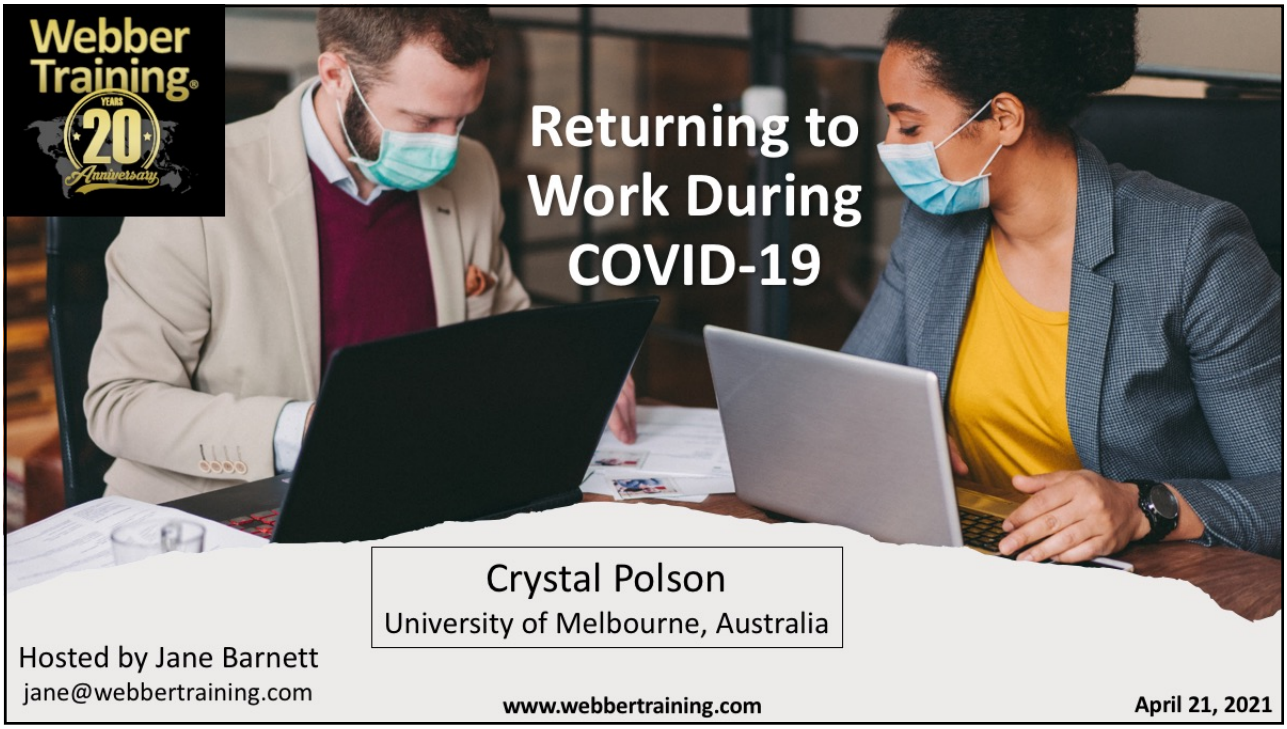


Objectives

- Understand how COVID-19 is transmitted and implications for prevention in the workplace
- Learn how employers' can manage employees' expectations about returning to work during COVID-19
- Overview of current vaccines and treatments

