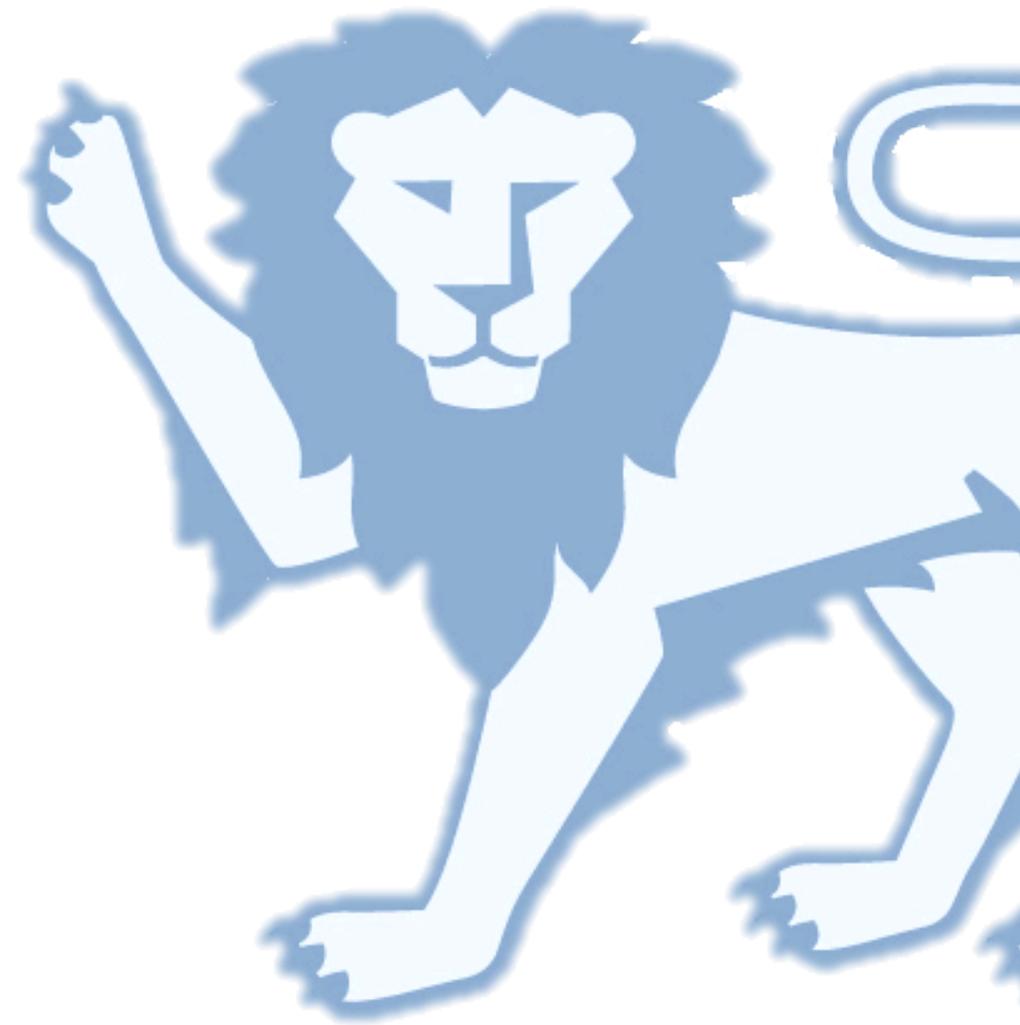


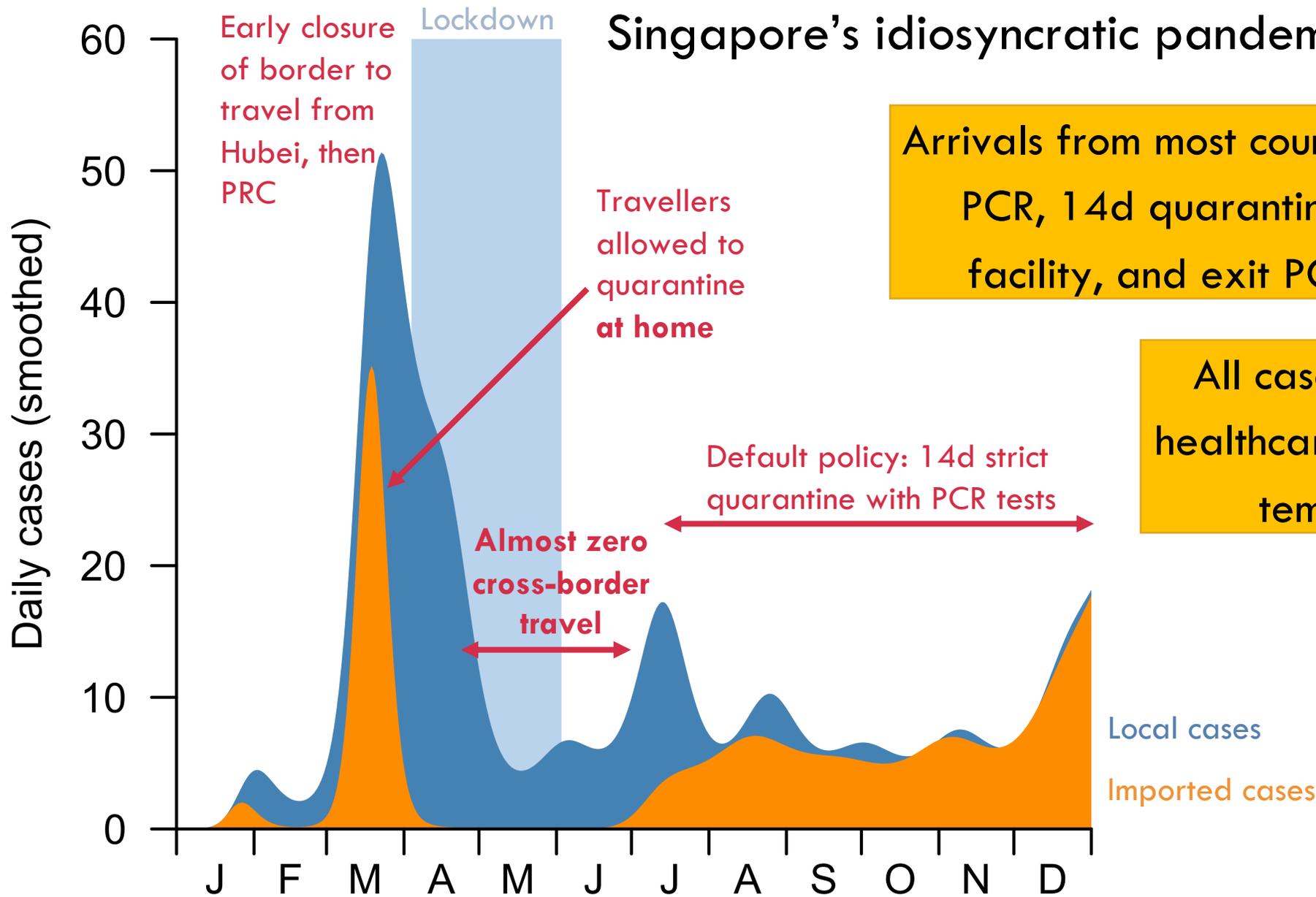
Closing and reopening borders in response to COVID-19

Alex R Cook

Associate Professor and Vice Dean (Research)



Singapore's idiosyncratic pandemic



Arrivals from most countries to do on arrival PCR, 14d quarantine in hotel or other facility, and exit PCR before release

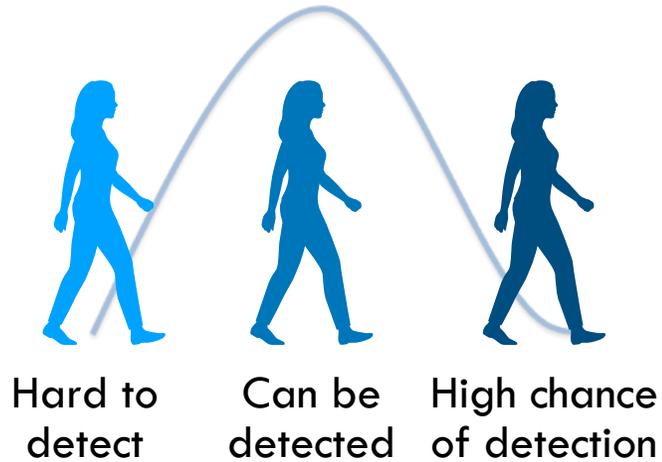
All cases are isolated in a healthcare facility (hospital or temporary facility)

