# Modelling HK's fifth wave of Omicron BA.2

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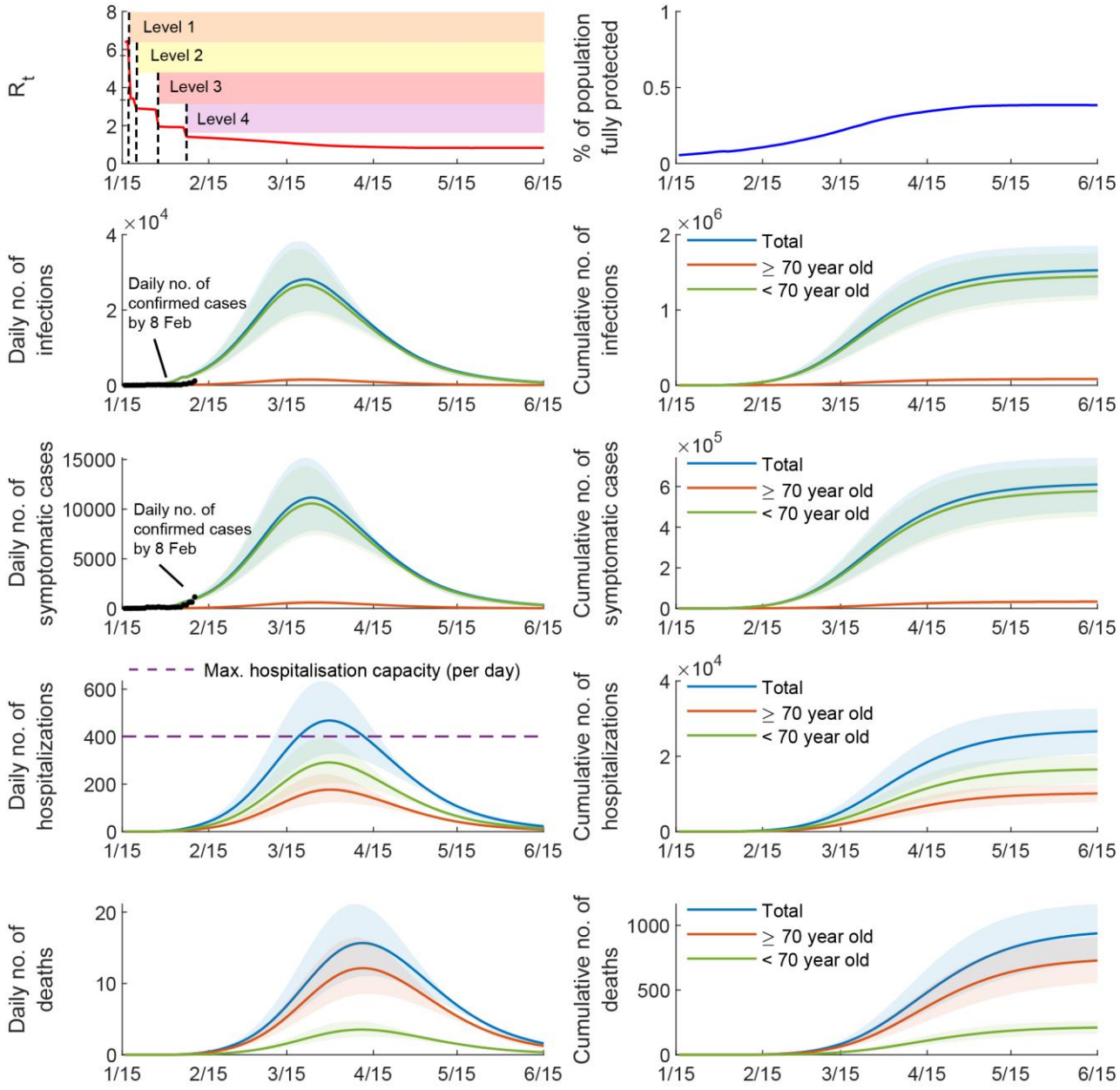
# Scenario 1: Level 4 control

