



HOSPITAL PREPARATION TO RESPONSE COVID-19 PATIENT SURGE AND NEW NORMAL

Setiawan Jati Laksono

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George Washington (1799)



“.....make them believe, that offensive operations, often times, is the surest, if not the only (in some cases) means of defense.”

Why we should prepare?

- The COVID-19 outbreak will test the resilience of our health care system. Planning for managing patients and our workforce must begin in full force
- Best-case estimates suggest that COVID-19 will stress bed capacity, equipment, and health care personnel in hospitals in ways not previously experienced
- How can health systems prepare to care for a large influx of patients with this disease?

Non-negotiable measures during “New Normal”

- WHO emphasized that the following interventions should continue: expanded testing of suspected cases; rapid isolation of suspected and confirmed cases; appropriate clinical care for those affected with COVID-19; quickly tracing and quarantining all contacts; and continuous implementation of proven public health measures, including frequent hand washing, wearing re-usable masks in public, and maintaining individual-level effective physical distancing.
- WHO reiterated that these are non-negotiable components of living with COVID-19 in 2020 and 2021 as the “new normal”.

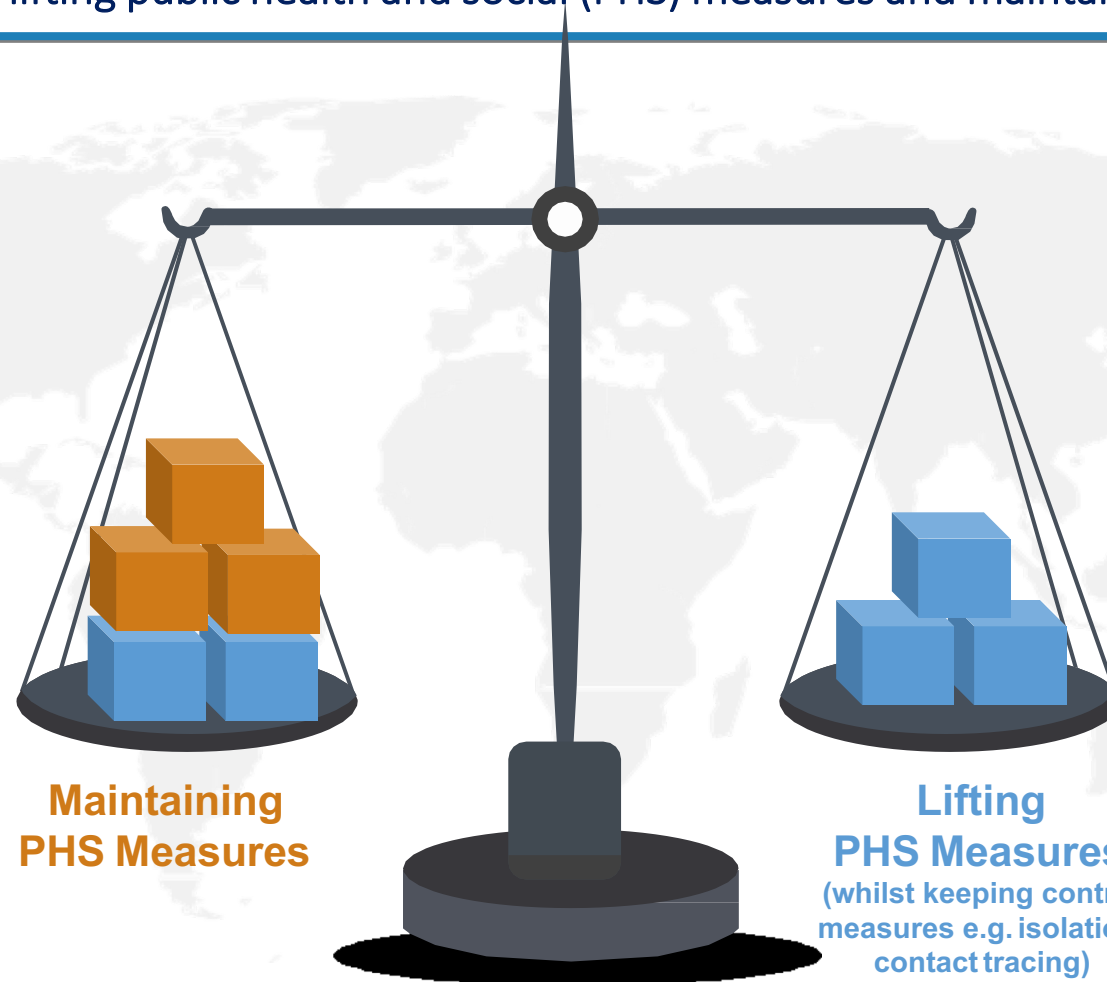
Selected criteria to assess COVID-19 transmission: Health System

