



## **GEYS4010 Group B02**

*How would we protect our workplace so business can slowly return to normal and people can go back to work?*




# Introduction

- With the worsening spread of COVID, many countries have shut down workplace, schooling, and travel, as an attempt to prevent the transmission of COVID-19
- As with all government policies, the benefit to prevent covid spreading also comes with detrimental impacts. In particular, the workplace and businesses are severely affected.
- Many businesses are forced to go bankrupt, which leads to unemployment and social unrest
- This in turn causes people to distrust the government and disobey the public health measures
- A balance must therefore be made to avoid excessive economic damage to the population
- In this presentation, we will explore the impacts of shutdown on the workplace, as well as potential methods to ameliorate this problem in Hong Kong.



## (2) What are other countries doing? Example 1 - Australia

- Work from home policies
  - Fines and imprisonment
- Social-distancing rules
  - e.g. 2 individuals should not stand closer than 1.5m
  - e.g. one person should occupy 4 sqm. of indoor space in a workplace
- Advice concerning workplace safety
  - Limit no. of workers travelling together
  - Limit unnecessary access to workplace by other people
  - Postpone work-related travel
- Unemployment benefit + Support to small and medium sized businesses



## (2) What are other countries doing? Example 2 - Singapore


- Workplace ppl- limits
  - No more than 50 percent of employees who can work from home should be allowed at workplace
  - No social gathering is allowed and the size is limited to five people
- Social-distancing rules
  - e.g. clear physical spacing of at least 1 meters through physical means
- Roles of Employers
  - Stagger the start time of employees + Implement flexible workplace hours
  - Take care of workers + temporarily redeploy vulnerable employees to another role in the company
- Employers and Employees also have to mandatorily check-in with TraceTogether Token or app at workplace



## (2) What are other countries doing?

### Example 3 - Britain

- **Workplace**: Encourage work from home. Government encourages all businesses should facilitate working from home as far as possible
- **Hospitality**: Indoor parts of certain hospitality venues should remain closed, including restaurants, pubs, bars and social clubs. Smoking equipment, such as shisha pipes are prohibited.
  - May open outdoor to provide service → Food and drinks are encouraged to be provided in a takeaway basais
- **Entertainment and tourism**: various premises are required to close, including nightclubs, dancehalls, amusement arcades, concert halls and circuses.
- **Businesses**: Permitted venues, including exhibition and conference centres, can hire out function and event spaces for essential work, education and training purposes
- **Sports and leisures**: Allowed to exercise outdoors in a group of 6 or a larger group of any size from up to 2 households. Only outdoor sports and leisure facilities can open.
- Customers and visitors over the age of 10 must wear a face covering in a number of indoor settings, unless exempt.
- **Government support**: The government has put in place a wide range of support for businesses affected by Coronavirus
  - up to £4,714 under the ordinance.



# (3) How to ameliorate the problems in HK? How to build a framework for a Return to Normal Operations plan?

Parker et al. (2020) Return to normal operations:  
COVID-19 mitigation strategies for workplaces.

- Business specific: impossible for one size fits all; calls towards individual industry & event specific plan
- Adequate response encapsulating not just extent of response, but speed of response
- Need for 4 main components/definitions

## 1) Stages of response (minimum of 3)

- Based on internal and external pandemic factors
- Different categories of response

## 2) Controls for different categories

Well defined controls and policies to respond to the different stages

- For faster ability to transition between stages with the changing pandemic situation (increasing speed of response) - Response as a net summation of all the controls: No single RNBO plan
- Evaluated based on feasibility and effectiveness; reduction in control of one measure would require increase in controls of other measures

## 3) Triggers for transition

- Define the internal and external factors
- e.g. local/state orders, local spread of COVID, case incidence in region/ communities of the business, testing capabilities

## 4) Workplace/industry specific guidelines

- Specific needs within each facility and possible hazards associated with building shutdown and prolonged work-from-home etc. policies; e.g. humidity and mould growth, etc



### (3) How to ameliorate the problems in HK?

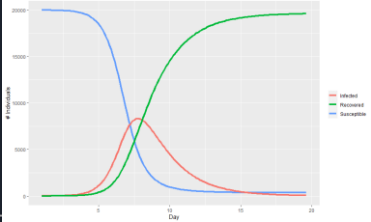
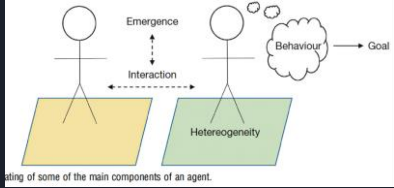
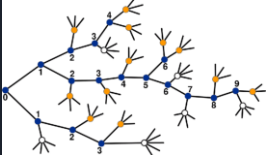
What bioethical principles need to be considered when building a framework?

