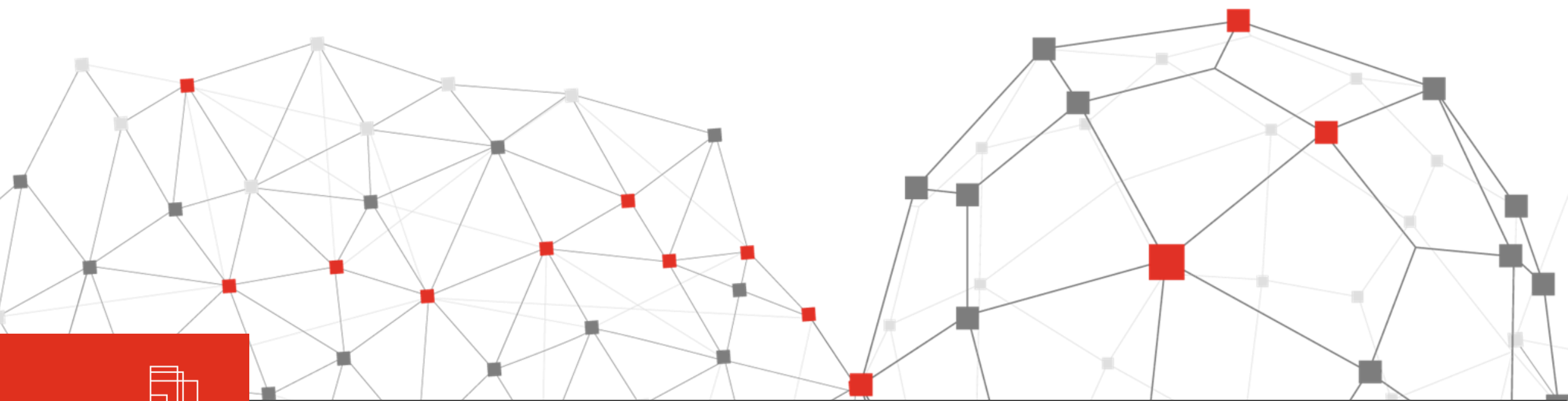


Towards a COVID-19-resilient Philippines

Exploring the best practices of the “winners” and the considerations in lifting the enhanced community quarantine



Disclaimer



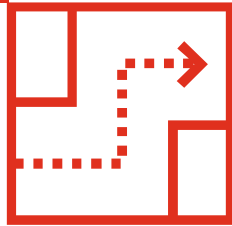
The Dataset used in this study is as of **30 April 2020**.

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Our key questions in this exploratory study

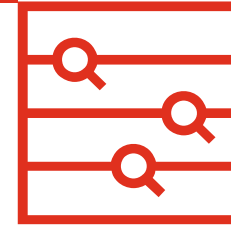
1



Which countries and Philippine local government units (LGUs) have already started flattening the curve?

Does it mean that the country is winning the battle against COVID-19 if the curve is flattening?

2

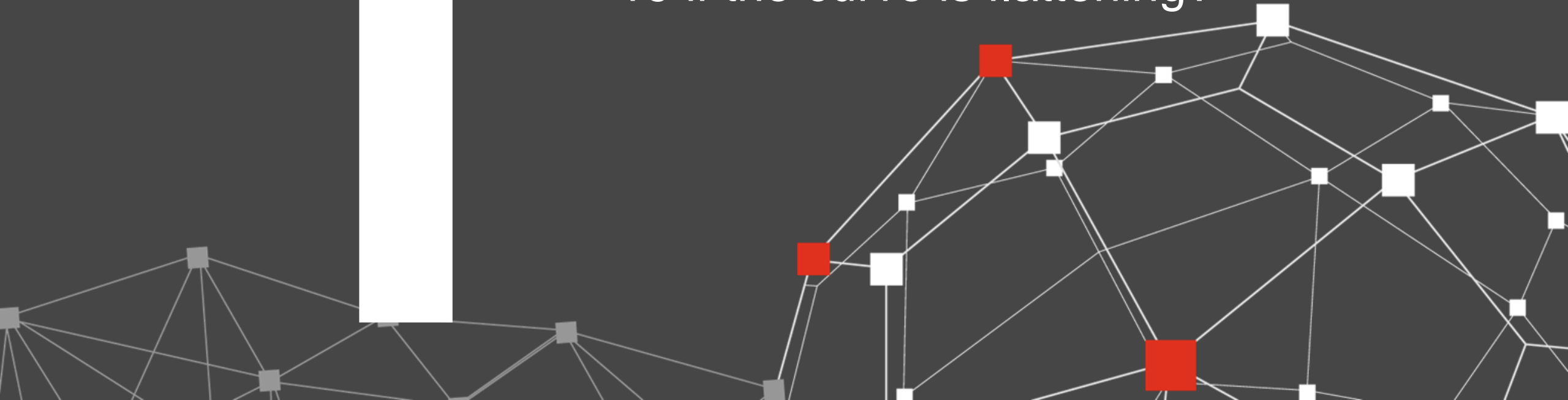


What should the Philippines do to become more resilient against COVID-19 especially with the plans of easing the lockdown?

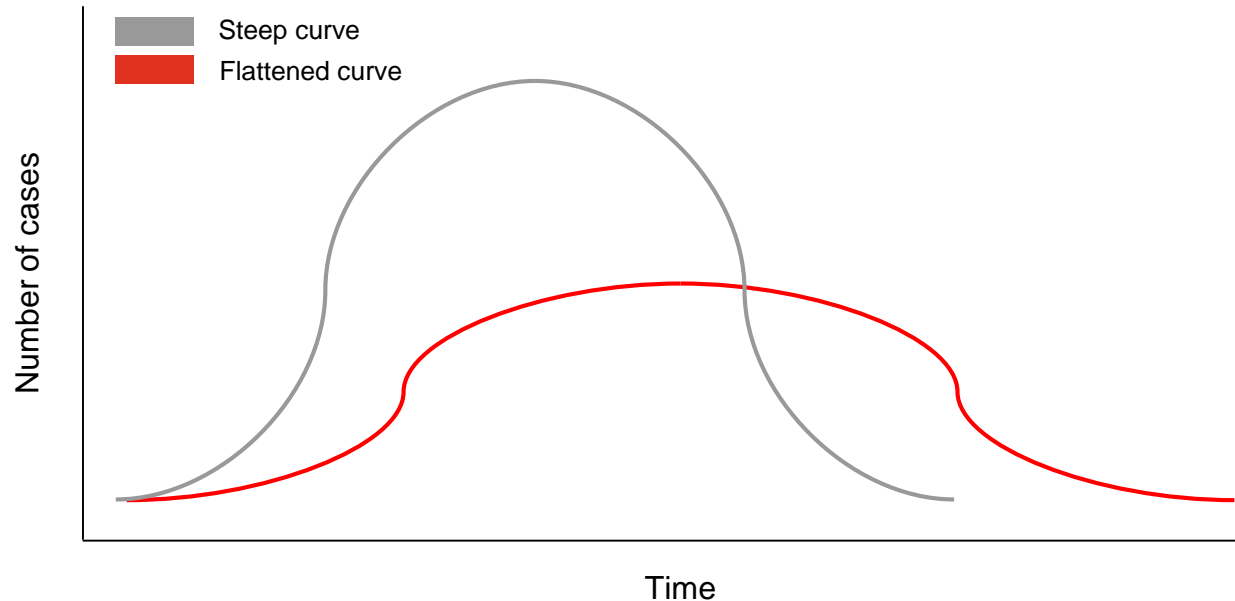


Which countries and local government units (LGUs) have already started flattening the curve?

Does it mean that the country is winning the battle against COVID-19 if the curve is flattening?



A flattened curve means that the virus is spreading slower



Epidemiological curve (“Curve”)

A visual representation of the onset of illness (i.e. when symptoms start to show) in an outbreak. The Y-axis shows the number of cases, while the X-axis shows the time period. There are usually two types of curves: (1) steep curve (2) flattened curve.

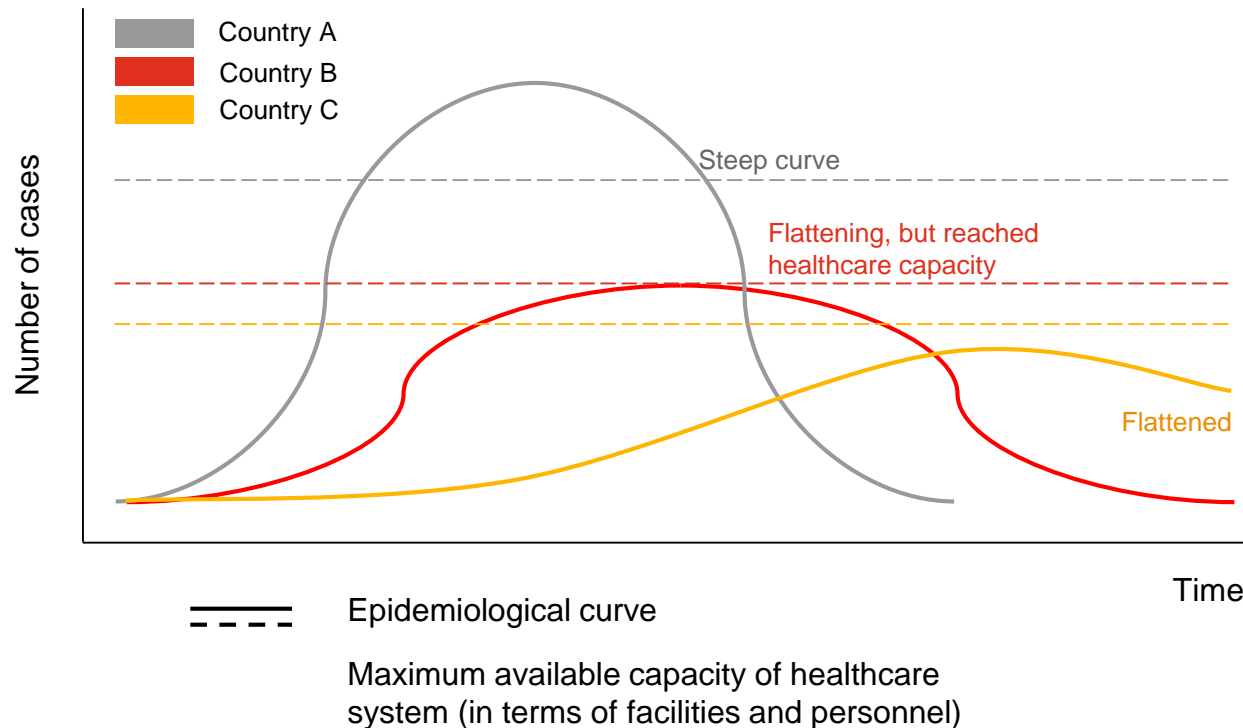
Flattened curve

Ideally, a flattened curve means that the number of cases recorded every day is **increasing at a slower rate** until it reaches a peak (i.e. same number of cases everyday). The peak is either maintained or is followed by a gradual decline afterwards.

It has three main characteristics:

- The number of cases recorded throughout a time period **does not exceed** the maximum number of COVID-19 cases that a country's healthcare system can accommodate.
- The number of days it takes for the cases to double (doubling time) is **five or more for the past 14 days**.
- The change of the calculated daily doubling time (DT) is **positive** for the past 14 days.

The significance of a flattening curve for a country depends on its healthcare system's capacity

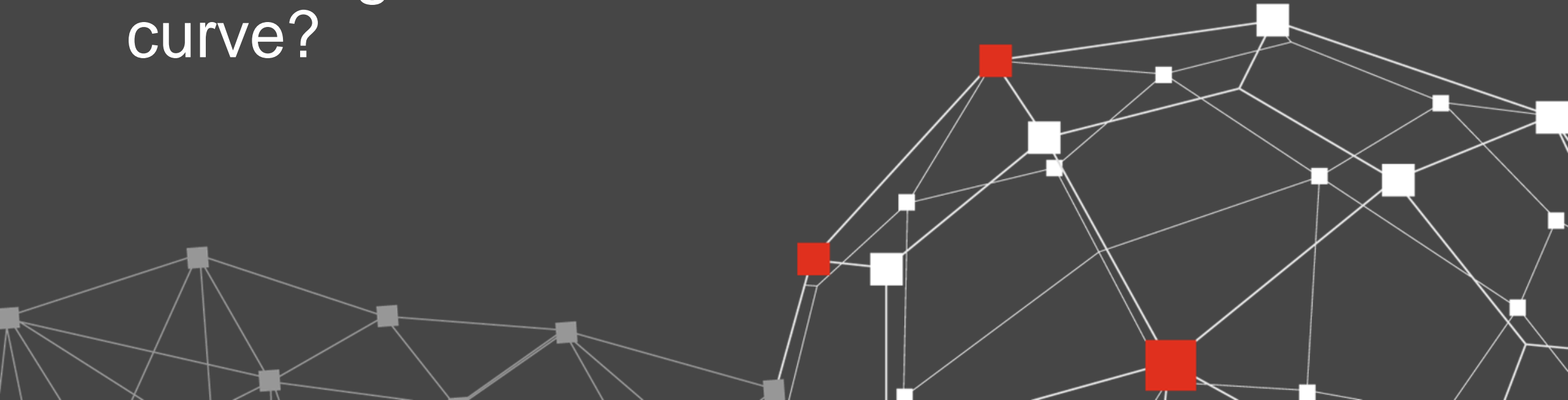


The idea of “flattening the curve” sounds like a general solution for COVID-19, but its significance will still **depend on each country’s situation**.

For a “flattening” curve to be effective, its peak must not exceed the maximum capacity of the country’s healthcare system (as represented by the dashed line). Whenever the curve goes above this line, more patients are being brought in than the country’s healthcare resources can handle.

Even if a country’s curve appears to be flattening, it will still continue to experience difficulties if its healthcare capacity is stretched to its limits.

Which countries
and Philippine
LGUs are already
flattening the
curve?



We limited our scope to the top 25% of the infected countries.



46

Countries considered

25%

Of all the countries, having the most number of cases



3.15m

Combined number of cases as of 30 April 2020

96%

Of the total cases globally as of 30 April 2020

List of countries

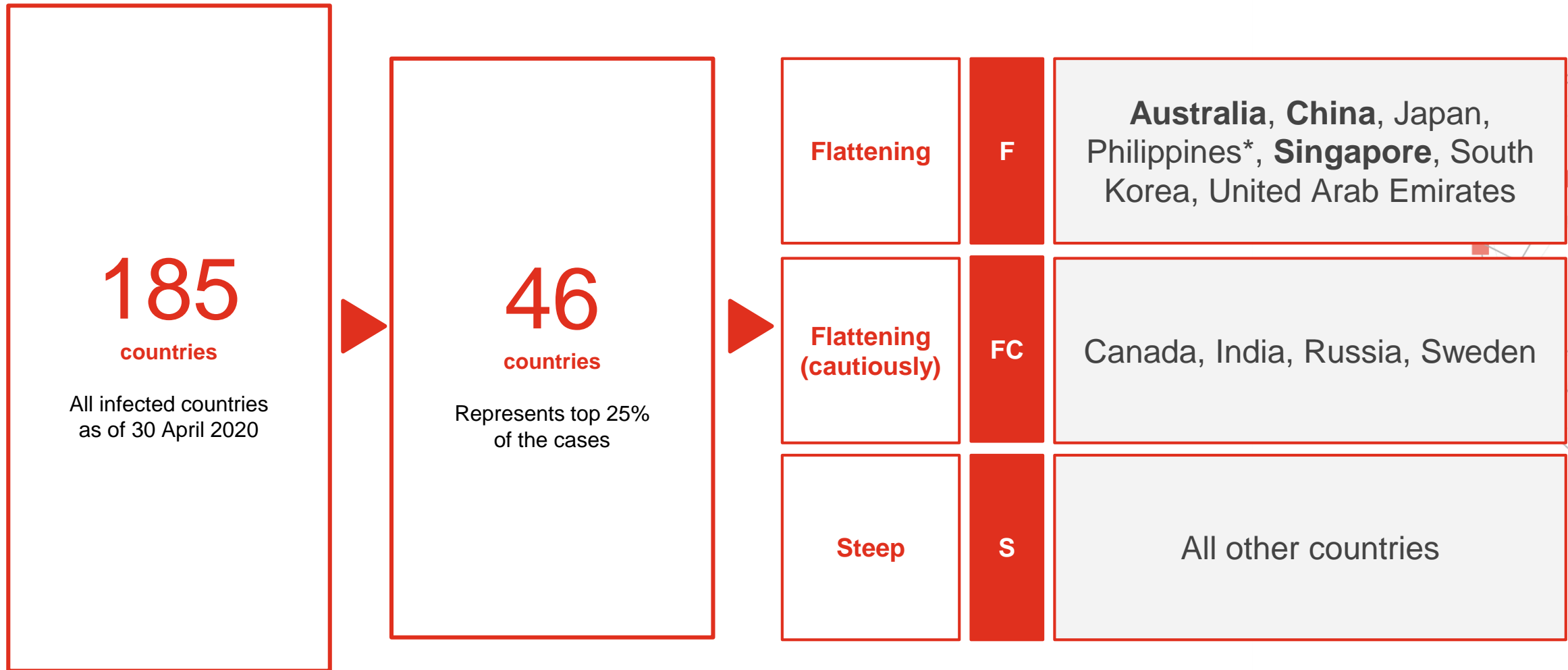
| | | |
|--------------------|--------------|----------------------|
| Australia | Iran | Russia |
| Austria | Ireland | Saudi Arabia |
| Bangladesh | Israel | Serbia |
| Belarus | Italy | Singapore |
| Belgium | Japan | Spain |
| Brazil | Korea, South | Sweden |
| Canada | Mexico | Switzerland |
| Chile | Netherlands | Turkey |
| China | Norway | US |
| Czechia | Panama | Ukraine |
| Denmark | Pakistan | United Arab Emirates |
| Dominican Republic | Peru | United Kingdom |
| Ecuador | Philippines | |
| France | Poland | |
| Germany | Portugal | |
| India | Qatar | |
| Indonesia | Romania | |

We categorized the infected countries' curves as flattening or steep.



Note: According to Christopher Monterola, Aboitiz Chair of Masters of Science in Data Science Asian Institute of Management, the *increase of the cases is no longer exponential if its doubling time is more than 5 days.*

We categorized the infected countries' curves as flattening or steep.

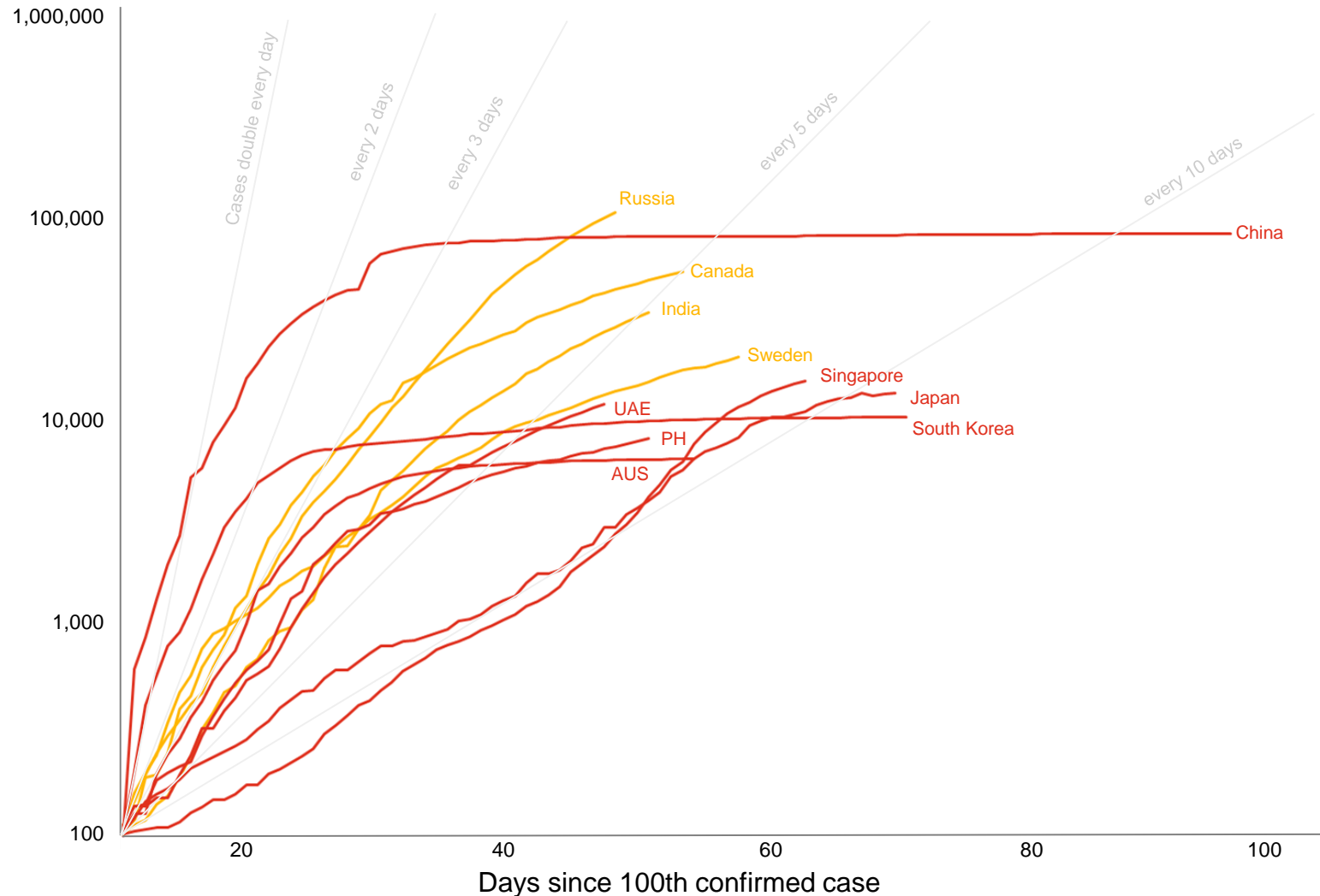


*The Philippines is **apparently** flattening

Note: According to Christopher Monterola, Aboitiz Chair of Masters of Science in Data Science Asian Institute of Management, the **increase of the cases is no longer exponential if its doubling time is more than 5 days.**

Those in **bold** are those countries whose doubling time have been more than 5 days for 28 days straight already.

Countries that are flattening their curves no longer have exponential growth in confirmed cases.