Assumption about effects of control measures
Level 1: -47%
Level 2: -55%
Level 3: -69% (most stringent PHSMs in Wave 4)
**Level 4: -77%**

Rt under control measures
Level 1: 3.4
Level 2: 2.9
Level 3: 1.9
**Level 4: 1.5 > critical threshold of 1**

**The current fifth wave of Omicron is unlikely to be containable with the current PHSMs at Level 4.**



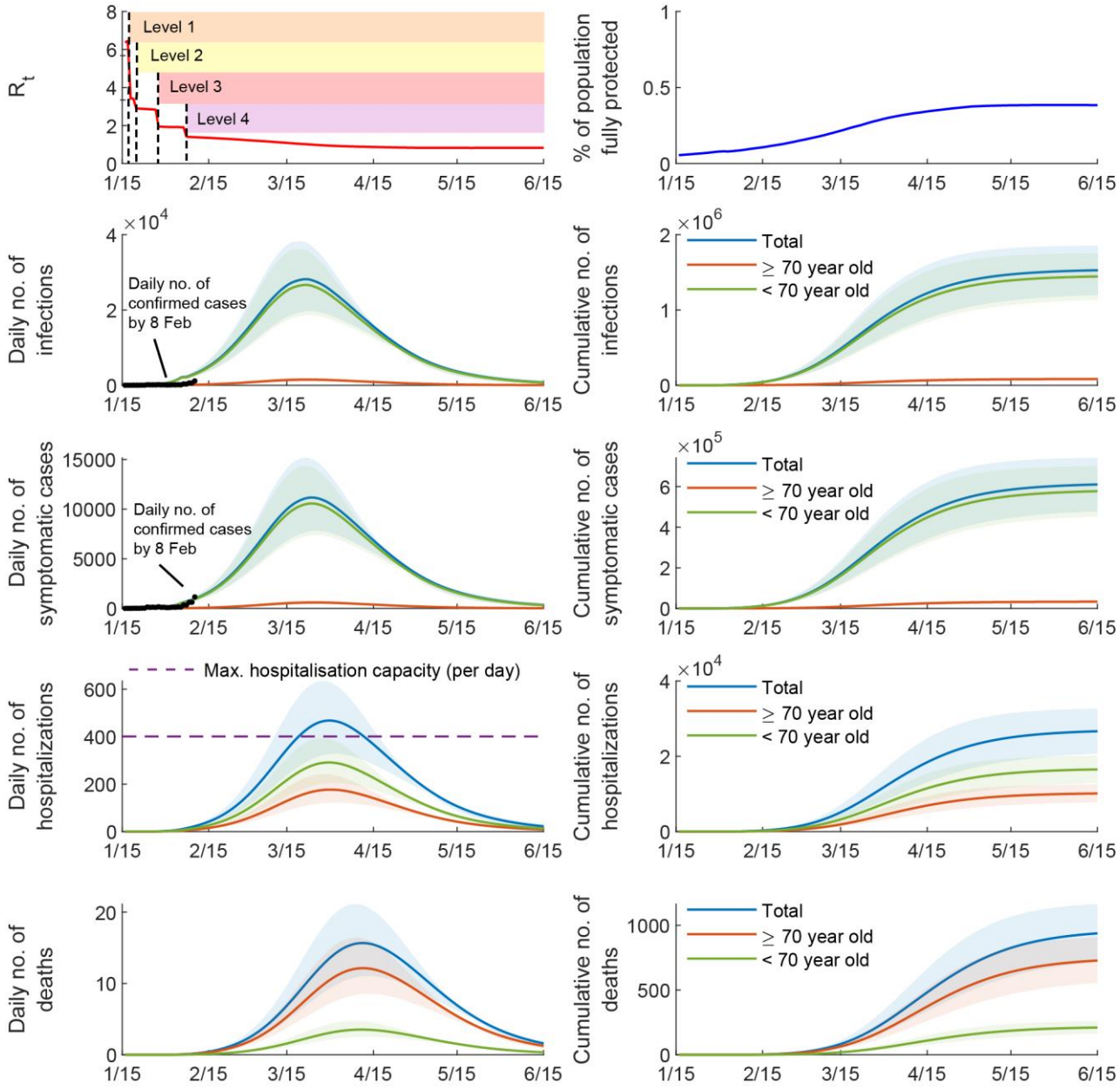
# Scenario 1: Level 4 control

**Peak incidence in mid- or late-March**
Infections: 28,000
Symptomatic cases: 11,165
Hospitalizations in an acute Tier 1/2 bed: 468

