

Occ-COVID-Science, Solutions & Success Stories

Occ-COVID Science & Solutions continues!



It is time for effective Personal Protective Equipment (PPE) as a Control: Respiratory Protection During COVID Winter

Friday, December 11th, 2020 from 1:30 to 3:00pm

Kevin Hedges, Ph.D., CIH, COH
khedges@ohcow.on.ca
Occupational Hygienist
OHCOW Eastern Clinic



Occupational
Health Clinics
for Ontario
Workers Inc.

Centres de
santé des
travailleurs (ses)
de l'Ontario Inc.

[Prevent Occupational Disease](#)

The current **surge in Covid case numbers in Canada is likely to climb throughout winter**, particularly given increased time spent - and interactions - indoors, compounded by the difficulty in maintaining natural ventilation at low temperatures.

Therefore, **every workplace** needs to consider and boost alternate controls, including the proper use of effective respiratory protection.

This will be critical to protect all frontline workers, in and out of healthcare.

Scientific studies have shown properly fitted (and worn) N95 (or better) respirators provide greater protection than surgical masks ([MacIntyre and Chughatai 2020](#), [NIOSH 2020](#)).

It is important that we understand the difference, **see the impact of making the wrong choice**, and learn how judicious use is making a difference in Covid prevention around the world.

- 1) International lessons from China and Australia, **Kevin Hedges, OHCOW**
- 2) Canadian lessons from SARS 1 and now 2, **Alec Farquhar (Mario Possamai)**
- 3) Elastomeric respirator effectiveness and use, **Nicolas Smit**
- 4) Respirator Program Considerations for Non-Healthcare Workplaces – Evaluating the Need and Implementation Guidance for COVID-19. **Kevin Hedges (obo Dr. Margaret Sietsema, University of Illinois)**
- 5) Panel Discussion and Q & A

Ontario COVID-19 Regional Risk Tool:

Risk Legend

Minimal risk – low to absent community transmission

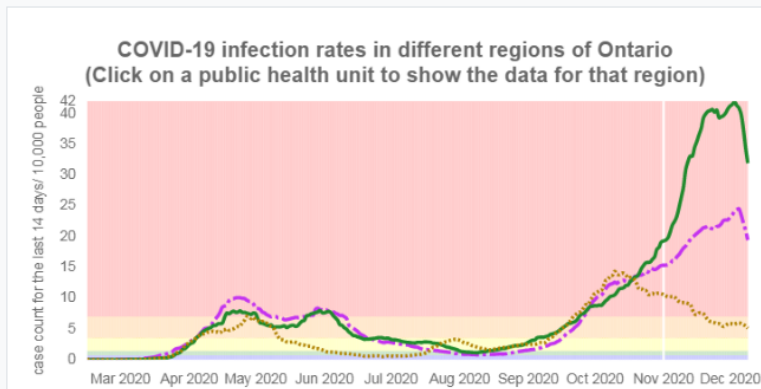
Controlled risk – some sporadic community activity – controlled occasional minor outbreaks

Some community risk – regular sporadic activity – controlled occasional larger outbreaks