Health System criteria		
1	All COVID-19 patients can be managed according to national standards	This indicates that the health system has returned to a state where all conditions (staff, beds, drugs, equipment, etc.) are there to provide the same standard of care that existed before the crisis
2	All other patients with a severe non-COVID-19 condition can be managed according to national standard	
3	There is no increase in intra-hospital mortality due to non-COVID-19 conditions	
4	The health system can absorb or can expand to cope with at least a 20% increase in COVID-19 case load	This indicates that the system would be sustainable even if it had to absorb a surge in cases resulting from loosening public health and social measures. This includes sufficient staff, equipment, beds, etc
5	An Infection, Prevention and Control (IPC) focal point is available in all health facilities (1 full-time trained IPC focal point per 250 beds) and at district level	This indicates strong capacity for coordination, supervision and training on IPC activities, including in primary health facilities.
6	All health facilities have screening for COVID-19	This is for ensuring that all patients who come to a facility are assessed for COVID-19 in order to prevent health associated infections.
7	All acute health facilities have a mechanism for isolating people with suspected COVID-19	The health system has sufficient capacity to isolate all patients with COVID-19

Trade-off in Decision Making for Lifting COVID-19 Restriction Measures

Advantages of lifting public health and social (PHS) measures and maintaining them

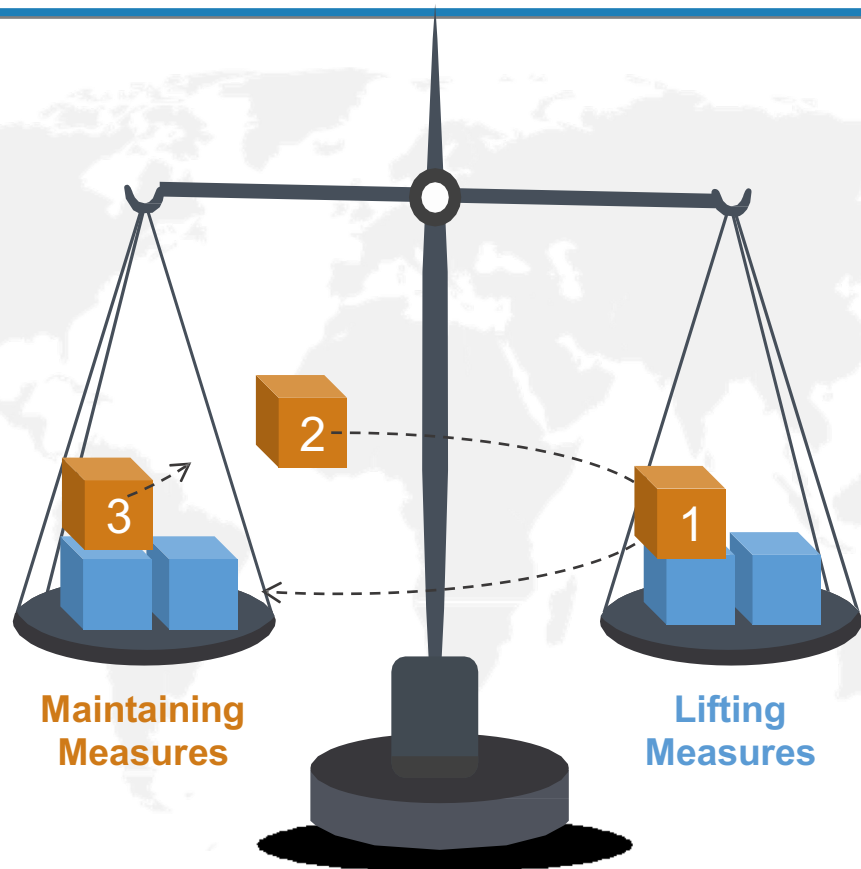
- Public health benefit of protecting the vulnerable, reducing risk of transmission, slowing down the infection rate, etc.
- Managing the burden on the health system and health workers
- Avoiding rapid resurgence of second wave with excess untreated deaths and infections due to vulnerabilities in community




- Mitigating the emerging economic crisis and the challenges for employers, businesses and economies
- Relieving social consequences on individuals, families and communities
- Reducing implications on food security, global travel and trade, job security, education continuity, etc
- Develop herd immunity to reduce chance of resurgence of second wave in the long term