**Peak incidence in mid-April**
Deaths: 15-20

**Cumulative incidence by mid-June**
Deaths: 954

**Disruption of societal functions at peak**
7-day isolation: 97,852
7-day quarantine: 293,556

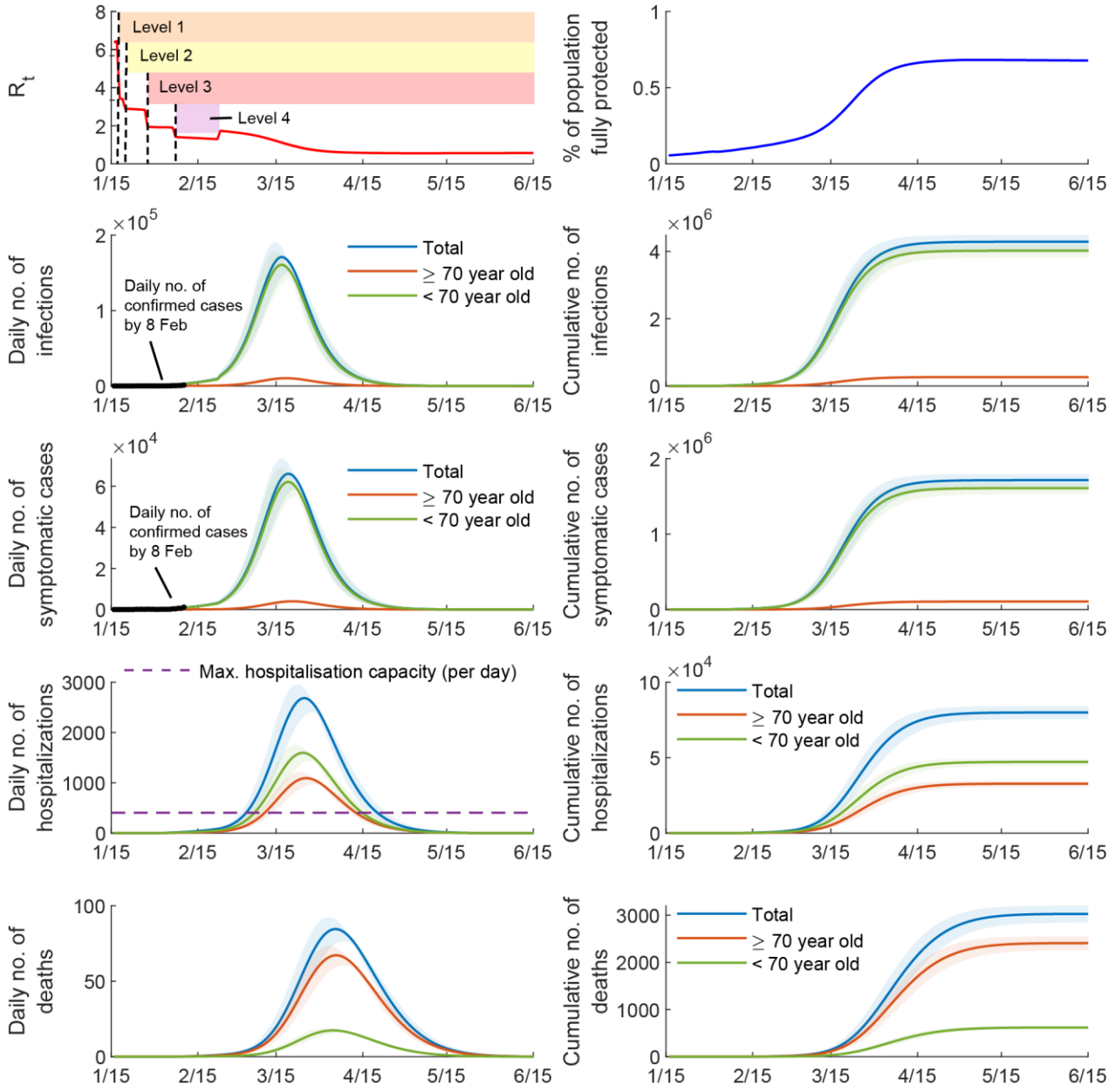


# Scenario 2: *de facto* Level 3 control after Feb 23

**A larger Omicron Wave 5**

**Cumulative incidence by mid-June**
Deaths: 3,027