Wider community risk – regular activity – periodic outbreaks

High risk – uncontrolled community transmission &/or outbreaks

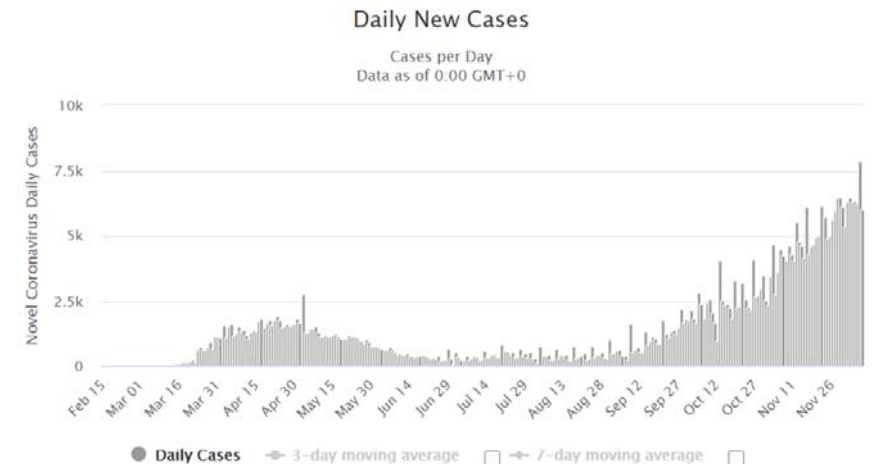
<p>Minimal risk low to absent community transmission</p> <p>0-0.7 cases in the last 14 days per 10,000 people</p>	<p>Controlled risk some sporadic community activity</p> <p>0.7-1.4 cases in the last 14 days per 10,000 people</p>	<p>Some community risk regular sporadic activity</p> <p>1.4-3.5 cases in the last 14 days per 10,000 people</p>	<p>Wider community risk regular activity outbreaks</p> <p>3.5-7 cases in the last 14 days per 10,000 people</p>	<p>High risk uncontrolled community outbreaks</p> <p>7+ cases in the last 14 days per 10,000 people</p>
--	---	--	--	--



<https://www.ohcow.on.ca/regional-risk-tool-and-tips.html> sourced 9 Dec 2020

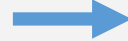
Occupational Health Clinics for Ontario Workers Inc.
Prevention Through Intervention

Daily New Cases in Canada



<https://www.worldometers.info/coronavirus/country/canada/> sourced 9 Dec 2020

Reflections



Droplet, contact and very small particles remaining airborne



<https://www.theguardian.com/world/2020/mar/20/chinese-inquiry-exonerates-coronavirus-whistleblower-doctor-li-wenliang>

The image is a screenshot of a live stream from CPAC. At the top, the CPAC logo is on the left, and navigation links for 'House', 'Senate', and 'Live' are on the right. The main video shows a woman with dark hair, identified as Dr. Tam, speaking at a podium. Behind her are several Canadian flags. The video player interface includes a title bar with the text 'LE CANADA COMPTE 182 839 CAS CONFIRMÉS' and the CPAC logo. Below the video player, there are language selection buttons for 'English', 'Français', and 'Floor'. A 'Wide Player' button is also visible in the bottom right corner.

Dr. Tam acknowledges airborne transmission
<https://www.cpac.ca/en/programs/covid-19-canada-responds/episodes/66276786/> 13 Oct. 2020
[Public Health Agency of Canada Declaration, Nov. 5, 2020](#)

Slide 6

VW1

Valerie Wolfe, 2020-11-13



Previous relevant webinars (OHCOW & WHWB)

Presenter	Occupational Health Clinics for Ontario Workers Inc. (OHCOW)	Workplace Health Without Borders (International)
Laurence Svirchev		COVID-19 Trajectory of a Pandemic March 2020
Dr. Simon Smith	Selecting Effective Respiratory Protective Equipment for SARS COVID 2.	Coronavirus (COVID) Respiratory Protection Resources and Updates on behalf of The International Society for Respiratory Protection (ISRP) April 2020.
Tony Havics		Respiratory Protection May 11 2020
Dr. Thomas Fuller		Infectious Disease Control – Infection Control for OSH Professionals (US)
Dr. Ajibike Oyewumi		Infection Control for Occupational Health and Safety Professionals (Nigeria)
Dr. Dave Zalk		Control Banding and COVID-19 Simplifying Risk Comm.
Dr. Lisa Brosseau	The role of infectious dose in identifying and managing COVID-19 risks.	Infectious dose can it inform COVID-19 decisions June 2020 (US)
Dr. Lidia Morawska		Why Should We Get Serious About Airborne COVID-19 Transmission In Schools?
Dr. Joseph Allen		Risk reduction strategies for re-opening schools. US



Workplace Health Without Borders Teleconference

Update on COVID-19 and Respiratory Protection

Speakers

Dr. Raina MacIntyre, University of New South Wales
SARS-CoV-2 transmission and research on respiratory protection

Dr. Susan Arnold, University of Minnesota
Making the MN Mask: A Team-Building Event
The MN Mask was designed by a multidisciplinary team for use where other respiratory protection is not available.

followed by Question & Answer session

Wednesday, December 16, 2020
3:00 p.m. Eastern Daylight Time
(December 17, 7:00 a.m., Australian EDT
December 16, 9:00 p.m. Western Africa Time)

No Cost – [RSVP Here](#)

- ❖ [Dr. MacIntyre](#) is a professor of Global Biosecurity and Head of the Biosecurity Program at the University of New South Wales.
- ❖ [Dr. Arnold](#) is Director of the University of Minnesota Exposure Science and Sustainability Institute.