2

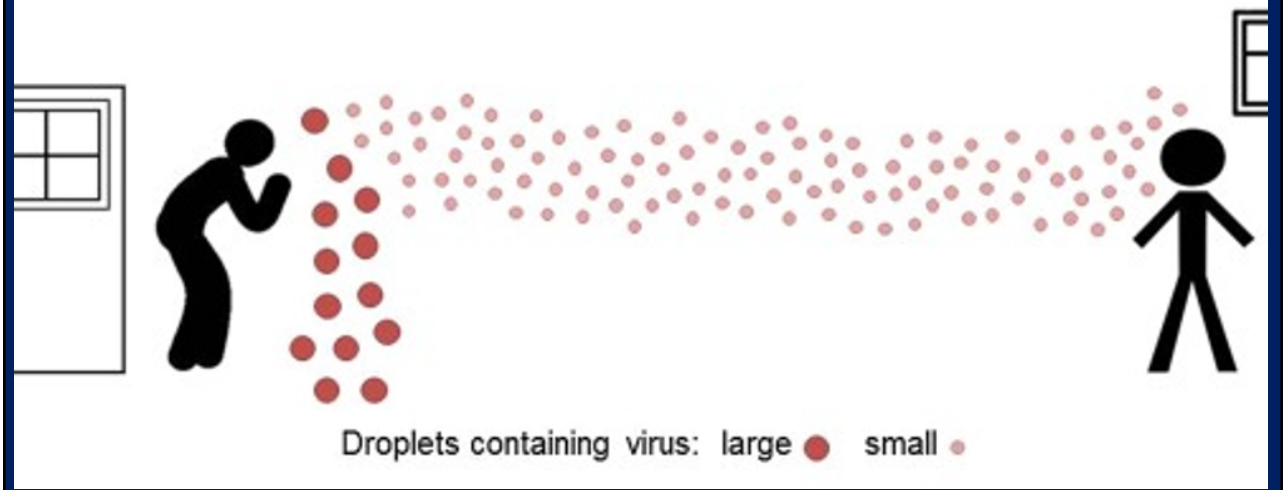
All stock photos sourced from Canva

3

Droplets & Aerosols

- Droplets are generally considered to be > 5 **µm**
- Aerosols are generally considered to be < 5 **µm**
- Experts disagree on the cutoffs.
- Spectrum rather than a dichotomous distinction
- Droplets can behave like aerosols depending on atmospheric conditions or airflow dynamics

5



6

Droplets

Generated by breathing, talking, coughing, sneezing, singing, laughing.

Relatively heavy so fall within a few metres landing on fomites or people.

Deposit in the UPPER airways

Droplet transmission can be mitigated by distancing, cough/sneeze etiquette, hand hygiene, cleaning/disinfecting surfaces, avoiding touching face/nose/eyes

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Aerosols

Generated by breathing, talking, coughing, sneezing, singing, laughing.

Defy gravity so can remain airborne for hours unless removed by air currents, dilution ventilation or air purification

Deposit in the LOWER airways

Most important implications for mitigation of aerosol transmission are ventilation, air purification, avoiding overcrowded enclosed spaces, and distancing.

8

Research has indicated that as many as 80-90% of the particles generated by human exhalation are smaller than 1 µm in size. (Papineni 1997)

The exact size of droplets produced is debated but most sources agree that speaking, coughing, and sneezing produce droplets that are sufficiently small to remain airborne.

Papineni RS, Rosenthal FS. The size distribution of droplets in the exhaled breath of healthy human subjects. J Aerosol Med. 1997;10(2):105–116.

9

Ventilation

- Open windows (with caution)
- Ensure HVAC systems are working properly, well-maintained and filters are clean.
- Some HVAC systems can be adjusted to increase percentage of outdoor air. More costly!
- Disable demand-control ventilation
- Ensure exhaust fans in bathrooms are working and directing exhaust outdoors

Consult with building owner or facilities manager, HVAC expert, occupational hygienist

10

What if ventilation can't be improved?

- Air purifiers
- Reduce the number of people in enclosed spaces together

11

Fans and Split-Systems

These recirculate air

Do not allow people to sit directly in front of or under devices that recirculate air

Open windows if possible

Ceiling fans on reverse mode

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UV Germicidal Irradiation

"Can consider using UV germicidal irradiation as a supplemental technique to inactivate potential airborne virus in the upper-room air of common occupied spaces." – CDC

Can cause skin and eye damage

Likely to be unnecessary in non-healthcare settings

If used, must be installed by knowledgeable technicians to avoid harm and work properly to reduce pathogens

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Fomites

SARS CoV 2 can remain viable on surfaces for a few days

Risk of contracting COVID-19 from surfaces is probably possible but not the most likely way

Cleaning and disinfecting should still be done – but don't go overboard

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How big is the risk from fomites?