Deaths: 4,231 (+50% with overwhelmed hospitals)

**Disruption of societal functions at peak**
7-day isolation: 583,593
7-day quarantine: 1.7 million

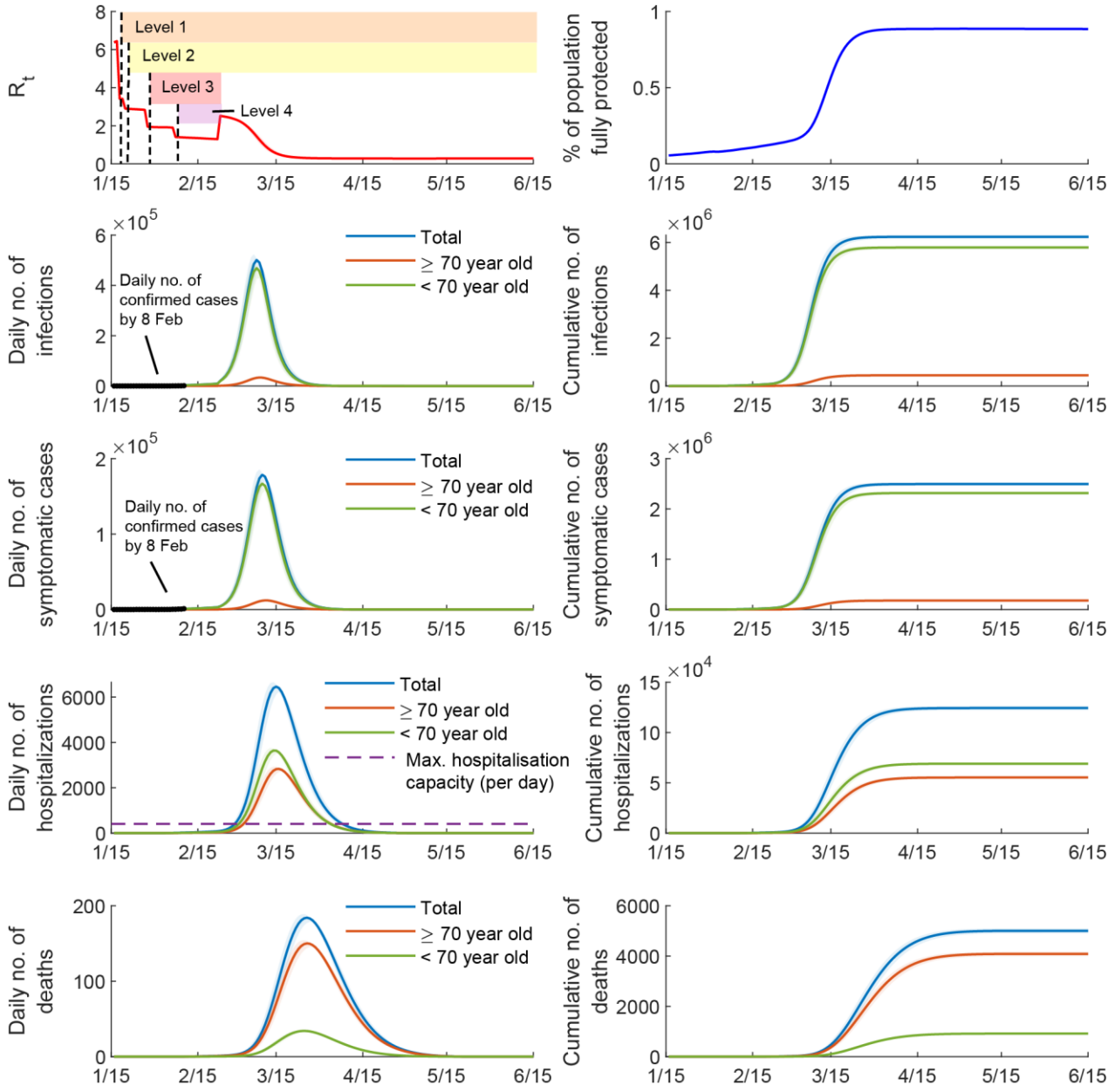


# Scenario 3: *de facto* Level 2 control after Feb 23

**A dire Omicron Wave 5**

