

A Systems Level Approach to COVID-19 Outbreak in Singapore

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Turning Discovery into Healthier Communities

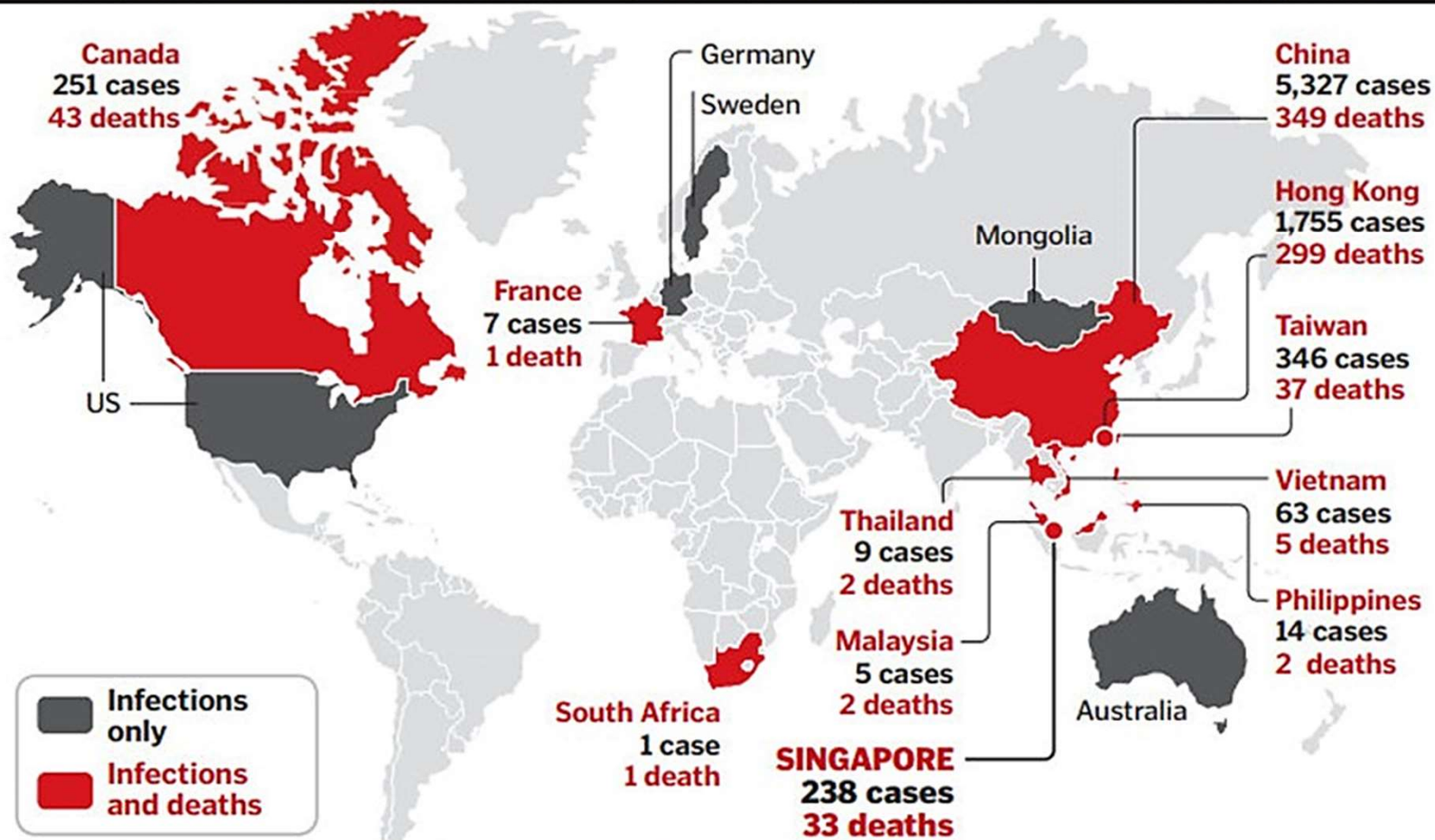
Disclaimer

This is a view of Singapore's response from a public health academic perspective, and in no way do I represent the Singapore Ministry of Health or the overall Singapore government.

Also not meant to provide a review of all Singapore measures.

SARS 2003: DEADLY VIRUS

774 deaths and 8,096 infections reported from November 2002 to July 2003



Some of the changes that have been implemented post-Sars

CANADA

- Public health reform, including the creation of a federal-level health agency
- Three national disease-related surveillance networks to monitor emerging infectious diseases

CHINA

- Robust online reporting system that allows hospitals to report suspected disease cases directly to the authorities
- Laws amended or added to allow central leaders to act swiftly to deal with outbreaks

HONG KONG

- Face masks commonly used and public toilets diligently cleaned
- Heavy investments to redesign hospital wards to minimise infection.

SINGAPORE

- New infectious disease hospital by mid-2018
- Every new school-going child gets an oral digital thermometer

TAIWAN

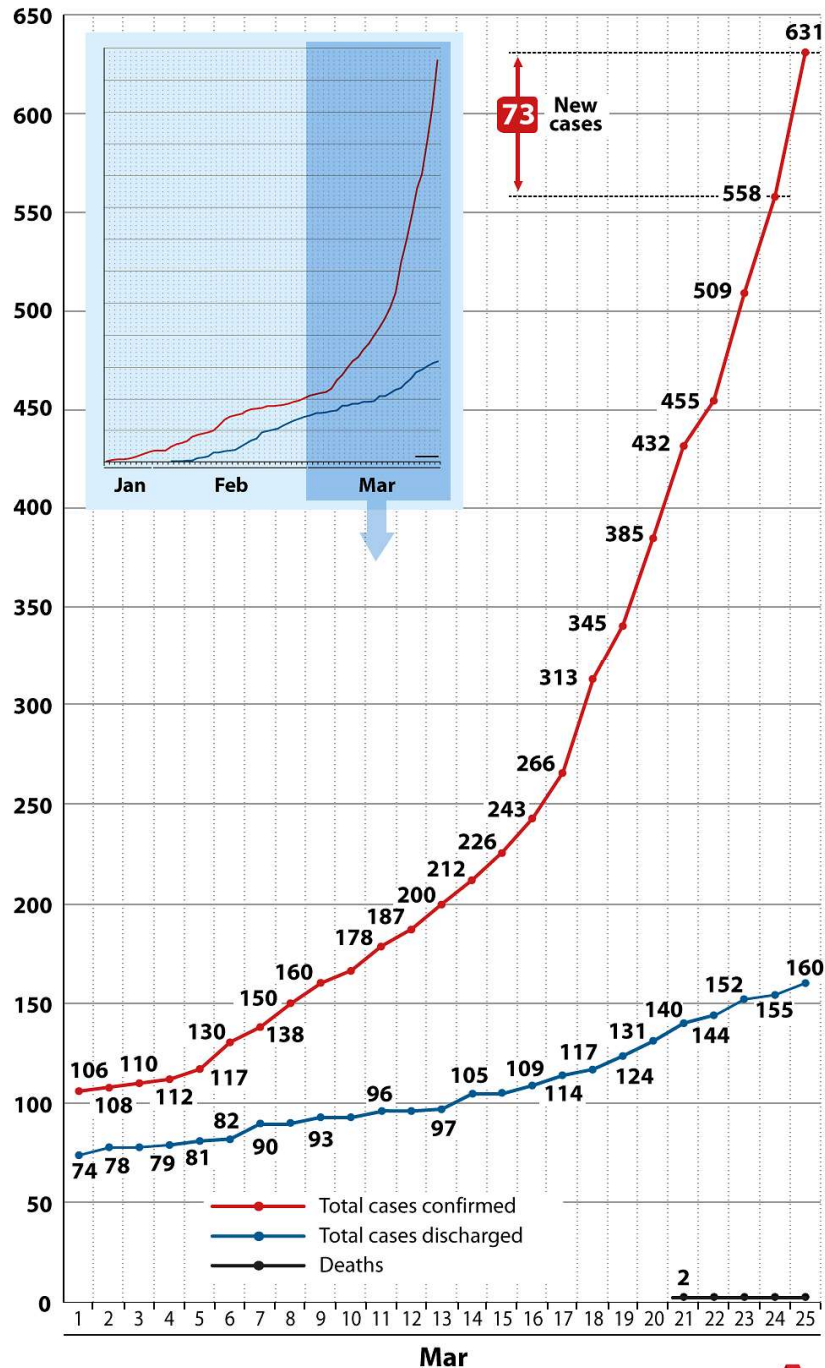
- Better personal hygiene encouraged, staying home when ill, courtesy bowing in place of handshakes
- Constant cleaning and sterilisation of public transport during pandemics



What is the **COVID** **situation** in Singapore?