[Professor. Raina McIntyre](#), University of NSW Australia SARS-CoV-2 transmission and research on respiratory protection.

[Assistant. Professor Susan Arnold](#), University of Minnesota **Director**, [Exposure Science and Sustainability Institute](#) Making the MN Mask: A Team-Building Event.

Weds. Dec 16, 2020 3pm EDT

No cost RSVP [here](#)

Lessons from China

- Late December 2019: First infection clusters reported to CDC-China
- January 2020: Deployment of MDs from around China to Wuhan;
- Aggressive public health measures such as mass quarantine & rapid building of dedicated field hospitals.
- Feb 1 - Feb 7, **production of medical respirators rose to 30 million/day (7.8x increase).**
- February 18: daily new cases peaked in China.
 - Daily recoveries surpassed the number of new cases
- Mid- February 99% of international cases located in China
- March 10: all temporary field hospitals closed.
- All returnees to China: 14 day quarantine by law;
- March 19: **zero new local cases reported in Hubei province,** but 41 new imported cases.

Lessons from China

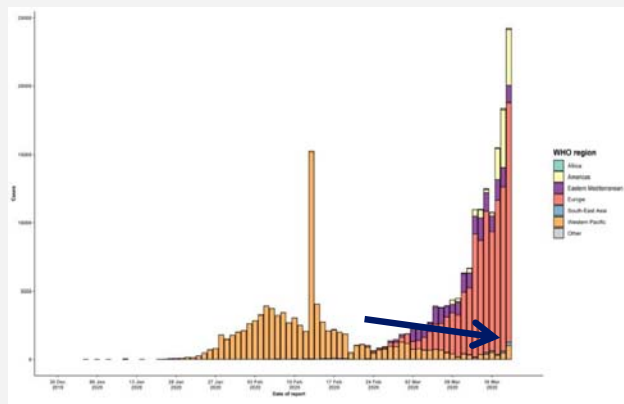
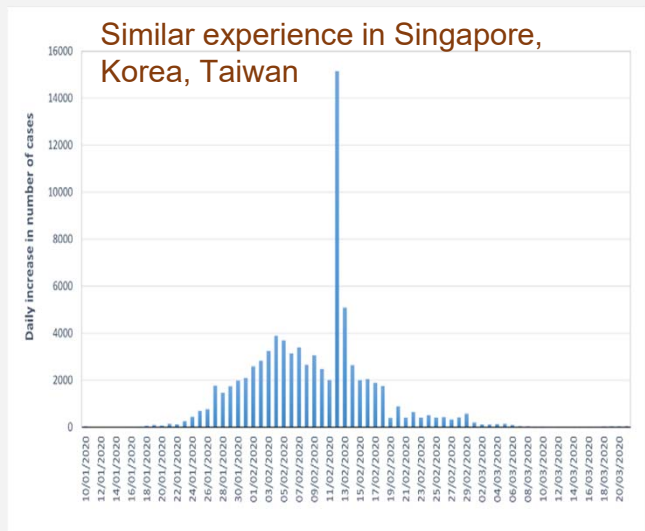


Xu Jian, nurse, Fujian Provincial Hospital. On her mobile phone is a photo of a patient she nursed.