**Cumulative incidence by mid-June**
Deaths: 5,005
Deaths: 6,993 (+50% with overwhelmed hospitals)

**Disruption of societal functions at peak**
7-day isolation: 1.6 million
7-day quarantine: 3.6 million



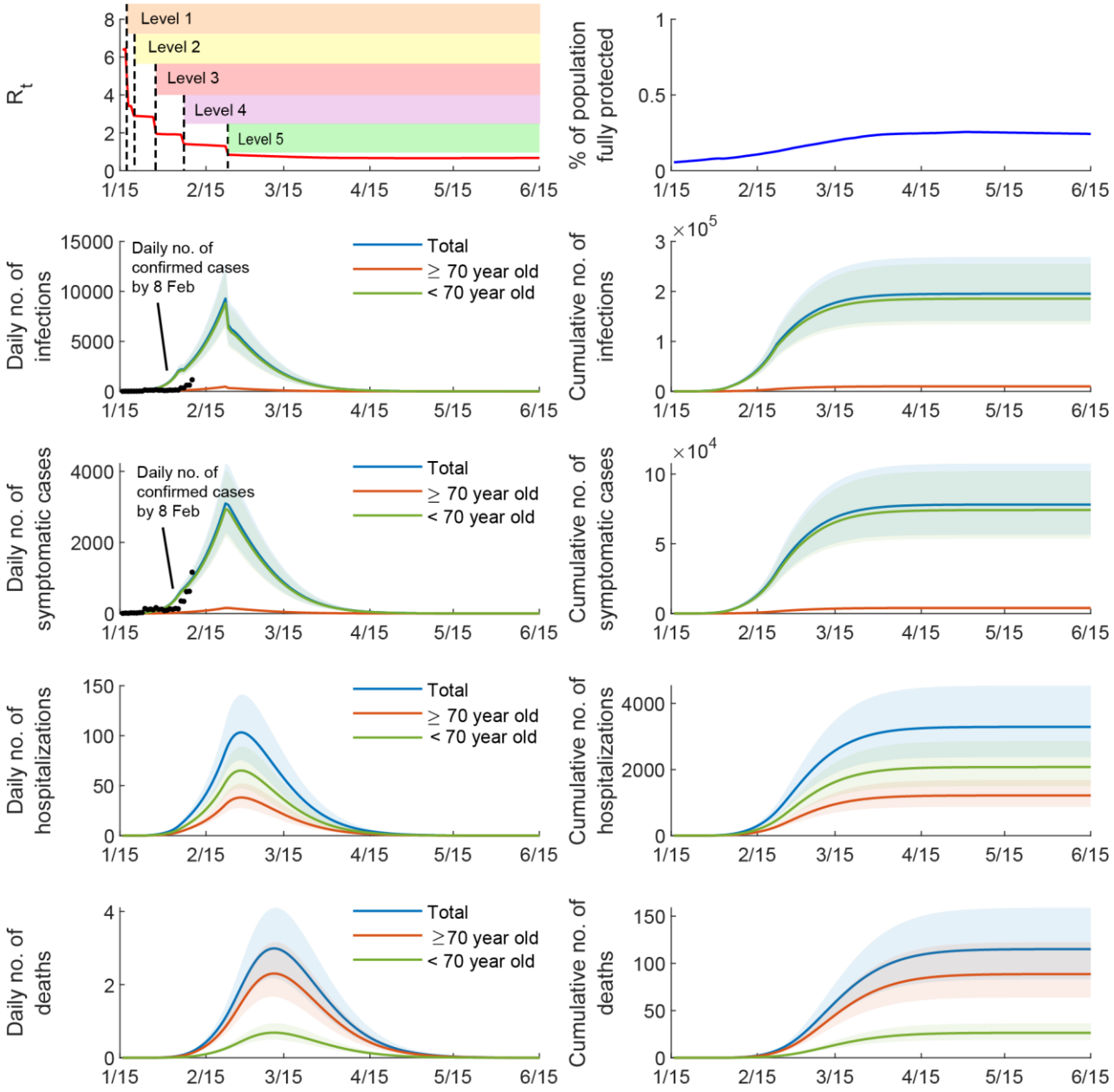
# Scenario 4: Level 5 lockdown

**Based on experiences of Shanghai's city-wide