Other key considerations from countries with flattening curves

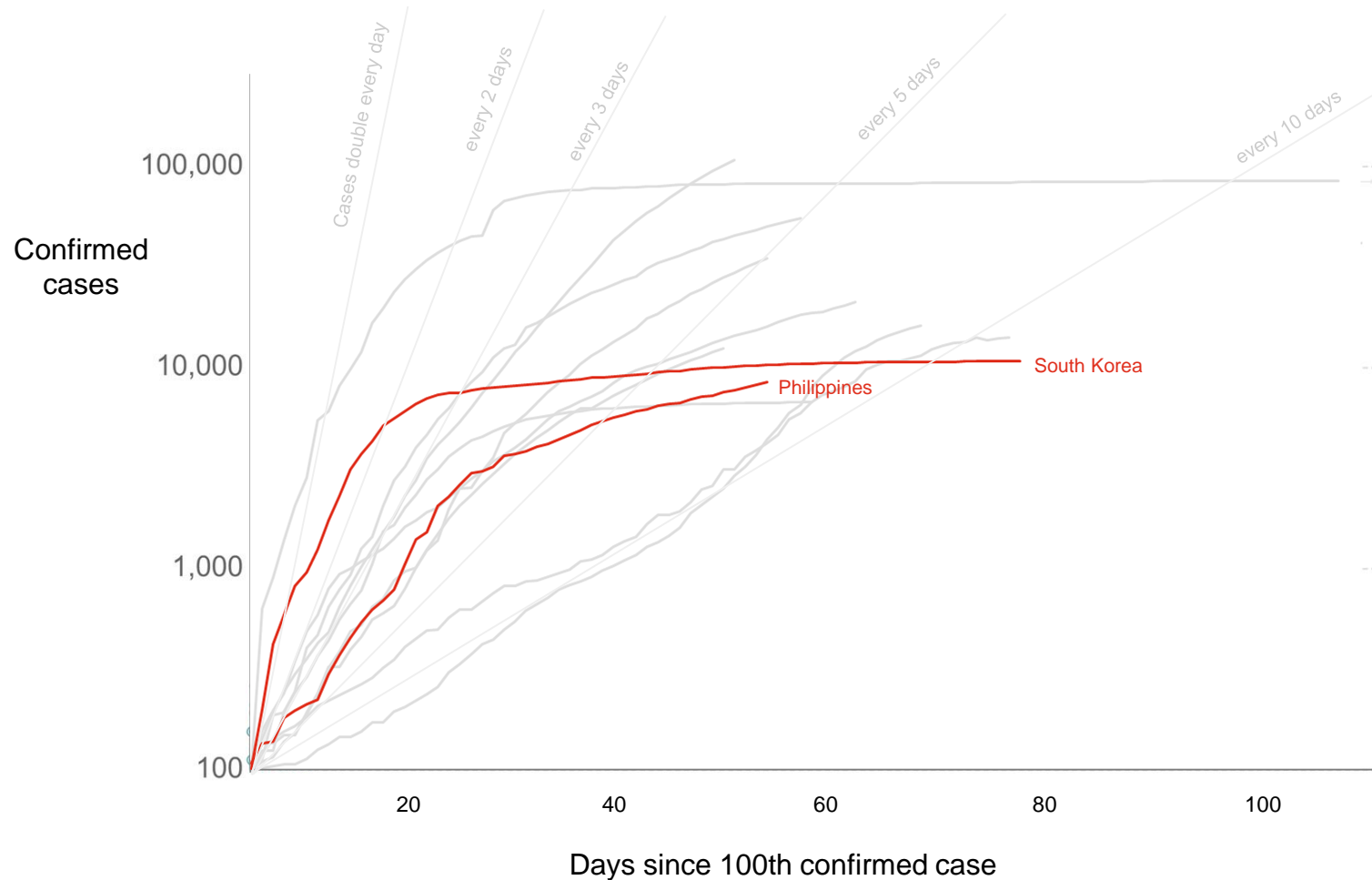
1. Number of deaths
2. Real-time and frequent information dissemination
3. Hygiene and sanitation
4. Extensive and optimized testings

For more information, please proceed to page 27.

— Flattening
— Cautiously flattening

Is the Philippines starting to flatten the curve?

Apparently (using doubling time), yes.



For the past 18 days (from 12 to 30 April 2020), the doubling time of the Philippines has been more than five days.

The trajectory of the Philippines' curve is starting to flatten and our doubling time has already gone beyond five days.

Current doubling time is around seven days.

However, the doubling time may be different at a per LGU level, which is why the flattening of the Philippines' curve is still uncertain.

Additionally, the numbers may rise as the number of tests increase and as backlogs are being addressed.

In the Philippines, patients wait five to seven days to get their test results. South Korea, which has consistently flattened the curve, sends the results the next day through a text message.

We took a closer look at the Philippines' local government units (LGUs) to identify which provinces are already flattening the curve



18

Provinces and cities considered

25%

Of all the provinces/ cities, having the most number of cases



6,222

Combined number of cases as of 30 April 2020

73%

Of the total cases locally as of 30 April 2020

List of cities/provinces

National Capital Region

Caloocan City
City of Las Piñas
City of Makati
City of Mandaluyong
City of Manila
City of Marikina
City of Muntinlupa
City of Parañaque
City of Pasig
City of San Juan
Pasay City
Quezon City
Taguig City

Region III

Province of Bulacan

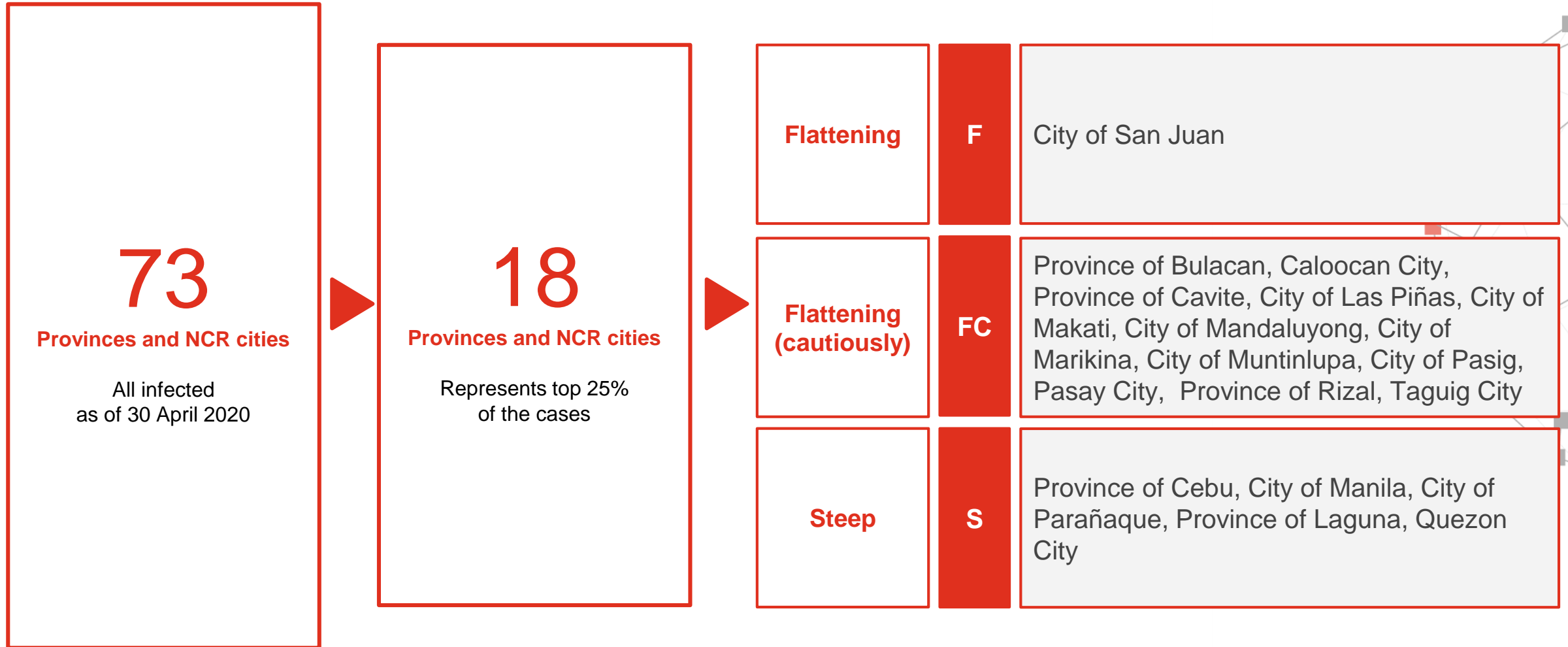
Region IV-A

Province of Cavite
Province of Laguna
Province of Rizal

Region VII

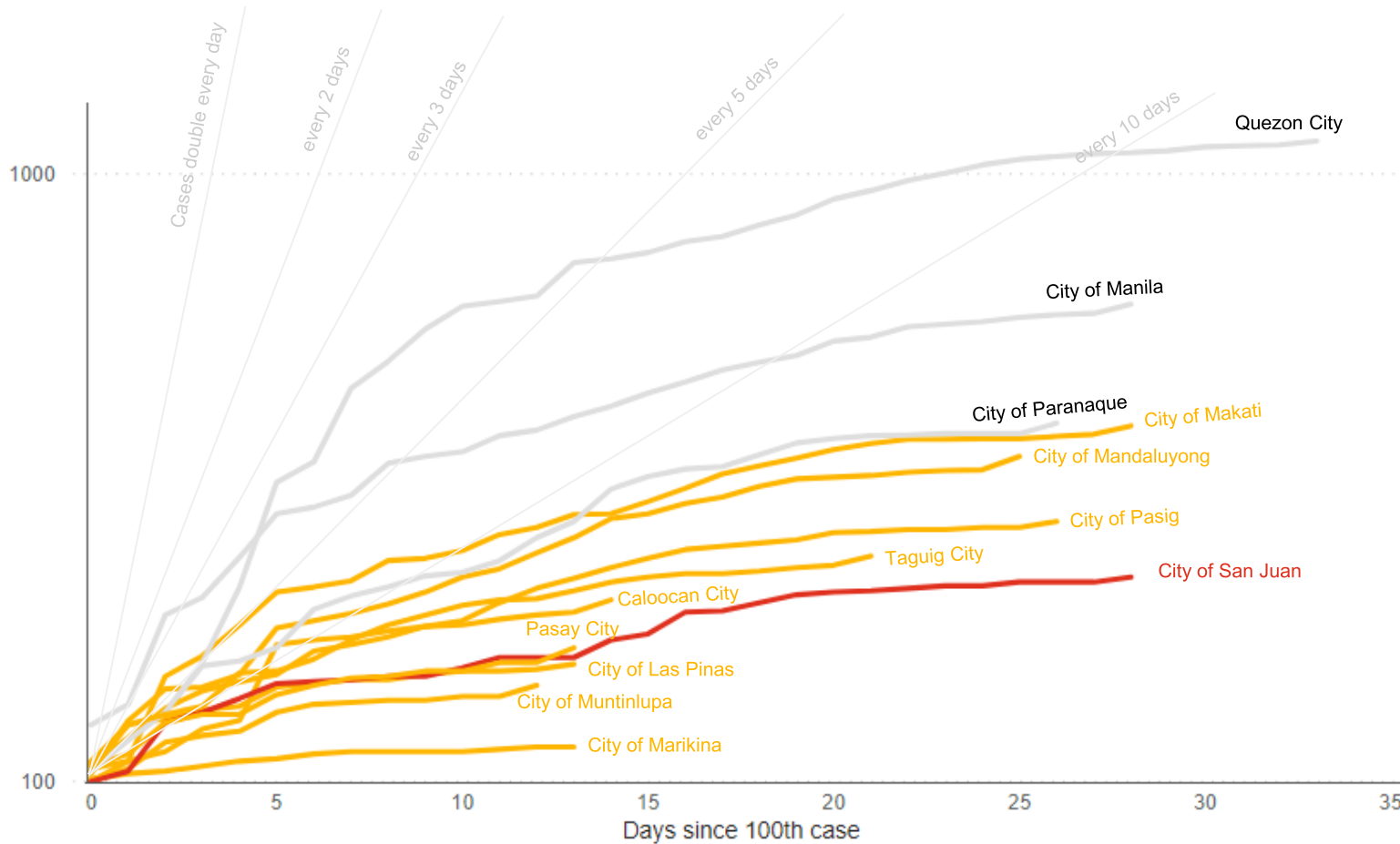
Province of Cebu

We categorized the infected LGUs' curves as flattening or steeping



Note: According to Christopher Monterola, Aboitiz Chair of Masters of Science in Data Science Asian Institute of Management, the *increase of the cases is no longer exponential if its doubling time is more than 5 days.*

The City of San Juan no longer has exponential growth in cases; nine more NCR cities are getting there



The City of San Juan currently has a doubling time of 9.41 days and has maintained a doubling time of more than five days for 28 days as of 30 April 2020.

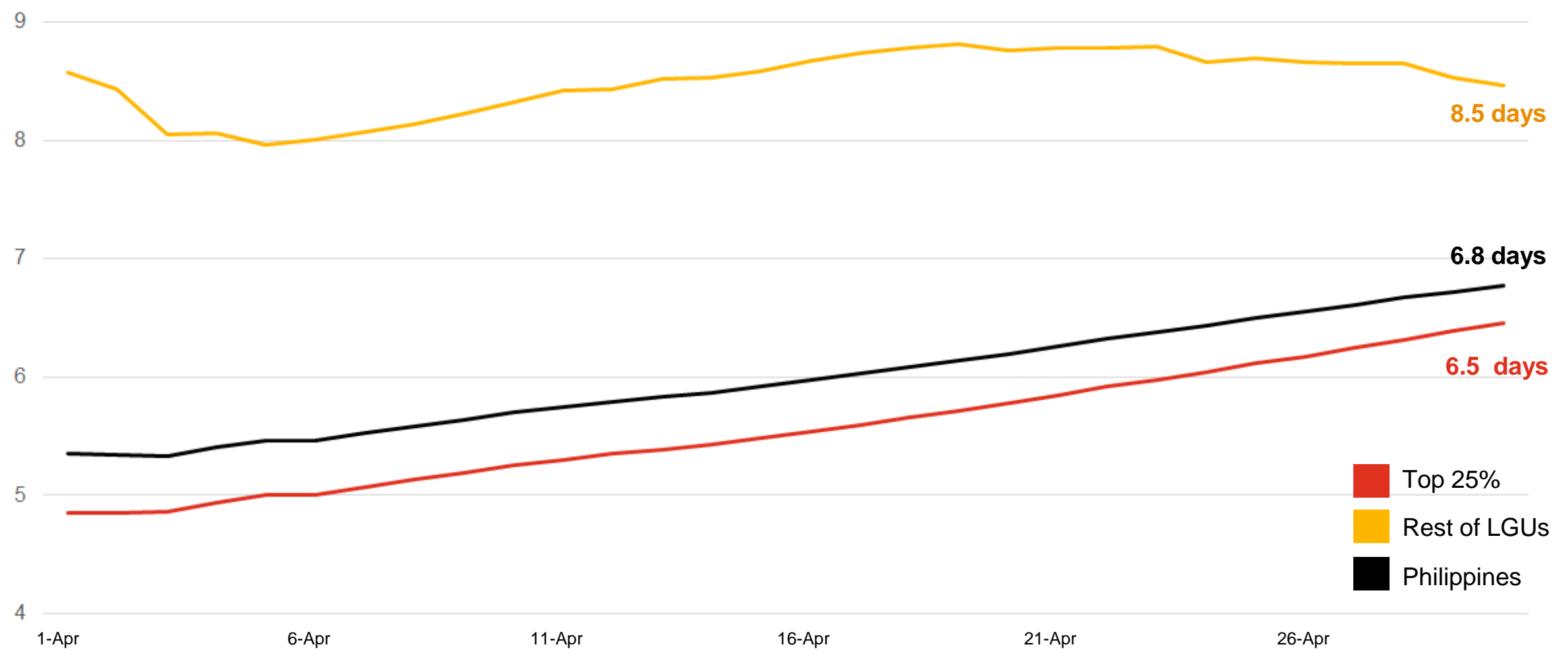
Meanwhile, Caloocan City, City of Las Piñas, City of Makati, Mandaluyong City, Marikina City, Muntinlupa City, Pasig City, Pasay City and the City of Taguig have maintained a doubling time of more than five days for the past seven days.

Note that the City of Valenzuela, City of Malabon, the City of Navotas and the Municipality of Pateros are not in the graph because they have not reached a 100 cases.

- Flattening
- Cautiously flattening
- Steep

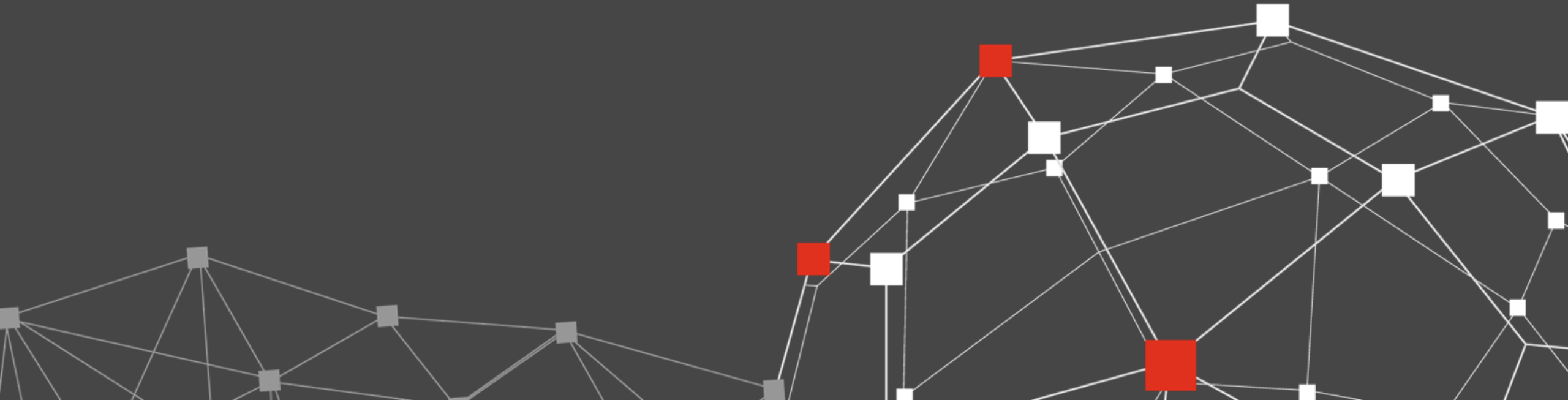
The rest of of the country has been experiencing higher doubling times, indicating a better overall position for the Philippines

Doubling times of top 25% LGUs versus the rest of the country



Source: Philippine DOH COVID-19 Data Drop (as of 30 April 2020)
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How has the ECQ
helped LGUs in
flattening the
curve?



How stringent are local governments' responses to COVID-19?

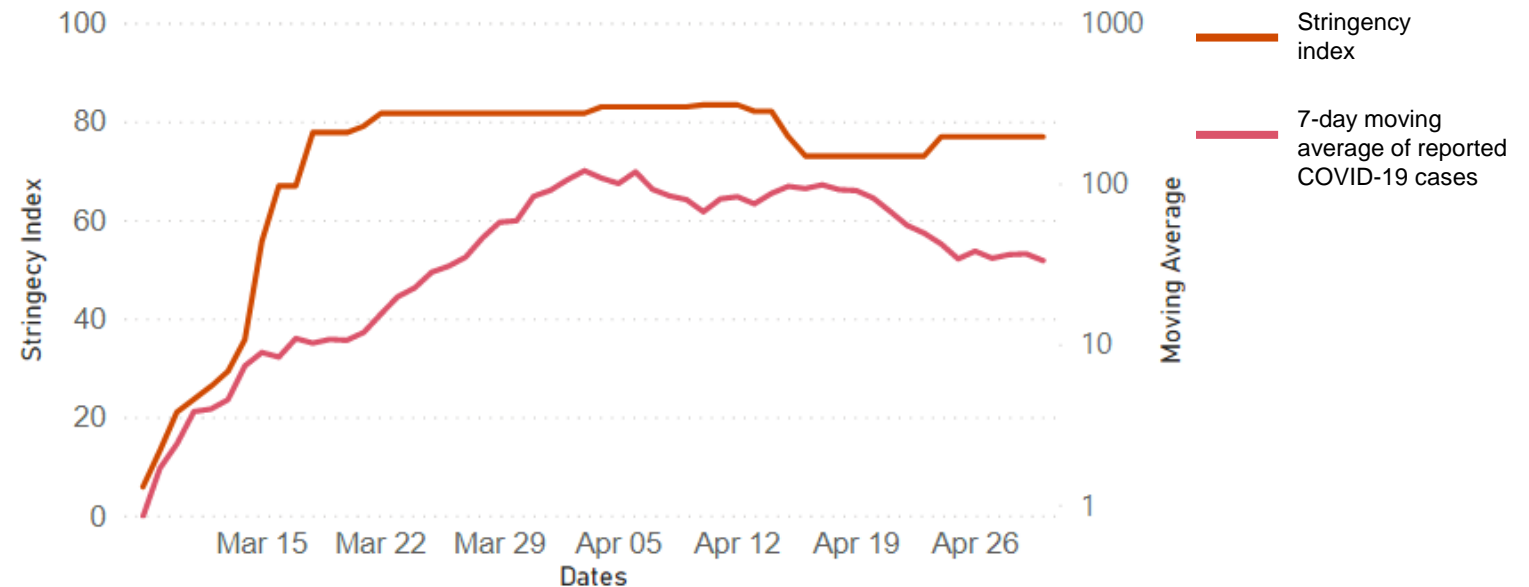
To be able to come up with a comparative index, we looked for COVID-19 response measures or policies from each local government unit (LGU) following the indicators used by the Oxford COVID-19 Government Response Tracker. The seven (7) indicators are shown on the right.

Using these indicators, we measured the number and the strictness of their policies and computed for the COVID-19 Local Government Response Stringency Index^b ranging from 0-100. This index is used to compare the responses of each LGU and should not be interpreted as 'scoring' the appropriateness or effectiveness of local government's response.