- Medical people worked such long hours that PPE left etches & abrasions in their faces;
- PPE not only shortage, also a shortage of a sanitary materials for menstrual cycles;
- Medical personnel used adult diapers so they could work longer hours to preserve supplies of PPE;
- Ms. Xu bears the marks of fatigue;
- The stoic determination in her eyes matches that of Earthquake survivors I met in 2008: they just don't give up.
- 1,712 occupational diagnoses resulting in 6 MD & 1 Nurse deaths (as of Feb 18, most confirmed cases <Feb 5).
- **Indicates extraordinarily high level of OHS Protections in Health Care: we have a lot to learn from China's experience.**

*Information shared courtesy of Laurence Svirchev AIHA
Ambassador to China*

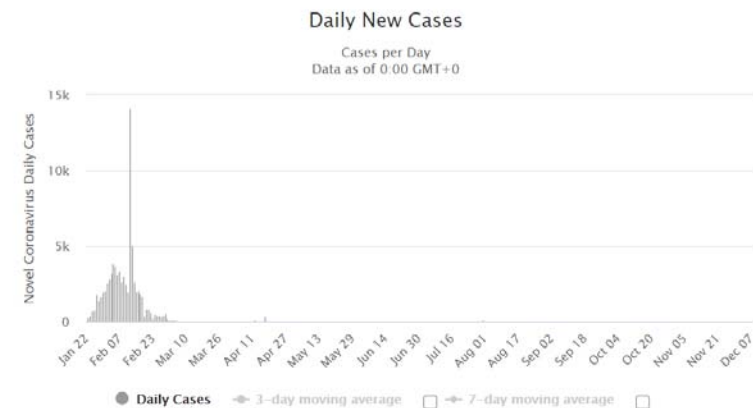
Lessons from China



Occupational Health Clinics for Ontario Workers Inc.
Prevention Through Intervention

