

# **Infection Prevention and Control during the COVID-19 pandemic**

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# (1) Pandemic preparedness

- Singapore was in readiness mode when news received on 31 Dec 2019 about viral pneumonia cases in Wuhan, China
- 1<sup>st</sup> Singapore case was diagnosed on 23 Jan 2020 in SGH
- Pandemic plan activated
  - Team segregation within IPE department
  - PPE guide development with multiple revisions (>30)
  - Daily pandemic audits done for 3 shifts



# The Brussels Times

Sunday, 10 January, 2021

Latest News: Spain braces for the worst as snowstorm rages...

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## Coronavirus: 'We must choose who to treat,' says Italian doctor

Monday, 09 March 2020



Patients with viral pneumonia, in acute respiratory failure, are first placed on non-invasive ventilation. Credit: Belga

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## Spanish Doctors Are Forced to Choose Who to Let Die

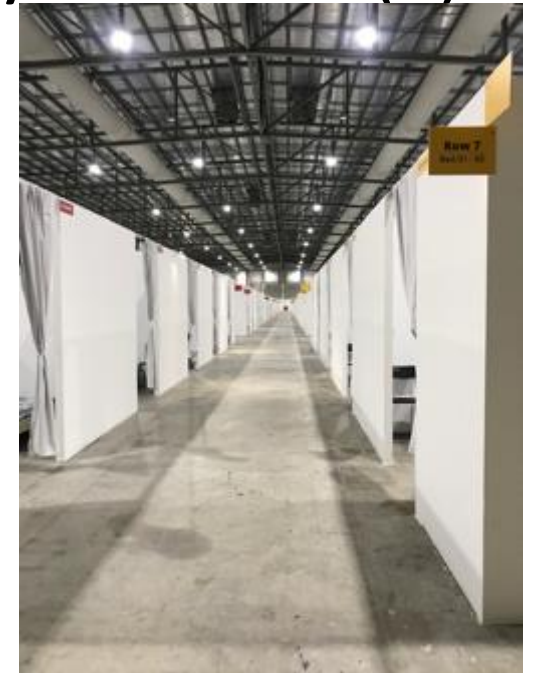
As the country becomes the pandemic's hotspot, people are dying in hospital waiting rooms before they can even be admitted.

By [Ben Sills](#) and [Laura Millan Lombrana](#)

26 March 2020, 06:45 GMT+8 Updated on 26 March 2020, 19:11 GMT+8

# We learnt to conserve acute care hospital for management of acute care patient

- Dormitories (8)
- Swab Isolation Facilities (4)
- Community Care Facilities /Community Recovery Facilities (2)



# Resilience was clearly evident from start

- Benefited from past experiences with SARS, MERS-CoV, H1N1, Nipah
  - Drawn plans for pandemic readiness
  - Annual drills and simulations
- Activation of institutional and cluster taskforce
  - Harmonised and co-ordinated approach in managing pandemic

Learn  
from the past,  
—————  
Prepare  
for the Future,  
—————  
Live  
in the present!  
—————  
- Thomas S. Monson

## **(2) Central integration helps in streamlining workflow and gets better buy-in and support from senior management**

- SHS Taskforce 1<sup>st</sup> meeting on 21 Jan 2020 and meeting twice weekly and weekly
- SHS IP Network
  - Existed since Apr 2018
  - Harmonization of policies and practices
    - Tiger Connect (Text), WhatsApp, emails



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# IPC Network

## IPC Teams

SHS Institutions



Toh Hui Xian (SGH)  
Nursing Homes

# **(3) IPC measures need to be defined and disseminated**

- International and national guidelines
  - WHO – most practical and feasible
- International consultation - WHO
- IPC team
  - Lookout for updates
  - Share with others in hospital
    - Via Taskforce
    - Via newsletters, videos, posters, Facebook, etc



# IPC led in IPC measures to be taken

- Immediate – video through Facebook highlighting key points
  - Mode of transmission – droplet and contact
    - Universal masking of all HCWs (even at office)
  - Hand hygiene
  - Safe distancing measures (1-2 m rule)
- Ongoing
  - Appropriate and correct use of mask
  - Steps in cleaning hands

# (4) Engaging staff assures better compliance and achieving staff safety

- Timely information to mass to quell fear and anxiety
  - Videos and e-messages
  - Through IPLOs (>100 in SGH, each dept has at least 1 IPLO)
    - Workplace Facebook, Tiger Connect (Text), newsletters, Routine Instructions
- Appropriate PPE use
  - PPE guides
  - Harmonization of guidelines across 11 institutions in cluster
  - Videos on donning, doffing, mask use, etc.