lockdown in early 2020:**
**Level 5: -85%**

The epidemic size of the Omicron outbreak would be limited with "only" 115 deaths by mid-June.

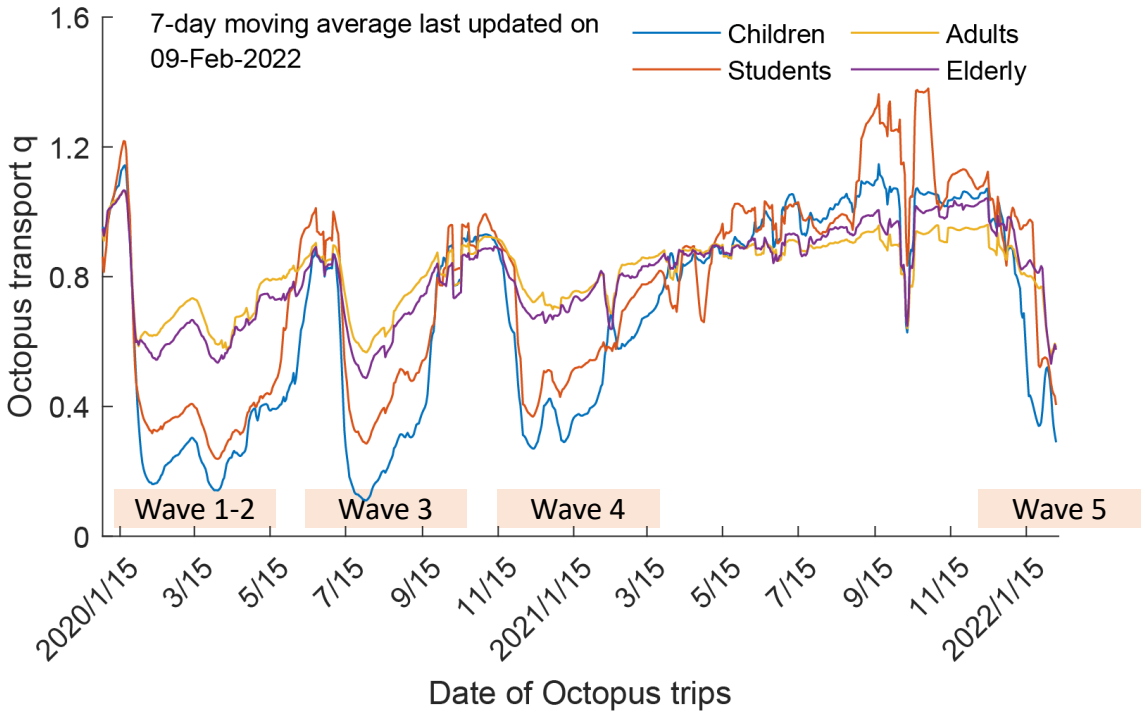
The daily number of hospitalisations in an acute Tier 1/2 bed would remain well below the maximum capacity of the local health system.

