

Managing COVID-19 in the Workplace

An Occupational Medicine Perspective.

Dr Michael Antoniadis, WorkDocs Ltd
Occupational & Environmental Physician (FAFOEM)
Wellington
17 April 2020

Overview

1. Epidemiology - what we know about COVID-19
2. Aetiology - how COVID-19 spreads
3. Situation in New Zealand
4. Symptoms and Diagnosis
5. Risk Factors
6. Managing the Risk - Work Zones, Risk Matrix, Health & Safety at Work Act 2015, Hierachy of controls, PPE.
7. Questions

Epidemiology

What we know about COVID-19 ...

- ▶ The severe acute respiratory syndrome COVID-19 is part of a larger group of Coronaviruses causing illness in humans and animals, some mild and some more severe.
- ▶ COVID-19 was a previously unrecognised infectious disease in humans until the outbreak in Wuhan, China in December 2019.
- ▶ The precise source of the novel coronavirus has not been proven. Current understanding and evidence is that the virus has a natural animal origin and most probably has its ecological reservoir in bats.
- ▶ WHO declared a Public Health Emergency of International Concern on 30 January 2020 and a Pandemic on 11 March 2020.

Aetiology

How Covid-19 spreads...

1. Primarily transmitted through droplets - from **cough, sneeze or potentially speech.**
2. Touching a **contaminated surface** and then touching your mouth, nose, eyes.
3. **Close personal contact**
 - ▶ Includes being less than 2 metres for more than 15min, including in a closed room.
 - ▶ **Infectivity.** The reproduction Number (R_0) for COVID-19 is expected to be around 2-3. i.e. **an infected person will, on average, infect 2 to 3 other persons.**
 - ▶ It is thought that transmission is greatest when people are symptomatic, especially around the time of symptom onset.
 - ▶ Risk of spread by asymptomatic individuals is likely low but has been described.

Situation in New Zealand

As of 16 April 2020:

- ▶ 1401 Confirmed (1084) or Probable (317) cases identified
 - ▶ 16 significant clusters.
 - ▶ 728 persons recovered
 - ▶ 9 Deaths
-
- ▶ NZ Case-fatality rate (death rate) is currently less than 0.5%. The overall global **Case-fatality rate (death rate)** is **approximately 6%** based on WHO data from 15 April.
 - ▶ Our community transmission is reported approximately 2% at present.
 - ▶ Currently at COVID-19 Alert Level 4

Situation in New Zealand

- ▶ **Level 4 - Eliminate** - Likely that disease is not contained
 - ▶ People instructed to stay at home.
 - ▶ **Businesses closed except for essential services (e.g. supermarkets, pharmacies, clinics) and lifeline utilities**
- ▶ **Level 3 - Restrict** - Heightened risk that disease is not contained
 - ▶ **More businesses open with ongoing higher restrictions on hospitality and retail outlets.**
 - ▶ Affected educational facilities closed and mass gatherings cancelled and ongoing closure of Public venues
- ▶ **Level 2 - Reduce** - Disease is contained but risks of community transmission growing
 - ▶ **Employers continue with alternative ways of working if possible (e.g. remote working, shift-based working, physical distancing within the workplace, staggering meal breaks, flexible leave arrangements)**
 - ▶ **High-risk people advised to remain at home (e.g. those over 70 or those with other existing medical conditions)**
 - ▶ Likely ongoing border and mass gatherings restrictions
 - ▶ Physical distancing on public transport and limit non-essential travel around New Zealand

Symptoms and Diagnosis

Symptoms include:

- ▶ **Fever** (greater than 38C) - 83%-98% of patients
- ▶ **Coughing**, often dry - 57%- 82%. Sputum (Phlegm) has been noted in a smaller percentage.
- ▶ **Difficulty breathing or a shortness of breath** - 18%-55%
- ▶ **Temporary loss or disturbance of smell and/or taste** - up to 86% of patients
- ▶ Sore throat - 5%-17% early in the illness
- ▶ Anorexia (Loss of appetite). 40% in a case series.
- ▶ Fatigue or myalgia/arthralgia (muscle/joint pain) - 26% to 69% (up to 44% for muscle aches)
- ▶ Less Common are symptoms of sneezing and runny nose, conjunctivitis, headache, dizziness, chest pain and gastrointestinal symptoms.