COVID-19 IN SINGAPORE

TOTAL CASES AND TOTAL DISCHARGED



As of Mar 25

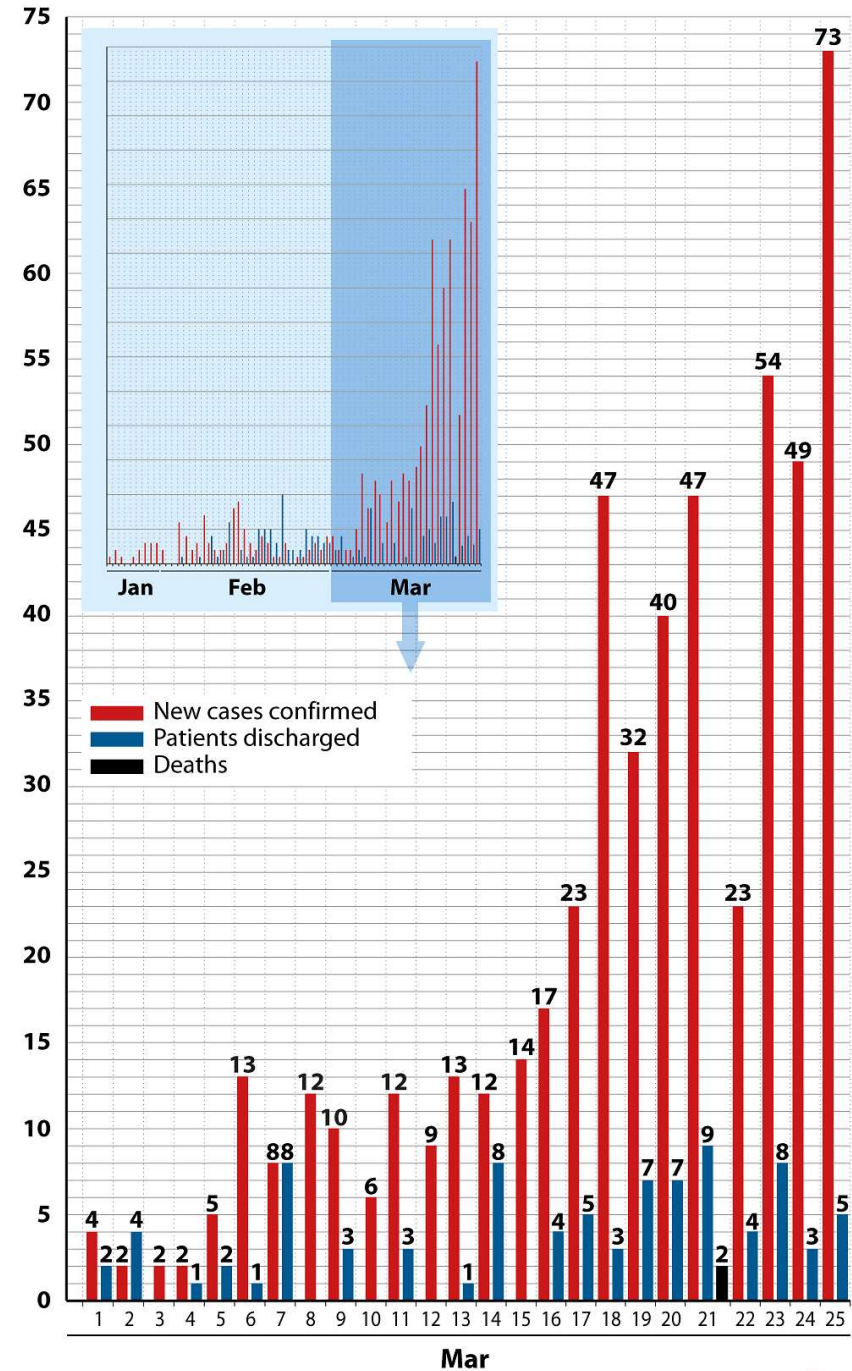
Infographic by Rafa Estrada

Source: Ministry of Health



COVID-19 IN SINGAPORE

NEW CORONAVIRUS CASES AND NEWLY DISCHARGED



As of Mar 25

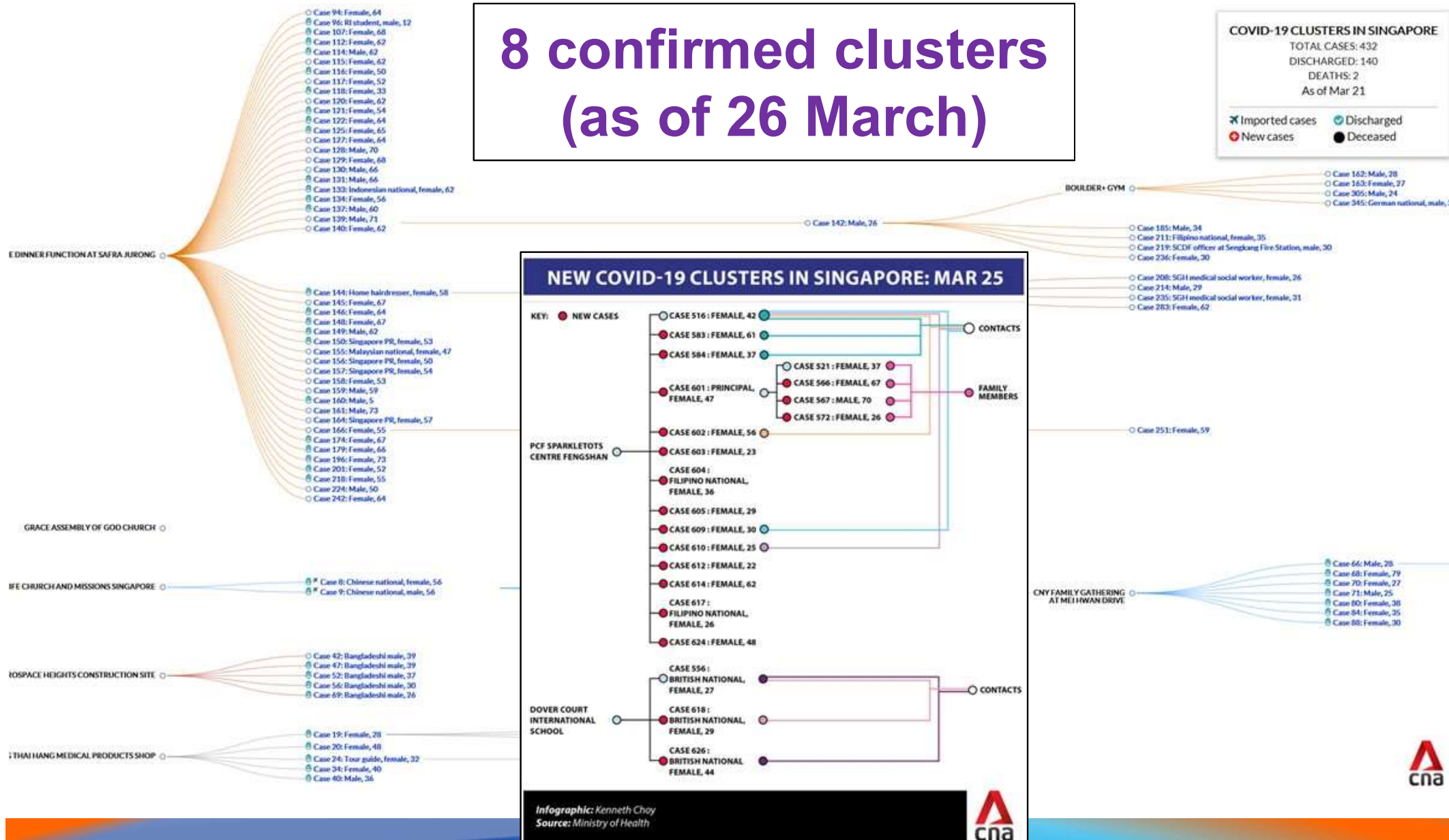
Infographic by Rafa Estrada

Source: Ministry of Health
































Case Linkages

8 confirmed clusters (as of 26 March)



Imported cases (as of 8 March)

- | | |
|---|---|
|  Case 1: Chinese national, male, 66 |  Case 17: Singaporean, female, 47 |
|  Case 2: Chinese national, female, 53 |  Case 18: Chinese national, female, 31 |
|  Case 3: Chinese national, male, 37 |  Case 22: Singaporean, male, 41 |
|  Case 4: Chinese national, male, 36 |  Case 23: Singaporean, male, 17 |
|  Case 5: Chinese national, female, 56 |  Case 26: Chinese national, female, 42 |
|  Case 6: Chinese national, male, 56 |  Case 45: Singaporean, female toddler, 2
Evacuated from Wuhan (30 Jan) |
|  Case 7: Chinese national, male, 35 |  Case 76: Singaporean, male toddler, 1
Evacuated from Wuhan (9 Feb) |
|  Case 10: Chinese national, male, 56 |  Case 87: Singaporean, male, 32
Evacuated from Wuhan (9 Feb) |
|  Case 11: Chinese national, female, 31 |  Case 113: French national, male, 42
Turkish Airlines (3/3); travel to France, Portugal, UK 8/2 – 3/3 |
|  Case 12: Chinese national, female, 37 |  Case 123: SIA cabin crew, male, 47
South Africa (14/2 – 17/2), France (22/2 – 24/2) |
|  Case 13: Chinese national, female, 73 |  Case 124: Singapore PR, female, 37
Germany (27/2 – 5/3) |
|  Case 14: Chinese national, male, 31 |  Case 132: Singapore PR, female, 37 —
London (23/2 – 27/2) |
|  Case 15: Singaporean, female, 47 |  Case 136: Italian national, male, 36
US (7/2 – 22/2), Italy (23/2 – 29/2) |
|   Case 16: Chinese national, male, 38 |  Case 147: Indonesian national, male, 64
Indonesia, arrived on 7/3 |

No importations since 6 Feb (travel advisories 22 Jan) until 4 March
Latest importations outside key travel advisory countries

Imported cases (as of 21 March)

Europe

North America

Others

Philippines

China

How did Singapore respond?

Whole-of-Government Response

- Multi-Ministry task force to overseas national response, signaling **impact beyond health** (post-SARS)
- Established 22 January (c.f. 1st case on 23 Jan)
- 10 members, including Manpower, Environment & Water Resources, Social & Family Welfare, Transport

COMMUNICATIONS
AND INFORMATION

TRADE

NATIONAL
DEVELOPMENT

EDUCATION

HEALTH

**Multi Ministry Task Force
Press Conference
27 Jan 2020**





Limitation of Entry (Visitors)

- **23 Jan:** Direct flights from Wuhan
- **29 Jan:** ≤ 14 days in Hubei Province, all passports issued in Hubei
- **1 Feb:** ≤ 14 days in whole China, no visa issuance or visa-free transit for PRC passports
- **26 Feb:** ≤ 14 days in Cheongdo and Daegu, South Korea
- **4 Mar:** ≤ 14 days in Iran, North Italy, whole South Korea
- **16 Mar:** Visitor ban for Italy, France, Spain, Germany
- **17 Mar:** 14D SHN for locals returning from ASEAN, Japan, Switzerland, UK
- **21 Mar:** 14D SHN for all returning locals
- **24 Mar:** Border closures to all short-term visitors

* Not applicable to citizens, PRs and long-term pass holders

Temperature Screening

- **2 Jan:** Flights from Wuhan
- **20 Jan:** All flights from China
- **24 Jan:** All land and sea checkpoints
- **29 Jan:** All flights into Singapore



Why this is necessary

Visitors from China

- ~3.6M China tourists in 2019,
~1M in Jan-Mar 2019
- **Chinese New Year** period on
25-26 Jan (1 wk before, 2 wks
after)
- **>400 flights** from China to
Singapore every week

Visitors from World

- ~17.4M tourists in 2019,
~7.8M in Jan-May 2019
- **>100** airlines, **380** cities,
>100 countries and territories
- **~7,400 flights** into Singapore
per week





Singapore is a major international flight hub



DORSCON Levels

	Be socially responsible: if you're sick, stay home	Maintain good personal hygiene	Look out for health advisories	Comply with control measures	Practise social distancing: avoid crowded areas
GREEN Minimal disruption	✓	✓	✓		
YELLOW Minimal disruption	✓	✓	✓		
ORANGE Moderate disruption (eg. quarantine, temperature screening)	✓	✓	✓	✓	
RED Major disruption (eg. school closures, work from home orders)	✓	✓	✓	✓	✓

**Disease Outbreak Response
System Condition (DORSCON)**
form part of Singapore's
pandemic preparedness plan

-  Disease is mild. Or it is severe but does not spread easily.
-  Disease is severe and spreads easily, but is occurring outside Singapore OR Disease is spreading in Singapore but is typically mild or being contained.
-  Disease is severe and spreads easily but it has not spread widely in Singapore and is being contained.
-  Disease is severe and is spreading widely.