# PPE Donning Sequence

## (Before attending to patients)



1. Perform hand hygiene.



2. Don N95 respirator. Mould flexible band to nose bridge.



3. Perform mask fit check.

\*\*Perform hand hygiene after fit check if N95 respirator is reused.



4. Don eye protection (goggles / visors / faceshield). Adjust to fit.



5. Don yellow gown.



6. Ensure that the flaps overlap to fully cover inner clothing and gown ties are secured.



7. Don gloves. Ensure that gloves covers the cuffs of gown.



8. You are ready to attend to your patient.

# PPE Doffing Sequence



If visible contamination can be seen on goggles or faceshield  
a) Remove gloves and perform hand hygiene.  
b) Don new pair of gloves and clean off visible soilage with hospital approved disinfectant wipes.



1. Remove and discard gloves. Perform hand hygiene if hands are visibly soiled.



2. Untie gown ties, taking care that sleeves do not come into contact with body.



3. Pull gown away from neck and shoulders.



4. Roll into a bundle, taking care that gown does not come into contact with your body.



5. Throw gown into waste bin.



6. Perform hand hygiene.



7. Keep N95 mask and eye protection as extended wear if still in hot zone



8. Perform hand hygiene.

# Training refreshed and rolled out



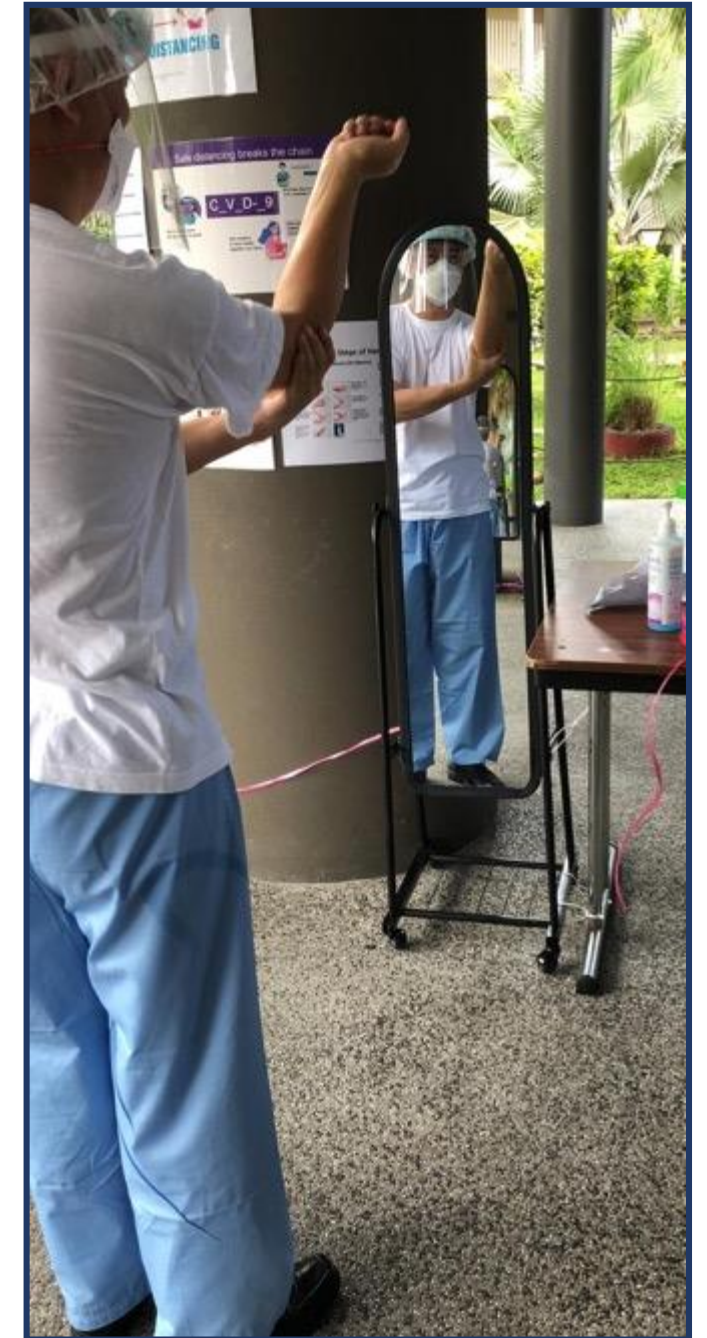
# IPC huddles to review and refine measures