Asymptomatic individuals

- ▶ Asymptomatic individuals with proven COVID-19 at this time is described.
- ▶ Risk of spread from asymptomatic individuals is low but has been described.

Symptoms and Diagnosis

The illness in three stages:

Stage 1: an asymptomatic incubation period (up to 14 days but typically 5-6 days) with or without detectable virus. The **least** manageable stage.

One recent study suggests incubation can be as long as 24 days.

[JAMA. 2020;323\(14\):1339-1340. doi:10.1001/jama.2020.3072](https://doi.org/10.1001/jama.2020.3072)

- ▶ Approximately 97.5% of patients develop symptoms within 11.5 days of infection.

Stage 2: non-severe, symptomatic period with the presence of virus.

Stage 3: severe respiratory symptomatic stage with high viral load.

- ▶ Death secondary to respiratory failure associated with acute respiratory distress syndrome. Other cause of mortality includes a Cytokine storm and associated multi-organ failure.
- ▶ Remember COVID-19 is often a mild or moderate severity disease, however fit healthy people have had severe illness.

Symptoms and Diagnosis

Treatment options

- ▶ Pharmacological treatments continue to be explored. Largely hospital-based trials.
- ▶ No current vaccination for COVID-19 but is hoped for over next 12 to 18 months.

Risk Factors - High risk

1. Older age and/or underlying health conditions.
 - ▶ People aged 65 years and older
 - ▶ Chronic respiratory disease (incl. COPD, Poorly controlled or severe Asthma), uncontrolled Hypertension, uncontrolled Ischaemic heart disease (angina) or cerebrovascular disease (stroke), poorly controlled Diabetes. Chronic renal or liver disease.
2. People who are immunocompromised
 - ▶ Many conditions can cause a person to be immunocompromised, including cancer treatment, smoking, bone marrow or organ transplantation, immune deficiencies, poorly controlled HIV or AIDS, and prolonged use of corticosteroids and other immune weakening medications).
3. Morbid Obesity (BMI >40). Smoking and Recent Surgery
4. Malignancy (Active and those undergoing treatment)
5. History of travel
6. Pregnancy is no current evidence for intrauterine infection.

Risk Factors- Medium Risk & Low Risk

Medium Risk

1. Respiratory conditions
 - ▶ Well controlled mild asthma
2. Cardiovascular conditions
 - ▶ Resolved / managed Ischaemic heart disease
 - ▶ Controlled hypertension
3. Diabetes -Well controlled
4. Cancer - Resolved without need for treatment

Low Risk:

1. Multiple possible options
 - ▶ Without cardiac or respiratory compromise
 - ▶ Without compromised immunity

Vulnerable “Bubble”

- ▶ This needs careful consideration of the nature of the medical complaint, potential consequence of COVID 19 infection and likelihood of exposure. Would include those living with high risk individuals.
- ▶ Some may be best addressed by Human resource department.

Managing the Risk


- ▶ Any infectious disease encountered in the workplace is considered a **workplace hazard**.
- ▶ The [Health and Safety at Work Act 2015](#) requires that employers take all practicable steps to mitigate risk and protect workers at all times from workplace hazards.


Managing the Risk


Minimizing the risk of Covid 19 in the workplace

RISK TABLE - Risk of significant health consequence

		Work Class			
		Class 1 Contact with known or suspected COVID-19 case	Class 2 Work with some likelihood of COVID-19 exposure	Class 3 Work with low likelihood of COVID-19 exposure	Class 4 Work with No likelihood of COVID-19 exposure
Risk associated with medical condition(s)	High				
	Medium				
	Low				

 Generally not recommended - increased risk of significant health consequence for worker.