"In my opinion, the chance of transmission through inanimate surfaces is very small, and only in instances where an infected person coughs or sneezes on the surface, and someone else touches that surface soon after the cough or sneeze (within 1–2 h). I do not disagree with erring on the side of caution, but this can go to extremes not justified by the data"

-Emanual Goldman, Rutgers University

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Cleaning and Disinfecting

Risk-based frequency/intensity

- Community transmission rates
- Number of people using the area/touching surfaces
- Type of setting
- High touch vs low touch surfaces

Product Selection

- Detergent and water for cleaning
- Approved disinfectant for disinfecting
- 2-in-1 products can be used
- Provide wipes for staff to use

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Cleaning and Disinfecting

Align with your local government regulations

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To fog or not to fog?

Probably more about optics than effectiveness

Can introduce new health and safety risks

Some countries explicitly recommend against fogging

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Physical Distancing

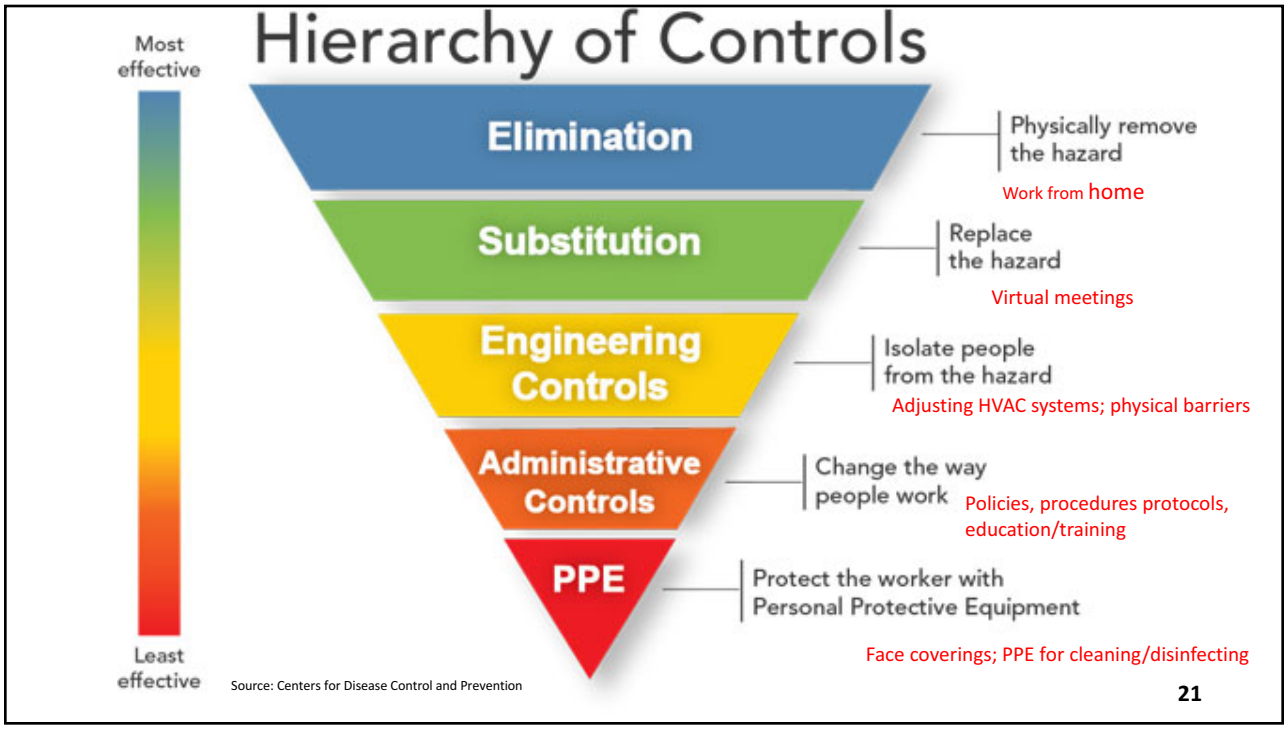
- Space reconfigurations
- Staff "bubbles" with alternating schedules
- Staggered start/finish times
- Reminders (signs/markers)
- Encourage walking meetings, breaks outdoors when feasible
- Capacity limits on enclosed spaces