Mandatory Social Distancing

INTRODUCED ON
27 JANUARY

INTRODUCED ON
18 FEBRUARY

INTRODUCED ON
28 JANUARY

1

LEAVE OF ABSENCE (LOA)

A precautionary measure.

Those serving LOA can leave their homes to get meals and necessities, **but must return to their homes as soon as possible.**



2

STAY HOME NOTICE(SHN)

One will have to **remain in their place of residence at all times for 14 days.**

Stricter than the LOA, **but one can stay with their family members.**



3

QUARANTINE ORDER (QO)

Issued to an individual who is, or is suspected to be, a carrier or contact of an infectious disease.

One has to be **isolated** from other people in the home, or in a suitable government facility.



Those who flout the SHN or the QO may face penalties and can be prosecuted under Section 21A of the Infectious Diseases Act.

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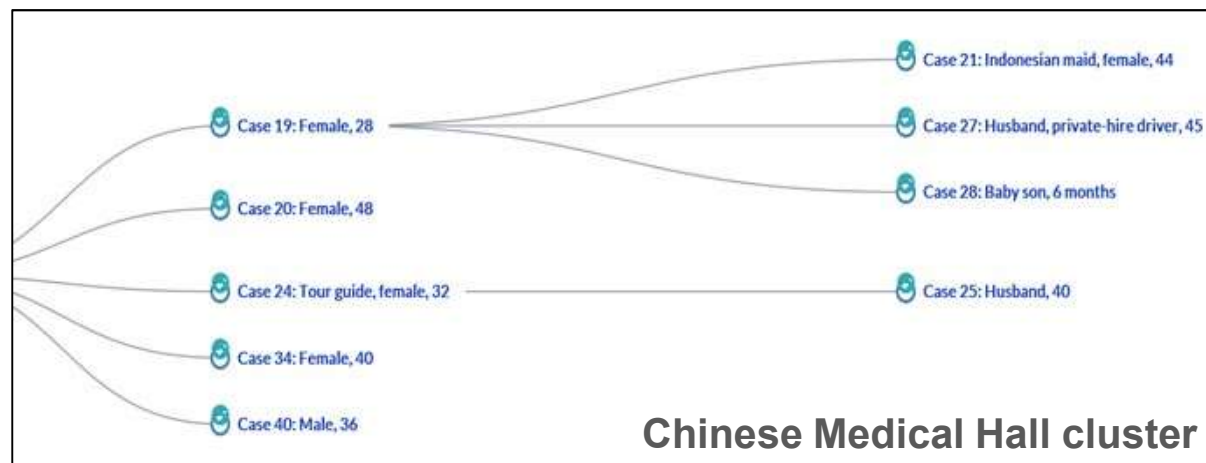


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Contact Tracing – Sheer Efforts



Assistant directors from the Health Ministry's Communicable Diseases Division Olivia Oh and Pream Raj (standing) with officers carrying out contact tracing on confirmed coronavirus patients. TNP PHOTO: KELVIN CHING



- Teams of 10, 2 shifts, 7 days
- Review activities and contacts for past 14 days before symptoms onset till isolation
- Flight manifests, interviews of case and NOK, **CCTV footages**, telephone calls
- Activity maps to cross-reference locations between cases
- Partnership with **Criminal Investigation Department**

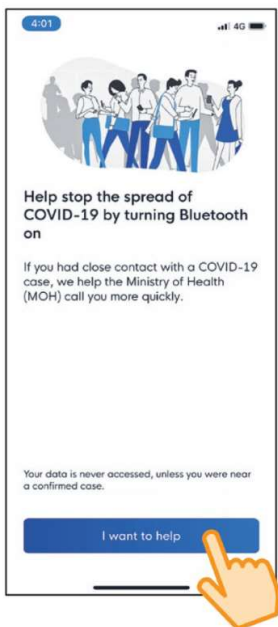
Contact Tracing – Technology



What is TraceTogether and how does it work?

TraceTogether is a contact-tracing smartphone app that enables the Ministry of Health (MOH) to quickly track people who have been exposed to confirmed coronavirus cases.

- 1** Users here can download the app on the Apple App Store or the Google Play Store.



- 2** Users have to input their mobile phone number for MOH to be able to contact them quickly. The number is the only data collected by the Government through the app.

Enter your mobile number to be contacted
+65 [input field]
We'll text you a One-Time Pin (OTP).
Setting up for your family? Use their number instead of yours.

Enter OTP that was sent to +65 [input field]
[Wrong number?](#)

Your code will expire in 1:57.
[Resend Code](#)

- 3** During the initial set-up, users have to give their explicit consent to be able to use the app.

Your consent is needed for the following:

- ☐ To store your mobile number in a secured TraceTogether registry
- ☒ For TraceTogether users who are COVID-19 cases to share information about their possible encounters with you — so that we can call your mobile phone about next steps

I agree

- 4** Users will then have to enable push notifications and location permissions, and keep the Bluetooth function on their phones turned on.

Set up app permissions

Select 'Yes' for the next 2 screens to set up.

- Bluetooth
- Push notifications

Both are needed for the app to work. Your battery usage may increase.

Proceed

"TraceTogether" Would Like to Use Bluetooth

TraceTogether exchanges Bluetooth signals with nearby phones running the same app. These signals contain an anonymised ID, which is encrypted and changes continually to ensure your privacy.

Don't Allow OK

"TraceTogether" Would Like to Send You Notifications

Notifications may include alerts, sounds and icon badges. These can be configured in Settings.

Don't Allow Allow

- 5** This is because the app uses short-distance Bluetooth signals that are exchanged between phones to detect other TraceTogether users in close proximity.



- 6** • Official contact tracers who call users will provide a code that users can match with a corresponding verification code on their app.
- Once authenticated, users will be given a PIN number that allows submission of logs when entered.
 - Official contact tracers will not ask for personal financial details or transfer of money.



Communication Strategies: Central Source of Information

Exclusive: How Singapore sends daily Whatsapp updates on coronavirus

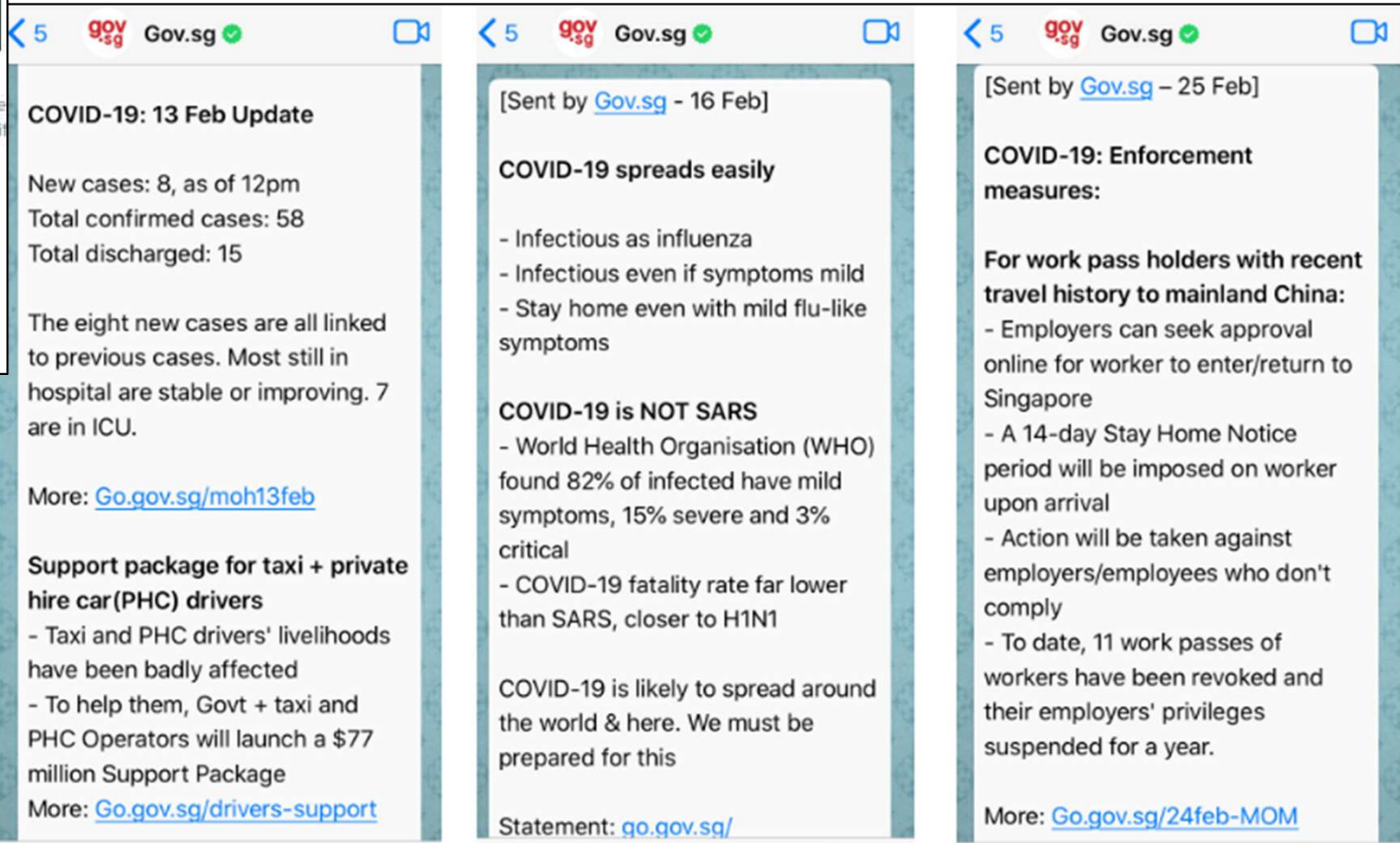
How a GovTech unit built #CovTech to coordinate Singapore's response to the COVID-19 outbreak.




Gov.sg WhatsApp Subscription

4. Language / 语言 / Bahasa / மொழி (optional)
*Do note that you may receive multiple messages based on the language you choose. If you choose English and Chinese, you will receive the same notification in both languages.