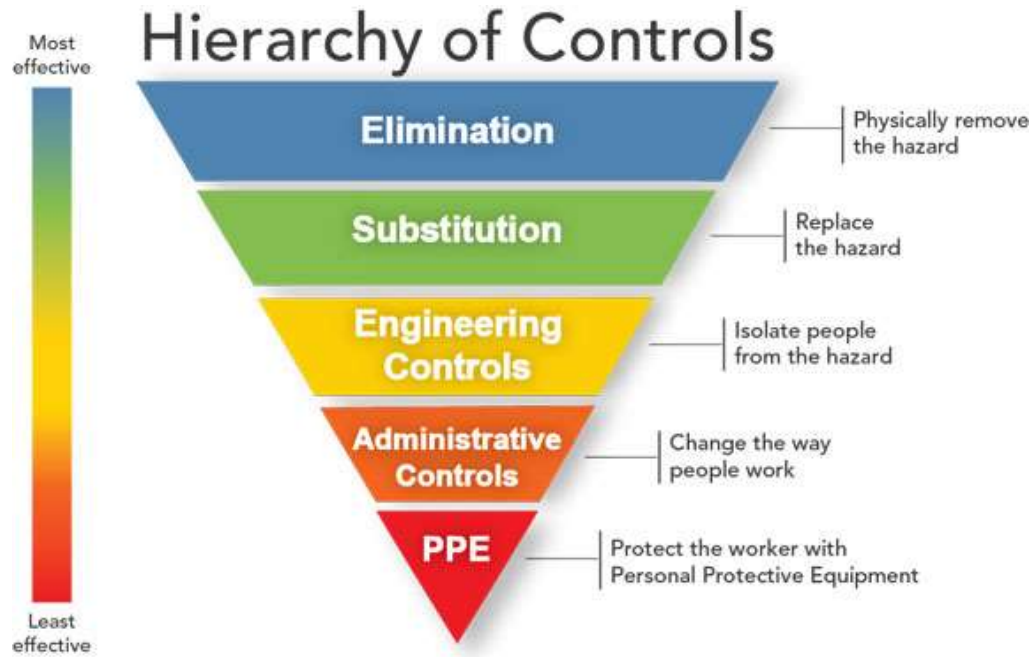
 Generally considered safe - very low likelihood of significant health consequence.

 +/- Requires further assessment and possible further controls

Managing the Risk

Minimizing the risk of Covid 19 in the workplace

Provide appropriate protection to workers through Hierarchy of Controls.



Managing the Risk

Minimizing the risk of Covid 19 in the workplace

Essential practices:

- ▶ Good personal hygiene- washing hands with soap and water for at least 20 seconds and drying hand thoroughly OR using an alcohol-based hand sanitiser (that contains at least 60% (some say, 70%) alcohol):
 - ▶ before eating or handling food
 - ▶ after using the toilet
 - ▶ after coughing, sneezing
 - ▶ after caring for sick people
- ▶ Good cough etiquette - cough into elbow and or tissues and safe disposal.
- ▶ Seek medical attention early if symptomatic. Report to employer.
- ▶ Getting immunised against other infectious diseases. Provide facility for workers to receive annual Influenza vaccine.

Managing the Risk

Minimizing the risk of Covid 19 in the workplace

Administrative Controls (change the way people work):

1. Plan and maintain worker's safety. Clearly communicate expectations.
2. Reinforce Sick, Paid and Unpaid, Parental leave availability.
3. Educate workers on COVID-19 risk factors and protective activity.
4. Encourage unwell workers to stay at home, even if symptoms mild.
5. Consider adjusting shift patterns to allow maintenance of physical distancing.
6. Minimizing contact between workers, clients and customers. Consider the staffroom use and risks there. Avoid hotdesking.
7. Support workers to work from home wherever possible.
8. Appropriate training, fitting (and refitting) and use of PPE if required.