Bernstein and Hutler (2020) An ethics framework for the COVID-19 Reopening Process.


- Reopening as a series of tradeoffs reflecting shared values of society, and balance with ethics
- Proposes 4 broad moral values - well-being, liberty, justice, and legitimacy
- Well-being
  - Effects of disease: total cases, hospitalization and capacity, total deaths
  - Economic effects
  - Public health effects
  - Effects on human development (esp. children)
- Liberty:
  - Freedom of movement and association
  - Freedom of religion and political participation
  - Privacy
- Justice:
  - Burdens and benefits of policy - fair and equitable distribution?
- Legitimacy
  - Legitimacy of the authority to make decisions, guidelines, recommendations and governing rules
- 7 step framework to evaluate the 4 proposed “moral values” - balance on a scale of ethical consideration

Takeaway: All policies will have backlash and supporters; ethical framework in place to provide public confidence in a transparent process of decision making and justification of policy

# (3) How to ameliorate the problems in HK? Epidemiological modelling

Name of Model	Description	Model
Susceptible- Infected-Removed Model (SIR)	<ul style="list-style-type: none"> <li>- Separate population into different groups</li> <li>- Predict no. in each group using a infection and recovery rate; predicts <math>R_0</math></li> <li>- Simplest model to use and apply; applicable to simple interventions</li> <li>- Does not account for the randomness in interaction between the groups</li> </ul>	
Agent-Based Models (ABM) e.g. COVASIM	<ul style="list-style-type: none"> <li>- Stochastic model</li> <li>- Most realistic model: able to account for more factors,, including number of household/ non-household contacts, age and clustering of contacts within households and microstructure in schools and workplace settings</li> <li>- Can evaluate very specific interventions</li> <li>- Interactions of both infected and susceptible groups</li> </ul>	 <p>Diagram illustrating the components of an agent: Emergence, Interaction, Behaviour, Goal, and Heterogeneity.</p>
Branching process models	<ul style="list-style-type: none"> <li>- Considered half-way between the other two models: model of reproduction</li> <li>- Only considers those who are infected and uses probabilistic algorithms to determine how many new infection they will cause</li> </ul>	





## (3) How to ameliorate the problems in HK? Epidemiological modelling

### Examples of Studies that use ABMs, specifically COVASIM to make predictions

1. Abey Suriya et al. (2020) *Estimating risks associated with early reopening in Victoria*
  - Restrictions stepped down one level at 2 different time points; 2 weeks apart
  - First time point - high risk of resurgence (86% would have 100 new cases/day after 1 month); Second time point (2 weeks later) - 41% simulations 100 cases/day in 1 month
1. Panovska - Griffiths et al. (2020) *Determining the optimal strategy for reopening schools, the impact of test and trace interventions, and the risk of occurrence of a second COVID-19 epidemic wave in the UK: a modelling study*
  - Reopening school strategy
  - Concluded with increased testing, effective contact tracing and isolation, a resurgence after reopening of schools could be prevented
  - Even when the infectiousness of children and young adults were varied to be lower than that of older people, comprehensive and effective test-trace-isolate strategy would still be needed

#### Takeaway:


- Models as oversimplifications of reality - implication for decision making?
- Little existing research on modelling and verification with real life progression
- However, still shows principles of how to improve the situation and give rough estimate to potential risk - e.g. time frame in laxing restrictions in policy making; social distancing; testing, etc.
- Possible ranking of importance of different categories of control (Parker 2020) - modelling as a method to give utilitarian value to benefits during policy making



### (3) How to ameliorate the problems in HK?

## Business continuity plan - framework proposed by Government

- Develop a comprehensive company policy
  - Ensure safety and health of employees
  - Transparent process: involve staff at all level → review and adjust policy regularly
- Acquire and promote understanding of disease
  - Health promotion and education
  - Easy access to health resources
- Familiarise with the Government's preparedness plan for novel infectious disease
  - Government's 3-tier system (3 response levels): alert → serious → emergency
  - Company should assess the business environment to identify the vulnerable areas under Government's response plan → anticipate possible restraints
- Maintain core operations and businesses
  - Identify skeleton staff to maintain essential services that require close contacts with others
  - Devise staff roster plan and secure back up staff
  - Avoid unnecessary staff to be physically present and allow them to work from home
- Promote remote working with best utilization of electronic systems
  - Availability of software applications and tools
  - Utilize electronic platforms for communication and transaction with customers




## (4) How to ameliorate the problems in HK? Infection control measures in workplace setting - examples

### 1. Maintain personal hygiene

Proper hand hygiene	Wear surgical masks (N95 respirators not preferred)
Appropriate social distancing (e.g. in changing room, conference room, pantry)	Cover mouth and nose with tissue paper during sneezing or coughing
Avoid sharing personal items (e.g. towels, clothings, toothbrushes)	Do not work if feeling unwell and seek medical help promptly