☐ English
☐ 华语
☐ Bahasa Melayu
☐ தமிழ்



COVID-19: 13 Feb Update

New cases: 8, as of 12pm
Total confirmed cases: 58
Total discharged: 15

The eight new cases are all linked to previous cases. Most still in hospital are stable or improving. 7 are in ICU.

More: [Go.gov.sg/moh13feb](https://www.gov.sg/moh13feb)

Support package for taxi + private hire car (PHC) drivers

- Taxi and PHC drivers' livelihoods have been badly affected
- To help them, Govt + taxi and PHC Operators will launch a \$77 million Support Package

More: [Go.gov.sg/drivers-support](https://www.gov.sg/drivers-support)

[Sent by Gov.sg - 16 Feb]

COVID-19 spreads easily

- Infectious as influenza
- Infectious even if symptoms mild
- Stay home even with mild flu-like symptoms

COVID-19 is NOT SARS

- World Health Organisation (WHO) found 82% of infected have mild symptoms, 15% severe and 3% critical
- COVID-19 fatality rate far lower than SARS, closer to H1N1

COVID-19 is likely to spread around the world & here. We must be prepared for this

Statement: [go.gov.sg/](https://www.gov.sg/)

[Sent by Gov.sg - 25 Feb]

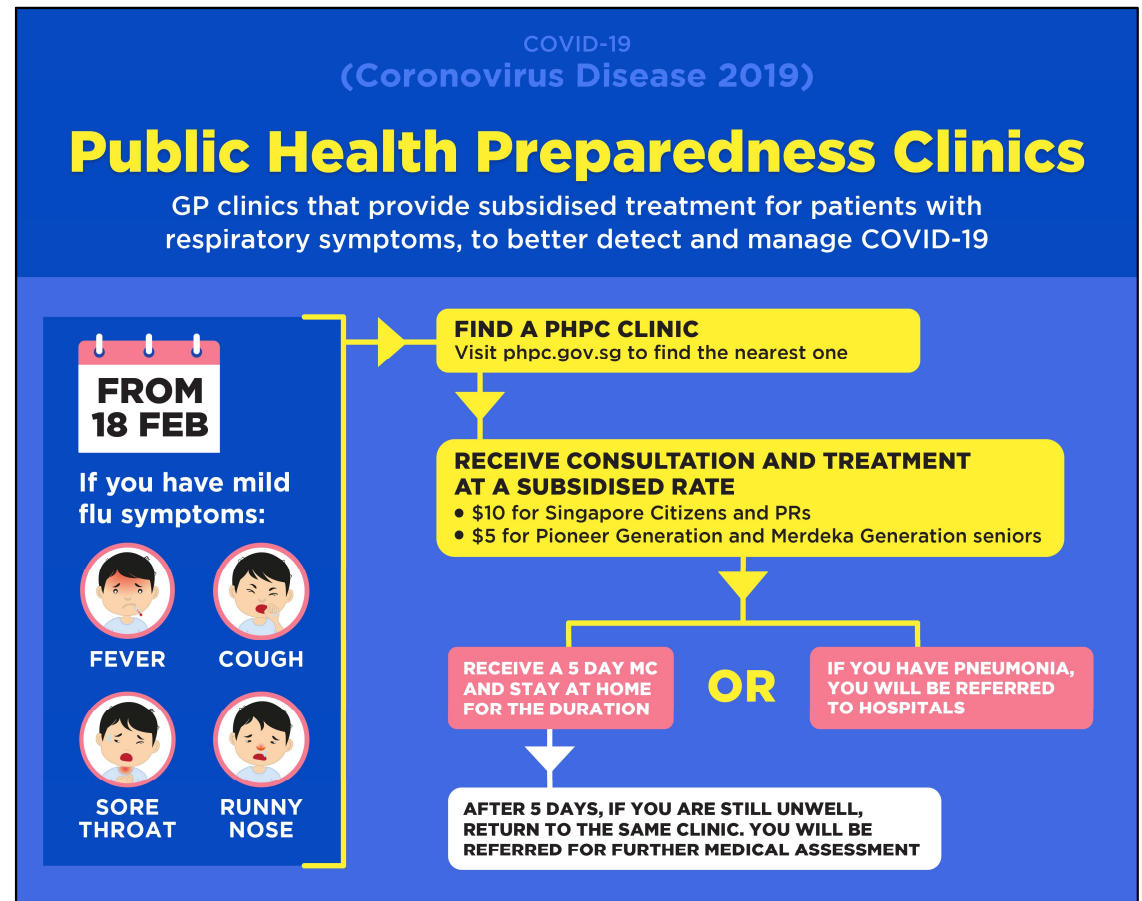
COVID-19: Enforcement measures:

For work pass holders with recent travel history to mainland China:

- Employers can seek approval online for worker to enter/return to Singapore
- A 14-day Stay Home Notice period will be imposed on worker upon arrival
- Action will be taken against employers/employees who don't comply
- To date, 11 work passes of workers have been revoked and their employers' privileges suspended for a year.

More: [Go.gov.sg/24feb-MOM](https://www.gov.sg/24feb-MOM)

1. Purpose-built **national centre for clinical response** during outbreaks since Aug 2018
2. All tertiary hospitals undergo **specific drills** to cope with such outbreaks (**EX SPARROWHAWK**), with gradual **increase in isolation capacity** to receive cases
3. Enhanced measures to **protect healthcare workers**
4. **Primary Care strengthening** (PHPCs), and sentinel surveillance



THE STRAITS TIMES

SINGAPORE

Coronavirus: Singapore Government to foot bills of infected patients at public hospitals, except outpatient expenses

🕒 PUBLISHED FEB 12, 2020, 8:53 PM SGT | UPDATED FEB 13, 2020, 6:36 AM

- Assurance of financial coverage for all, **including migrant workers**
- Singapore insurance associations issue joint statement to provide coverage for medical expenses related to COVID-19

Bangkok Post THAILAND WORLD BUSINESS OPINION AUTO

THAILAND > GENERAL

Virus covered by universal health care

Official: Mask shortages due to lack of raw materials

PUBLISHED : 2 MAR 2020 AT 19:39

WORLD NEWS MARCH 10, 2020 / 12:35 PM / 13 DAYS AGO

REUTERS

Singapore charges visitors for coronavirus treatment after imported Indonesian cases

Aradhana Aravindan, John Geddie

3 MIN READ

🐦 📘

Health bills may hurt coronavirus fight in US

THE STRAITS TIMES, PUBLISHED 1 MAR 2020

High costs could deter potential patients from being tested and seeking medical help: Experts

Financial Assistance to those on Mandatory Social Distancing



Wuhan virus: \$100 a day for those quarantined; severe penalties for people who flout quarantine orders

🕒 PUBLISHED JAN 28, 2020, 7:47 PM SGT | UPDATED FEB 3, 2020, 3:44 PM

Salma Khalik Senior Health Correspondent

Income Protection

For delivery-partners who are hospitalised, quarantined or on LOA.

	Hospitalisation/ Quarantine	LOA (Leave of Absence)
 ONE-OFF INCOME ASSISTANCE Get between \$100 to \$200 in income support to help you through this period.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 MAINTAIN YOUR TIER LEVEL Your Emerald Circle tier from the previous month will be maintained for the affected month.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

*LOA (Leave of Absence) valid for delivery-partners who have declared and presented an air ticket/boarding pass and passport showing that they have travelled to Mainland China and returned to Singapore on/after 20th Jan. Not applicable to delivery-partners who departed on/after 28 Jan.

CARE PACKAGE FOR DRIVERS

QUARANTINED DUE TO THE WUHAN CORONAVIRUS SITUATION

If you are under a Quarantine Order and have to stop working for 14 days, here's how the National Taxi Association (NTA), the National Private Hire Vehicles Association (NPHVA), Land Transport Authority, and taxi and private hire car operators will help you:



	NTA AND NPHVA MEMBER	NON-MEMBER
\$200 ONE-OFF ALLOWANCE From NTA and NPHVA	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AT LEAST \$100 ONE-OFF ALLOWANCE From all taxi operators, Gojek, Grab, Ryde and TADA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
RENTAL WAIVER From all taxi operators, Gojek, Grab and Ryde	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
\$100 PER DAY ALLOWANCE From the Government	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Supported by: ComfortDelGro Taxi, HDT Taxi, Gojek, Grab, Land Transport Authority, Ryde, Premier Taxis, Prime Taxi, SMRT Taxis, TADA and Trans-Cab

Multi-Sectoral Cooperation

Soldiers deployed to pack masks



Detectives for case linkage

Coronavirus: CID roped in to help find links between cases, trace contacts



1 of 2

Officers coordinating the police's contact tracing operations from the Criminal Investigation Department Command Centre at the Police Cantonment Complex.

SG Clean Taskforce
Ministry for Environment and
Water Resources

Singapore



06 Mar 2020 10:14AM
(Updated: 06 Mar 2020
10:40PM)

**Task force formed to raise
public hygiene standards
beyond COVID-19 outbreak**

Countering Fake News

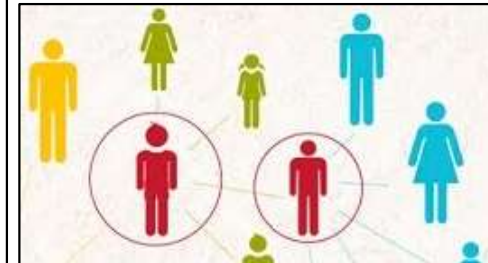
Singapore  cna

Health Minister orders POFMA correction directions to States Times Review, Facebook over COVID-19 post



Singapore 28 Jan 2020 08:13PM  cna

Wuhan virus: POFMA Office issues correction direction to Facebook over posts claiming Woodlands MRT closure



\$100
China LOA

★ Commentary | CNA

Commentary: What to do with all these health rumours and forwarded messages in the time of COVID-19?

As developments over the coronavirus outbreak unfold, all of us will have to exercise patience and care in fighting falsehoods, says an observer.