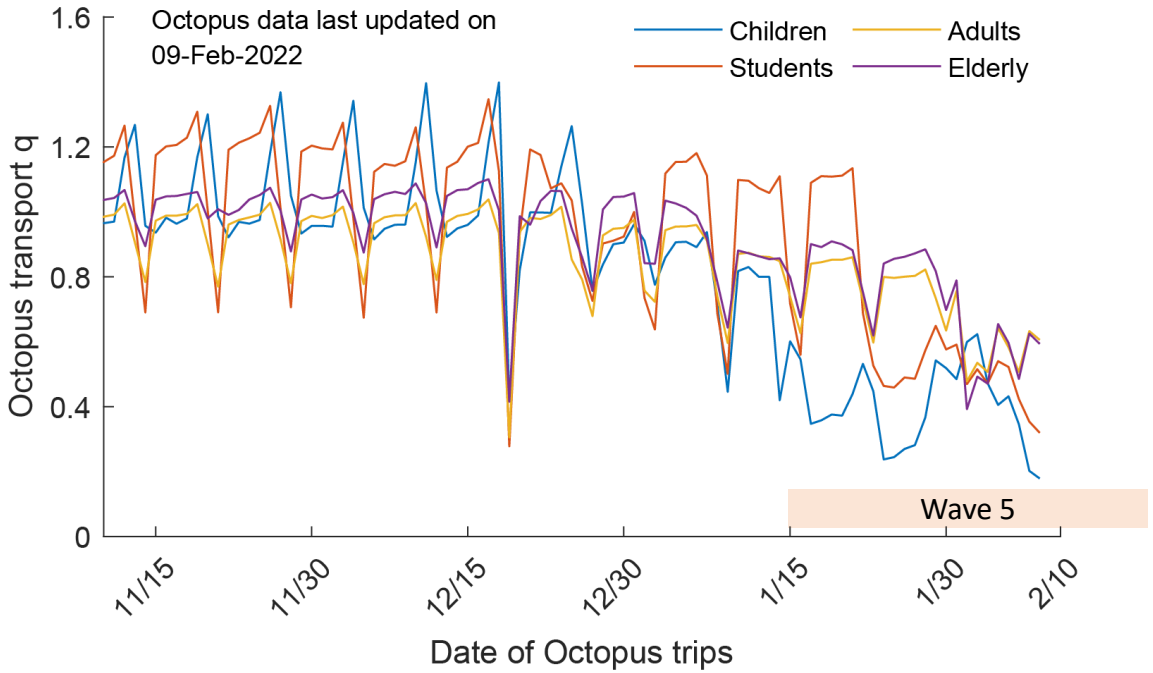
However, **if prevalence is non-zero when the lockdown is lifted, the epidemic will resurge.** Population immunity against infection at that point would only be around 20% higher than that before lockdown.