'Cautiously flattening' LGUs started to show less steep curves in daily reported COVID-19 cases about two weeks after quarantines and other policies were imposed in Metro Manila on 15 March and in the rest of Luzon on 17 March. As it neared a month into the implementation of these policies, most of them exhibited a downward trend in their curves.

a. The team opted to change "International travel controls" to "Travel controls" given that local government units will be the subject of the analysis.
b. For more information on how to compute for the stringency index, refer to www.bsg.ox.ac.uk/covidtracker

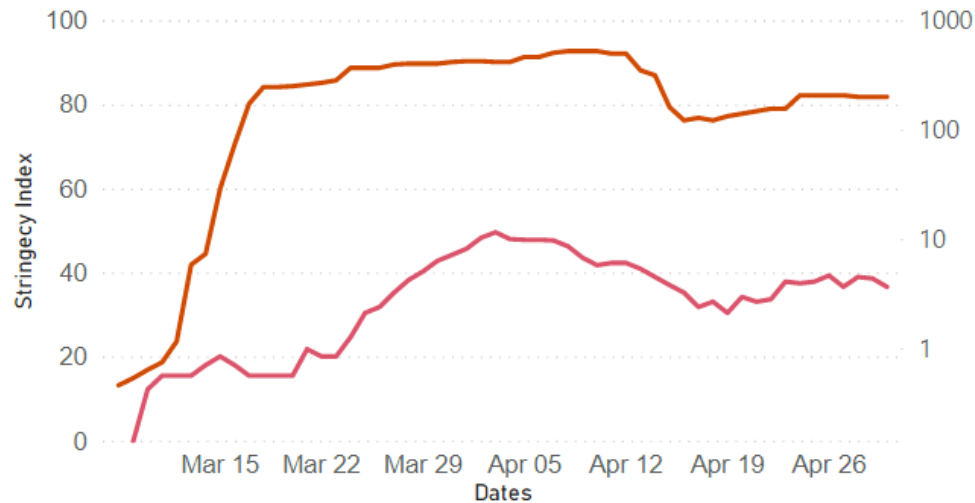
| Policy | Description |
|--------------------------------------|---|
| 1. School closing | Record closings of schools and universities |
| 2. Workplace closing | Record closings of workplaces |
| 3. Cancel public events | Record cancelling public event |
| 4. Close public transport | Record closing of public transport |
| 5. Public info campaigns | Record presence of public info campaigns |
| 6. Restrictions on internal movement | Record restrictions on internal movement |
| 7. Travel controls ^a | Record restrictions on travel |



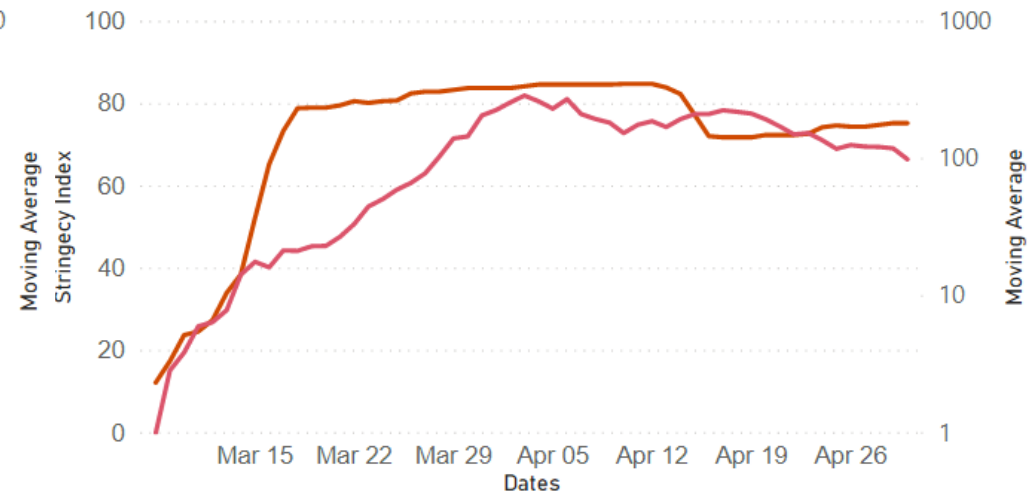
On enhanced community quarantine liftings and extensions

Caution and closer monitoring are advised.

LGUs whose ECQs will end on 30 April 2020



LGUs with ECQs extended until 15 May 2020



Stringency level*

7-day moving average of reported COVID-19 cases

Other than the lower risk brought about by the low number of reported COVID-19 cases, provinces and cities whose quarantines were not extended beyond 30 April had a higher stringency index than those whose quarantines were extended to 15 May.

However, the rest of the LGUs should practice caution as they could have possibly relapsed after 19 April, as there had been an upward trend in the reported number of cases. It could also be possible that the decrease in stringency, starting 13 April, could have contributed to the rise.

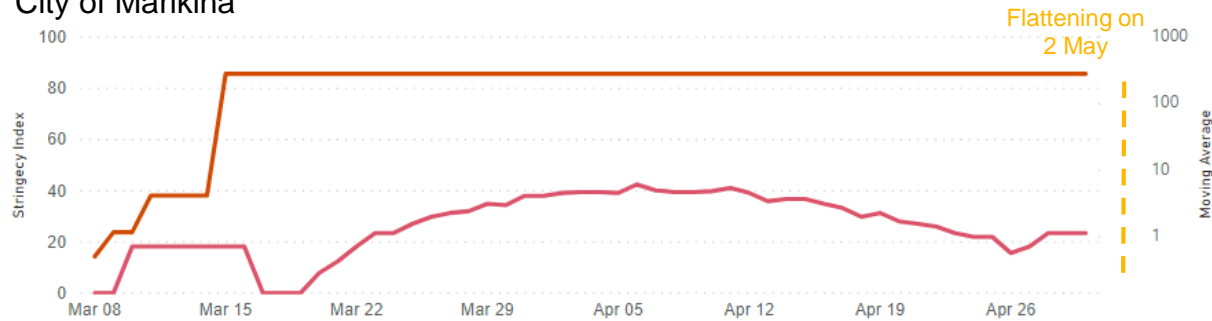
Note that provinces with zero cases are not included.

Sources: Philippine DOH COVID-19 Data Drop, "Variation in Government Responses to COVID-19" Version 4.0. Blavatnik School of Government Working Paper, PwC analysis

PwC

‘Cautiously flattening’ LGUs should maintain their downward trend in the next two to 14 days

City of Marikina



Province of Bulacan



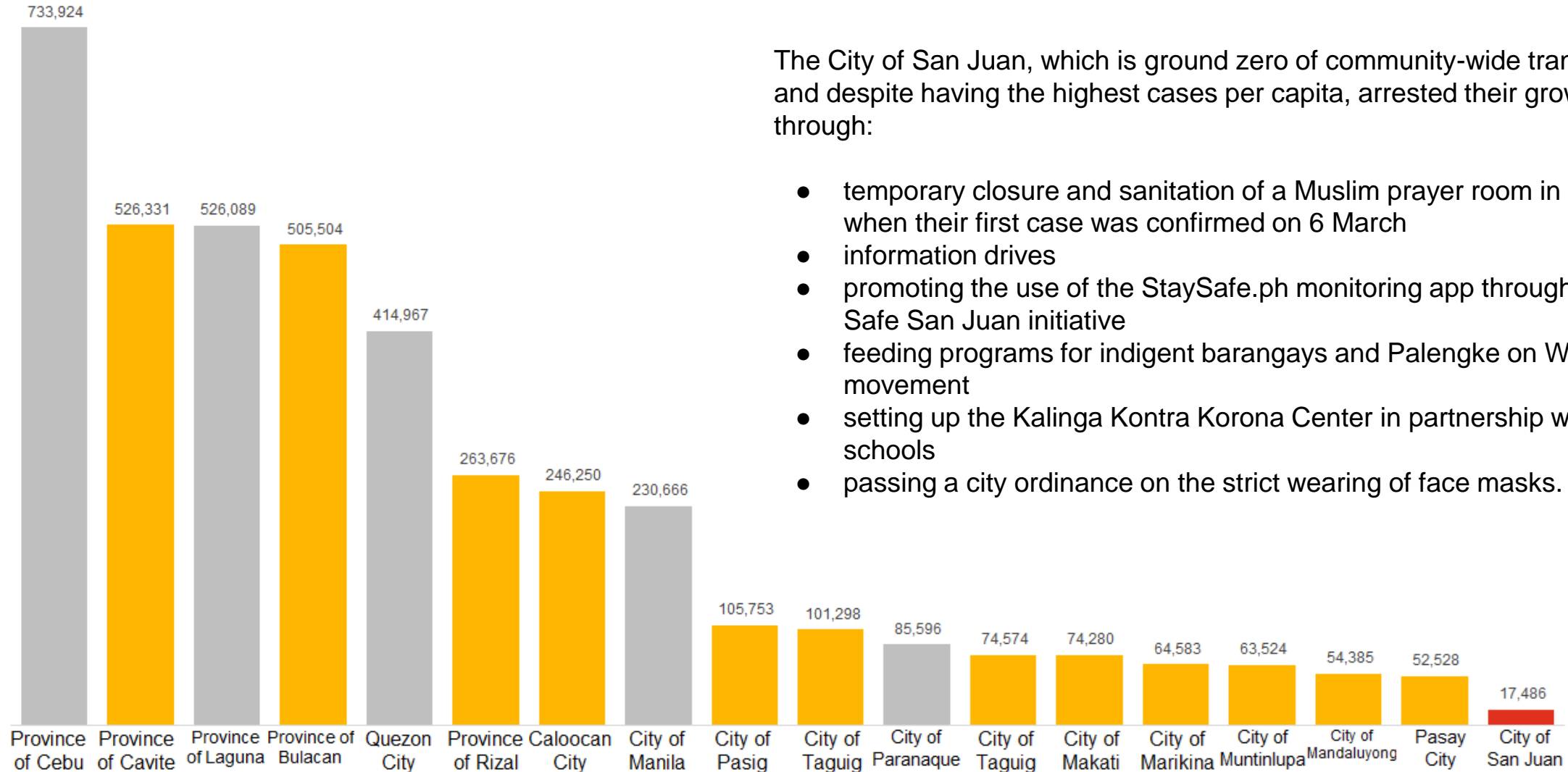
City of Muntinlupa



| Cautiously flattening LGUs | Days to maintain downward trend |
|----------------------------|---------------------------------|
| City of Marikina | 2 |
| Province of Bulacan | 3 |
| City of Muntinlupa | 3 |
| Pasay City | 6 |
| Caloocan City | 7 |
| Taguig City | 7 |
| City of Las Piñas | 8 |
| City of Pasig | 10 |
| Province of Cavite | 11 |
| Province of Rizal | 11 |
| City of Makati | 14 |
| City of Mandaluyong | 14 |

— Stringency index
 — 7-day moving average of reported COVID-19 cases
 — Date when the LGU could start flattening if they at least maintain their DT

LGUs with larger populations were observed to be the top infected locations with steep curves.



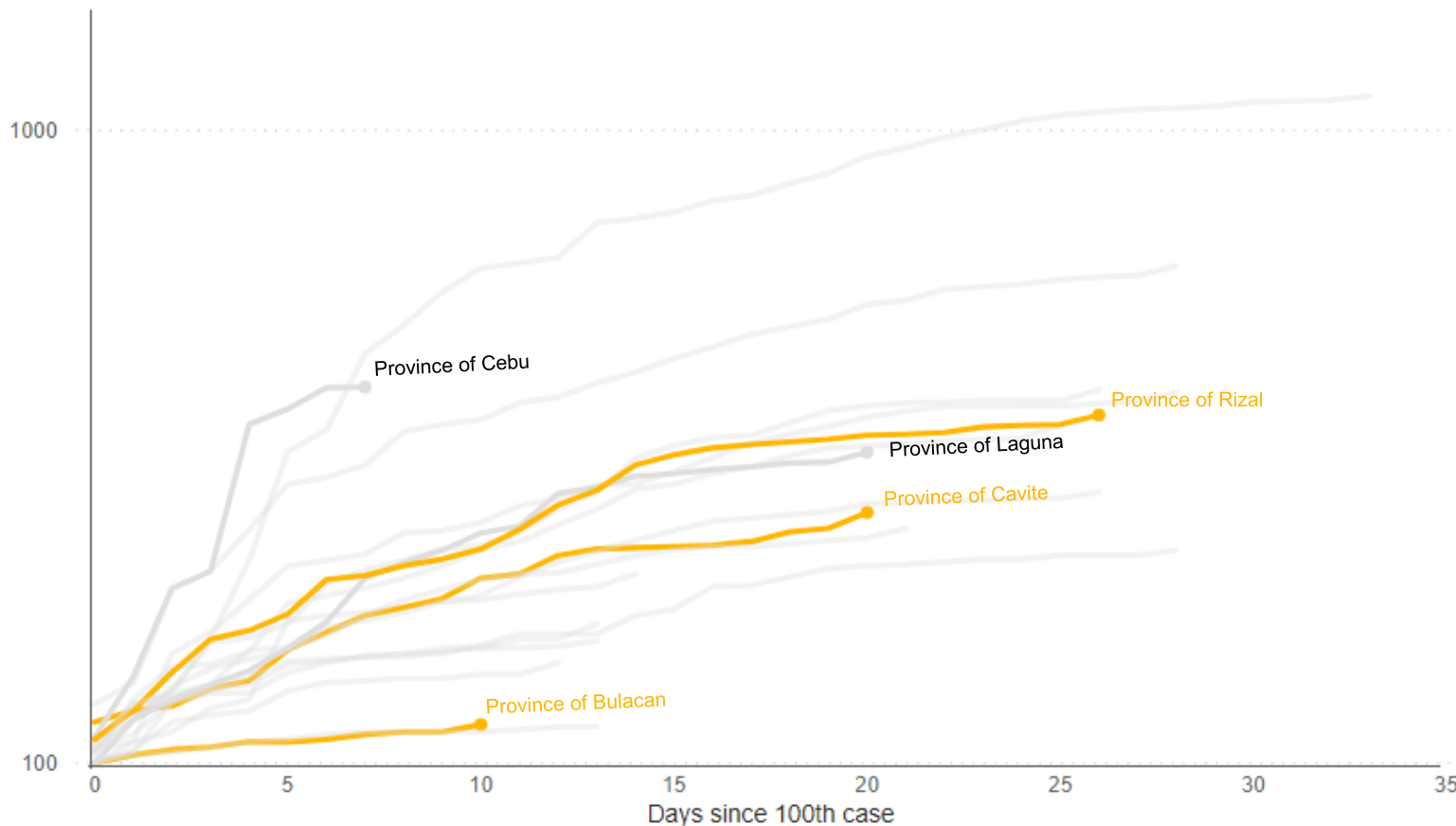
The City of San Juan, which is ground zero of community-wide transmission, and despite having the highest cases per capita, arrested their growth curve through:

- temporary closure and sanitation of a Muslim prayer room in Greenhills when their first case was confirmed on 6 March
- information drives
- promoting the use of the StaySafe.ph monitoring app through the Stay Safe San Juan initiative
- feeding programs for indigent barangays and Palengke on Wheels to limit movement
- setting up the Kalinga Kontra Korona Center in partnership with San Juan schools
- passing a city ordinance on the strict wearing of face masks.

Source: DSWD SAP Monitoring for Emergency Subsidy Under AICS as of 24 April, 2020, PSA 2015 Census of Population

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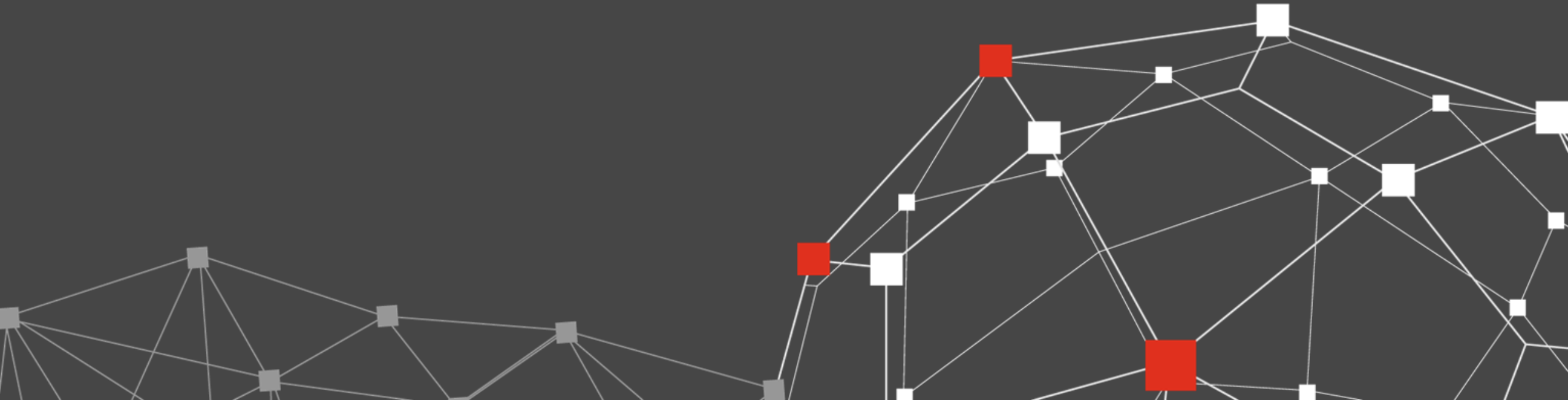
However, a slower rate of increase in cases was already also observed in these top infected provinces, a sign that these areas are improving.



The provinces of Bulacan, Cavite and Rizal already have a doubling time of more than five days for the past seven days while the provinces of Cebu and Laguna have just reached five days as doubling time.

— Cautiously flattening

The Philippines' curve may appear to be flattening, but it does not necessarily mean it is winning the battle against COVID-19.



The Philippines may not necessarily be winning yet as there are other points to consider other than flattening the number of the cases.

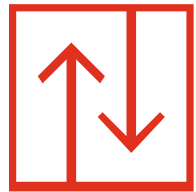
We need to consider what the country should be doing in these aspects in the short term, medium term, and long term.



Controlling the number of deaths



Improving hygiene and sanitation



Having real-time and frequent information dissemination

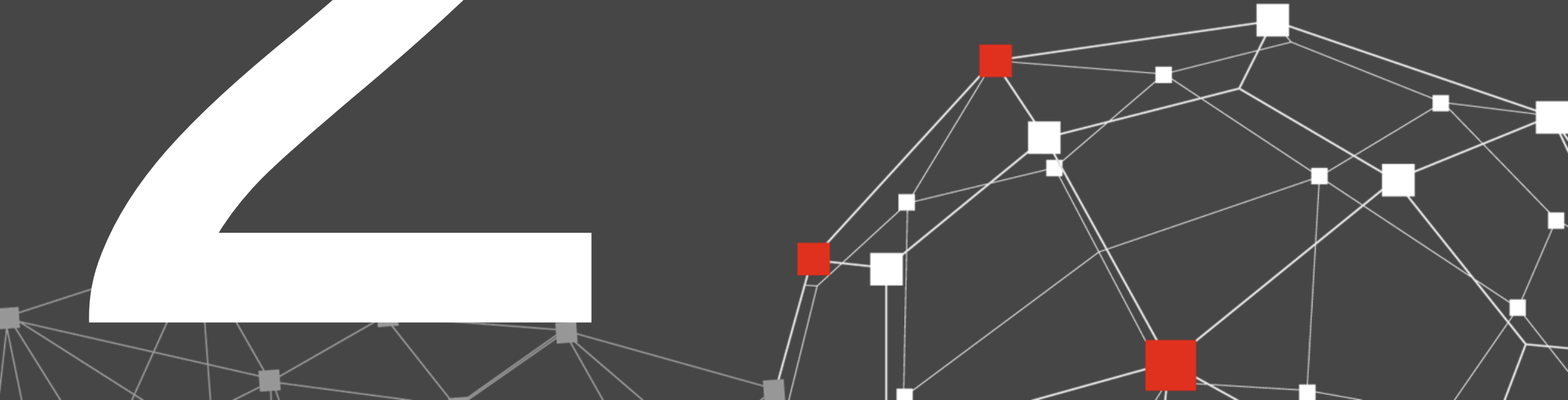


Conducting extensive and optimized testings

In Phase 2, we shall be discussing these aspects in detail.

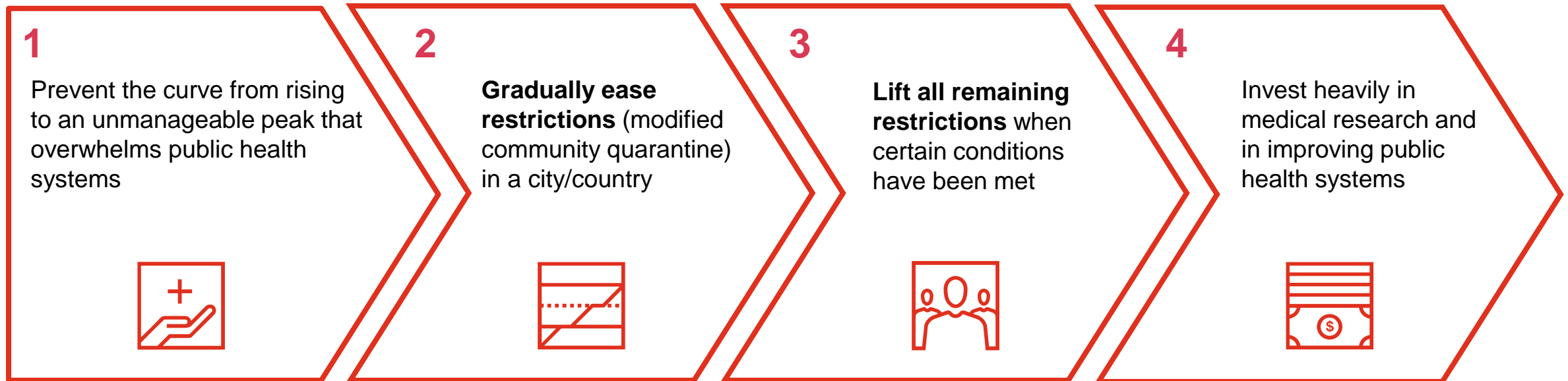
2

What should the Philippines do to become more resilient against COVID-19, especially with the plans of easing the lockdown?



Lifting community quarantines requires careful evaluation of the pandemic situation and safety measures that have been implemented.

With the ECQ ending on 15 May and movement restrictions being eased, people may be facing higher risks of getting infected with COVID-19, which may lead to an uncontrollable relapse. With that, we have to evaluate first whether we have implemented safety measures that will prevent this from happening. This can be achieved through a multi-faceted approach on what to do in the short term, medium term and long term.