*Information shared
courtesy of Laurence
Svirchev AIHA
Ambassador to China*

Daily New Cases in China



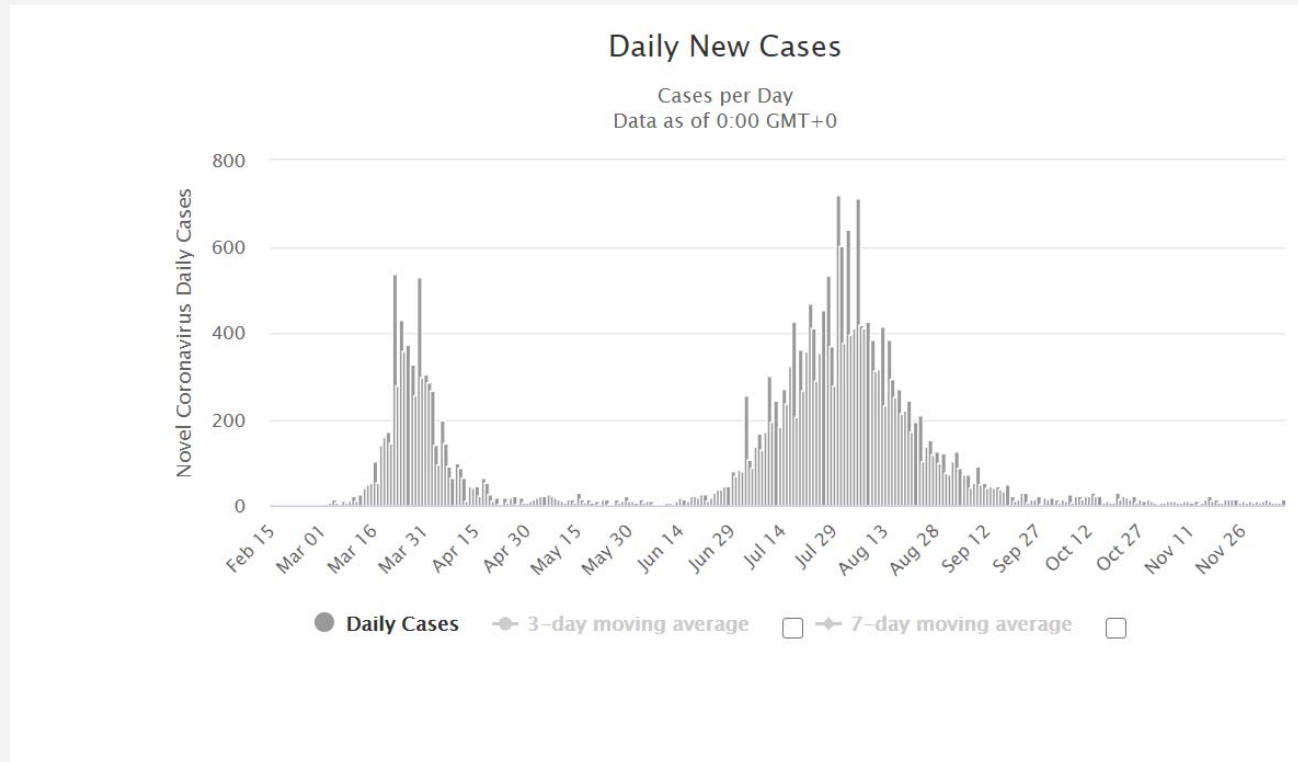
Active Cases in China

<https://www.worldometers.info/coronavirus/country/china/>

WHO Secretary-General: “The first pandemic in history that could be controlled....The great advantage we have is that the decisions we all make – as governments, businesses, communities, families and individuals – can influence the trajectory of this epidemic...An uneven epidemic at the global level.”

What happened next: the initiative was lost.

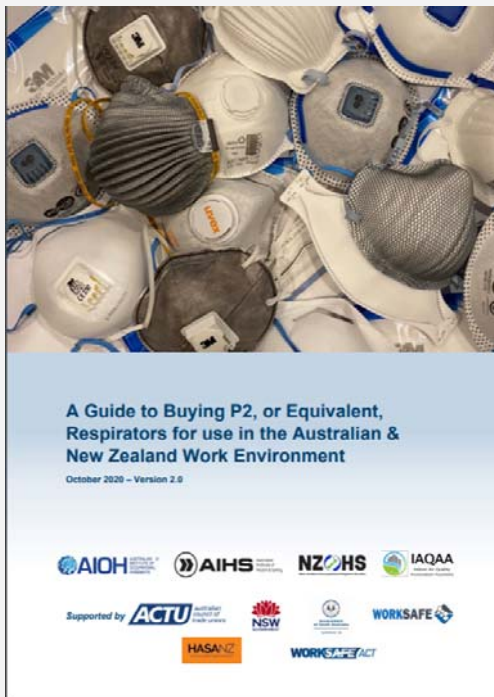
Lessons from Australia



<https://www.worldometers.info/coronavirus/country/australia/>

Lessons from Australia (from an Occupational Hygienists Perspective)

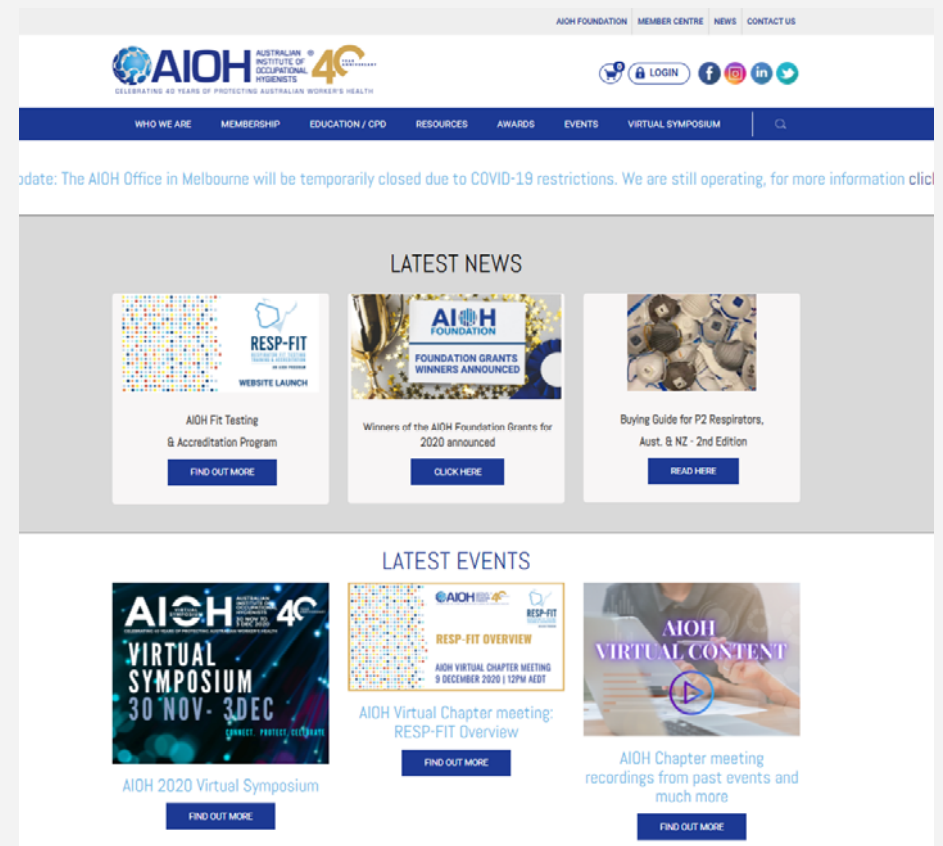
The [Australian Institute of Occupational Hygienists \(AIOH\)](https://www.aioh.org.au/) is well recognized in Australia and has a high profile with [Safe Work Australia](https://www.safeworkaustralia.gov.au/)