# Octopus card use in public transportation

As a proxy of the social mixing levels by age

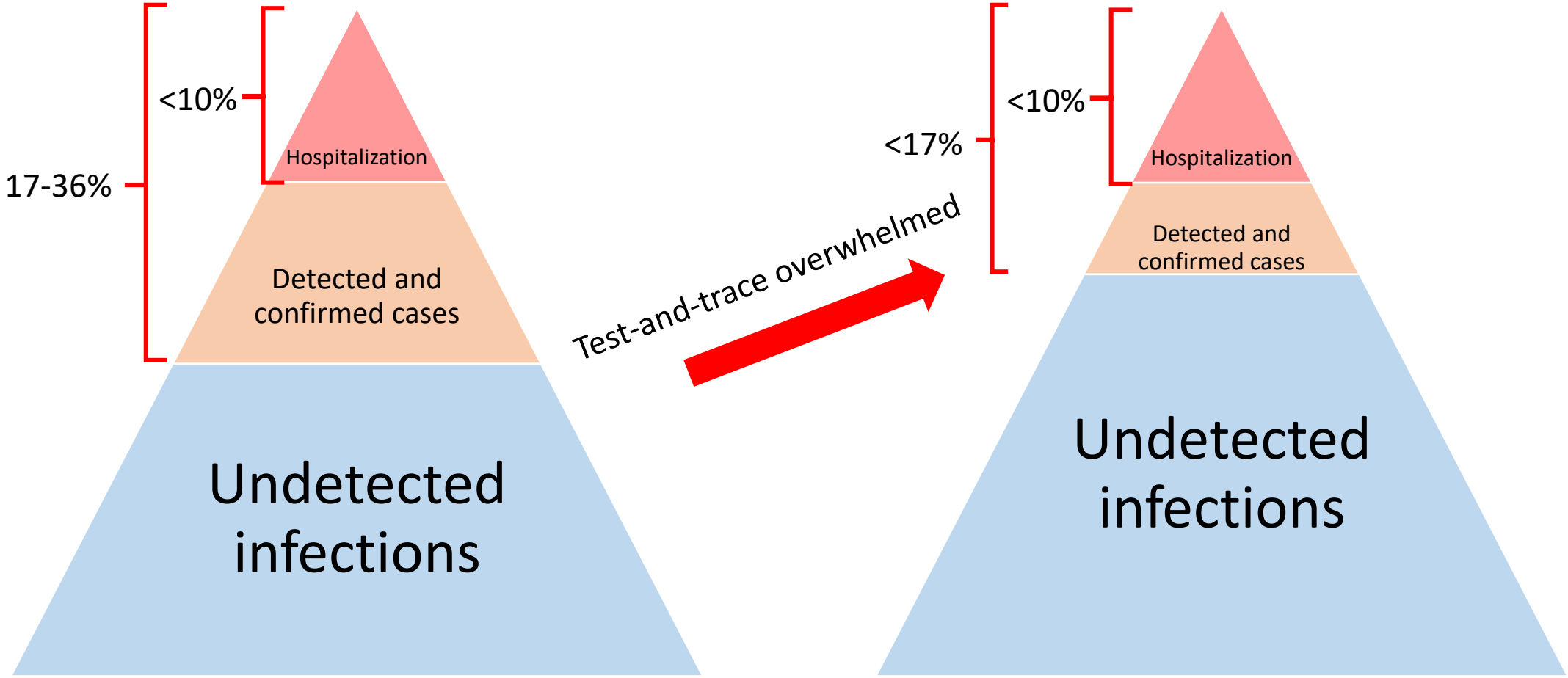


# The Iceberg Phenomenon: case ascertainment ratio

17-36% from community seroprevalence study (Wave 3-4)
23% from Octopus modelling study (Wave 1-2)

Fewer cases are detected because the testing and tracing system is overwhelmed



# Way Forward: 10 Measures to Consider

1. Divert all vaccination resources to 65+ age group, especially in RCHEs
   - Waive medical pre-screening and pursue an aggressive true opt-out vaccination drive
2. Daily RAT for staff in RCHEs and hospitals, as well as those who work in critical infrastructure
3. Universal community testing: supply RAT to each HK resident for self-testing every other day for the coming 1-2 months
   - Each set of RAT should come with 2 swabs (1 each for the nose and throat) to increase sensitivity and mitigate against inadequate sampling technique
4. Urgently consider the feasibility of a full lockdown

5. Critically assess testing surge capacity, and as necessary waive DH PHLC confirmatory requirement. At some point, we may need to start counting by RAT positivity
6. In advance, let people know what they might be provided with during home isolation so that they could be better prepared. For instance, government should as far as possible provide at least a thermometer, pulse oximeter, chlorine tablets to disinfect bowel movements with toilet flushing, etc, in addition to food and other daily necessities on a reasonable as needed basis
7. Explore feasibility to leverage private medical sector to alleviate HA surge demand, especially for non-COVID needs

8. Ensure that 90%+ of school-aged children will be vaccinated to prepare them for eventual school reopening mitigating against the expected secondary wave associated with such
9. There is no longer a public health rationale for post-arrival quarantine in DQHs. They can undergo home quarantine just like local close contacts. Flight bans should be lifted as the risk of local infection exceeds importation
10. Rethink the role of sewage surveillance and redeploy those resources accordingly