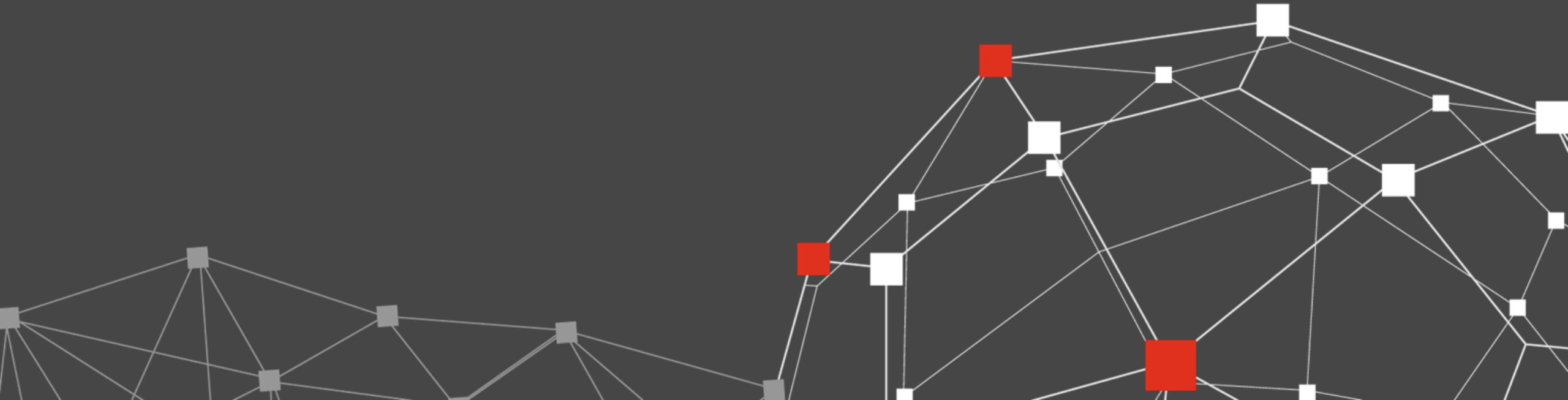


Upon easing the lockdown, multi-faceted preventive measures should be implemented and spread out in the short, medium, and long term.

| | Immediate response | | | | |
|--|---|---|---|--|---|
| | Short term (1-4 weeks) | Control the number of deaths For the government to implement additional measures for the aging population to mitigate the COVID-19 death toll | Have real-time and frequent information dissemination For the government to develop an integrated information campaign that maximizes the use of available communication channels | Improve hygiene and sanitation For the government to take prompt actions in sanitizing public areas along with the utmost cooperation of individuals | Conduct extensive and optimized testings For the government to coordinate with the private sector in developing test kits and carrying out mass testing efforts |
| | Medium term (1-6 months) | Certify public areas or establishments that comply with a set of cleanliness standards For the government to periodically assess the level of cleanliness observed in various establishments and for the establishments to develop a culture of cleanliness | | | |
| | Long term (6 months or more) | Update LGU development plans For our local areas to be more prepared and more agile in responding to crises by having developed crisis preparedness programs | | Improve healthcare system capacity To help us better manage the sudden influx of outbreak cases on a national level | |

Control the number of deaths

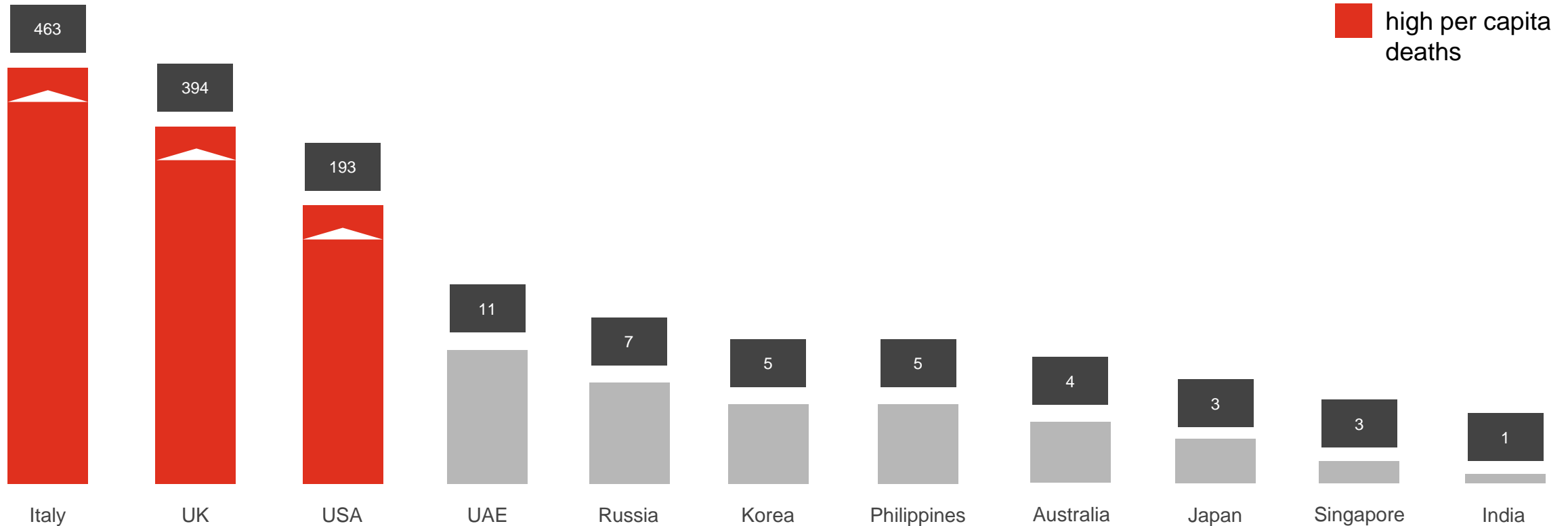
We must implement special protective measures for the aging population as they are more at risk from COVID-19



Italy, UK, and the United States have high per capita deaths, highlighting their lack of action during the pandemic's early stages

The US, UK and Italian governments have repeatedly downplayed the potential impact of the disease during the crisis' early days. UK leader Boris Johnson earlier pushed for a strategy of natural herd immunity, US president Donald Trump dismissed his advisers' repeated warnings, and politicians in Italy engaged in public handshaking to undermine the crisis.

COVID-19 deaths per 1 million of population

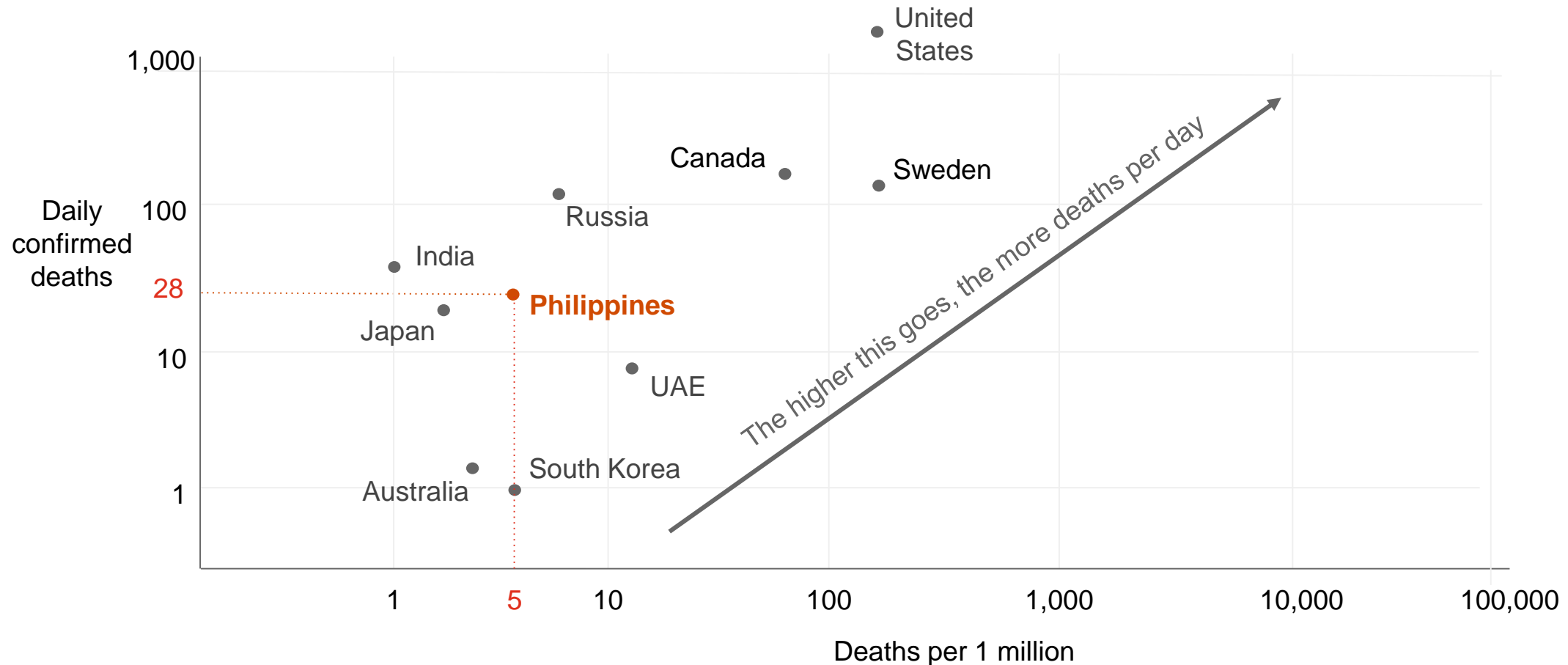


Sources: Harvard Business Review, The Guardian, Worldometers (as of 30 April 2020)

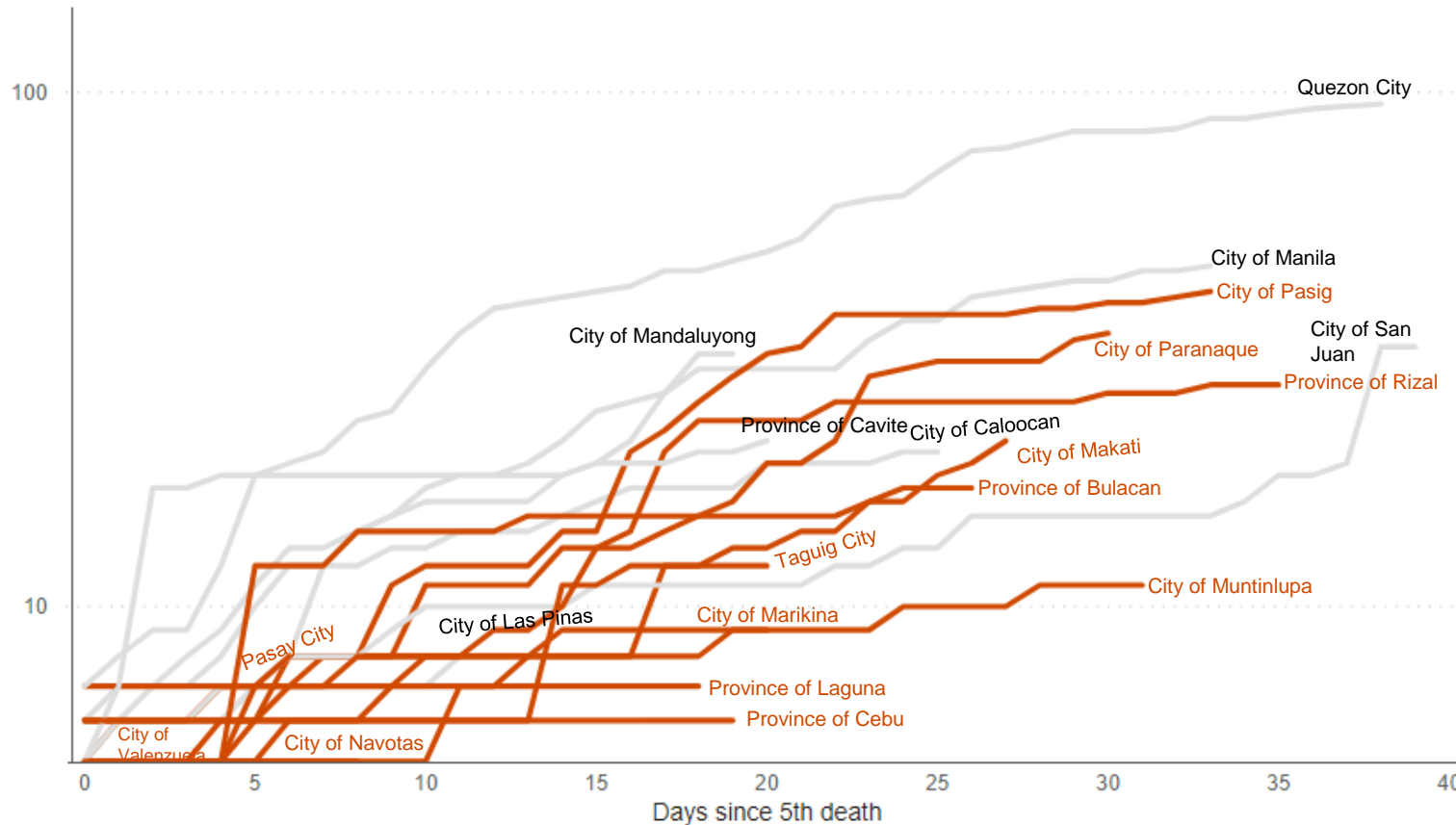
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The Philippines may be facing a strained healthcare capacity, as indicated by the relatively higher daily confirmed deaths

A factor with this rising death toll is most likely due to our country's struggling healthcare capacity to keep up with the number of positive cases to be treated. A few hospitals have announced that they will no longer accept patients suspected or confirmed with COVID-19 due to limited facilities and equipment.



Additionally, LGUs still need to control the doubling time of their deaths



Though LGUs may be flattening in terms of confirmed cases, they still need to manage the growth of their deaths to even match the average DT of deaths of nine days of those flattening countries.

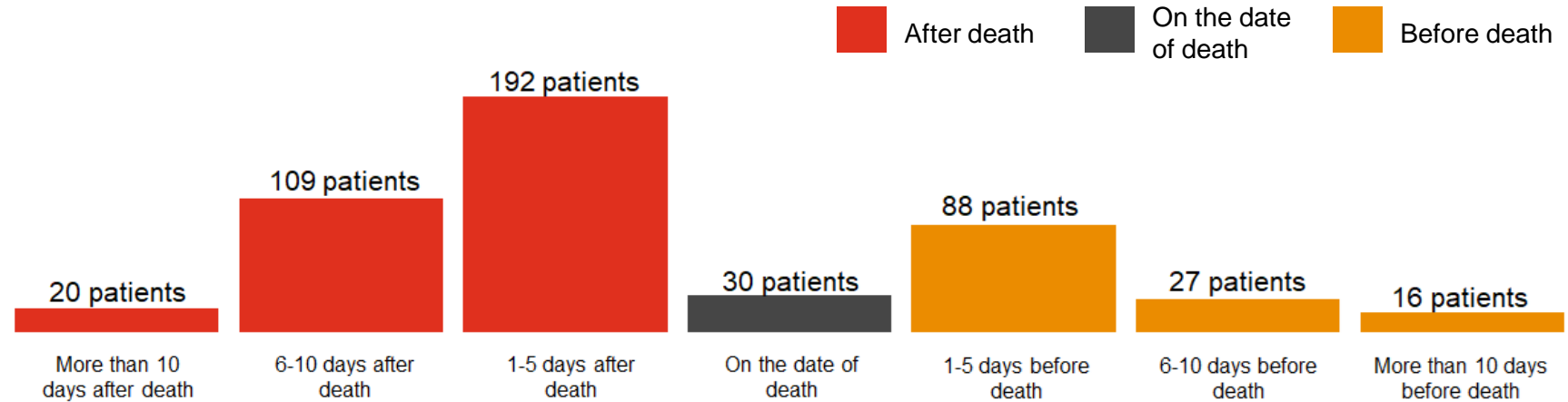
The City of San Juan has yet to break the nine-day mark together with the Caloocan City, City of Las Piñas, City of Mandaluyong, City of Manila, Province of Cavite and Quezon City.

Note that the City of Malabon and the Municipality of Pateros are not in the graph because they have not reached five deaths.

The number of deaths shown may not even be accurate because the Philippines seems to have a delay in confirming cases and reporting deaths

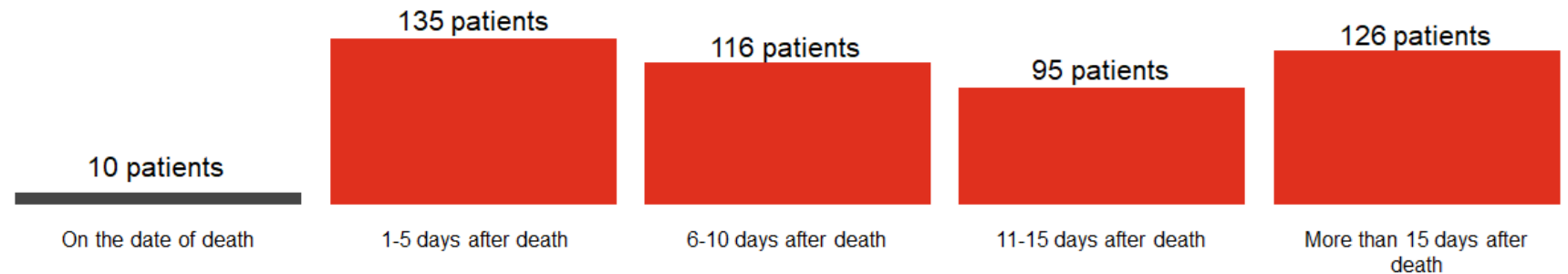
Days from confirmation of positive test result versus day of death

Patients who died of COVID-19 were reported positive an average of two days after their death.



Days from death to being reported by DOH

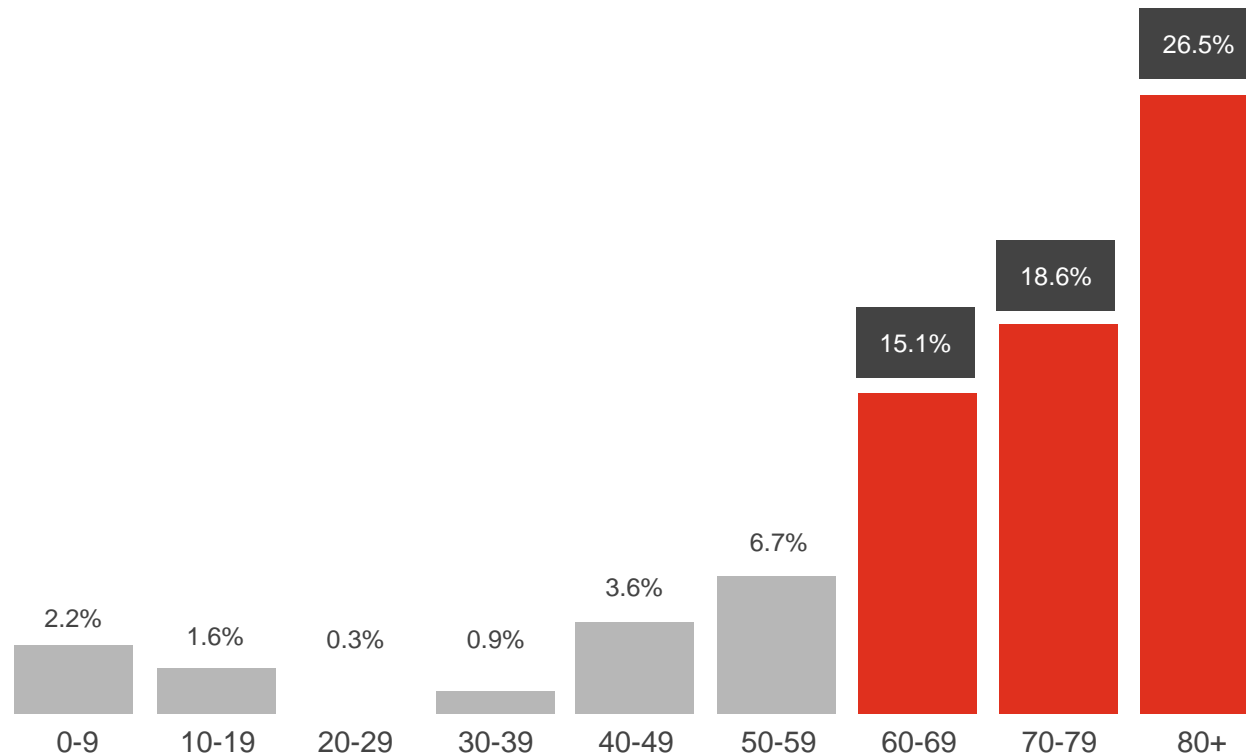
Patients who died of COVID-19 were reported by DOH an average of 11 days after their death.



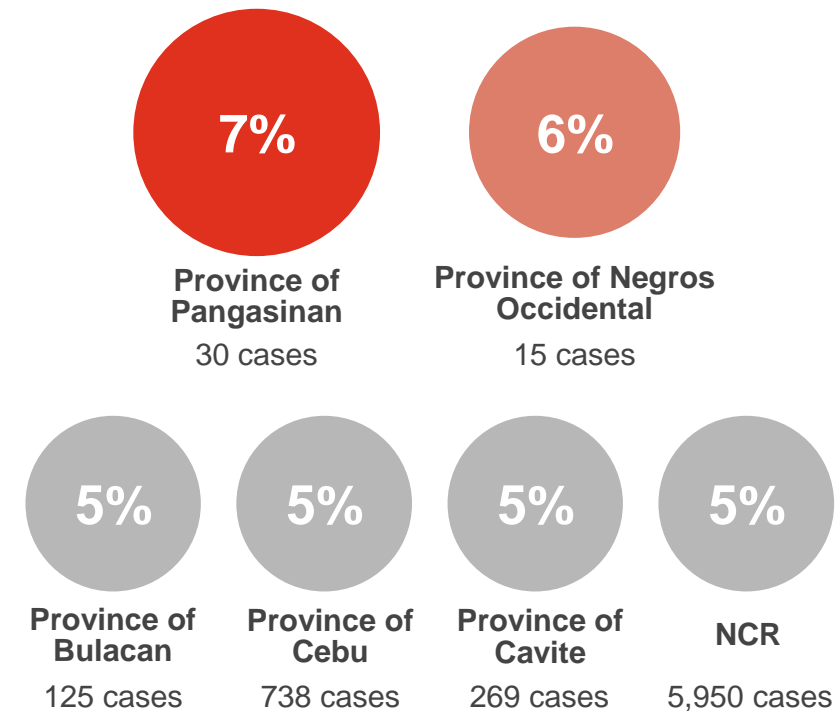
We need to protect the vulnerable populations (aged 65+).