### 1. Maintain workplace hygiene

Maintain good ventilation	Disinfection of workplace (esp. high-touch areas)
Empty garbage bins at least once a day	Easy access to hand sanitizers



## (4) How to ameliorate the problems in HK? Infection control measures in workplace setting - examples

### 3. Monitor employees' health condition

Health screening (e.g. temperature check, health declaration form)	Request staff to undergo regular COVID-19 testing
Keep in touch with staff who require compulsory testing or return from travel outside HK	

### 4. Set up core team to coordinate response to COVID-19

Devise general plans and policies to be implemented in workplace
Administrative arrangements (e.g. work from home, video conferences) to minimize face-to-face contact
Provide staff with timely advice and updated work arrangements (e.g. via emails, e-messages)

### 5. Devise preparedness plan for emergency situation (e.g. if a staff is +ve for COVID-19 testing)

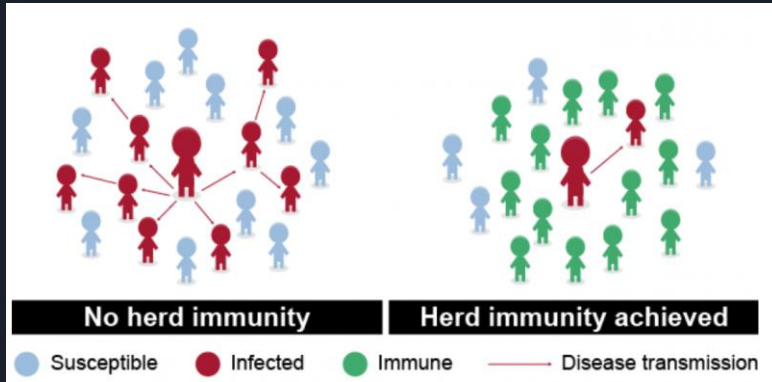
**Arrangements for Catering Business, Bars/Pubs and five Scheduled Premises  
under the “Vaccine Bubble”**

**Catering Business**

Options of mode of operation	Mode of Operation				Mandatory specific measures				Remarks
					Staff		Customers		
	Maximum number of persons per table	Dine-in service hours	Capacity limit of premises	Maximum number of persons per banquet	Testing	Vaccination	Use of “LeaveHomeSafe” mobile application (LHS)	Vaccination	
Existing Options									
Type A Mode of Operation	2	5am to 5.59pm	50%	20	x	x	x	x	
Type B Mode of Operation	4	5am to 9.59pm	50%	20	Once every 14 days <sup>1</sup>	x	Use of LHS or registration using specified form <sup>2</sup>	x	

Newly Added Options									
Type C Mode of Operation	6	5 am to 11.59pm	50%	20	x	✓ Received first vaccine dose <sup>3·4</sup>	✓ <sup>5</sup>	x	Under Type C Mode of Operation, may additionally delineate a “designated zone B” within which Type B Mode of Operation applies.
Type D Mode of Operation	8	5am to 1.59am on the subsequent day	75%	100	x	✓✓ Completed vaccination course (i.e. 14 days after the second vaccine dose) <sup>4·6</sup>	✓ <sup>5</sup>	✓ Received first dose vaccine <sup>3·7</sup>	Under Type D Mode of Operation, may additionally delineate “designated zone B” and “designated zone C” within which the corresponding mode of operation applies.

(4) How to ameliorate the problems for business sector in HK?



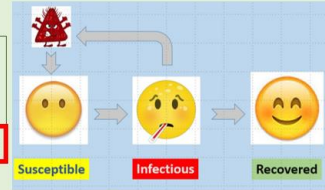
## What determines incidence ?

### Contact rate $\cdot$ infect. & susp.:

- Mode of transmission
- Network & distribution

### Proportion susceptible:

- Past hx of infection
- Vaccination coverage



### Proportion infectious:

- Population density
- Transmission efficiency

Pros: This “vaccine bubble” scheme could incentivise more people to vaccinate with financial incentive -> Higher vaccines coverage -> achieve herd immunity when a sufficient proportion of a population has become immunised against an infectious pathogen. Fewer “S” in the SIR model


Cons/difficulties:

-concern of personal freedom and boundaries; “is it ethical for companies to fire employees who refuse to vaccinate”

-frequent news article of adverse side effect of vaccine

-unsatisfactory protection rate / not fully 100% protective

-distrust of the government, or vaccine



## (4) How to ameliorate the problems in HK? Work from home practice

### - Can work-from-home arrangement maintain business productivity?

A study done by Nicholas Bloom, William Eberle Professor of the Department of Economics at Stanford University, published on Harvard Business Review, showed that letting Employees Work from Home can indeed raise productivity.