Legal Enforcement



Singapore

26 Feb 2020

Man loses PR status, barred from re-entering Singapore after breaching Stay-Home Notice



Singapore

28 Feb 2020

China couple charged under Infectious Diseases Act for obstructing COVID-19 containment work

89 Work Passes Revoked for Breach of Entry Approval and Stay-Home Notice Requirements

21 March 2020 | [Employment practices](#) | [Foreign manpower](#) | [Work passes and permits](#)



Community Restrictions

Singapore 04 Feb 2020 06:00PM • (Updated: 05 Feb 2020 02:58PM)

Coronavirus outbreak: Schools, eldercare facilities to suspend large gatherings after first local transmission

CCs, RCs suspend classes attended by confirmed coronavirus cases

🕒 PUBLISHED MAR 8, 2020, 5:00 AM SGT

ST SINGAPORE



Community Restrictions

- Applies to all gatherings outside of work and school
- With effect from 11:59pm, **March 26**
- Measures expected to stay in place until April 30, but may be extended if situation does not improve

BARS AND ENTERTAINMENT VENUES, INCLUDING NIGHT CLUBS, DISCOS, CINEMAS, THEATRES AND KARAOKE OUTLETS	<ul style="list-style-type: none"> • Closed 	ALL EVENTS AND MASS GATHERINGS, E.G. CONFERENCES, EXHIBITIONS, FESTIVALS, CONCERTS, SPORTING EVENTS AND TRADE FAIRS	<ul style="list-style-type: none"> • Must be deferred or cancelled
MALLS, MUSEUMS AND ATTRACTIONS	<ul style="list-style-type: none"> • Reduce operating capacity to no more than one person per 16 sqm of usable space • Groups must not exceed 10 people • Shows within attractions, museum group tours and open atrium sales will be suspended • Malls and attractions unable to adhere to requirements must be closed • Existing measures for F&B venues still apply 	PRIVATE CELEBRATIONS, E.G. BIRTHDAYS, WEDDINGS	<ul style="list-style-type: none"> • Avoid holding and participating in such gatherings involving more than 10 people at any time
TUITION AND ENRICHMENT CENTRES	<ul style="list-style-type: none"> • All centre-based classes suspended 	FUNERALS AND WAKES	<ul style="list-style-type: none"> • Limit attendance as far as possible to family members only, and gatherings of 10 or fewer people at any point
RELIGIOUS SERVICES AND CONGREGATIONS	<ul style="list-style-type: none"> • Suspended • Places of worship (e.g. temples, mosques and churches) may stay open for private worship and essential rites, subject to group sizes of 10 people or fewer at any time 	WORKPLACES	<ul style="list-style-type: none"> • Existing measures apply

Infographic: Kenneth Choy
Source: Ministry of Health

Fiscal Measures to Buffer Economy

 **SUPPLEMENTARY BUDGET 2020** Support. Stabilise. Build. Deploy.

COMBATING COVID-19

Since Budget 2020, **COVID-19** has accelerated into a **global pandemic**. The global economy has been hit and **we are affected**.

To meet these challenging times, we have a
\$48 BILLION RESILIENCE BUDGET
to support Singaporeans and businesses and
EMERGE STRONGER



EMERGE STRONGER



- Announced **26 March 2020**, after the annual budget on 18 February 2020

FOUR KEY THRUSTS

1. **SAVING JOBS, SUPPORTING WAGES**
2. **ADDITIONAL SUPPORT FOR HOUSEHOLDS**
3. **STABILIZING BUSINESSES**
4. **STRENGTHENING SUPPORT NETWORKS**

Saving Jobs, Supporting Wages

SUPPORTING WORKERS

SAVING JOBS, SUPPORTING WAGES

Enhanced Jobs Support Scheme (JSS)

- Government will help employers by **paying 25% on the first \$4,600 of monthly salaries**, up from 8% on the first \$3,600 previously
- JSS will be for **9 months** till end-2020, up from 3 months previously

JSS
will support
1.9m jobs

Enhanced Wage Credit Scheme (WCS)

- Additional **\$500m** for employees' **wage increases**, on top of \$600m disbursed in March 2020¹

¹WCS was enhanced in Budget 2020. The March 2020 payout was based on Budget 2019 parameters. A further WCS payout in June 2020 will comprise additional wage credits arising from Budget 2020 enhancements.



Supporting wages to
minimise layoffs

SUPPORTING WORKERS

HELPING WORKERS WITH LESS MEANS

COVID-19 Support Grant

- Cash grant of **\$800 a month for 3 months** for lower- and middle-income Singaporeans who lose their jobs due to COVID-19
- Grant will tide them over while they find new jobs or go for training
- Those who need immediate assistance in April 2020 can apply for the **Temporary Relief Fund**

Enhanced Workfare Special Payment

- Cash payment of **\$3,000** for Singaporeans who received Workfare payments in 2019¹

¹ Original payout was an additional 20% of Workfare payments based on work done in 2019, with a minimum payment of \$100



Helping **existing**
unemployed, including
supporting training

SUPPORTING WORKERS

HELPING SELF-EMPLOYED PERSONS (SEPs)

SEP Income Relief Scheme (SIRS)

- Eligible Singaporean SEPs will receive **\$1,000 a month for 9 months**

SEP Training Support Scheme

- Extended till **end-2020** and set aside **\$48m** for the scheme
- Enhanced training allowance rate of **\$10 per hour**
- Sustained support for 200,000** eligible **SEPs** to make use of downtime to train and upskill



Helping **self-employed**
people, unconventional
workforce

Stabilising Businesses



SUPPLEMENTARY
BUDGET 2020

Support. **Stabilise.** Build. Deploy.

STABILISING BUSINESSES

HELPING WITH CASH FLOW & COSTS

Enhanced Property Tax Rebate for 2020

- **100% rebate** for qualifying commercial properties¹
- **60% rebate** for the Integrated Resorts
- **30% rebate** for other non-residential properties

¹Includes hotels, serviced apartments, tourist attractions, shops, and restaurants.

Enhanced Rental Waivers

- **3 months' rental waiver** for hawkers
- **Up to 2 months' rental waiver** for commercial and other non-residential tenants in government properties



Defraying **key**
fixed costs



SUPPLEMENTARY
BUDGET 2020

Support. **Stabilise.** Build. Deploy.

STABILISING BUSINESSES

HELPING WITH CASH FLOW & COSTS

Deferment of Income Tax Payments

- **Automatically defer income tax payments for 3 months**, for companies and self-employed persons (SEPs)
 - ❖ **Companies:** deferment of payments due in **April to June 2020**
 - ❖ **SEPs:** deferment for payments due in **May to July 2020**

Freeze All Government Fees & Charges

- **Freeze** all government fees and charges for **1 year**, from 1 April 2020 to 31 March 2021



Minimising **variable**
costs outlays



SUPPLEMENTARY
BUDGET 2020

Support. **Stabilise.** Build. Deploy.

STABILISING BUSINESSES

HELPING WITH CREDIT

Enterprise Financing Scheme (EFS)

- Maximum loan quantum of **EFS-Trade Loan** increased from \$5m to **\$10m** Government's risk-share raised to **80%**
- Maximum loan quantum of **EFS-SME Working Capital Loan** increased from \$0.6m to **\$1m**

Loan Insurance Scheme

- Subsidy for loan insurance premium raised to **80%**

Temporary Bridging Loan Programme

- Expanded to **cover all sectors** and maximum supported loan raised from \$1m to **\$5m**



Enhancing credit
schemes to
ensure liquidity

Support for Households



SUPPLEMENTARY
BUDGET 2020

Support. Stabilise. Build. Deploy.

ADDITIONAL SUPPORT FOR HOUSEHOLDS

HELPING FAMILIES WITH DAILY EXPENSES

Care & Support – Cash & PAssion Card Top-up

- **Enhanced cash payout** for all Singaporeans aged 21 and above in 2020 of **\$300, \$600, or \$900¹**
- **Additional cash payout** for each Singaporean parent with at least 1 Singaporean child aged 20 and below in 2020 **tripled** from \$100 to **\$300**
- All Singaporeans aged 50 and above in 2020 will receive their **\$100 PAssion Card Top-up in cash**

¹Original cash payout announced was \$100, \$200, or \$300.



**Means-guided cash
payout to help families**



SUPPLEMENTARY
BUDGET 2020

Support. Stabilise. Build. Deploy.

STRENGTHENING SUPPORT NETWORKS

MORE FUNDING FOR COMMUNITY

More Community Help for Vulnerable Households

- **Self-Help Groups** to receive grants of **\$20m** over two years to enhance support for the community
- **Community Development Councils** to receive **\$75m** to provide meals to vulnerable households

NTUC Care Fund (COVID-19)

- **\$25m** in joint funding from NTUC, Unions, and the Government to **help workers and SEPs**
- **One-off relief of up to \$300** to low- to middle-income union members



**Supporting the
community to lend aid**



SUPPLEMENTARY
BUDGET 2020

Support. Stabilise. Build. Deploy.

ADDITIONAL SUPPORT FOR HOUSEHOLDS

HELPING NEEDY SINGAPOREANS

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¹Original payout was an additional 20% of Workfare payments based on work done in 2019, with a minimum payment of \$100

Enhanced Grocery Vouchers

- **Triple** current voucher in 2020 to **\$300** for Singaporeans aged 21 and above living in 1- or 2-room HDB flats
- \$100 Grocery Voucher for 2021
- Total of **\$400** in 2020 and 2021