In the Philippines, it could be seen that case fatality ratios increase with age. In order to control the virus better, we need to **mandate** stringent measures, especially in areas that have the highest aging population.

Case fatality rate in the Philippines per age group



Top six **cities/provinces** with the highest number of aging population
% of total population per province



Even with limited guidance from international organizations, several countries took extra steps to protect their aging populations

Argentina

Argentine President Alberto Fernandez instructed citizens over 65 years old to stay at home, heeding the advice of medical experts that older people are more at risk from COVID-19.

The government also announced that people over 60, except for healthcare workers, will be entitled to take paid leave. President Fernandez also said specific hours would be set aside for them in banks, clinics and other services.

United Kingdom

Secretary of State for Health and Social Care Matt Hancock said that people over 70 and those with certain health conditions would be asked to self-isolate. Additionally, people without symptoms would still be allowed to visit older relatives and friends as long as they maintain a distance of 2m (6ft) away.

Australia

The Australian government coordinated with the private sector to assist the elderly with access to regular food supplies and prepared meals. A number of grocery suppliers are also mandated to give older and vulnerable people priority access to their online and telephone shopping services.

Japan

Even with a large aging population, Japan did not implement stringent lockdown measures. The Japanese culture is well-known for cleanliness, as its citizens use hand sanitizers, wear masks, and maintain good hygiene on a day-to-day basis.

Source: Aljazeera, Anadolu Agency, Australian Department of Health, BBC, South China Morning Post
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Situation in the Philippines



70% of COVID-19 fatalities are aged 60 and above



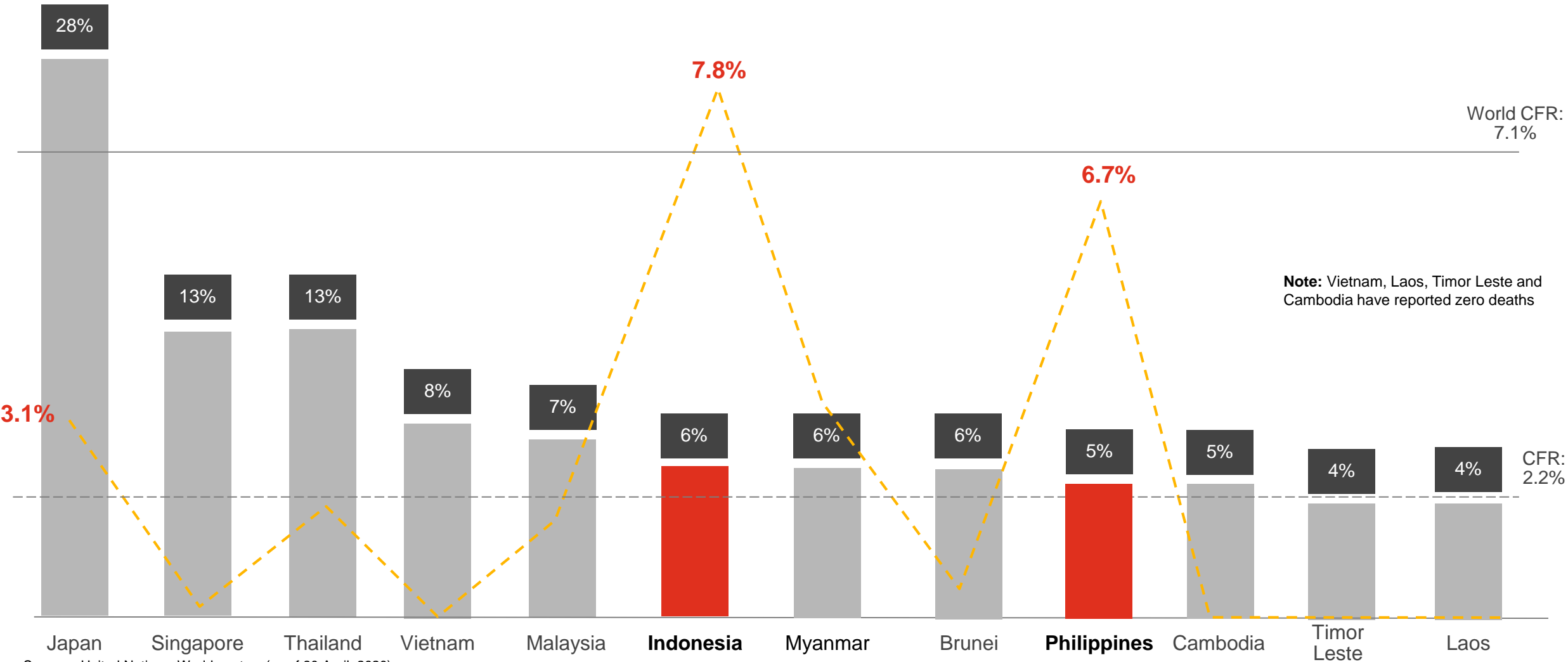
18% Case fatality rate of those 60 years old and above



The recent announcement that people over 60 cannot leave their homes even after the Enhanced Community Quarantine (ECQ) measures are lifted caused dissent among the aging population, accusing the policy as discriminatory.

Higher death rates even with a lower set of 65+ year old age bracket in the Philippines indicate that the older population may be suffering more.

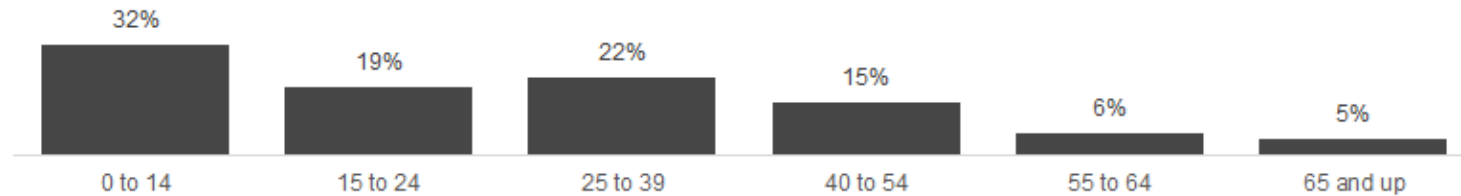
% Population within ages 65 and above vs. Case fatality rates (CFR)
To total population



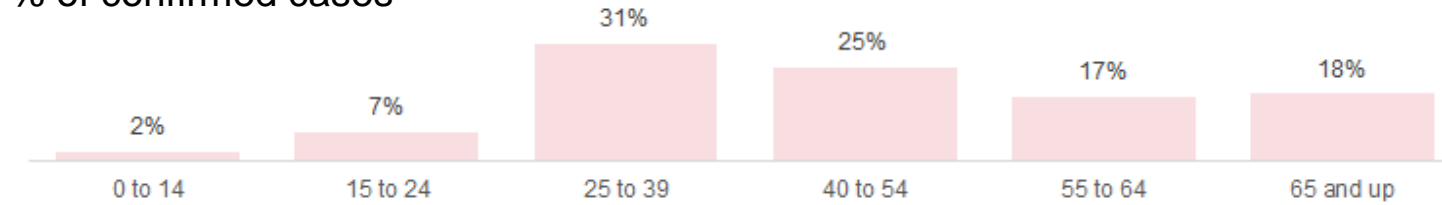
Sources: United Nations, Worldometers (as of 30 April, 2020)
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1 in 2 COVID-19 deaths in the Philippines are of persons aged 65 and above

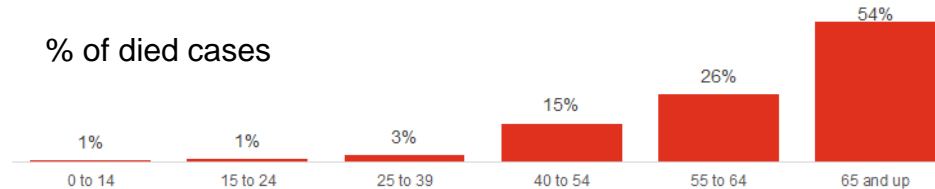
% of the Philippine population (2015 Census)



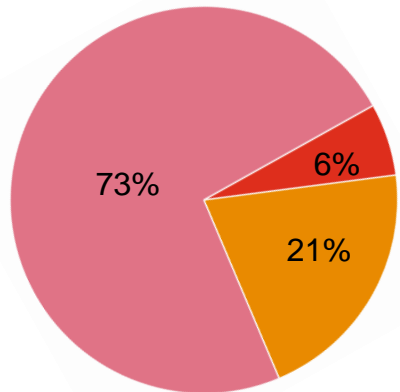
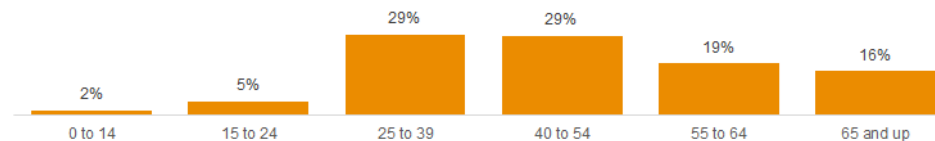
% of confirmed cases



% of died cases



% of recovered cases



Note: The pie chart shows the percentage of active cases versus those that have died/recovered.

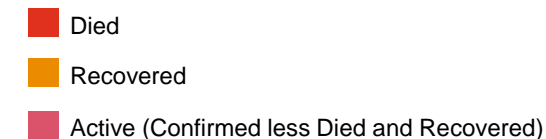
Source: Philippine DOH COVID-19 Data Drop as of 30 April 2020

PwC

While the population of the Philippines is predominantly young, statistics show that the virus affects those aged 25 and up—more than those in the 0 - 24 age group.

Moreover, 54% of the deaths due to COVID-19 are of persons aged 65 and up. Studies show that those who die under the 65 have weak immune systems or have other complications or comorbidities.

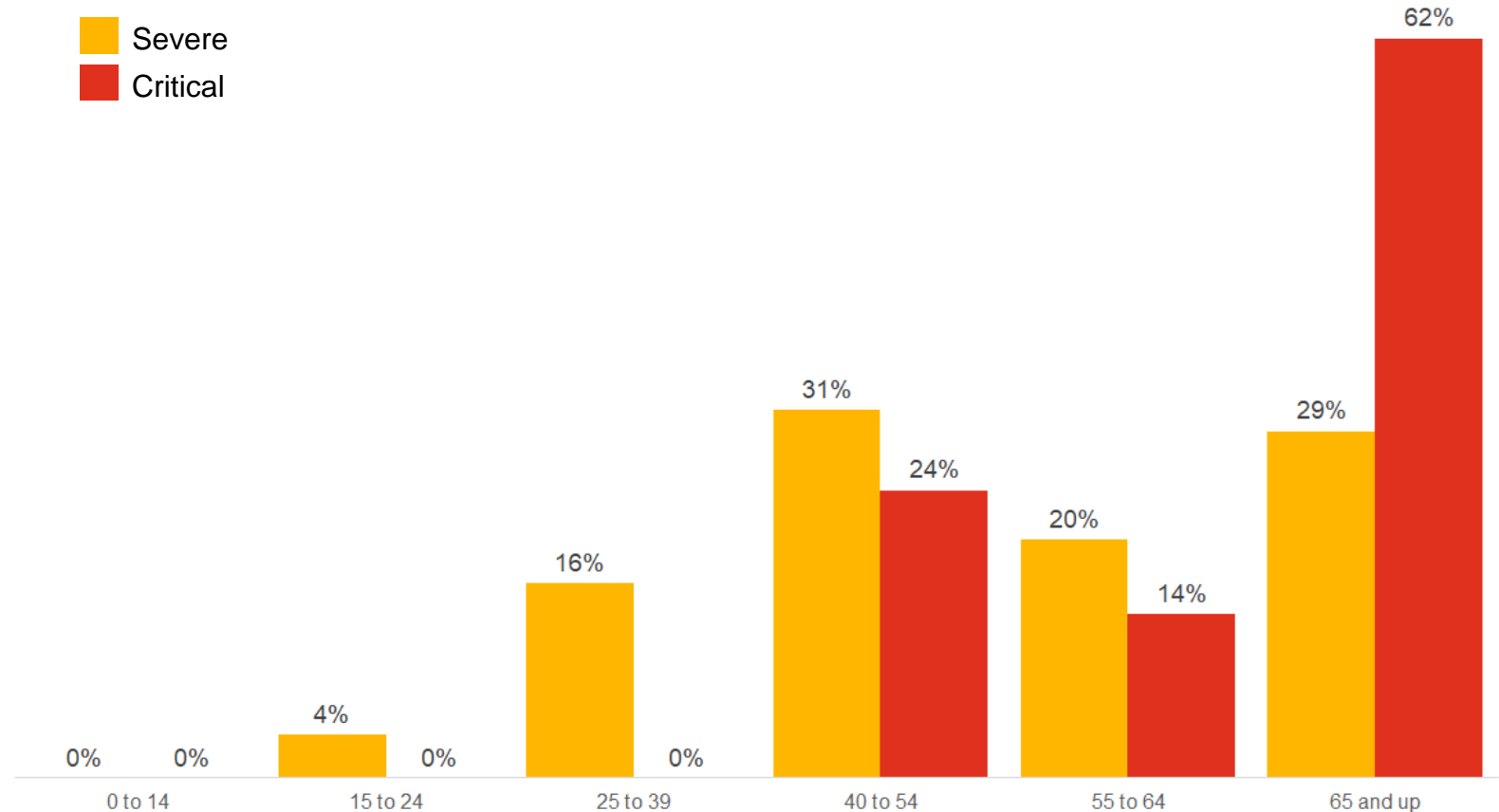
Based on the data, there is almost a similar proportion of total confirmed cases and total recoveries per age group.



More 65+ year olds are in critical conditions

As of 30 April 2020, those within the age bracket of 65 and up have the highest number of patients with critical conditions; while there is a high amount of severe cases for both 40 - 54, and 65 and up, age brackets.

Those aged 0-14 do not have either severe or critical cases. At the same time, those in the age bracket of 15 to 39 have severe cases but no critical cases were recorded.



Curb the COVID-19 death toll by implementing additional measures for the aging population



Provide free protective and hygiene kits for the elderly, especially those who occasionally need to go outdoors



Consider implementing lockdown measures for people aged 60 and above, even after the ECQ



Coordinate with the private sector for the delivery of essential goods and services to the elderly

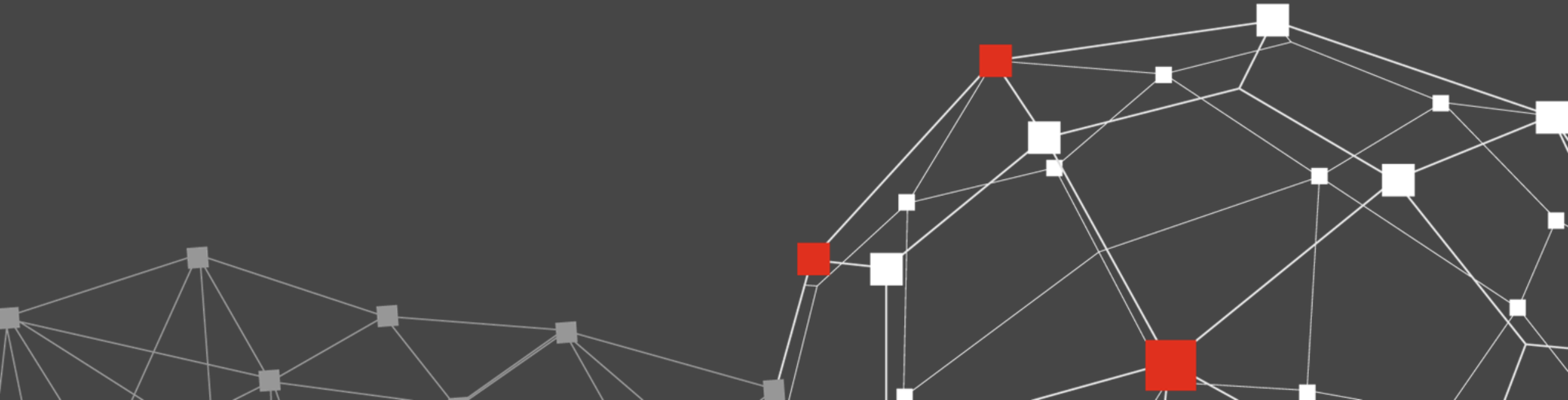
Important points:

- Many people aged 60 and above may be compelled to go outdoors for essential activities. The additional measures should focus on protecting the elderly and not penalizing them for violations.
- Consider allocating windows of time for the elderly to go outdoors for activities such as grocery shopping and banking.
- Consider incentivizing private firms to help with the delivery of necessities to homes of the elderly.

Short-term measures (1-4 weeks)

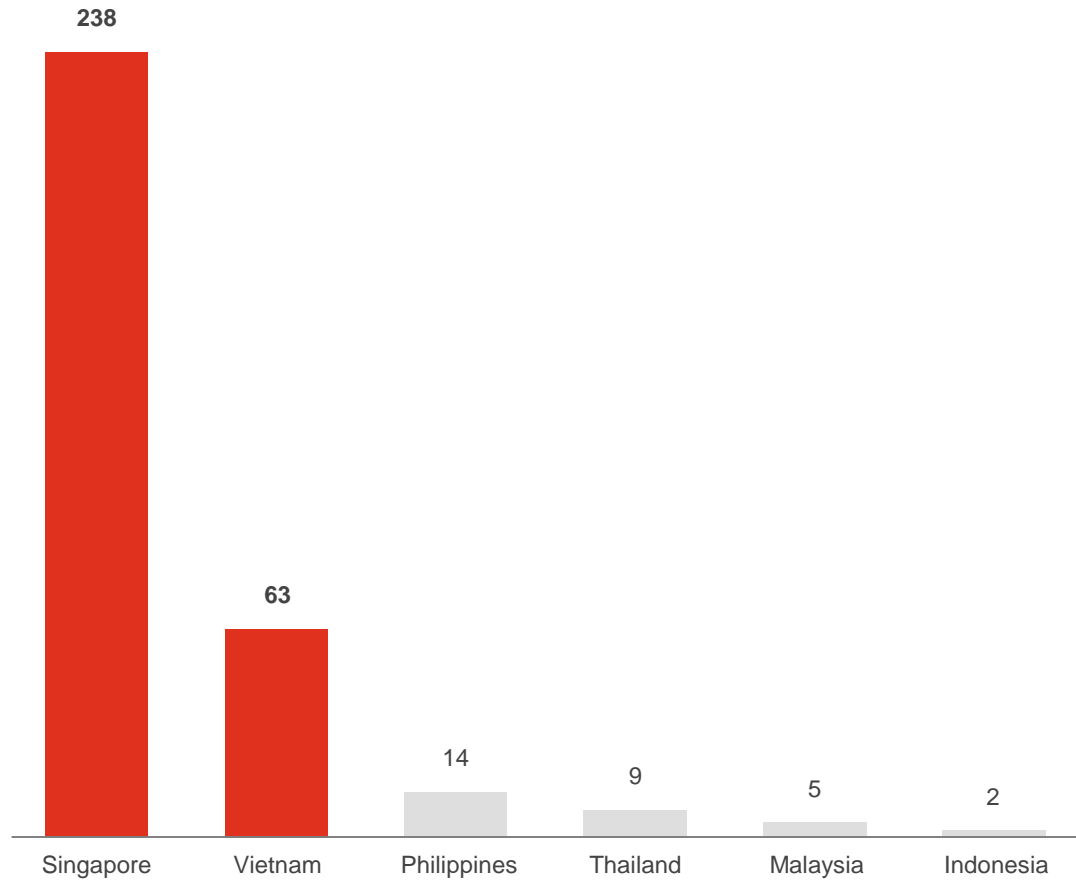
Have real-time and frequent information dissemination

Better access to information can improve government-citizen and intragovernmental cooperation



Vietnam and Singapore have learned their lessons and used information to promote government-citizen and intragovernmental cooperation.

Total number of SARS cases in the ASEAN region



Sources: World Health Organization, The ASEAN Post, The Lancet, The Straits Times
PwC

These two countries suffered the most during the 2003 SARS outbreak, having the most number of cases in the ASEAN region. But this paved the way for them to enhance the way they deal with similar situations.

Measures implemented during the COVID-19 crisis

Vietnam

- Effective communication and government-citizen cooperation
- Early risk assessment
 - Systematic tracing of pathogen carriers and early imposition of travel bans

Singapore (up until before the relapse of cases)

- Implemented intragovernmental cooperation within the first week of the outbreak for contact tracing efforts among other initiatives (Health Ministry, Singapore Police Force, Singaporean Armed Forces)
- Instituted strict travel controls and protocols for identifying sick individuals
- Tracks and collects detailed accounting of how many people have been tested, the location, and nature of people's social contacts
 - Helps in analyzing the nature of the virus
- Set up management information systems - almost daily meetings between Regional Health System managers, hospital leaders, and the Ministry of Health
- Provided timely, accurate and transparent risk communication through daily reports on mainstream media and websites that debunk misinformation

Access to online health information platforms allows citizens to remain vigilant and participate in government initiatives like contact tracing.

Vietnam

Effective communication and public education helped the Vietnamese government and citizens understand how contagious and dangerous COVID-19 is. They used the internet as the main medium for information dissemination given that 65% of the Vietnamese have internet access. Since 3 January, news outlets have already published articles and news that branded the virus as a serious illness rather than a seasonal flu. An average of 127 articles daily have also been published across 13 famous online news outlets from 9 January to 15 March, leaving no room for false rumors or misinformation to spread.

Developing a sense of urgency, citizens have also been voluntarily providing critical health information using a **government contact tracing app called NCOVI**. Overall, access to updated information has helped shape the citizens' perception to take COVID-19 seriously.

South Korea

Using South Korea's broadcasting public warning system based on a Cell Broadcasting Service, government authorities are able to **simultaneously send out text messages to mobile users at city and district levels**. These messages usually contain updates on recently confirmed cases and time and location points that COVID-19 patients have visited.

United Arab Emirates

The United Arab Emirates launched a **bluetooth app called TraceCovid** that tracks infected individuals by identifying the people who were in proximity of a COVID-19 patient through the recording feature of the application.