In the study, the staff at Ctrip's call center the opportunity to work from home for nine months. Half of the employees were allowed to telecommute while the rest remained in the office as a control group. Performance of individual staff is measured remotely by number of calls made.

## (4) How to ameliorate the problems in HK?


### Work from home practice - can it maintain business productivity?

#### Pros/Goal:

- Avoid gathering of a large crowd/workforce, in offices, pantries or public transportation
- it could save business expenditure on space and furniture
- Reported Higher job satisfaction and happiness
- Less quit rate
- Employees could work in a more familiar, personal and quite environment
- New communicating software to helps to compensate lost in face-to-face communication
- Higher flexibility to employees, e.g. attract educated mother
- More productivity (10-50%) compared to office workers







## (4) How to ameliorate the problems in HK? Work from home practice

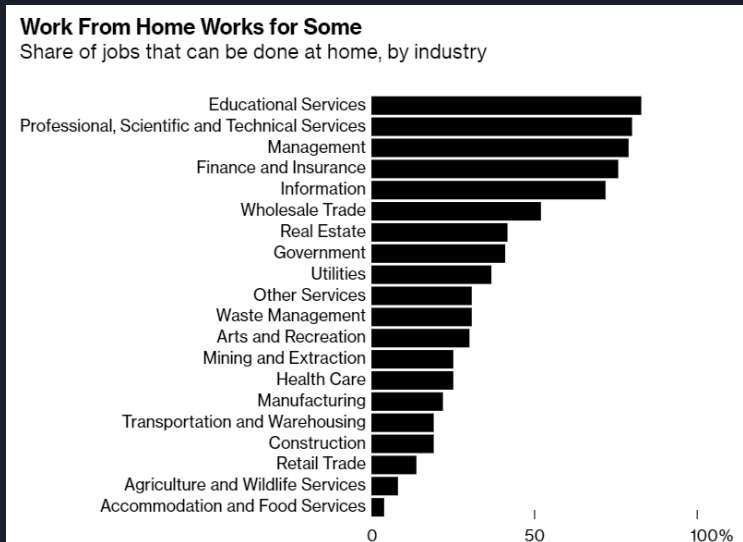
### Cons:

- Decreased discipline when working at home and less supervision -> drop in productivity
- Decrease in communication between workers
- The study only showed benefit for works that require less teamwork or more “robotic”, e.g. call-center work
- Doubtful benefits to productivity for work that requires high degree of teamwork, innovation or sophistication

# (4) How to ameliorate the problems in HK?

## Work from home practice

Conclusion: Work-from-home could pave the way forward for the business and other sector in the future.






## (4) How to ameliorate the problems in HK?

- HKU study “Impact assessment of non-pharmaceutical interventions against coronavirus disease 2019 and influenza in Hong Kong: an observational study”
- Suggests that testing, contact tracing, population behavioural changes, surveillance, and border control can meaningfully control COVID-19
- These measures are less disruptive to business than total lockdown or business closure

→ business may resume if infection control measures are done well

[https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(20\)30090-6/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(20)30090-6/fulltext)



## (4) How to ameliorate the problems in HK? Current scheme by gov to help business and revive economy - Consumption Voucher


### Scheme

#### Pros:

- Boost consumer spending → help business → economic recovery
- Time-limited → compulsory consumption and avoid saving vs direct cash transfers where some people may not spend the money and save for future use, defeating the purpose of encouraging consumption

#### Cons:


- Considerable administrative costs
- Substitution effect → households use vouchers to buy goods they would have bought anyway and save the money that has originally been set aside for consumption



## (4) How to ameliorate the problems in HK? Consumption Voucher Scheme

Is it really useful?

- Taiwan issued consumption vouchers during the global financial crisis in 2008 → subsequent assessment reports showed that the vouchers only raised Taiwan's GDP by about 0.28%-0.43%, lower than gov original estimation of 0.66% + 72% of vouchers used for purchases that would have occurred in cash without the vouchers
- 1999 Japan → survey results showed that consumption stimulated by vouchers only accounted for 32% of the value of the vouchers



## (4) How to ameliorate the problems in HK? Consumption Voucher Scheme

- Alternative? → voucher system that target industries directly impacted by pandemic
- E.g. Singapore: SingapoRediscovered Vouchers → aim to support local tourism-related industries → every Singaporean citizen aged 18 or above receive S\$100 worth of vouchers to spend on local attractions, hotel stays and tours
- Australia: Tasmania's Make Yourself at Home scheme → voucher to spend on accommodation or tourism experience; New South Wales's Out and About Voucher → AU\$100 worth of digital vouchers to spend on eating out and entertainment activities; South Australia's Great State Voucher → target tourism