19

Case Management

- Be prepared to deal with positive cases
- Contact tracing tools; notifying close contacts
- Business continuity plans
- Working with local department of health/public health units

20


Hierarchy of Controls
Most effective
Least effective
Elimination
Physically remove the hazard
Work from home
Substitution
Replace the hazard
Virtual meetings
Engineering Controls
Isolate people from the hazard
Adjusting HVAC systems; physical barriers
Administrative Controls
Change the way people work
Policies, procedures protocols, education/training
PPE
Protect the worker with Personal Protective Equipment
Face coverings; PPE for cleaning/disinfecting
Source: Centers for Disease Control and Prevention
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Managing Employees' Expectations
22

What are the concerns?

- Contracting COVID-19
- Infecting a loved one
- Public transport
- Co-workers' practices
- Measures in place in the workplace
- Losing work-life balance gained while working from home

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What can employers do?

Ensure hierarchy of controls are implemented

Ask and listen (direct communication, surveys, the grapevine)

Make reasonable adjustments

Provide a way for employees to ask questions and get answers quickly

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What else can employers do?

Risk assessments – especially for vulnerable employees

Flexibility – especially with sick leave and family care leave

Mental health support, promoting EAPs, wellness programs

Consider COVIDSafe Marshals/Champions

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Communication is Key

COVID-19 hotline

COVID-19 email

Share COVIDSafe plans

Regular updates

Designated COVID support persons/teams

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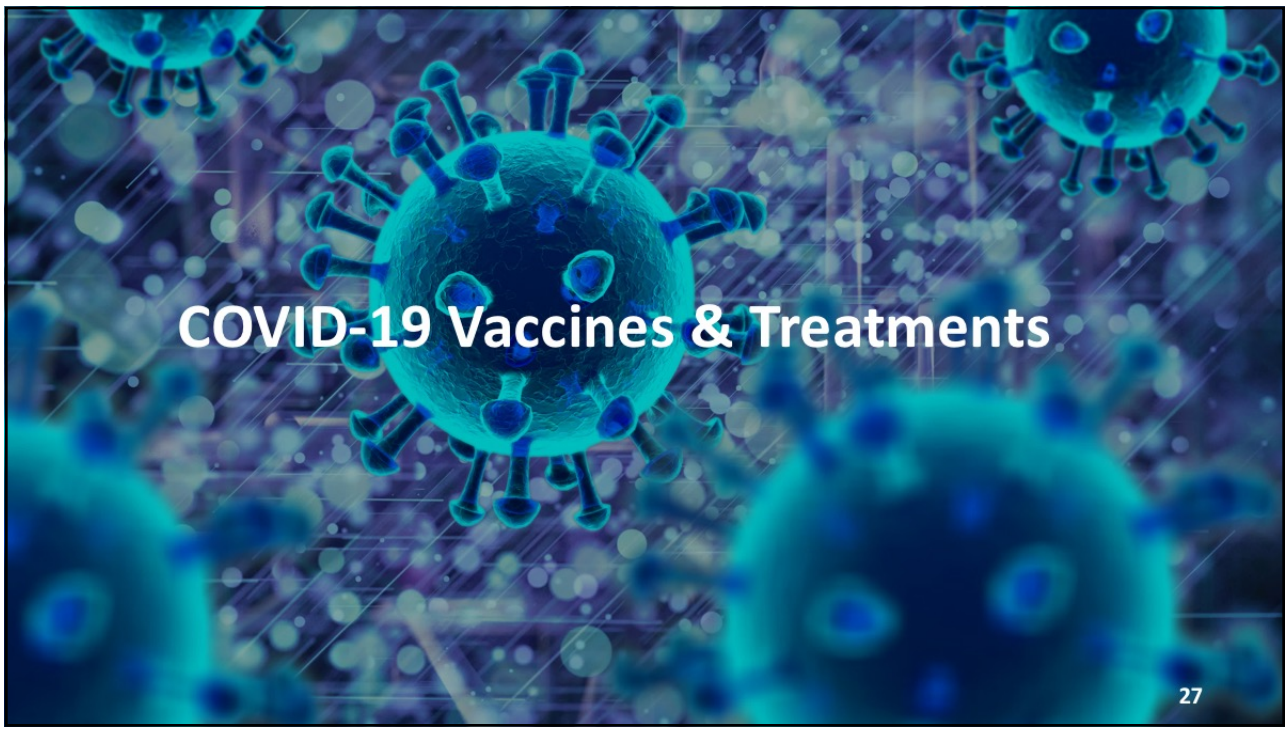