Aug to Dec:
130 local cases
1110 importations

Impact of border control

Model overview

Hypothetical
population of
travellers



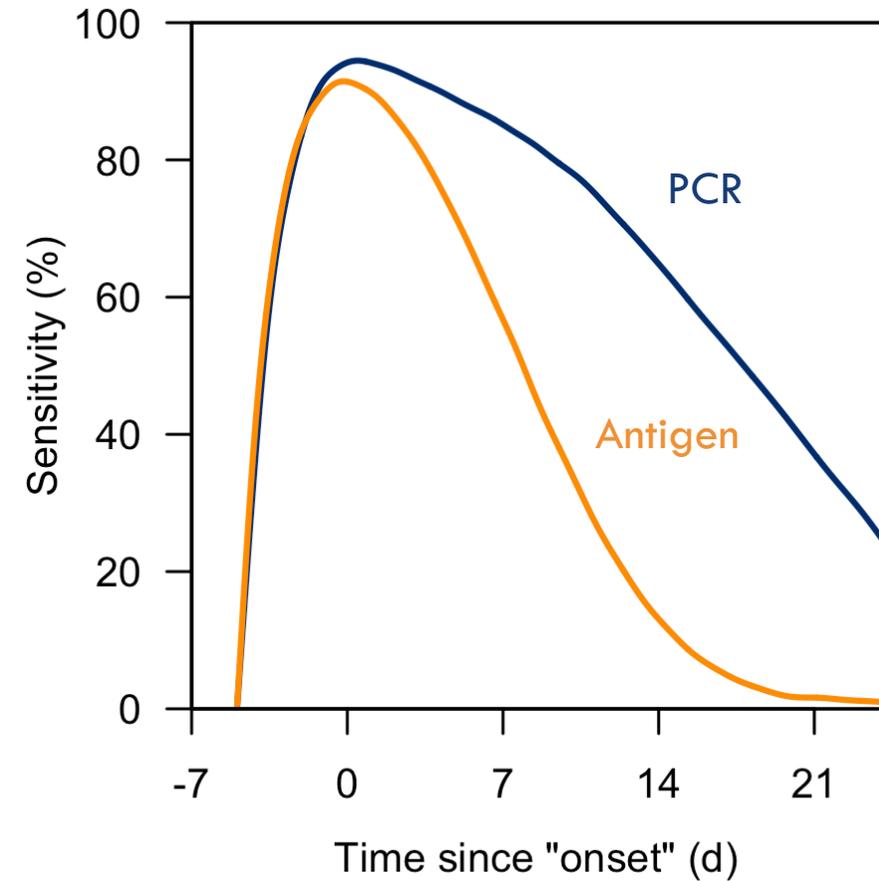
Testing strategies simulated

Positive
passengers
missed

Secondary infections
 $R_0 = 2$

Spillover to
community

Key parameter: sensitivity



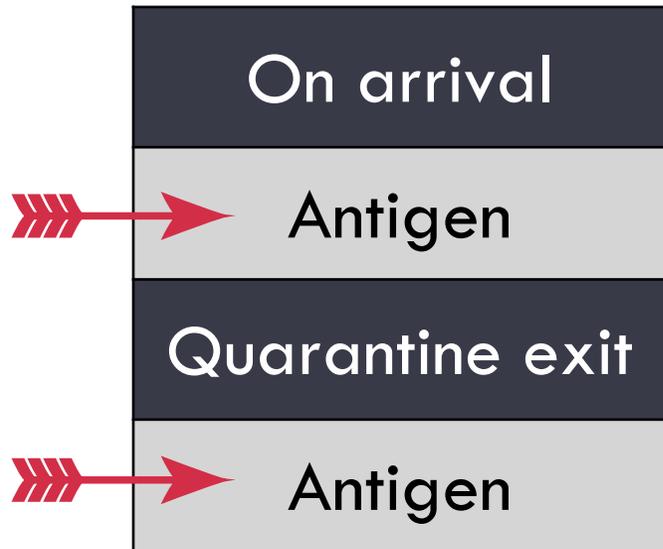
Impact of border control



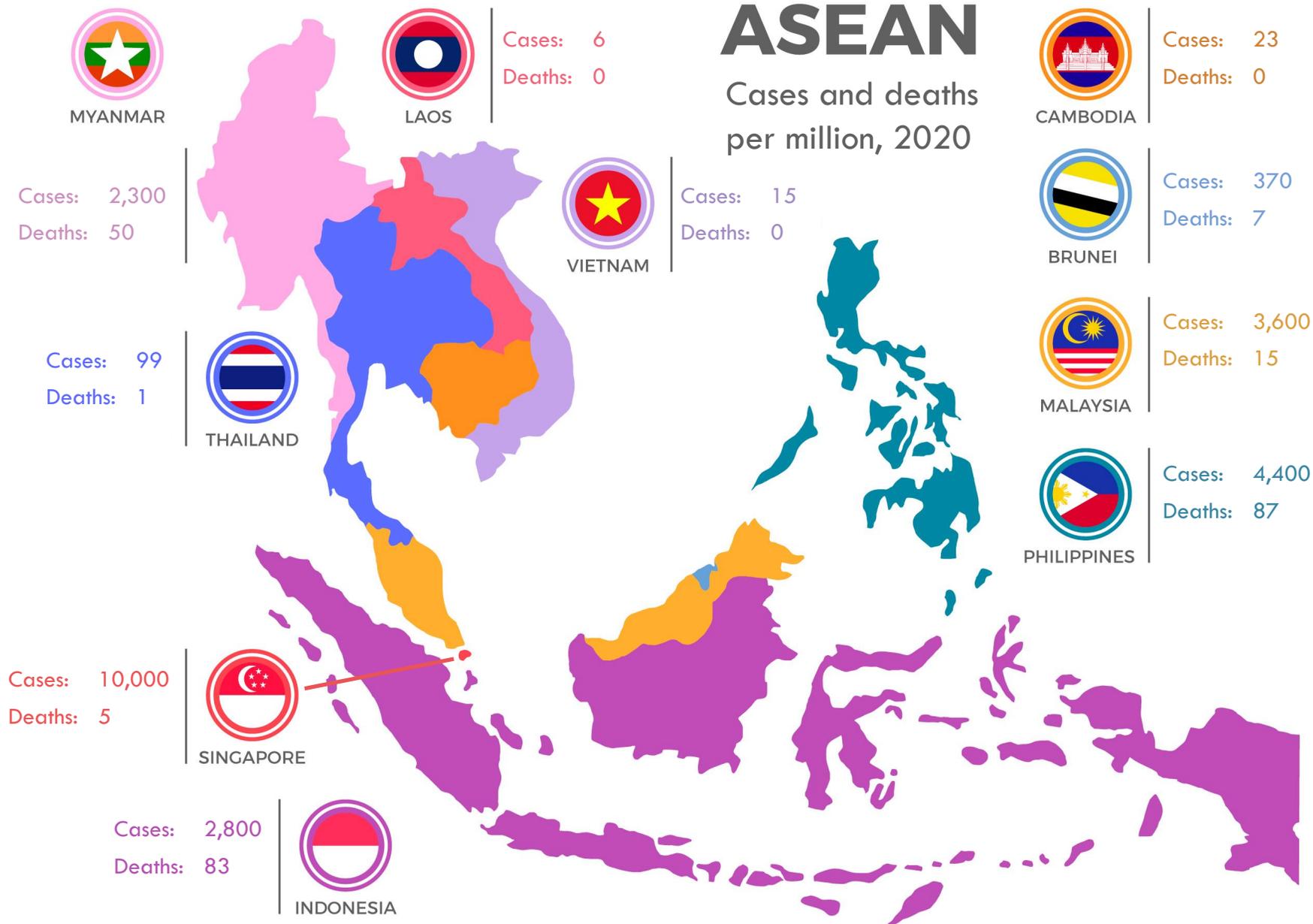
		Prevalence	2%	1%	0.5%	0.15%
		Infected travellers (/ 10 000)	200	100	50	15
		N missed				
On arrival	Quarantine	% missed				
PCR	3d	17%	33	17	8	2
Quarantine exit	7d	7%	15	7	4	1
PCR	10d	4%	7	4	2	1
	14d	2%	3	2	1	0

Impact of border control

Prevalence	2%	1%	0.5%	0.15%
Infected travellers (/ 10 000)	200	100	50	15



Quarantine	% missed	N missed			
3d	17%	34	17	9	3
7d	8%	15	8	4	1
10d	4%	8	4	2	1
14d	2%	5	2	1	0



For comparison:

USA	Cases: 61,000	Deaths: 1,100
UK	Cases: 37,000	Deaths: 1,100
France	Cases: 39,000	Deaths: 960