IPLO Refresher training conducted in end Jan 20 to early Feb 20

Following the training, IPLOs were kept updated on changes via emails

Daily face to face huddles in clinical areas were conducted by the audit team





Have you had been diagnosed with chicken pox or herpes zoster previously?  
 您有曾经被诊断过患有水痘或带状疱疹吗?



# Stop the spread of germs!

Flushing with the toilet lid up can cause germs from the toilet to spread into the air

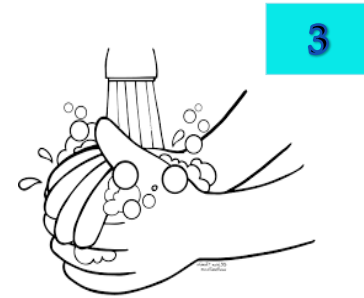
## After using the toilet



Lower toilet lid



Flush



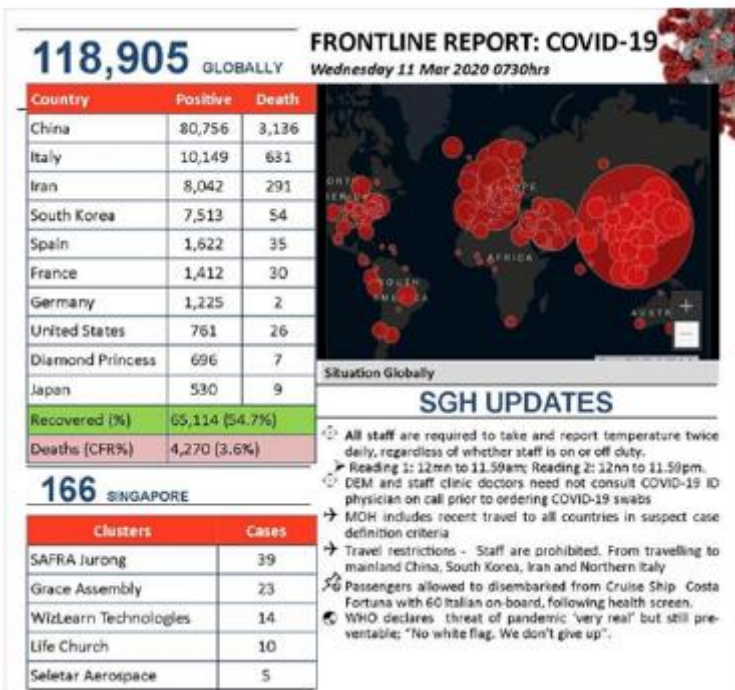
Wash hands with soap and water



# Synergy from teamwork



# COVID-19 training and education materials: Newsletters



## COVID-19 IPLO UPDATES

### STAFF TRAVEL ADVISORY

With effect from 10<sup>th</sup> March 2020, MOH has updated the screening criteria to include any travel history outside of Singapore as a risk factor; hence, staff are strongly advised to defer or cancel all non-essential travel overseas.

## COVID-19 IPLO UPDATES

### PRECAUTIONARY MEASURES

Should staff still decide to proceed with their pre-planned overseas travel, the staff must ensure compliance with the following upon his/her return to work:

- Wear a surgical mask for 14 days, regardless of whether they are deployed to patient-facing areas or otherwise.
- Frequent hand hygiene practice e.g. before eating, before touching face, after visiting toilet, etc.
- Practice social distancing such as avoiding having meals together with other staff, limiting face-to-face contact. Meetings or discussions should be conducted via phone or teleconferencing, etc.
- Record their temperature twice a day in the SingHealth Staff Health Surveillance System (S3) and watch for symptoms (fever and respiratory symptoms such as cough); and
- Inform their supervisor and seek treatment immediately at their Institution's Staff Clinic or A&E in the event they feel unwell or have a fever (above 37.5 degree C).