Situation in the Philippines



DOH public information campaigns
(Facebook, Twitter, other websites)

- Chat bot to answer frequently asked questions about personal preventive measures, self-checks, updated statistics, and hotlines
- Bite-sized publications about personal preventive measures and updated statistics
- Informational videos
- Press releases

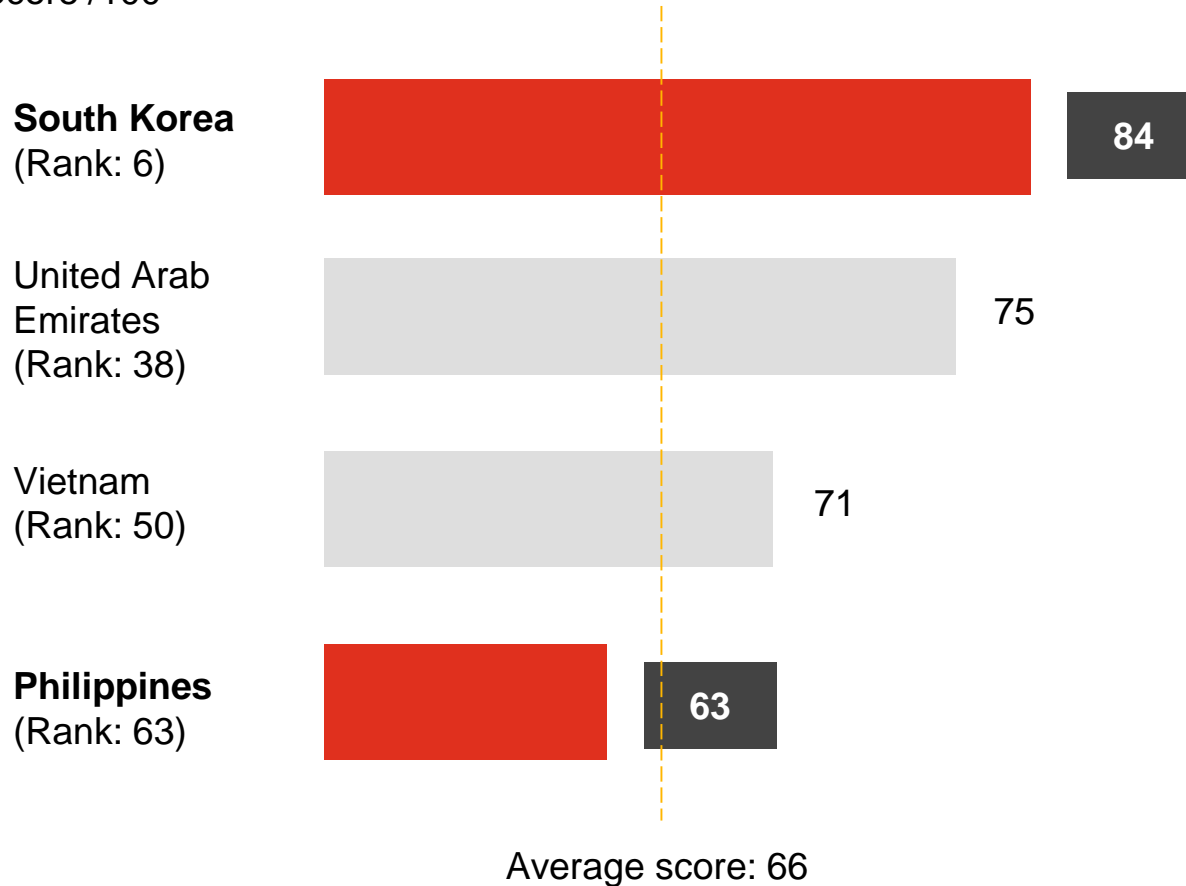


StaySafe contact tracing application

- Identifies communities with COVID-19 cases to avoid
- Records your current health condition and disclosed medical information
- Provides health tips and important protocols

However, while the internet may be a good medium for information dissemination, not everyone in the Philippines may have access to it.

Overall EIU 2020 Inclusive Internet Index score
Score /100



The Philippines ranks 63rd in the EIU 2020 Inclusive Internet Index score with an overall score of 63 out of 100

The overall score was determined by analyzing four main domains that encapsulate internet inclusion:

- **Availability:** quality and breadth of available infrastructure required for access and levels of Internet usage.
- **Affordability:** cost of access relative to income and the level of competition in the Internet marketplace.
- **Relevance:** existence and extent of local-language content and relevant content.
- **Readiness:** capacity to access the Internet, including skills, cultural acceptance and supporting policy.

This may suggest that other mediums of information dissemination should be explored to make health information more accessible and remote citizen cooperation more feasible.

The government should consider developing an integrated information campaign that maximizes the use of available communication channels.



Evaluate and maximize the current reach of the online information campaigns and contact tracing initiatives



Explore partnerships with television and radio broadcasting stations that can help widen the media coverage of important reminders and announcements (e.g. short program segments or commercials)



Consistently send text messages to mobile users at specific times about personal protective measures and hotlines of key health facilities

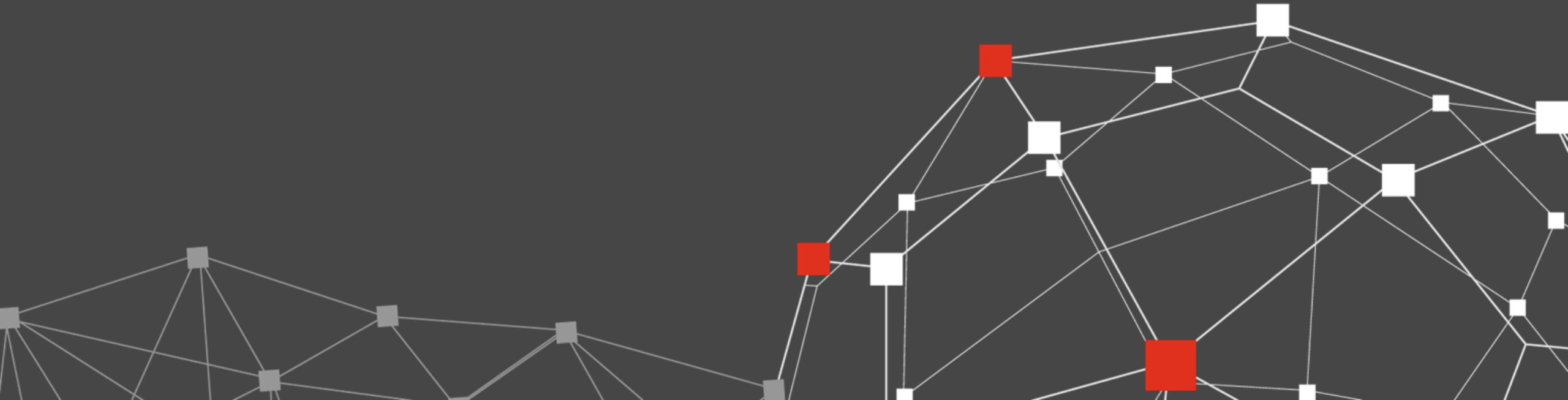
Important points:

- Consider the time and frequency of the online materials posted, the number of interactions with the posts, and the most appropriate types of posts that should be made in each social media platform (e.g. Facebook and Twitter)
- Information campaigns may also mention that people can anonymously report possible cases or exposures to the virus for contact tracing purposes via texts or other offline modes of communication.
- Continue to coordinate with National Government Agencies (NGAs), LGUs and barangay units to cascade and receive vital information.

Short-term measures (1-4 weeks)

Improve hygiene and sanitation

Giving importance to sanitation by both the government and individuals can help control the spread of COVID-19



The efforts of individuals observing good hygiene and of the government in ensuring sanitized public areas are both equally important

On personal efforts

Japan

Despite having a relatively aging population (who are highly vulnerable to infection), they were still able to flatten the curve in their confirmed cases. This is because good personal hygiene is deeply rooted in their day-to-day life. Even before the pandemic, Japan has already paid keen attention to cleanliness.

On government efforts

South Korea

The city government joined forces with the military to disinfect areas in Seoul. Cleaning authorities disinfected public buildings, trains, streets and other public areas.

Singapore

Towns have increased the regular cleaning and disinfecting of high human traffic areas and frequent touch points (lift buttons, notice boards, railings, etc.). Their National Environment Agency (NEA) has also informed Town Council supervisors of the proper way of cleaning, as well as the kind of disinfectant or cleaning solutions they should be using.

United Arab Emirates

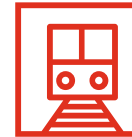
Performed a nationwide disinfection campaign where streets and public areas are sprayed daily between 8.00pm and 6.00am. Street furniture, waiting rooms at bus stops, benches, pedestrian tunnels and bridges, and other public touch points are cleaned as well.

Sources: The Lancet The Atlantic, National Environment Agency (SG), Department of Health, Department of Transportation
PwC

Situation in the Philippines



The Department of Health shared on their website interim guidelines to public and private offices, homes, and individuals on how to disinfect surfaces in open areas and on the kind of disinfectant solution they can use.



Before the ECQ began, the Department of Transportation announced that regular sanitation of the MRT and LRT stations and trains were being done.



Some areas already implemented disinfection initiatives in public areas but it has yet to be done on a large-scale basis, **especially at places with high human traffic and crowded slum areas.**

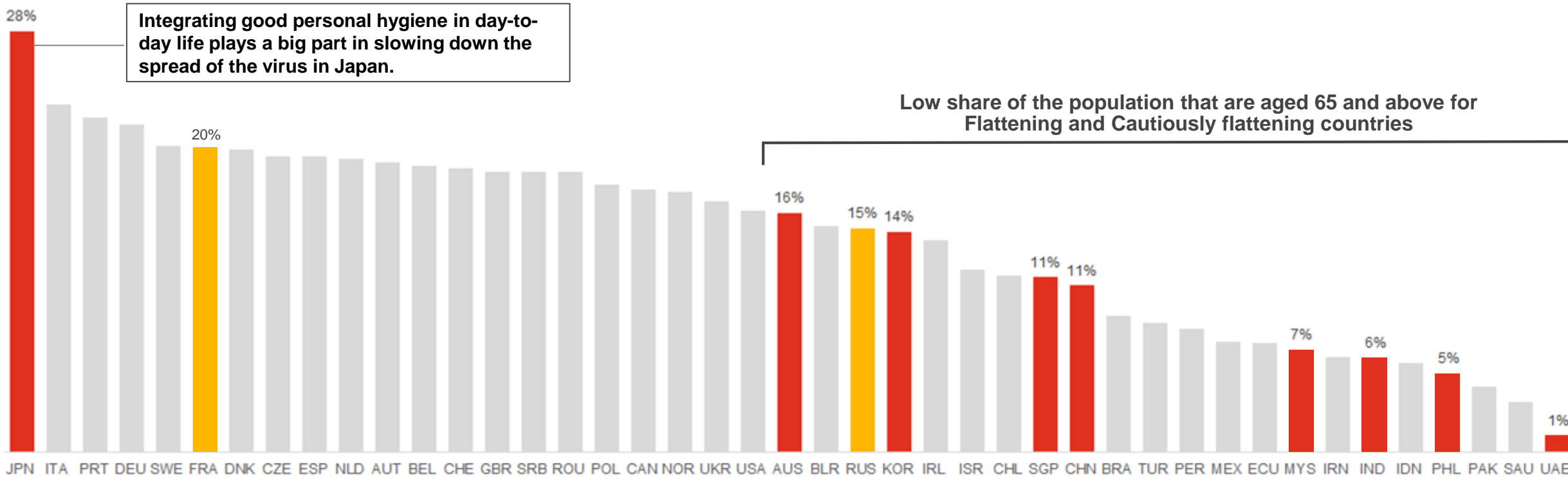


In preparation for easing the lockdown, the Department of Health (DOH) announced that minimum public health standards which are social distancing, wearing of face masks in public, mandatory checking of temperature, and access to regular use of disinfectants, **shall always be in place** in all areas.

A low share of aging population may help slow down the infection, but observing good personal hygiene also plays an important part.

Population from ages 65 and above
% of total population

Flattening Cautiously flattening Struggling



Japan's ideal hygiene practices and resiliency, deeply rooted in their culture, paved way for their phenomenon in this crisis

COVID-19 public guidelines

Japan's norms

Washing hands regularly with soap and water (or with alcohol)

Coughing or sneezing to a flexed elbow or tissue paper that's disposed properly

Observe social distancing

Basic hygiene is taught from an early age

Wearing masks when they have a cold or flu as consideration to others

Greeting etiquette is a bow

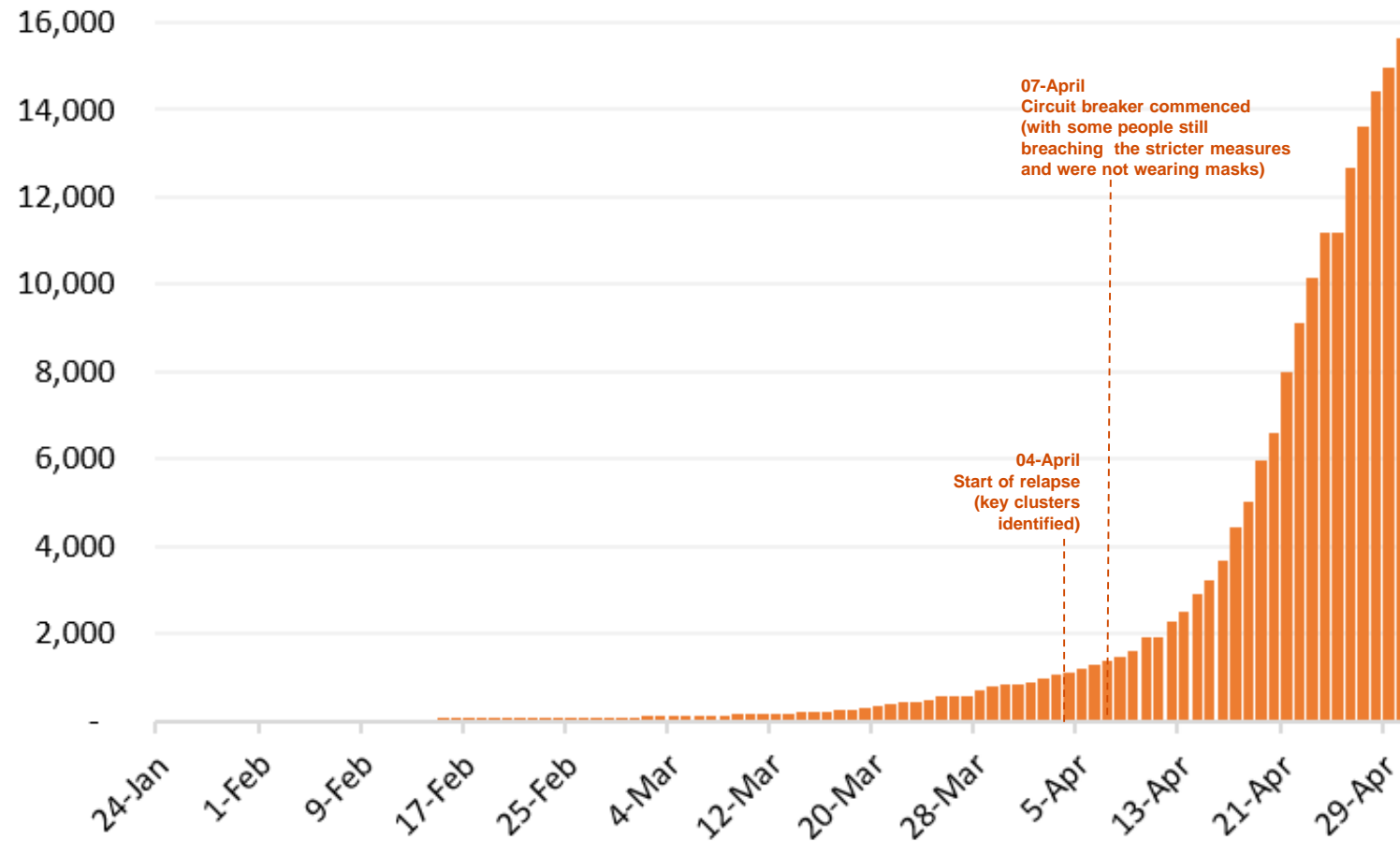
Disposes trash properly and even sorts them to facilitate recycling

The country's sense of hygiene is said to be rooted in Buddhism philosophy, which is one of the two major religions in Japan along with Shintoism. In Buddhism, cleanliness is a central part while in Shintoism, they believe that cleanliness is godliness. The Japanese regard cleaning the space around as an opportunity to practice Buddhism where washing the dirt off both physically and spiritually plays an important role in daily practice.

In addition, Japan is also known for developing innovative ways to combat global crises. As a country particularly vulnerable to typhoons and earthquakes, they prepare for such situations and has developed a wastewater recycling system (called Wota Box) that has ensured and provided people access to clean water during times of disasters. This is just one of Japan's many developments to make their country better prepared for other crises.

Re-transmission of COVID-19 could also occur when crowded areas or communities are overlooked, as seen in Singapore's relapse.

Total number of COVID-19 cases per day in Singapore



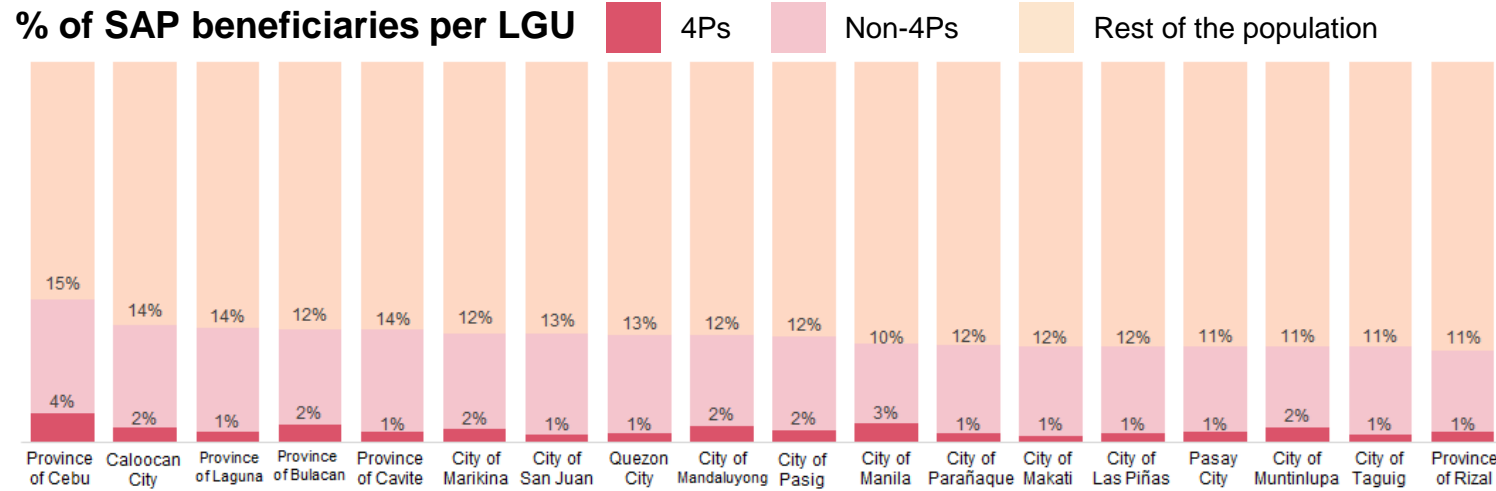
The country has been placed on a “Circuit breaker” after the resurgence in additional daily cases per day

Singapore has 1.4 million working foreigners out of a total workforce of 3.7 million. Of these, 300,000+ are migrant workers who live in clustered dormitories.

The surge in new cases reported daily are mainly rooted to these **clustered dormitories where social distancing guidelines are nearly impossible to achieve.**

The Government and Task Force have reacted immediately and placed the dormitories in total isolation. Medical facilities and triage clinics were also set up to conduct continuous testings of the workers that came in contact with confirmed cases.

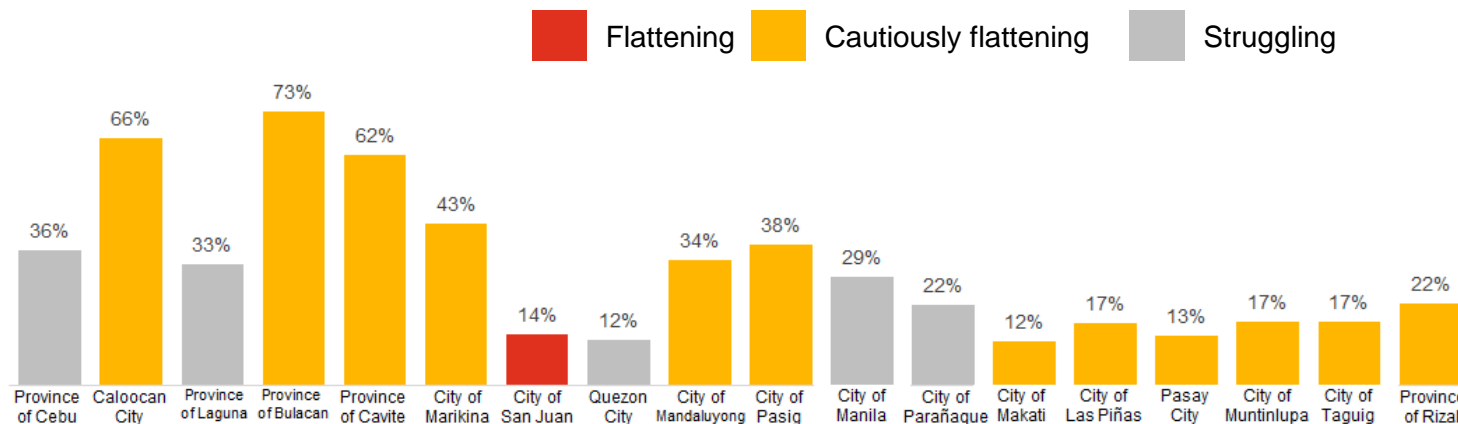
Locally, majority of the poor community are on a “no work, no pay” arrangement, which makes it a challenge for them to stay home.



Roughly only **40%** of the target beneficiaries in the most infected LGUs have received their social amelioration program (SAP) package.

Considering that most of these individuals are part of society’s “poorest of the poor”, situated in **dense communities**, and are on a “no work, no pay” arrangement, a prolonged “stay at home” policy may not be ideal for them. And if this group does not receive the allotted SAP for them, they will be left with no choice but to go out, forgetting about the strict social distancing and sanitation measures.

% of people who have claimed their SAP benefit per LGU



For the enhanced community quarantine to be successful, the prompt dissemination of SAP and sanitation aid to these people may help lessen the chances of them violating social distancing protocols.