Managing the Risk

Minimizing the risk of Covid 19 in the workplace

Engineering controls (isolate people from the hazard):

- ▶ 1m (2m if practicable) between workers, use physical barriers (eg clear plastic)
- ▶ Clean and disinfect frequently touched surfaces daily (e.g., light switches, doorknobs, countertops, handles, phones). A deeper clean if contamination from infected worker occurs.
- ▶ Maintain good ventilation - e.g. air conditioning systems are not recirculating air and are vented to the outside. Circulate air with open windows.
- ▶ Discourage sharing of tools and equipment, if feasible.

Managing the Risk

Minimizing the risk of Covid 19 in the workplace

Be Kind

- ▶ **Look out for worker's mental health & well-being**
 - ▶ Employers need to show empathy and compassion
 - ▶ Keep checking in on people's workloads and stress levels and offer support where possible e.g. EAP or Counselling.
 - ▶ Line managers should be trained in identifying workers experiencing increased stress, anxiety or low mood, including those working from home.

- ▶ **Offer flexible working hours depending on the workers individual home situation**
 - ▶ It is appropriate that consideration is also given to those who have caring responsibilities (elderly or sick family members).

- ▶ **Consider those who have reduced capacity/access to healthcare e.g. Financial constraints.**

Managing the Risk

Minimizing the risk of Covid 19 in the workplace

Use of Personal Protective Equipment (PPE - mask, gloves, face shields, clothing)

- ▶ Only required for some workers (as per Ministry of Health for Workplaces):
 - ▶ Facemasks and gloves are **not recommended** if you can maintain TWO* metre separation from workers with potential symptoms of COVID-19.
 - ▶ Consider glove-use for workers who touch surfaces or items touched by others e.g. Supermarket workers.
 - ▶ Regular hand hygiene and physical distancing must still be maintained.
 - ▶ For workers that are **unable** to maintain **physical separation** from potentially infected individuals, **facemasks and gloves are recommended** e.g. Prisons, healthcare workers etc.

*One metre separation in the workplace does remain the recommendation on MOH COVID-19 website and WHO.

Managing the Risk

Protective Personal Equipment (PPE)

It is important that PPE is:

- ▶ Consistently and properly worn when required.
- ▶ Regularly inspected, maintained, and replaced, as necessary.
- ▶ Properly removed, cleaned, and stored or disposed of, as applicable, to avoid contamination of self, others, or the environment.
- ▶ Maintain physical distancing as able, good hand hygiene and apply cough etiquette while in PPE.
- ▶ If employer runs out of essential PPE they may need to stop specific work activities until supplies become available.

Cloth face coverings:

- ▶ **These are not PPE. Uncertain whether cloth face coverings protect the wearer.**
- ▶ CDC in US recommends wearing cloth face coverings in public settings (e.g. grocery stores and pharmacies) **especially** in areas of **significant community-based transmission.**

Summary

Things to consider looking forward...

- ▶ Be responsive to this evolving situation for your specific workplace especially with frequent changes in Alert Levels.
- ▶ Recommendations discussed today may not apply in future as our understanding of the disease evolves. Refer to MOH for most relevant and up-to-date information on COVID-19.
- ▶ This presentation should not be used as a template for Hazard Management. It is recommended that the advice from Government is followed.
<https://covid19.govt.nz/help-and-advice/for-businesses-organisations-and-employees/>
- ▶ It is important to plan ahead and to anticipate that disruption is going to be **long term**. **This is a marathon and not a sprint** so workplace modification should be viewed as a long-term investment.

Questions?



Dr Michael Antoniadis, FAFOEM, WorkDocs Ltd, 17 April 2020

Managing the Risk

Questions you may have...

▶ How can I screen my employees for Covid-19 when they return to work?

Use questionnaires to screen workers about their:

1. Contact with ill individuals.
2. Symptoms of infection.
3. Measurement of their temperature.
4. Overseas travel or travel in areas of recent outbreak.

▶ What if my employee becomes unwell at work?

