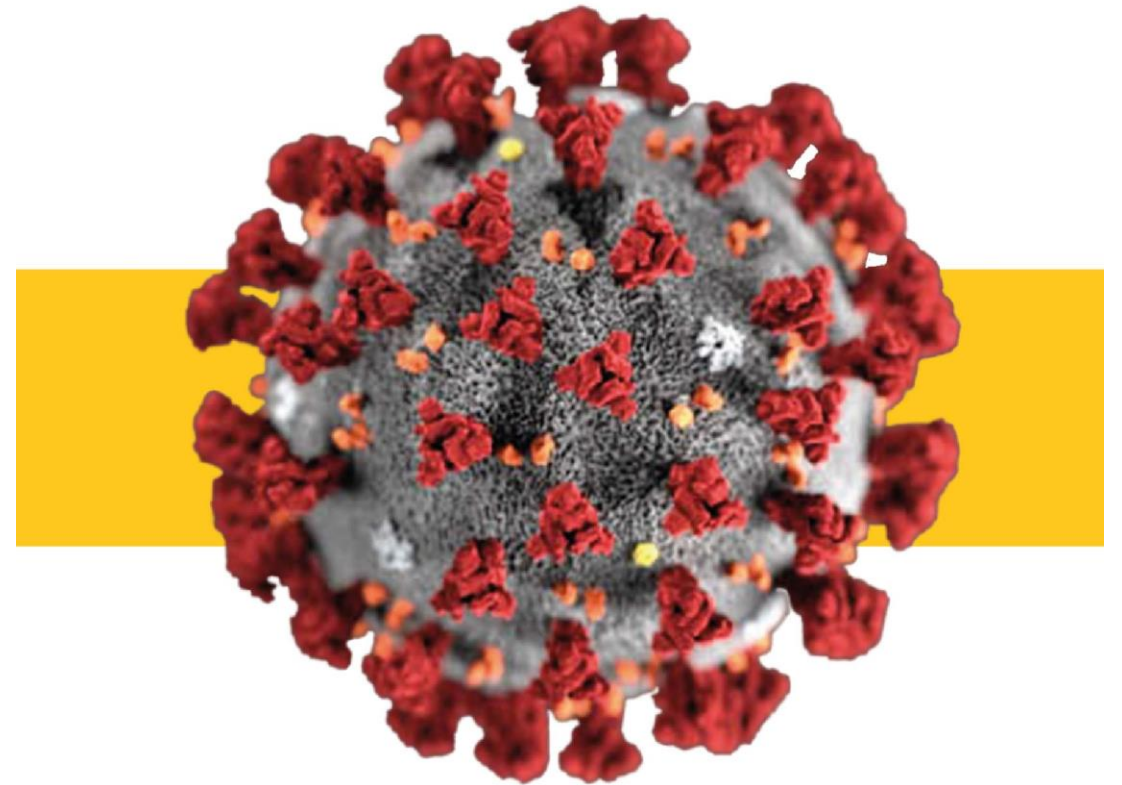


CORONAVIRUS (COVID-19)

The experience from the coronavirus biohazard

Important facts on coronavirus COVID-19!

- COVID-19 is a new strain of coronavirus first identified in Wuhan City, China in January 2020
- Coronaviruses are common across the world
- There is no COVID-19 vaccine yet!
- Symptoms may develop between 2 and 14 days after infection



[This Photo](#) by Unknown Author is licensed under [CC BY-SA-NC](#)

How COVID-19 is spread?

- From Close contact (**2 metres or less**) with an infected person
- Droplets produced when an infected person coughs or sneezes
- By touching a surface, object or the hand of an infected person that has been contaminated ...(such as touching doorknob or shaking hands then touching own face)

Signs and symptoms

- dry cough
- sore throat
- difficulty in breathing
- tiredness
- muscle pain
- fever

COVID-19

Disease caused by the SARS-CoV-2 virus



Novel coronavirus

Coronaviruses are viruses that **circulate among animals** but some of them are also known to affect humans.

The 2019 novel coronavirus was identified in China at the end of 2019 and is a new strain that has not previously been **seen in humans**.