Prompt action by the government and the utmost cooperation of the Filipinos are what we need to beat COVID-19



Adaptive measures should be laid down to ensure that social distancing will still be observed in public areas



Government should promote and support the disinfection of public areas (especially those areas moving forward to GCQ)



Make sanitation facilities available to special areas like crowded communities (which are also highly vulnerable to infection)



Violators of the minimum health standards set by DOH will be subject to fine or will be sanctioned accordingly

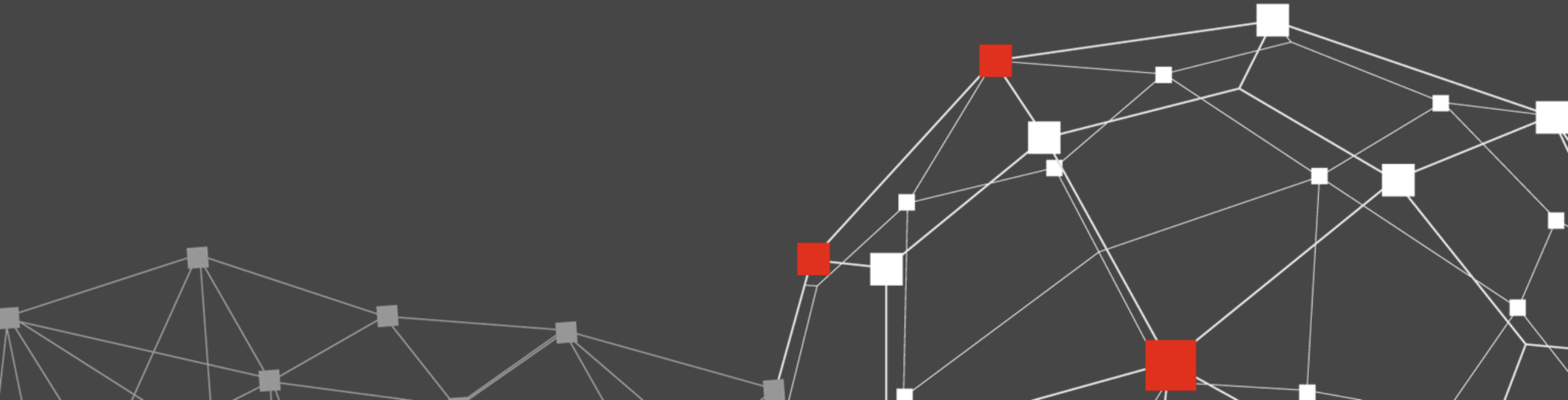
Important points:

- Adaptive measures can be placing distance markings on sidewalks of public areas with high human traffic.
- The guidelines and standards of DOH and DENR on Disinfection of Public areas must be properly conveyed to LGUs.
- Government may try tapping into Private-Public Partnerships that can aid in providing crowded areas with access to clean water and adequate supply of hygienic materials.
- There should be a nationwide orientation/training to the regulators who will be responsible for sanctioning violators. However, regulators must have a uniformed protocol on who can impose restrictions and sanctions, as well as perform their duties appropriately.

Short-term measures (1-4 weeks)

Conduct extensive and optimized testings

Coordination with the private sector can help enable COVID-19 mass testing



Early participation of private labs and medical companies boosted countries' mass testing efforts

South Korea

When Chinese scientists first published the COVID-19 virus' genetic sequence in January, at least four South Korean firms quietly began developing and stockpiling test kits alongside the government—well before the country had its first case.

A virus testing kit developed by Korean company Kogene Biotech Co Ltd was granted an emergency use authorization by the Ministry of Food and Drug Safety.

Vietnam

As soon as the first local case was declared, the Vietnamese government immediately contacted companies with experience on medical testing. Researchers at Vietnam's state-run Military Medical University worked with private laboratories to design a test kit. A license was handed to the private company to mass produce the kit.

Vietnam increased the number of accredited COVID-19 testing centers from three at the beginning of the outbreak in January, to 112 by April.

United Arab Emirates

Door-to-door testing was carried out with the help of private sector and the virus was effectively contained by sealing the Al Naif and Al Rais localities.

USA

The Food and Drug Administration (FDA) failed to immediately allow private laboratories to conduct COVID-19 tests, even as the government already declared the disease a public health emergency. This contributed to the rapid increase of cases in the country.

Source: ABS-CBN News, Aljazeera, Gulf News, Institut Montaigne, The National
PwC

Situation in the Philippines



17 accredited government and private COVID-19 testing centers



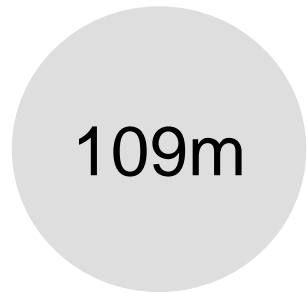
0.1% of population tested (0.81% of National Capital Region)



950 COVID-19 tests per million of population



Natural “herd immunity” may not be an option for the Philippines



Philippine
population



60% percent of the
population must be infected
to achieve herd immunity



On average, **19%** percent of
cases require hospitalization

For natural herd immunity to work in the Philippines, approximately 65.4 million individuals will have to be infected and around 12.5 million will require hospitalization. **The sheer number will likely overwhelm the country's healthcare system** (assuming 13,429 hospital beds, or 20% of the nationwide capacity, are available for COVID-19 patients).

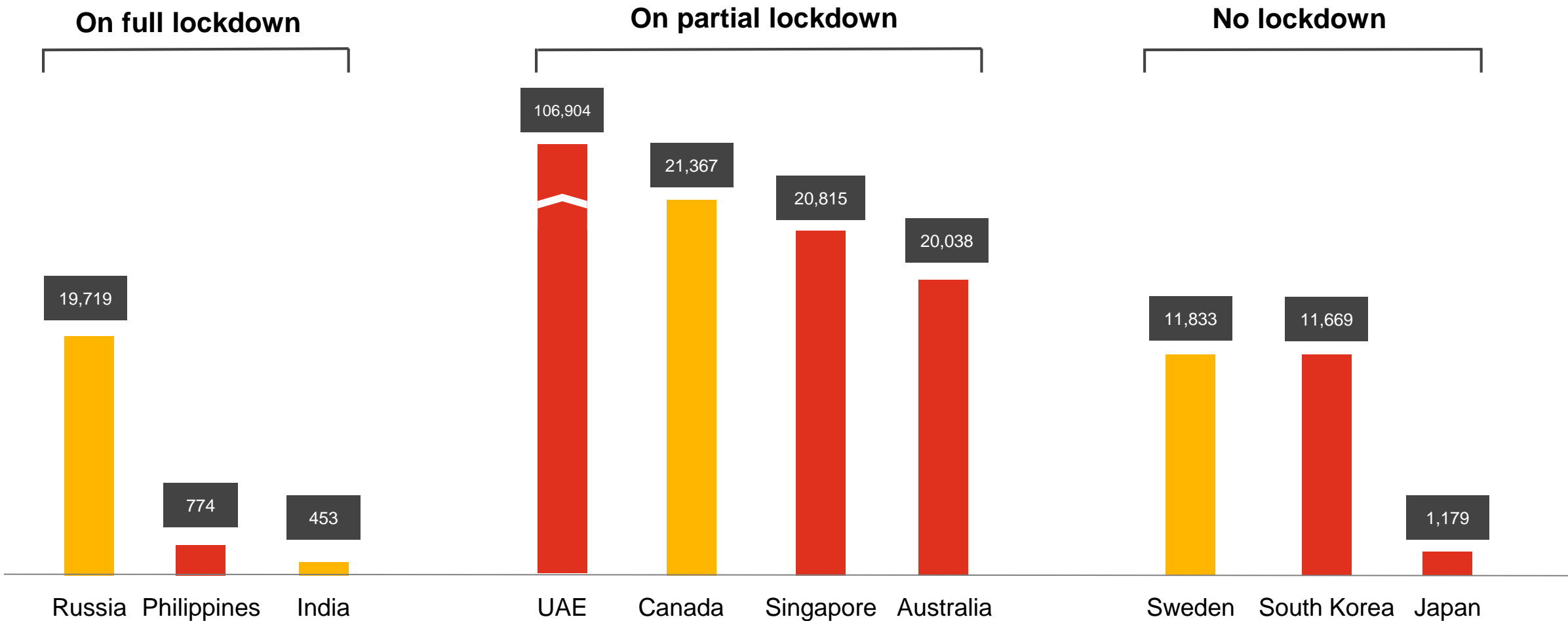
Here are areas to consider before implementing natural herd immunity:

- Possibly overwhelming of hospital and healthcare personnel capacity
- Possible increase in death rate, especially the vulnerable
- Medical experts and scientists are yet to be certain whether the body can develop antibodies that would prevent re-infection
- Post-recovery effects on the body

Mass testings are helping countries flatten the curve even with only partial lockdowns.

COVID-19 tests per million of population

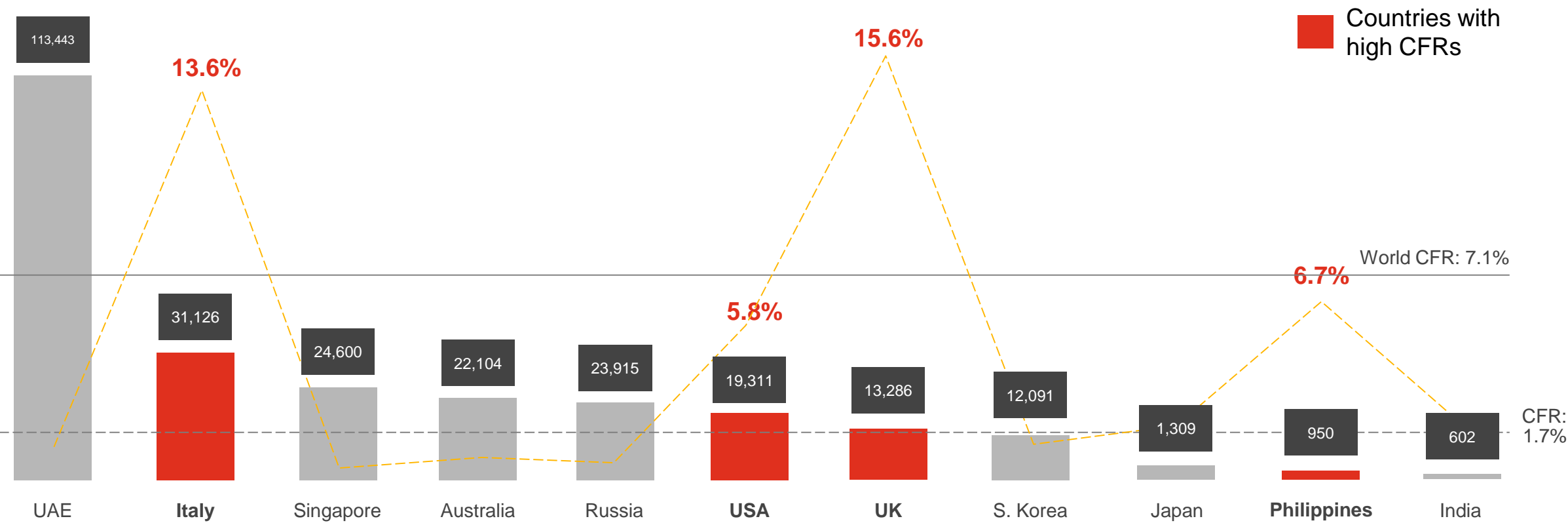
Flattening Cautiously flattening



Priority testing may not be an ideal approach because it may not reveal the entire scope of the virus transmission.

Having low tests per million and a high number of deaths may indicate that a country is only testing or prioritizing individuals who are most susceptible to getting the disease. **This is not the ideal case, as mass testing is critical to identify and break the chains of transmission.**

COVID-19 tests per million, case fatality rates (CFR) in %

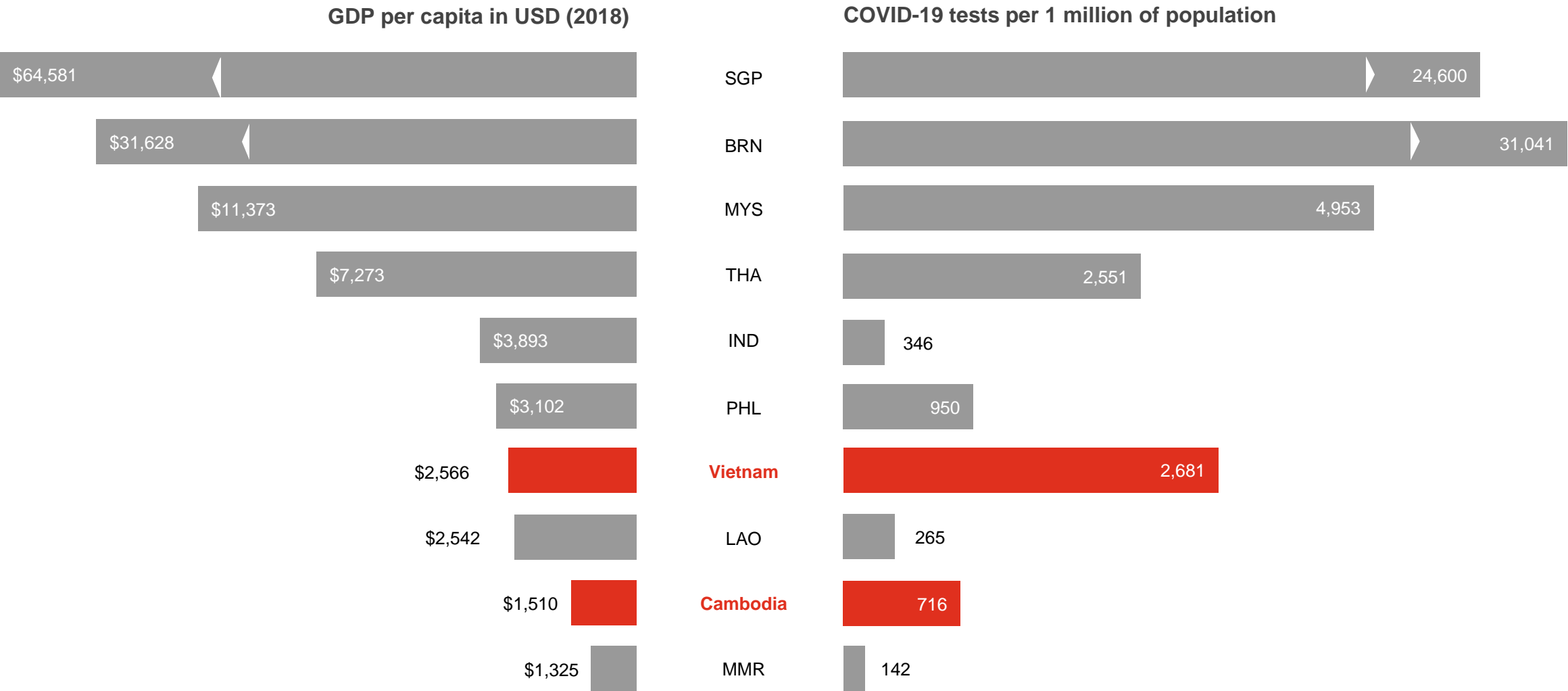


Note: The case fatality rate is calculated as the number of deaths over the number of confirmed cases.

Sources: Worldometers (as of 30 April 2020), World Bank

In general, countries in ASEAN with lower GDP per capita are conducting fewer tests

However, Vietnam and Cambodia are doing more with less. **The Philippines may reconsider allocating its resources to conducting more testing.**

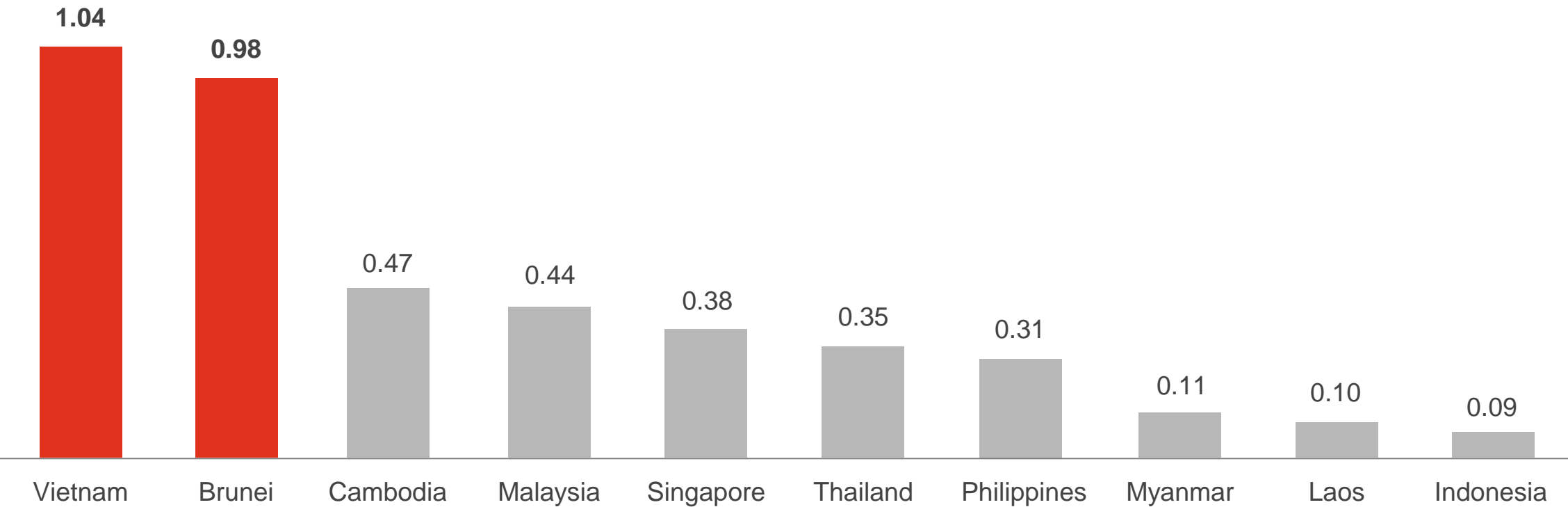


Sources: Worldometers (as of 30 April 2020), World Bank
PwC

Taking a closer look, Brunei and Vietnam are conducting more tests per dollar of GDP per capita

Brunei conducts the most tests per million among ASEAN countries. Vietnam has been receiving praise within the international community for its effective response to the pandemic, including maximizing its resources for mass testing.

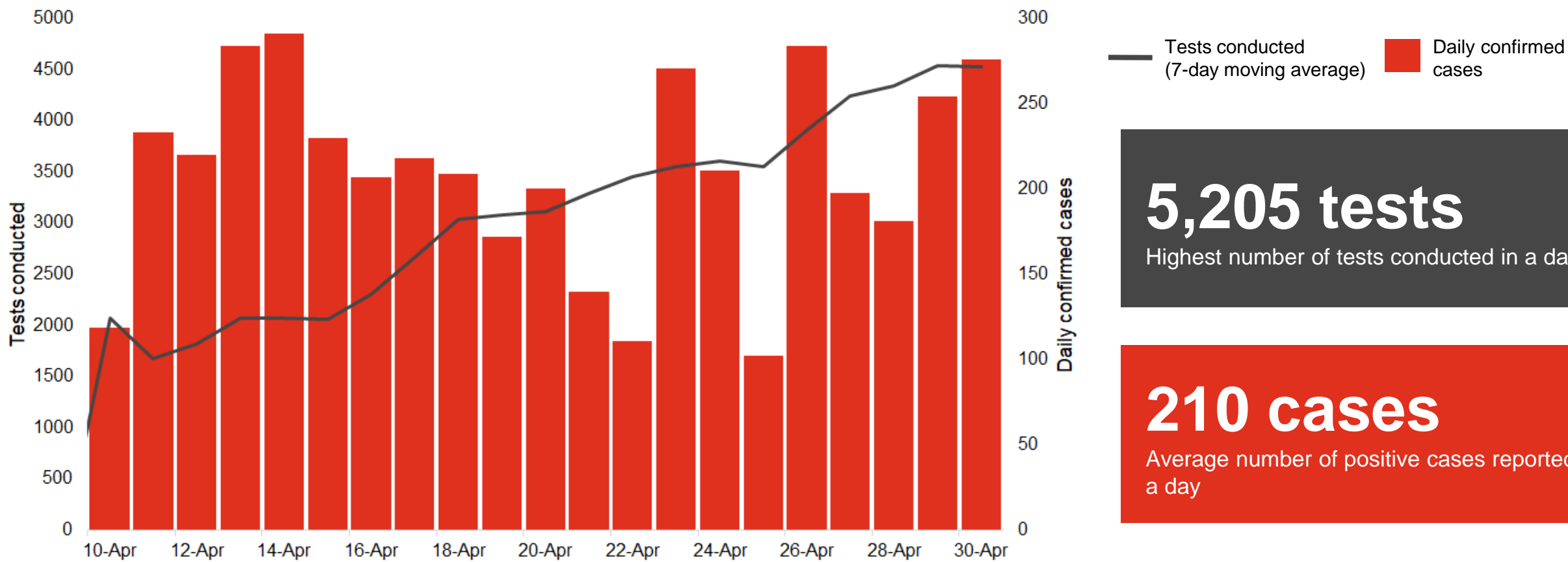
COVID-19 tests (per million) per dollar of GDP (per capita)