**Protecting the least
fortunate in society**



**Harnessing
academia and research
to mount a
scientific evidence-guided
national response**

Academic–Government cocreation of models for COVID–19 policy



Hannah Clapham



Alex Cook

Simple compartmental
model

Quick enough can run on

Individual based model

Needs hours on HPC

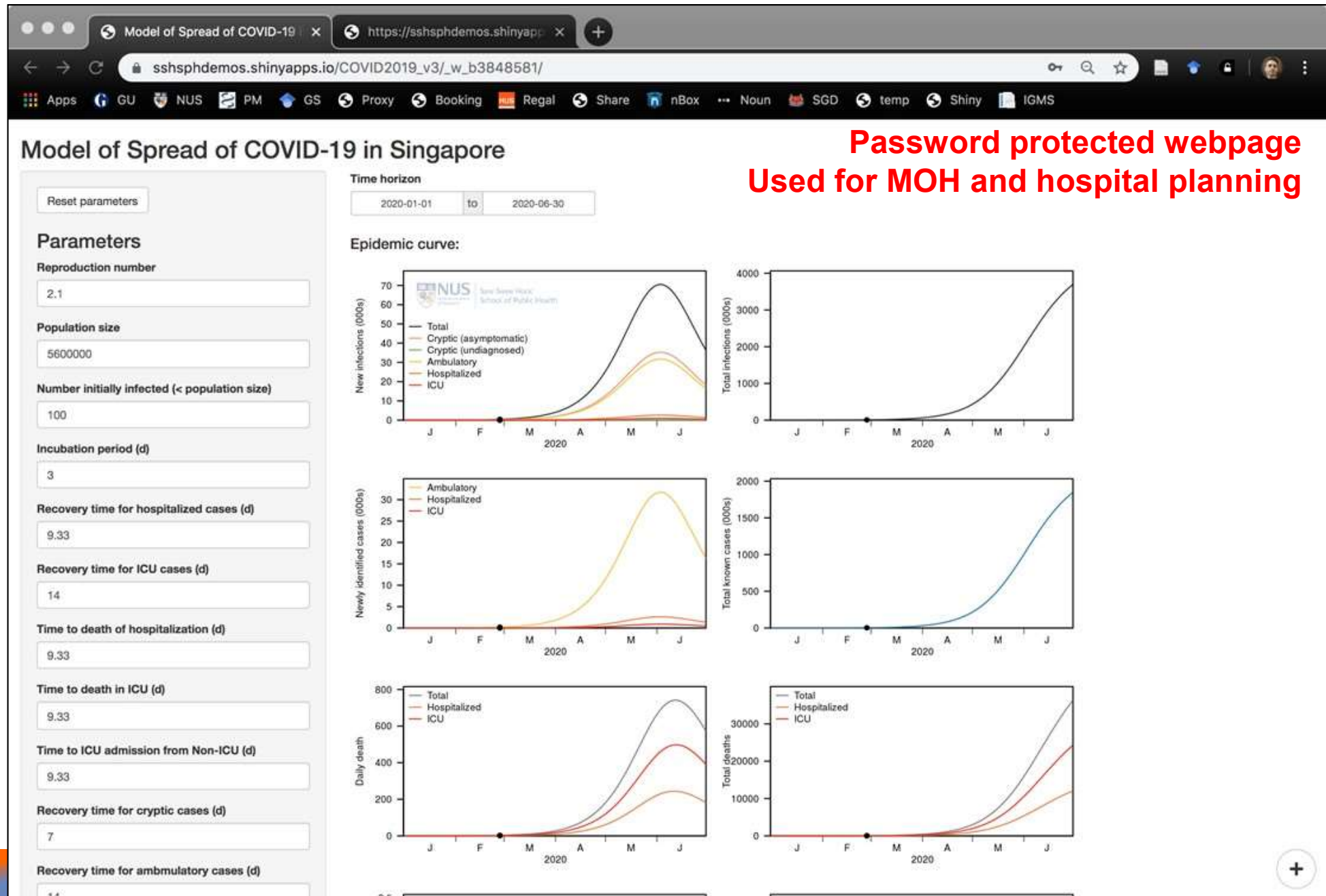
Important caveat

These models are for mitigation phase: built using
from China

Also working on SG outbreak analytics from containment
(using the actual line listings, not the media reports)

Hannah Clapham, Alex Cook, Bo Dickens, Han Yiting, Joel Koo, Lim
Jue Tao,
Otomaru Hirono, Minah Park, Sharon Quaye, Sun Haoyang, Sun
Xiaohe, Yue Mu

Epidemiological Modelling: Simple Compartmental Model



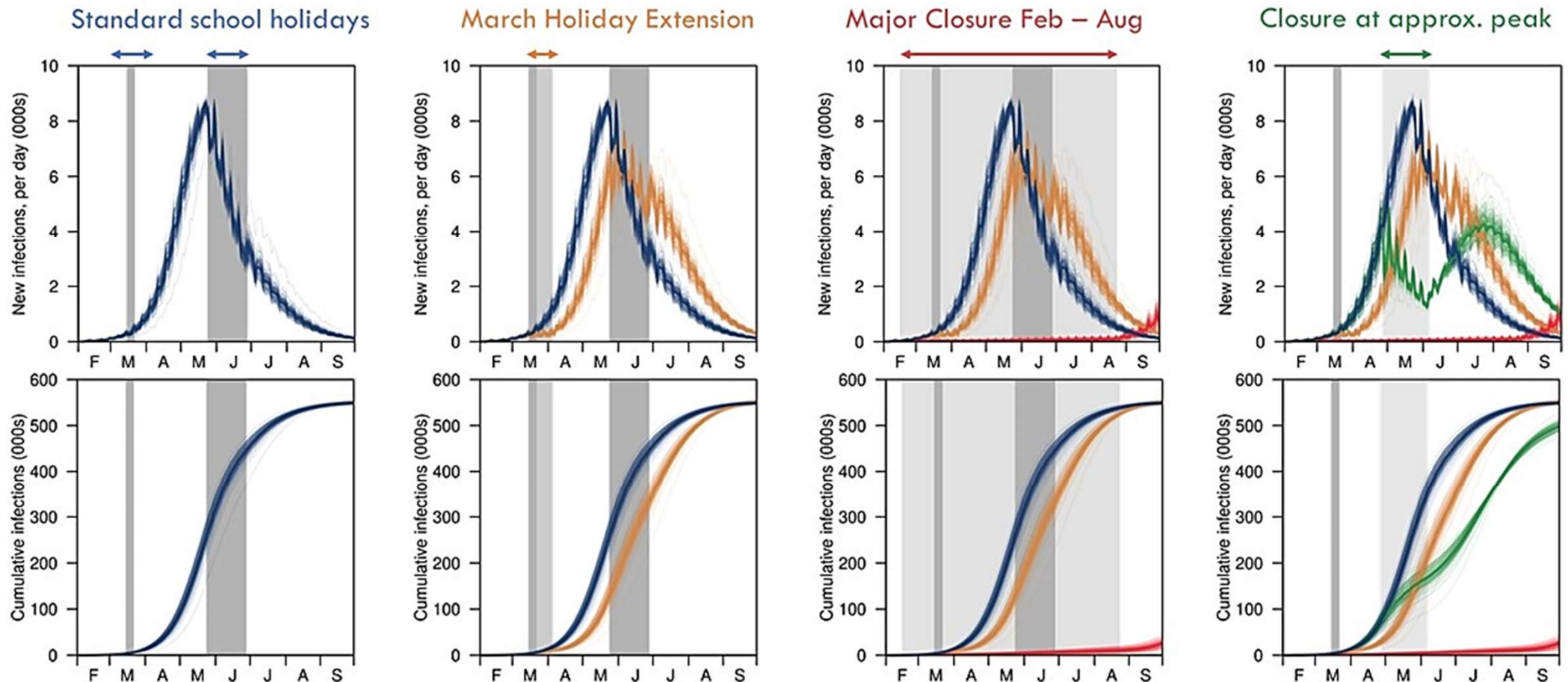
**Password protected webpage
Used for MOH and hospital planning**

Epidemiological Modelling: Individual-Based Model



NUS
National University
of Singapore

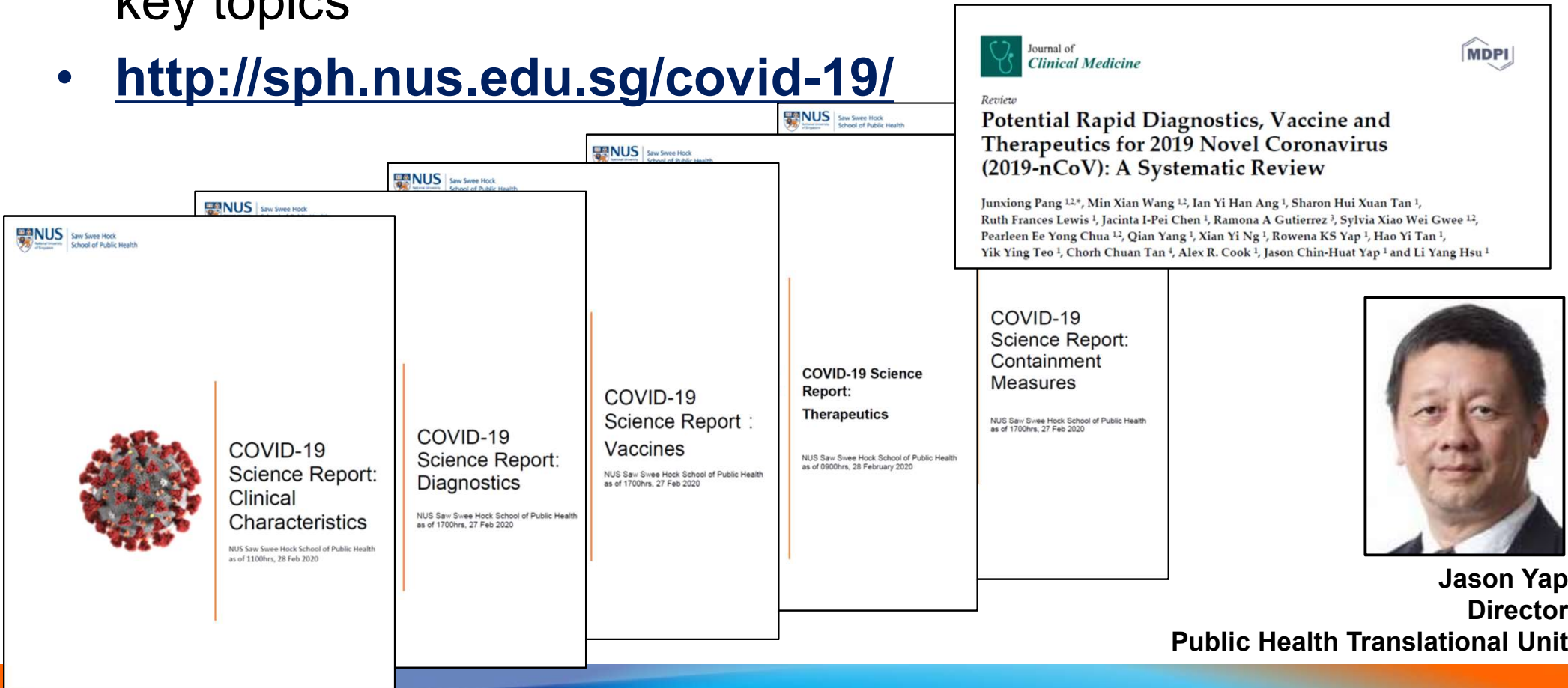
Saw Swee Hock
School of Public Health



contact transmission in both communities and schools at different times and for

Rapid Evidence Synthesis

- Commissioned by Chief Health Scientist to **Public Health Translational Unit** in School of Public Health
- Weekly synthesis of latest scientific and media reports on key topics
- <http://sph.nus.edu.sg/covid-19/>



COVID-19 Science Report: Clinical Characteristics
NUS Saw Swee Hock School of Public Health as of 1100hrs, 28 Feb 2020


COVID-19 Science Report: Diagnostics
NUS Saw Swee Hock School of Public Health as of 1700hrs, 27 Feb 2020

COVID-19 Science Report : Vaccines
NUS Saw Swee Hock School of Public Health as of 1700hrs, 27 Feb 2020

COVID-19 Science Report: Therapeutics
NUS Saw Swee Hock School of Public Health as of 0900hrs, 28 February 2020

COVID-19 Science Report: Containment Measures
NUS Saw Swee Hock School of Public Health as of 1700hrs, 27 Feb 2020

Review
Potential Rapid Diagnostics, Vaccine and Therapeutics for 2019 Novel Coronavirus (2019-nCoV): A Systematic Review
Junxiong Pang ^{1,2,*}, Min Xian Wang ^{1,2}, Ian Yi Han Ang ¹, Sharon Hui Xuan Tan ¹, Ruth Frances Lewis ¹, Jacinta I-Pei Chen ¹, Ramona A Gutierrez ¹, Sylvia Xiao Wei Gwee ^{1,2}, Pearleen Ee Yong Chua ^{1,2}, Qian Yang ¹, Xian Yi Ng ¹, Rowena KS Yap ¹, Hao Yi Tan ¹, Yik Ying Teo ¹, Chorch Chuan Tan ¹, Alex R. Cook ¹, Jason Chin-Huat Yap ¹ and Li Yang Hsu ¹



Jason Yap
Director
Public Health Translational Unit



Community, enterprise and social **actions**

Increase Personal and Social Responsibility

National Campaign on COVID-19

2019 NOVEL CORONAVIRUS

LET'S ALL DO OUR PART

- Wash your hands frequently with soap
- Monitor your temperature twice daily
- AVOID** touching your face with your hands
- Keep your home and surroundings clean and well-ventilated

Be socially responsible

- Cover your mouth with tissue paper when sneezing or coughing
- Wear a mask if you are sick and see a doctor promptly
- If you are sick, **AVOID** crowded places and stay at home
- Comply with Home Quarantine Orders and Leaves of Absence and stay at your designated locations

WE WILL GET THROUGH THIS!