Prevention

When visiting affected areas

Avoid contact with sick people



Wash your hands with soap and water



If you develop cough, use a medical face mask



Wherever you travel apply general hygiene rules

Symptoms

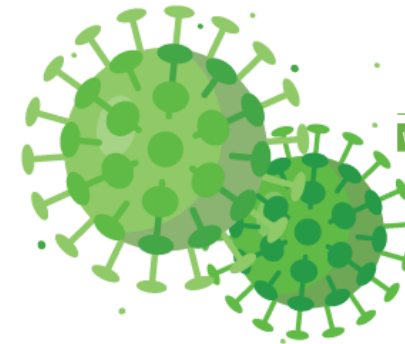
FEVER

COUGH

DIFFICULTY BREATHING

MUSCLE PAIN

TIREDNESS



Transmission

VIA RESPIRATORY DROPLETS

2-14 days
estimated incubation period



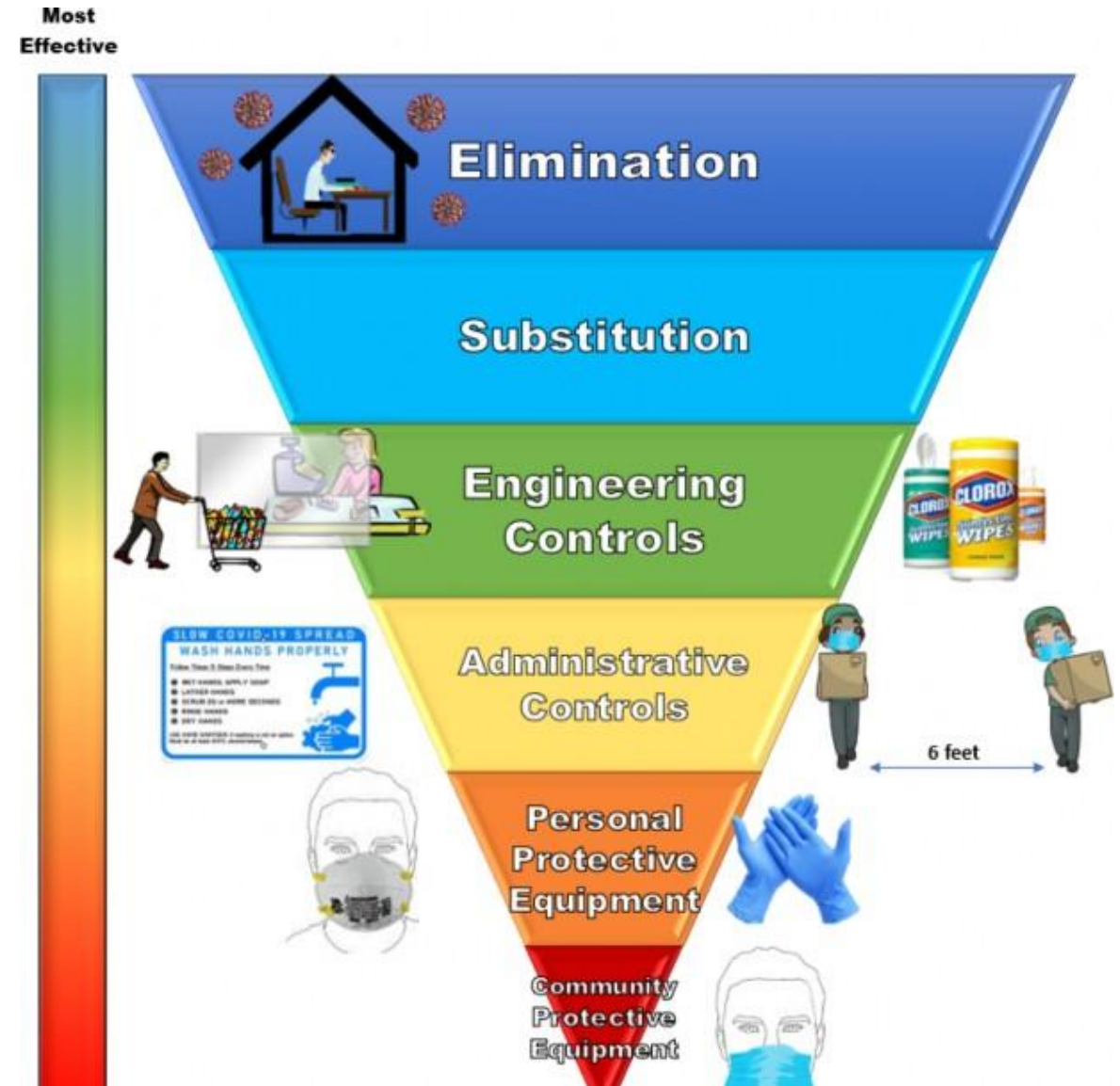
How to prevent spread of COVID-19?

- Wash hands often for at least 20seconds or use a hand sanitiser
- Avoid touching your eyes, nose, and mouth with unwashed hands
- Cover mouth and nose with tissue when coughing or sneezing
- Keep at least 2 arms' length distance with other people
- Clean and disinfect surfaces you touch
- Be alert and inform others if symptoms occur and **STAY HOME IF YOU ARE SICK**
- **Consult your employer on the hygiene procedures of your workplace**



COVID-19 Hierarchy of Controls

Environment, Health and Safety-Cornell University



As Hippocrates said...
Prevention is
better than
Cure!





Disclaimer

This presentation intends to inform and does not replace the training you should receive for your workplace. Always consult your health and safety manager for any questions arise for occupational health and safety issues