Sources: Worldometers (as of 30 April 2020), World Bank
PwC

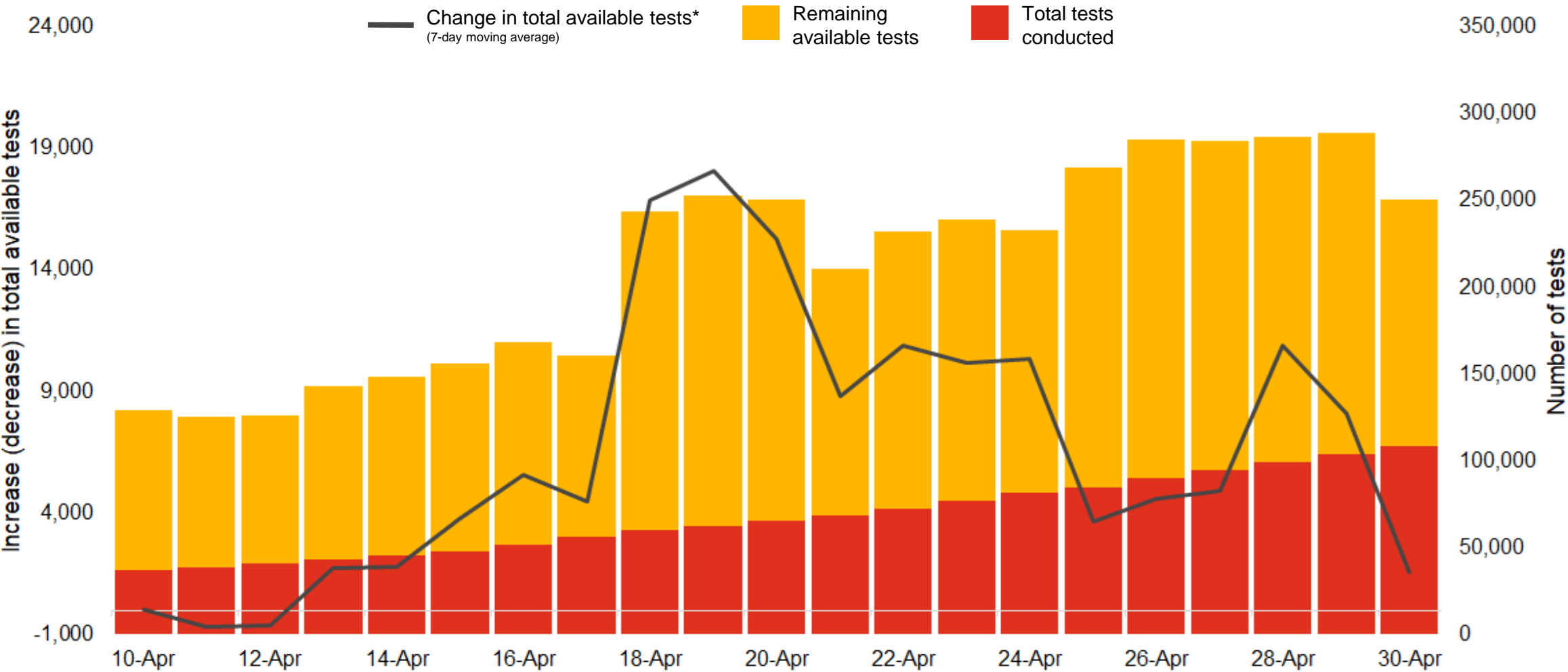
The Philippines has grown its testing capacity with no significant increase in cases

Tests conducted and daily confirmed cases for the past three weeks



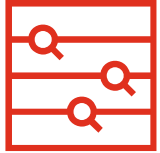
Source: Philippine DOH COVID-19 Data Drop as of 30 April,2020

However, we may not be acquiring tests as we used to as shown in the decline in change in total available tests

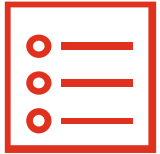


*Total available tests is the sum of remaining available tests and total tests conducted.
Source: Philippine DOH COVID-19 Data Drop as of 30 April,2020

The Philippines should tap into the private sector in the fight against COVID-19



Actively seek hospital, clinic, and pharmaceutical groups in the private sector which might be able to help with testing efforts



Streamline the processes for approval and mass production of test kits by private companies



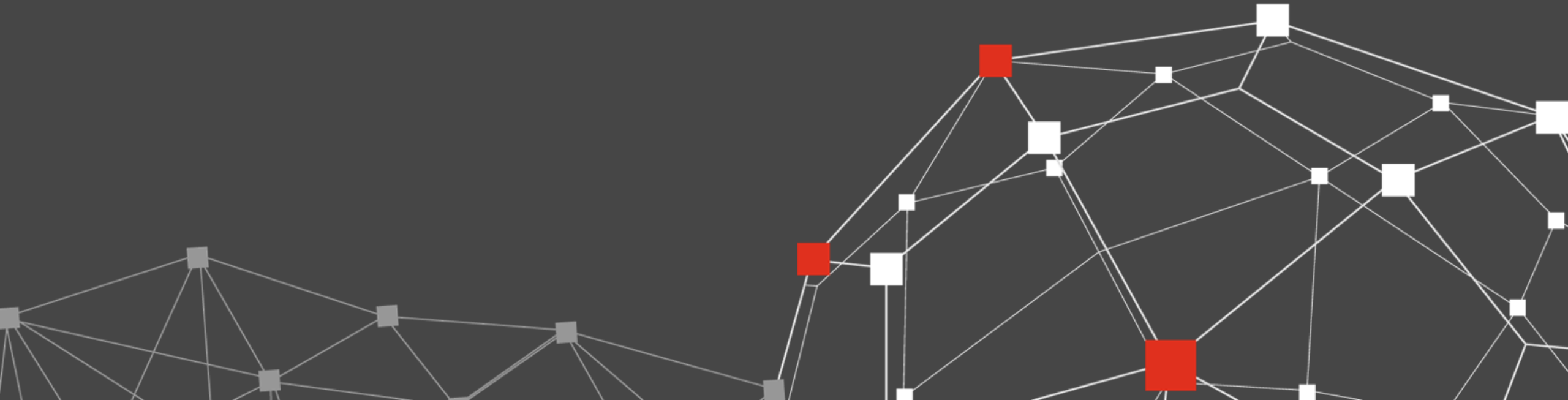
Expedite the accreditation of additional testing facilities to expand the country's mass testing capacity

Important points:

- Consider ways to incentivize private firms that lend their resources and expertise.
- Even with a streamlined process, continue to impose stringent quality control measures for privately produced test kits.
- Ensure that candidates for additional testing facilities meet all safety standards, as these are important to prevent the accidental spread of the virus within the facilities.

Medium-term measures (1-6 months)

Certify public areas or establishments that comply with a set of cleanliness standards



As more establishments are expected to open overtime, ensuring the cleanliness of places with high human traffic should be a top priority.



The **SG Clean Campaign** was launched on 16 February 2020 by the National Environment Agency (NEA). It aims to foster collaboration among the country's stakeholders and the public to raise the standards of personal and public hygiene, public health, and social responsibility. **It also seeks to raise public confidence on the cleanliness of publicly accessible venues with high human traffic.**

Initiative highlights

Informs individuals about the **proper hygiene practices to observe** such as hand washing and disposal of personal litter

Certifies different types of premises with a **premises-based sanitation and hygiene indicator** if a premise meets sector-specific sanitation and hygiene checklists

Participation snapshot (as of 13 March 2020)



5,000 premises certified (40% are hawker and market stalls)



1 in 5 hawker and market stalls is certified SG Clean



34 premises certified from the tourism and lifestyle sectors

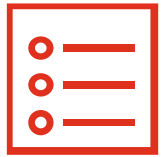


95% of schools and premises under the Ministry of Education have been certified

Establishments expecting high human traffic should be periodically assessed by the government based on a set of standards on cleanliness.



Develop and disseminate sector-specific cleanliness standards for target industries or establishments



Establish concrete steps to execute the evaluation process from the government's and establishments' perspectives



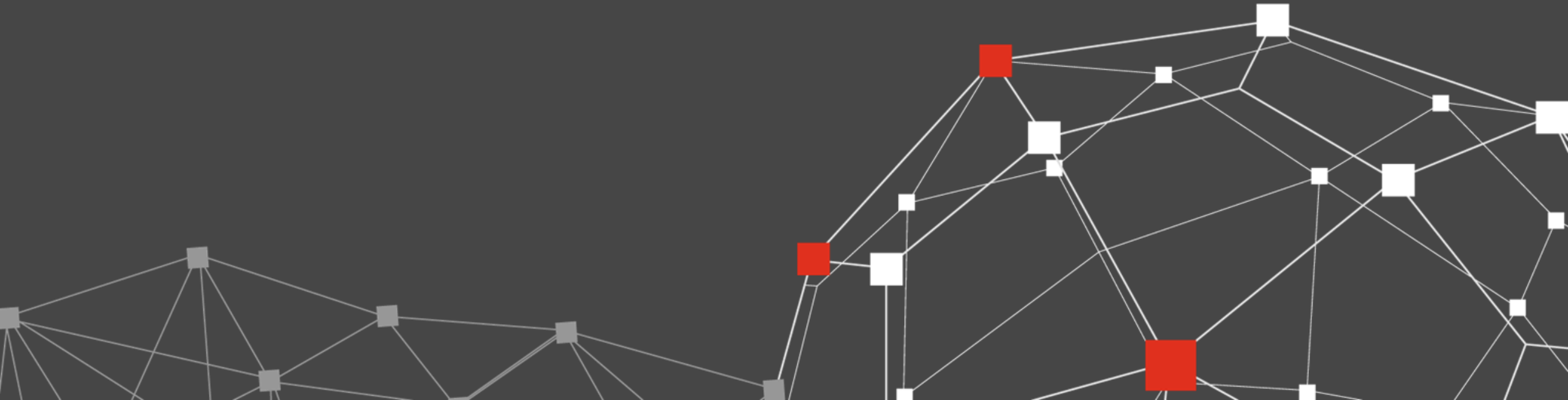
Explore methods to streamline the evaluation process to avoid disruption of key business and economic activities

Important points

- Consider if establishments should not be allowed to operate beyond GCQ provisions if no certification has been acquired yet.
- Consider setting corrective measures or informational briefings in case of non-compliance.
- Suggested establishments covered could be, but are not limited to, F&B establishments, schools, transport terminals, integrated leisure facilities and hotels.

Long-term measures (6 months or more)

Update LGU development plans



Upgrading development plans at LGU level can improve our country's ability to promptly respond to future crises

One of the key lessons brought upon by this pandemic is that the ability to respond immediately and appropriately to a crisis can help in keeping an outbreak under control.

It is important to learn from experience and to use these lessons in updating development plans or in creating a new plan such as a crisis preparedness program. Doing this initiative will better equip LGUs withstand future crises and at the same time, better allocate what they have to serve better the community and their people.

According to the Commission on Audit (COA), poor planning and the lack of it is one of the reasons why LGUs were underspending.

Overall, updating plans will help LGUs allocate their resources more effectively, and also help the country's government be aware of the areas they can utilize and areas that may need more of their focus.

However, on a study done by the Philippines Institute for Development Studies, they stated that outdated development plans are common in Philippine municipalities.

Situation in the Philippines

More than 50% of municipalities have outdated development plans.

95% of Comprehensive Land Use plans are outdated

60% of Comprehensive Development Plans are outdated

70% of Local Development Investment Programs are outdated

Upgrading development plans at LGU level can improve our country's ability to promptly respond to future crises



Revise the multi-year development plans and investment programs of LGUs



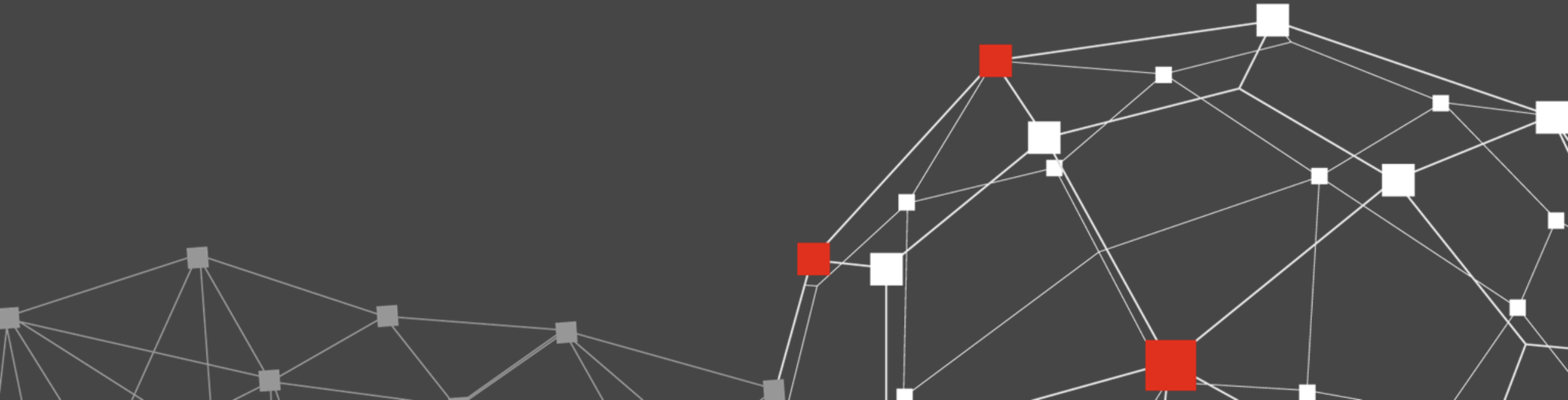
Consider upskilling and digitizing of cities and municipalities as part of the priority programs, projects and activities

Important points

- Consider revising investment programs in upgrading health systems and improving future pandemic response, and other critical infrastructure projects.
- Digitization can improve transparency, which can further help the LGU assess its position during a crisis. It can also support in giving up-to-date information per LGU that may help the national government keep track of local areas that may need more of their attention or areas that they can utilize.

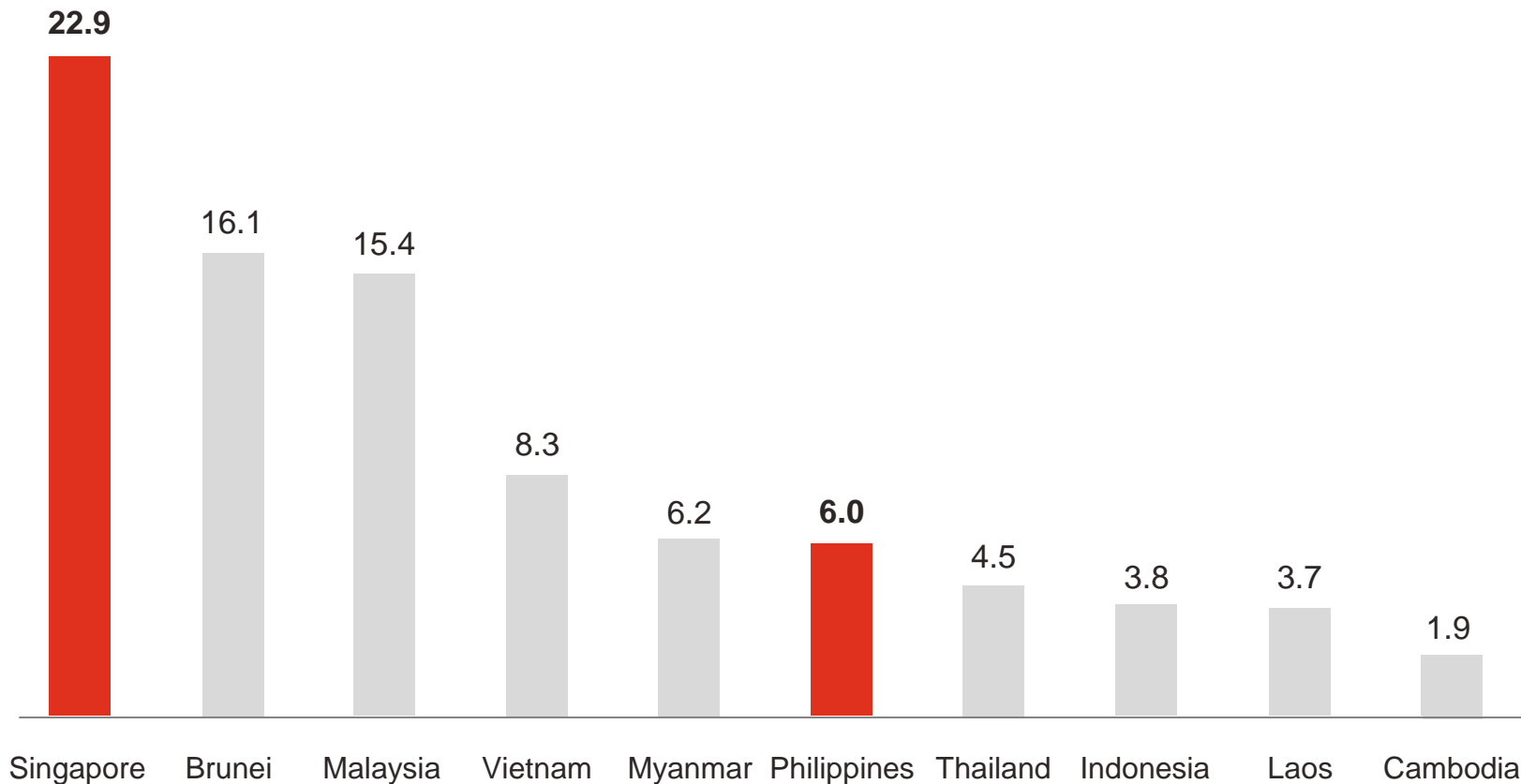
Long-term measures (6 months or more)

Improve healthcare system capacity



Doctors and medical workers – a key component of the Philippines’ healthcare system – are already stretched beyond their limits.

Number of medical doctors in the ASEAN region*
per 10,000 population



*Data retrieved is as of 2017 and 2016, except for Malaysia (2015) and Cambodia (2014)
Source: World Health Organization, CNN Philippines
PwC

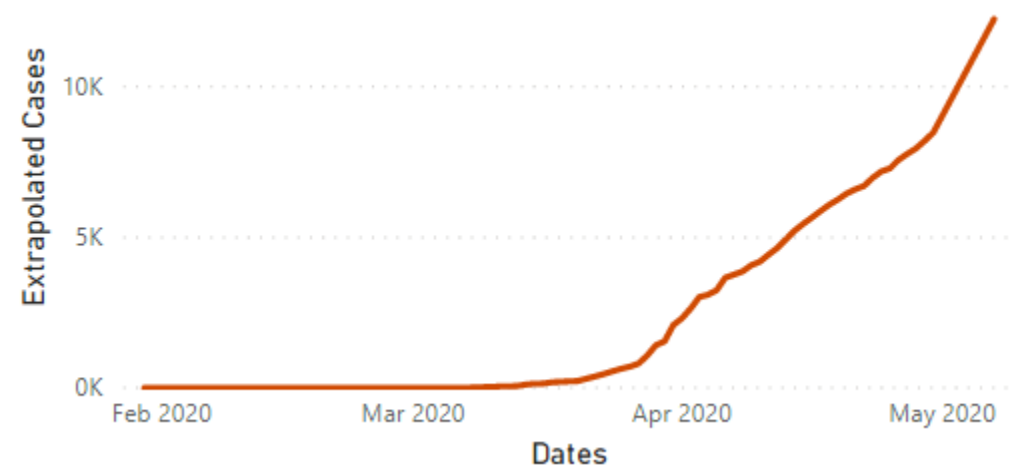
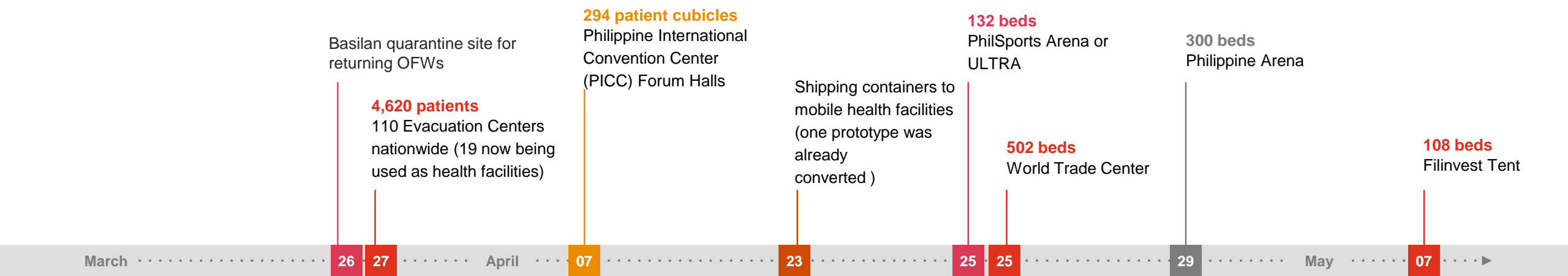
On 27 April, the DOH announced that:

- **1,245** healthcare workers have been infected
- **27** healthcare workers have passed away
- The infection rate among healthcare workers is **16%** (average in the Western Pacific region is 2-3%)

Even before the COVID-19 outbreak, the Philippines is already known to have a low number of medical doctors per 10,000 of the population compared to its ASEAN neighbors.

As COVID-19 continues to overwhelm several hospitals and health facilities across the country, the limited number of doctors and medical workers are further incapacitated as more of them are infected by the virus.

Additional medical facilities may be needed to accommodate the increasing number of confirmed cases.



Several public buildings and sites are converted to health facilities as recommended by the DPWH. Buildings like the PICC, PhilSports Arena, World Trade Center and Philippine Arena are now fit to accommodate COVID-19 patients while the construction of Filinvest Tent facility is expected to be completed on 7 May.

Even with the additional medical facilities and the trend in increase in number of confirmed cases, the Philippines may not have enough medical facilities to accommodate COVID-19 patients.

Ultimately, upgrading our healthcare capabilities will help us better manage the sudden influxes of outbreak cases in the country.



Allocate a larger healthcare budget, especially for medical research and development of crisis preparedness plans



Invest in putting up more healthcare facilities and improve its working conditions or environment



Revisit compensation and benefits provided to healthcare workers to make it more competitive

Important points

- Allocating enough budget for healthcare and investing in medical research will help the country be more prepared and capable of handling future pandemics or crises.
- The Philippines produces a lot of nurses every year. However, better pay and working conditions abroad are the main reasons why nurses and doctors continue to leave.

Source: Bloomberg



No single measure alone will be enough to prevent the unmanageable surge of cases that may overwhelm our healthcare capacity.

| | Immediate response | | | |
|--|---|---|---|--|
| | Control the number of deaths | Have real-time and frequent information dissemination | Improve hygiene and sanitation | Conduct extensive and optimized testings |
| Short term (1-4 weeks) | For the government to implement additional measures for the aging population to mitigate the COVID-19 death toll | For the government to develop an integrated information campaign that maximizes the use of available communication channels | For the government to take prompt actions in sanitizing public areas along with the utmost cooperation of individuals | For the government to coordinate with the private sector in developing test kits and carrying out mass testing efforts |
| Medium term (1-6 months) | Certify public areas or establishments that comply with a set of cleanliness standards For the government to periodically assess the level of cleanliness observed in various establishments and for the establishments to develop a culture of cleanliness | | | |
| Long term (6 months or more) | Update LGU development plans For our local areas to be more prepared and more agile in responding to crises by having developed crisis preparedness programs | | Improve healthcare system capacity To help us better manage the sudden influxes of outbreak cases on a national level | |

COVID-19 is a battle of every human and every unit of government, but to ultimately win against it, we would need collective effort and solidarity.

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