### FAQs

**What does "overseas travel" mean?**  
It includes any travel including our neighboring countries such as Malaysia and Indonesia during your approved leave as well as off days, weekends and public holidays.

**My staff lives in JB but works within SGH campus, what precautionary measures should I advise staff?**  
Staff must wear a surgical mask daily and practice all other precautionary measures as stated above.

**What precautions should staff take if the staff is travelling?**  
Staff should monitor daily news on cases in countries to be visited. During air travel, staff should consider wearing a surgical mask especially if there are fellow passengers with URTI near them and use alcohol hand rub agent during flight to prevent acquisition of virus via fomites.

### SOCIAL DISTANCING

Social distancing, is to be applied at work as well as personal and social life.

Social distancing means reducing face-to-face interactions to a minimum.

It also includes maintaining a distance of at least 2m apart from other people and avoiding crowded areas.

## Frequency

- Daily during peak of pandemic
- Then revised 3x a week and now weekly

# (5) Pandemic audits – goal is zero HA-COVID

- All inpatients and outpatients
  - Daily and changed to 3 times per week since mid-June
- Dormitories and SIF: 10 offsite locations
  - Weekly and changed to fortnightly since mid-Jun
- CCFs - daily
- Feedback
  - Immediate
  - Command Centre
  - Infonet via IPE intranet



# Pandemic Tool Entry via Infopedia:

Daily and changed to 3 times per week since mid-June 2020

**Pandemic Audit Tool Entry - New Item**

Ward/ Department audited *	<input type="text" value=""/>	Please enter ward/area you are auditing
Date of Audit *	<input type="text" value=""/>	
Audited by *	<input type="text" value=""/>	
Select healthcare worker group (applicable for section 1) *	<input type="text" value=""/>	
A1 Hand Hygiene- Before touching a patient *	<input type="radio"/> NA <input type="radio"/> Yes <input type="radio"/> No (Specify name of staff & non-compliance in the text box below)	
A1-If no, please specify name of staff & non-compliance in the text box	<input type="text" value=""/>	
A2 Hand Hygiene- Before clean/aseptic procedure *	<input type="radio"/> NA <input type="radio"/> Yes <input type="radio"/> No (Specify name of staff & non-compliance in the text box below)	
A2-If no, please specify name of staff & non-compliance in the text box	<input type="text" value=""/>	
A3 Hand Hygiene- After body fluids exposure risk *	<input type="radio"/> NA <input type="radio"/> Yes <input type="radio"/> No (Specify name of staff & non-compliance in the text box below)	
A3-If no, please specify name of staff & non-compliance in the text box	<input type="text" value=""/>	
A4 Hand Hygiene- After touching a patient *	<input type="radio"/> NA <input type="radio"/> Yes <input type="radio"/> No (Specify name of staff & non-compliance in the text box below)	
A4-If no, please specify name of staff & non-compliance in the text box	<input type="text" value=""/>	
A5 Hand Hygiene- After touching patient's environment *	<input type="radio"/> NA <input type="radio"/> Yes <input type="radio"/> No (Specify name of staff & non-compliance in the text box below)	
A5-If no, please specify name of staff & non-compliance in the text box	<input type="text" value=""/>	
B1 Mask- Appropriate mask is donned on as indicated *	<input type="radio"/> Yes	

# Limited supplies during pandemic

- Revised guidelines and practices to conserve PPE
  - Extended use
  - Re-use
- No change in basic principle
  - Change gloves in between patient care
  - Use of ABHR
- Re-designed work flow and work hours
  - 2H shifts in hot zones followed by 2H breaks

# (6) Just-in-time adoption of technology enables smooth and efficient processes esp. in light of limited resources





**Swabbot**



# SG-SPARC: portable negative pressure ante-rooms for MICU and OT





# (7) IPC team needs to be better staffed

**Infection  
Prevention**



## (8) Infrastructure needs to be re-designed



**(9) We need to continue to collaborate with all stakeholders even after pandemic**



# (10) IPC recognized as an essential team member

- Lead in field
- Team member



# The Infection Prevention Professional



**Thank you**