Do not spread rumours.
Get the latest on the novel coronavirus by signing up for the Gov.sg WhatsApp channel (www.go.gov.sg/whatsapp) or at the MOH website (www.moh.gov.sg)



gov.sg

Updated: 8 Feb 2020

DO NOT WEAR A MASK IF YOU ARE WELL

There are sufficient masks in the warehouses and government stockpiles, if they are used responsibly.

WEAR A MASK ONLY IF

- You have a **FEVER, COUGH OR RUNNY NOSE**
- You are **RECOVERING FROM ILLNESS**

HOW TO WEAR A MASK?

- It should **COVER YOUR MOUTH, NOSE AND CHIN**, with the coloured side facing outwards.
- PINCH THE METAL EDGE OF THE MASK** so that it presses gently on your nose bridge.
- Remove a used mask by **HOLDING ONLY THE EAR LOOPS**

WASH YOUR HANDS WITH SOAP AND WATER REGULARLY.



Get the latest on the Wuhan coronavirus and other important Government information by signing up for the Gov.sg WhatsApp channel (www.go.gov.sg/whatsapp), or at the MOH website (www.moh.gov.sg)



gov.sg

Updated: 29 Jan 2020

COVID-19 (Coronavirus Disease 2019)

If you have mild flu-like symptoms like

- Cough
- Runny nose
- Sore throat
- Fever

SEE A DOCTOR

- Don't go to work or school
- Avoid crowds
- Stay at home
- Don't doctor-hop

You can go to Public Health Preparedness Clinics and polyclinics for subsidised treatments if you have flu-like symptoms. Check www.phpc.gov.sg

Look out for this logo

PHPC

tests positive for virus

PHPC

Increase Personal and Social Responsibility

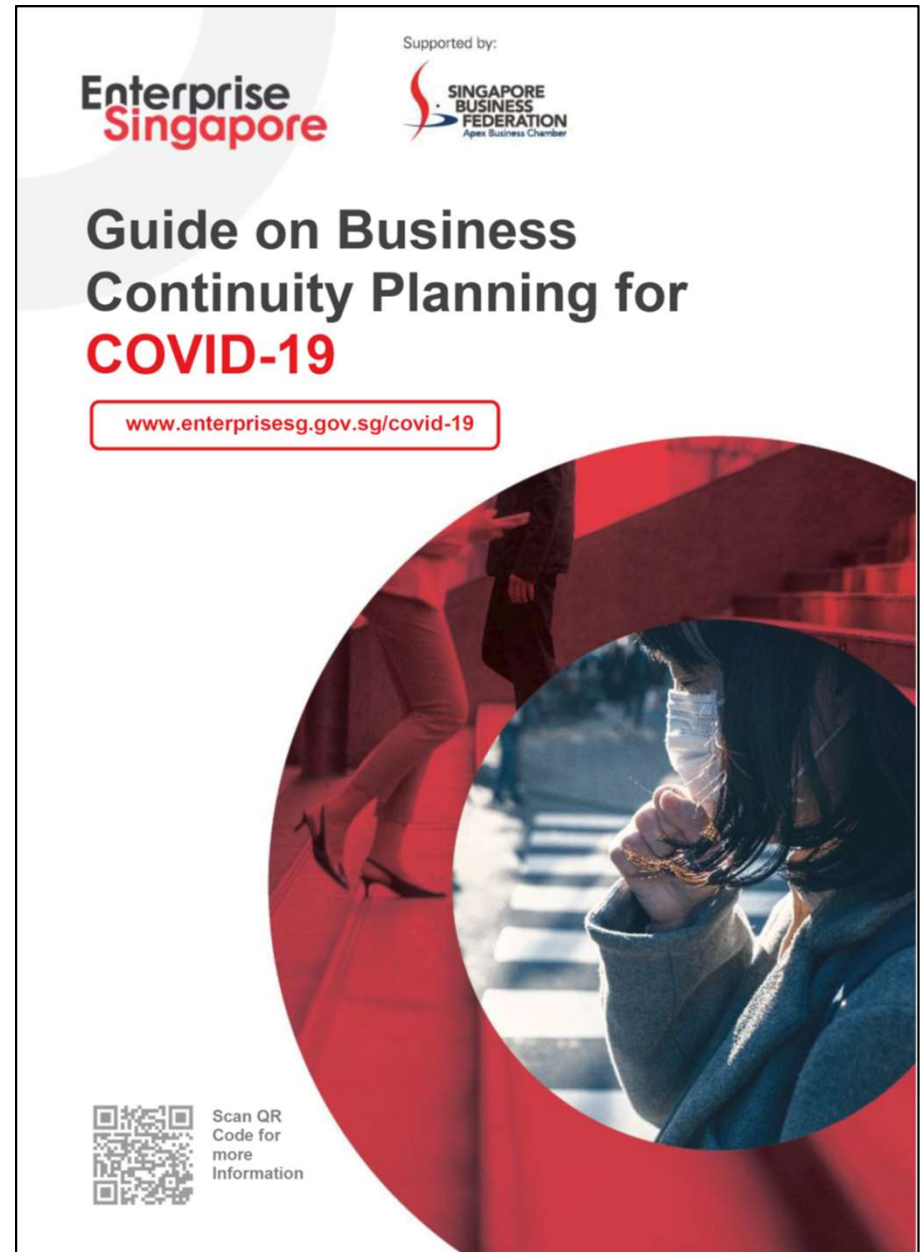
Traditional and Social Media



Business Continuity Plans

Planning and Execution

- BCP protocols established as **routine business and governmental SOPs**
- Specific COVID-19 implementation plans
- **Split teams** on work schedules or work sites for key frontline staff
- **Work-from-home** (WFH) arrangements for non-essential backend staff
- **Teleconferencing** and **e-learning** for meetings and lessons in tertiary institutions
- Temperature screening of staff, visitors, customers



Social and Corporate Solidarity

ST SINGAPORE POLITICS ASIA WORLD VIDEOS LIFESTYLE FOOD MORE ▾

Budget debate: President, ministers to take 1-month pay cut; special bonus for front-line public officers tackling Covid-19





  

Singapore

Temasek freezes staff salaries, senior management to take partial cut in bonuses





SingPost to cut, freeze upper-level management pay as part of Covid-19 measures

THE BUSINESS TIMES


Business

CapitaLand freezes pay for managerial staff, senior management to take wage cut

Business

SIA announces pay cuts for management to reduce manpower costs amid COVID-19 outbreak



Health of Migrant Workers



mothership News COVID-19 Budget 2020 Lifestyle Videos Abroad Weekend + More

S'porean doc who sees migrant workers: If we don't look after the weakest link, we all pay the price

Stories of Us: A volunteer doctor explains why migrant workers are often 'left in the lurch' in a public health crisis, and why he steps up to help.

Jane Zhang | March 2, 11:30 am

f 4.7K



HealthServe's Geylang clinic. Photo via Facebook / HealthServe.



Jeremy Lim
Co-Director
Leadership Institute for Global
Health Transformation (LIGHT)
School of Public Health, NUS

*“Frankly, if they are at higher risk, then all of us become at higher risk also, because in managing outbreaks and epidemics, **the chain is only as strong as the weakest link.**”*

“I would not see this as a zero sum game, that if we help Singaporeans, we cannot help migrant workers. Surely, as a country, as a society, we are big enough, we are generous enough, to do what we can for every group.”