<https://www.aioh.org.au/static/uploads/files/p2-respiratory-protection-in-anz-2nd-edition-wfhnnkvrqpiw.pdf>



<https://respfit.org.au/>



Occupational Health Clinics for Ontario Workers Inc.
Prevention Through Intervention

Lessons from Australia

<https://www.aihs.org.au/news-and-publications/news/healthcare-workers-almost-three-times-more-likely-get-covid-19>

NATIONAL COVID-19 CLINICAL EVIDENCE TASKFORCE

NEWS

New expert panel to bring latest evidence and clinical experience together to prevent COVID-19 transmission in healthcare settings

30 November, 2020

The National COVID-19 Clinical Evidence Taskforce has today announced the membership of its new expert panel for infection prevention and control (IPC), which will be jointly chaired by the Infection Control Expert Group (ICEG).

The formation of the panel addresses calls from the clinical sector to strengthen capacity for emerging evidence and frontline clinical experience to inform national IPC guidance for healthcare workers.

Occupational Health Clinics for Ontario Workers Inc.
Prevention Through Intervention

New IPC Panel Members

Professor John Ferguson (Co-Chair, ICEG Nominee)
Dr Phillipa Hore (Co-Chair, Taskforce nominee)
Dr Penny Burns (Expertise in Primary care)

Ms Kate Cole (Expertise in Occupational Hygiene)

Ms Kathy Dempsey (Expertise in IPC)
Melanie Dicks (Expertise in Care of Older People)
Bridget Ferguson (Expertise in Women's Health)
Associate Professor Deborah Friedman (Expertise in Infectious Diseases and IPC)
Dr Briony Hazelton (Expertise in Paediatric and Adolescent Health)
Nicole King (Expertise in Operative/Perioperative Care)
Associate Professor Sally McCarthy (Expertise in Emergency Care)
Associate Professor Steve McGloughlin (Expertise in Critical care)
Professor Brett Mitchell (Expertise in IPC)

Professor Malcolm Sim AM (Expertise in Occupational and Environmental Medicine)

Dr Andrew Stewardson (Expertise in Infectious Diseases and IPC)
Mr Barry Tam (Expertise in Clinical Engineering)
To be announced (Experience in providing COVID-19 nursing care)

The false narratives of SARS-COV-2 transmission have compromised healthcare worker safety By Prof. MacIntyre



Epistemic Trespassing, Nathan Ballantyne, Mind, Volume 128, Issue 510, April 2019, Pages 367–395,

Abstract

Epistemic trespassers

Epistemic trespassers judge matters outside their field of expertise. **Trespassing is ubiquitous in this age of interdisciplinary research** and recognizing this will require us to be more intellectually modest.

<https://academic.oup.com/mind/article-abstract/128/510/367/4850765?redirectedFrom=fulltext>

Why did so many healthcare workers in Victoria catch COVID-19?

7:30 / By Norman Swan and Will Jackson

Posted Tue 10 Nov 2020 at 10:53pm, updated Wed 11 Nov 2020 at 12:32am



Radiographer Bruno Treglia believes wearing an N95 mask and face shield at work would have prevented him from catching COVID-19.

Radiographer Bruno Treglia believes wearing an N95 mask and face shield at work would have prevented him from catching COVID-19.

<https://www.abc.net.au/news/2020-11-11/why-did-so-many-healthcare-workers-in-victoria-catch-covid-19/12869008>