1. Immediately separate from other workers, customers, and visitors
2. Send home immediately
3. Follow Guideline for cleaning and disinfecting areas the sick workers visited. This may include hard (non-porous) as well as soft surfaces, linen, clothing and electronics.

CDC has clear guidelines for cleaning and disinfecting the workplace (<https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html>)

Managing the Risk

Questions you may have...

- ▶ **When is it safe for my employee to return to work after they've been unwell with COVID-19?**

There are two options:

1. Non-test based strategy (if test-based strategy is not feasible. Most suitable for industry)
 - ▶ At least 2 days (48 hours) have passed *since recovery* defined as resolution of fever without the use of fever-reducing medications **and** improvement in respiratory symptoms (e.g., cough, shortness of breath); **and**,
 - ▶ At least 7 days have passed *since symptoms first appeared*.
 - ▶ Severe illness or immunocompromise may shed virus for longer.
 2. Test-based strategy
 - ▶ Resolution of fever without the use of fever-reducing medications **and**
 - ▶ Improvement in respiratory symptoms (e.g., cough, shortness of breath), **and**
 - ▶ Confirmed Negative test result.
- ▶ Accurate antibody testing for COVID-19 remains elusive.

Managing the Risk

Questions you may have...

- ▶ **Is reactivation of COVID-19 possible?**
 - ▶ Yes, possible but no support for this having occurred in NZ.
 - ▶ Currently no specific clinical characteristics in first episode to distinguish the risk for reactivation.
 - ▶ It appears likely that there will be at least short-term immunity with lifelong immunity after infection is unclear.

- ▶ **Who is considered a close contact?**
 - ▶ A close contact is a person who experienced any one of the following exposures during the 2 days before and the 14 days after the onset of symptoms of a probable or confirmed case:
 - ▶ Face-to-face contact with a probable or confirmed case within 1 metre (3 feet) and for more than 15 minutes (cumulative time). Same closed space for longer than 2 hours.
 - ▶ Direct physical contact with a probable or confirmed case
 - ▶ Direct care for a patient with probable or confirmed COVID-19 disease without using proper personal protective equipment
 - ▶ Other situations as indicated by local risk assessments.

References:

1. COVID-19—New Insights on a Rapidly Changing Epidemic *JAMA*. 2020;323(14):1339-1340. doi:10.1001/jama.2020.3072
2. WHO Website <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
3. Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19) (WHO - Interim guidance 27 February 2020) https://apps.who.int/iris/bitstream/handle/10665/331215/WHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf
4. NZ COVID-19 Alert Levels https://covid19.govt.nz/assets/COVID_Alert-levels_v2.pdf
5. NZ Ministry of Health COVID-19 Case Definitions https://www.health.govt.nz/system/files/documents/pages/COVID-19_case_definition-8apr20.pdf
6. Guidance on Preparing Workplaces for COVID-19 (USA Department of Labour/OSHA) <https://www.osha.gov/Publications/OSHA3990.pdf>
7. Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1. *NEJM* 17/02/2020. https://www.nejm.org/doi/full/10.1056/NEJMc2004973?query=featured_coronavirus
8. BMJ Best Practice - Coronavirus disease 2019 <https://bestpractice.bmj.com/topics/en-gb/3000168/history-exam-referencePop96>
9. Coronavirus (COVID-19) advice for UK employers (April 2020). <https://www.cipd.co.uk/knowledge/fundamentals/emp-law/health-safety/coronavirus-factsheet>
10. Worksafe NZ <https://worksafe.govt.nz/>
11. Chartered Institute of Personnel and Development (CIPD) <https://www.cipd.co.uk/knowledge/fundamentals/emp-law/health-safety/coronavirus-employer-response-guide>
12. Centres for Disease Control and Prevention (USA) - CDC <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html>; <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-small-business.html>
13. Guidance on Preparing Workplaces for COVID-19 and OSHA Document <https://www.osha.gov/Publications/OSHA3990.pdf>
14. Screening workers for health risk due to potential exposure to Covid-19 in essential industries (Draft document April 2020). Dr Mark Floyd, Occupational Physician.