COVID-19 Vaccines

- Efficacy: percentage reduction in outcomes of interest in vaccinated group vs non-vaccinated group in optimal conditions (RCTs)
- Effectiveness: ability of vaccine to prevent outcomes of interest in real-world
- Outcomes of interest: preventing serious illness and death

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Can the vaccine prevent spread?

- Current data suggests it's harder for vaccinated people to get infected
- We know some vaccines are effective at preventing serious illness and death, but it's possible vaccinated people can still get infected and spread the virus

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Are some vaccines better than others?

- Efficacy percentages mean vaccine is effective at preventing symptomatic COVID-19
- Example: AZ vaccine is 79% effective at preventing symptoms and 100% effective at preventing serious illness/death. Pfizer vaccine is 95% effective at preventing symptoms and 100% effective at preventing serious illness/death.
- Remember – efficacy is reported for controlled trials. We do not yet know the true effectiveness of the vaccines

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Developer	How it works	Status
Pfizer/BioNtech	mRNA	Approved in several countries. Emergency use in U.S., E.U., AUS, other countries.
Moderna	mRNA	Approved in Switzerland. Emergency use in U.S., E.U., other countries.
Gamaleya	Ad26; Ad5	Early use in Russia. Emergency use in other countries.
AstraZeneca	ChAdOx1	Approved in Brazil. Emergency use in U.K., E.U., other countries.
CanSino	Ad5	Approved in China. Emergency use in Mexico, Pakistan, Hungary.
Johnson and Johnson	Ad26	Emergency use in U.S., E.U., other countries.
Vector Institute	Protein	Early use in Russia

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Developer	How it works	Status
Sinopharm	Inactivated	Approved in China, U.A.E., Bahrain. Emergency use in other countries.
Sinovac	Inactivated	Approved in China. Emergency use in other countries.
Sinopharm-Wuhan	Inactivated	Approved in China. Limited use in U.A.E.
Bharat Biotech	Inactivated	Emergency use in India, other countries.
Novavax	Protein	Expected to be approved soon

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Treatments

- Remdesivir (antiviral) only approved treatment by the FDA for critically ill patients requiring supplemental oxygen
- Dexamethasone (steroid) shows promising results in reducing deaths. Can be harmful in people in early stages of COVID.
- Tocilizumab (cytokine inhibitor) shows promising results at reducing deaths and preventing patients from going on ventilator
- Prone position and ventilator

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Thank You!

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Returning to Work During COVID-19
Crystal Polson, University of Melbourne, Australia
A Webber Training Teleclass

www.webbertraining.com/schedulep1.php	
April 27, 2021	*(FREE European Teleclass ... Denver Russell Memorial Teleclass Lecture)* **HYGIENE BEHAVIOUR IN OUR HOMES AND EVERYDAY LIVES TO MEET 21ST CENTURY NEEDS** Speaker: **Prof. Sally Bloomfield**, International Scientific Forum on Home Hygiene, UK
May 5, 2021	*(FREE WHO Teleclass for May 5 Events)* **SECONDS SAVE LIVES: CLEAN YOUR HANDS** Speaker: **Prof. Didier Pittet**, University of Geneva Hospitals, Switzerland
May 11, 2021	*(European Teleclass)* **THE NORWAY EXPERIENCE CONTROLLING THE CORONAVIRUS PANDEMIC** Speaker: **Prof. Bjørg Marit Andersen**, Faculty of Health and Social Science, Department of Nursing and Health Science, University of South-Eastern Norway
May 20, 2021	**COMPLACENCY ABOUT DISEASES, ANXIETY ABOUT VACCINES: THE MENINGITIS PERSPECTIVE** Speaker: **Elizabeth Rodgers**, Meningitis Research Foundation, UK

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