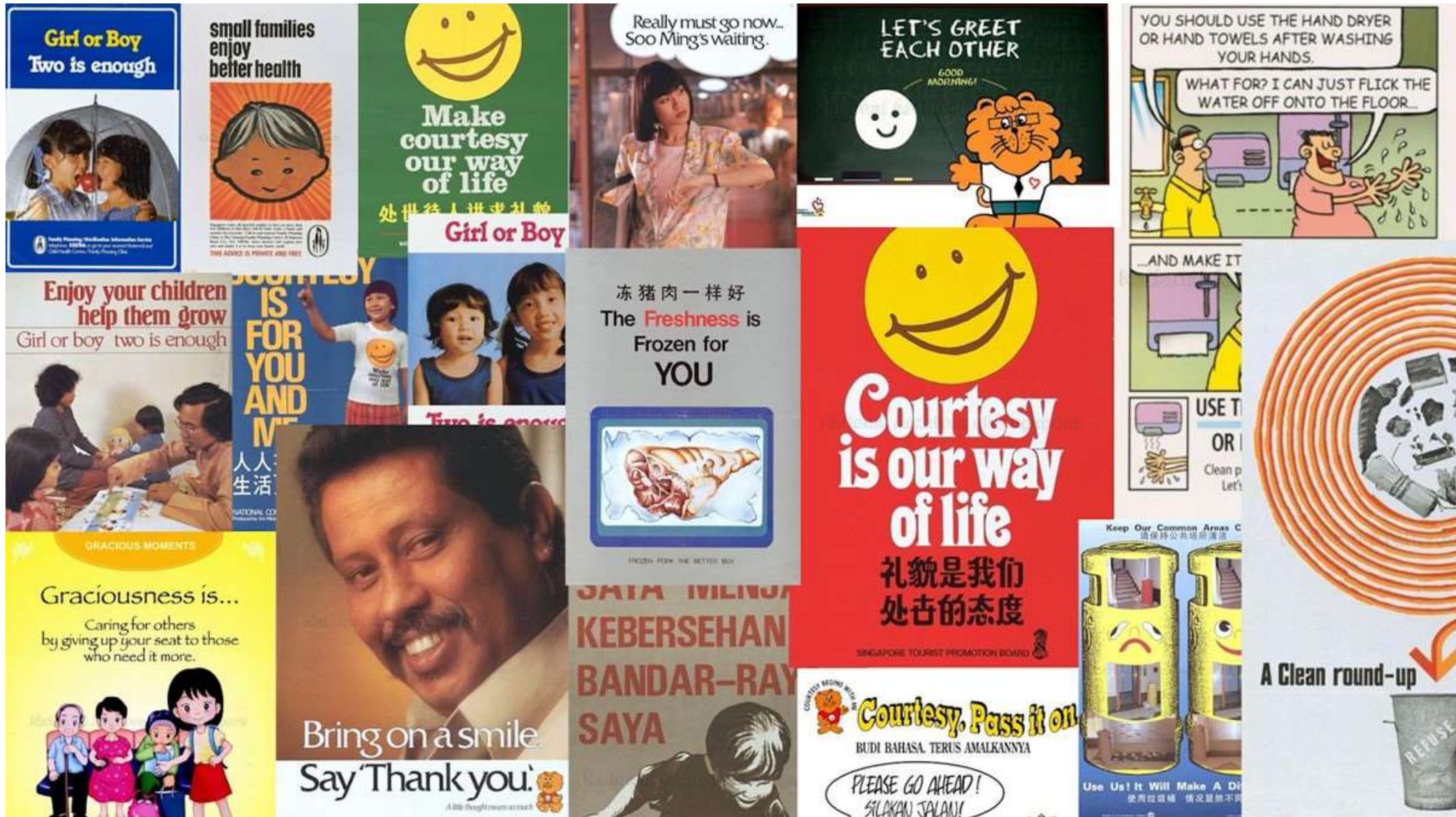
What **factors** allowed
these measures to work?

1. Size of the Country

Aids control and implementation, agile and finite entry points



2. Populace socialized to national campaigns



3. Trust between people and government

2019 General Population

52	Global 26
79	China
73	Indonesia
72	India
71	UAE
62	Singapore
59	Malaysia
58	Mexico
56	Canada
55	Hong Kong
54	The Netherlands
52	Colombia
49	U.S.
48	Australia
46	Argentina
46	Brazil
46	Italy
46	S. Korea
45	S. Africa
45	Turkey
44	France
44	Germany
43	U.K.
42	Ireland
40	Spain
39	Japan
29	Russia

2019 Edelman Trust Barometer. The Trust Index is the average percent trust in NGOs, business, government and media. TRU_INS. Below is a list of institutions. For each one, please indicate how much you trust that institution to do what is right using a nine-point scale where one means that you "do not trust them at all" and nine means that you "trust them a great deal." 9-point scale; top 4 box, trust. General population, 26-market global average.

Trust
(60-100)

Neutral
(50-59)

Distrust
(1-49)

"I believe that trust between the people and the Government is absolutely essential. And the best way to win your trust is to first trust you with the truth – no matter how hard or unpopular."

Deputy Prime Minister
Heng Swee Keat
15 June 2019

How the 4G generation can build trust with my generation of youth

The relationship must be based on interdependence and respect for each other's roles

Ng Chia Wee

For The Straits Times

In 2019 Singapore, two processes of coming of age are taking place simultaneously.

The first of these is the political coming of age of the so-called fourth generation or 4G political leadership, a transition in progress which recently reached a significant milestone – the appointment of Mr Heng Swee Keat as Deputy Prime Minister (DPM).

The second is the demographic coming of age of my generation – the youth.

from conversation to action.

It was significant that the panel co-chair, Ms Sim, said the Government's goals were aligned with those of young people in many areas, such as building an inclusive society.

As a member of Access Singapore, a ground-up organisation tackling educational inequality, I found this extremely heartening.

More broadly, a good relationship between the 4G leaders and youth is key to a strong 4G mandate. After all, the 4G can take the country into the future only if the actual future generation stands with them.

Alignments in an age of disruption

youth today.

For instance, in a recent interview, DPM Heng highlighted the flaws of multi-party democracy, arguing that greater opposition does not mean better outcomes. He was responding to a question on younger Singaporeans wanting more political opposition. It is debatable if many young Singaporeans subscribe to that same view.

The recent 19+ Worldview survey conducted by The Straits Times and the Singapore University of Social Sciences also points to other gaps. A poignant example: 91 per cent of respondents who were not already pursuing a degree wanted one to improve their salary prospects, which may not align with the Government's 40 per cent cohort target.

Education Minister Ong Ye Kung, like his predecessors, has maintained the importance of

My fear is that as both political leaders and youth come of age, gaps in expectations may widen, exacerbated by the forces of disruption.

A consensus that binds

The solution, therefore, must be that the glue which binds the 4G and the youth must go beyond broad goal alignments or even individual policy alignments, which could end up being rather transactional in the face of disruption.

What is needed is a strong consensus to underpin these alignments and to minimise the impact of the inevitable misalignments.

In an increasingly diverse Singapore, disagreements on policy options, even on core principles, are a given. A climate of trust and mutual respect is crucial to maintaining a cohesive bond. This consensus has to be based

when they disagree.

Indeed, this is what the 4G leaders will set out to do in the coming months. As DPM Heng said in an interview: "Our biggest challenge that we need to address is to build a sense of unity amid these tremendous changes that are going on around us."

In the age of disruption, however, this consensus will not come easy. Furthermore, the 4G leaders must also ensure that this is not a transactional consensus that breaks when tough times come, but a consensus that binds in the face of disruption.

Thus, I would like to suggest two guiding principles on which to build consensus.

First, the principle of interdependence. Leaders and people, including the young, must understand that they are in a symbiotic relationship. Leaders cannot take Singapore into the

equals". Scaled up, this power relationship can be applicable in government-people relations, an answer to the question of what a new social compact might look like.

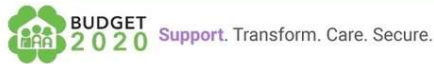
In contrast to a more hierarchical relationship, I hope to see the Government and citizens engage with each other as more equal partners, though the Government retains "veto power".

On the Government's part, this entails a greater readiness to compromise after considering the depth of public opinion.

More importantly, citizens, especially the youth, must be ready to compromise too. After all, how can we expect the Government to compromise when we are not willing to do so?

"First among equals" also means that we must be more willing to accept the Government's judgments even when misalignments occur, trusting the path that the Government has chosen.

4. Ability to offer robust fiscal response



HELPING SECTORS HIT BY COVID-19

STABILISATION & SUPPORT PACKAGE

Enterprises in Tourism Sector

- **Temporary Bridging Loan Programme** for cash flow support
- **Up to 30% Property Tax Rebate** for 2020

Aviation Sector

- **Rebates** on aircraft landing and parking charges, assistance to ground handlers
- **Rental rebates** for shops and cargo agents at Changi Airport



SINGAPORE BUDGET 2020

S\$4B STABILISATION AND SUPPORT PACKAGE

- Jobs Support Scheme offsets 8% of wages for 3 months, subject to a cap
- Wage Credit Scheme enhanced; qualifying monthly wage ceiling raised to S\$5,000 so more can benefit.
Government co-funding levels for 2019 and 2020 raised to 20% and 15% respectively
- 5 sectors to get additional support amid COVID-19 situation: Tourism, aviation, retail, F&B and point-to-point transport services



Infographic: Kenneth Choy
Source: Ministry of Finance



What **factors** allowed these measures to work?

Measures really are **context-dependent** depending on **individual country's** enabling factors

Summary

- Ability or *inability* to respond during a public health crisis is a function of decisions taken in the country in the past
- Singapore still keeping up with containment strategies, but at the same time preparing for mitigation
- Measures taken are context-dependent, so is success of implementation
- Tentative control of situation = 3-4 weeks of delay but important not to squander, and prepare for next waves

Checklist of Preparations



Saw Swee Hock
School of Public Health

<https://www.who.int/docs/default-source/coronaviruse/20200307-responding-to-covid-19-communitytransmission-final.pdf>

1. Procuring and ascertainment supply of PPE and essential medical equipment (ventilators, respirators, treatment drugs)
2. Training of HCWs on PPE usage and intensive care management
3. Protocols to decongest ICU and isolation wards
4. Establish primary care and hospital infection control protocols, including for suspected and confirmed cases
5. Develop primary care strategy for large-scale triage and treatment
6. Prep/train for contact tracing
7. Execution plans for social distancing and quarantine
8. Community protocols when confirmed case is reported (comms, decontamination, BCP)
9. Establish WOG response team
10. Prepare economic package to support affected business sectors, sustain employment and manage trade chain liquidity
11. Establish trusted comms platform with public, community & industry leaders
12. Form academic partnerships for training and guiding response

Questions

ephtyy@nus.edu.sg

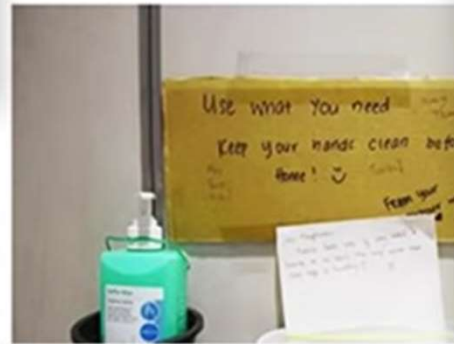


https://www.youtube.com/watch?v=zMbYnwk_vOw

This made my day: Woman gives out ginger tea with surgical masks – and other kind acts during virus outbreak



**'The kampung spirit is still alive':
Punggol residents step up amid
coronavirus outbreak**



**NUS & NTU students deliver food to students
on leave of absence 3 times a day, every day**

E-gaming students at NUS have even
organised a gaming marathon to keep
those on Leave of Absence occupied.

Melanie Lim | February 3, 06:05 pm



**Coronavirus: Cleaning stepped up
in areas frequented by public**



**Thank This Couple For
Helping Your Ah Ma, Ah Gong
Understand Coronavirus**

STORY: Sim Ding En

06 February 2



**S'porean man & Vietnamese wife give
out 17,000 free masks outside Punggol
MRT**

7,000 masks given out in one day.

Nyi Nyi Thet | February 5, 12:07 am



免费送口罩给陌生人

来源 / 联合早报
摄影 / 林国瑞
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