Symptoms and Diagnosis

Clinical Criteria

- ▶ The individual presents acute respiratory infection with at least one of the following symptoms: cough, sore throat, shortness of breath, coryza (runny nose, sneezing, post-nasal drip), anosmia (absence of sense of smell), with or without fever.
- ▶ Testing is available to anyone who meets the clinical criteria regardless of travel history or known contact with a confirmed or probable case of COVID-19.
- ▶ Testing of individuals who are asymptomatic is NOT recommended unless requested by the local Medical Officer of Health.

What is the difference between confirmed and probable cases?

- ▶ A 'confirmed case' is a case that has laboratory definitive evidence.
- ▶ A 'probable case' is a case which meets the clinical criteria but for whom testing has been inconclusive OR a close contact of a confirmed case who meets the clinical criteria.

Managing Close Contacts

- ▶ Managing close contacts of suspect cases
 - ▶ Any household or other close contacts of suspect cases should be meticulous with physical distancing, hand hygiene and cough etiquette. within 14 days of the last exposure to the suspect case
 - ▶ No need to self-quarantine.
 - ▶ If symptoms develop, they should immediately self-isolate and phone Healthline.
- ▶ Managing close contacts of cases under investigation
 - ▶ Any household contacts of cases under investigation should self-quarantine while awaiting test results.
 - ▶ They should be meticulous with physical distancing, hand hygiene and cough etiquette, and immediately isolate and phone Healthline if symptoms develop.
- ▶ Managing close contacts of a confirmed or probable case
 - ▶ Household and other close contacts of confirmed or probable cases should self-quarantine.
 - ▶ Managed at home with monitoring for symptoms.
 - ▶ If they develop symptoms they should be tested and stay in isolation until results are available.
 - ▶ Further advice on the management of close contacts of probable and confirmed cases is available in the Advice for Health Professionals.

Managing the Risk

Minimizing the risk of Covid 19 in the workplace

- ▶ Any infectious disease encountered in the workplace is considered a **workplace hazard**.
- ▶ The [Health and Safety at Work Act 2015](#) requires that employers take all practicable steps to mitigate risk and protect workers at all times from workplace hazards.
- ▶ **Consider the following:**
 1. How likely are any hazards or risks to occur?
 2. How severe could the harm that might result from the hazard or risk be?
 3. What a person knows or ought to reasonably know about the risk and the ways of eliminating or minimising it (e.g. by removing the source of the risk or using control measures such as isolation or physical controls to minimise it).
 4. What measures exist to eliminate or minimise the risk (control measures)?
 5. How available and suitable is the control measure(s)?
 6. Weighing up the cost: What is the cost of eliminating/minimising the risk? Is the cost grossly disproportionate to the risk?

Managing the Risk

Minimizing the risk of Covid 19 in the workplace

To assist with risk assessment of vulnerable workers the following classes are suggested to determine the likelihood of workplace exposure to COVID-19:

- ▶ **Class 1 : Contact with known or suspected COVID-19 case**
 - ▶ Not typical outside healthcare setting but could include contract cleaners or maintenance staff entering areas where COVID patients are or have been.
- ▶ **Class 2 : Works with possibility of COVID-19 exposure**
 - ▶ Regularly working closer than 2 metres from others in the workplace
 - ▶ Regular contact with public surfaces or potentially contaminated surfaces
 - ▶ Regular Interacting with the public - closer than 2m
- ▶ **Class 3 : Works with low likelihood of COVID-19 exposure**
 - ▶ No close contact (<2m) with other workers
 - ▶ Not in contact with public.
 - ▶ No contact with surfaces that cannot be sanitised
- ▶ **Class 4 : No likelihood of workplace exposure to COVID-19**
 - ▶ Works from home
 - ▶ No workplace contact

The above categorisation scheme is relevant to all members of staff working in those zones, irrespective of their work or role. Maintenance and engineering staff, and any other staff visiting any zone, even on an intermittent and short-lived basis will be considered as working in that zone.