Guiding Principles of Decision Making

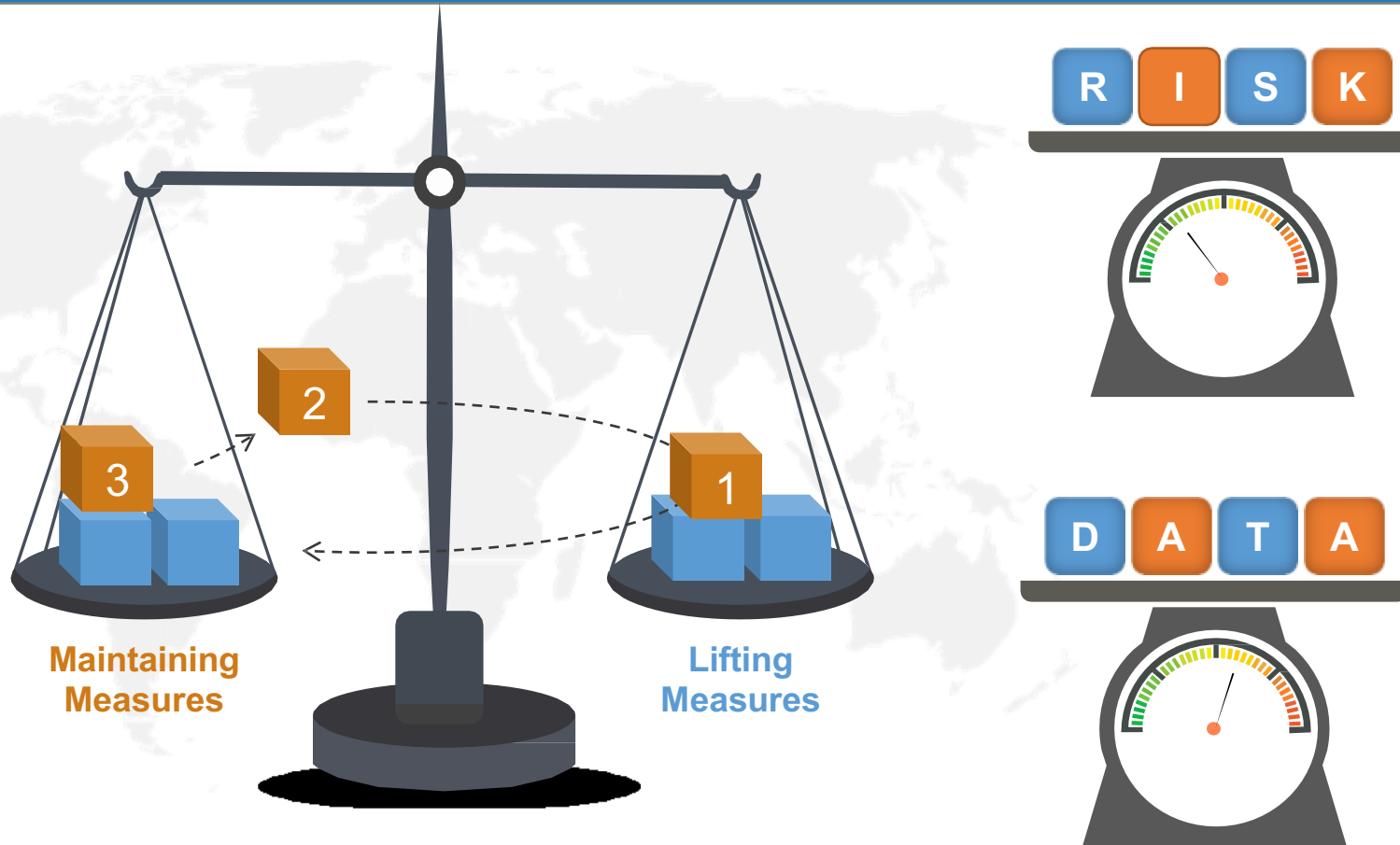
Deciding which measures and in which order measures could be lifted should be based on a number of considerations:



-  **Not all at once, start with sub-national level** and in areas with lowest incidence.
-  **Basic individual measures** should be maintained.
-  **Measures with the highest level of acceptability and feasibility** and the fewest negative consequences could be introduced first and removed last
-  **Lifted in a controlled, slow, and step-wise manner**
-  **Protection of vulnerable populations** should be central in the decision to maintain or lift a measure.
-  **Some measures could be lifted first** where the population or individual density is lower
-  **May need to continue to loosen or reinstate** measures throughout the pandemic.

Guiding Principles of Decision Making

Risk assessment and quality epidemiological data are at the core of decision making



Careful **risk assessment** and **staged approach** based on **data** is needed to balance the benefits and potential harms of adjusting these measures, so as not to trigger a resurgence of COVID-19 cases and jeopardize the health of the population.

Planning for the “new normal” and prolonged surge in health care needs

- As a second Covid-19 wave is possible and likely, need to care for Covid-19 patients safely, while establishing the “new normal” for routine care
- During recovery, primary care providers may be overloaded by patient volume arising from new and existing unmet need
- Because of workforce scarcity and funding limitations, providers may be unable to accommodate secondary surges in demand

Source: CDC 2020

Hospital Preparation To Response COVID-19 Patient Surge:

- Develop a Strategy for Patient Volume and Complexity
- Protect and Support Health Care Workers on the Front Lines
- Define a Strategy to Allocate Health Care Resources
- Develop a Robust, Transparent, and Open Communication Policy

DEVELOP A STRATEGY FOR PATIENT VOLUME AND COMPLEXITY

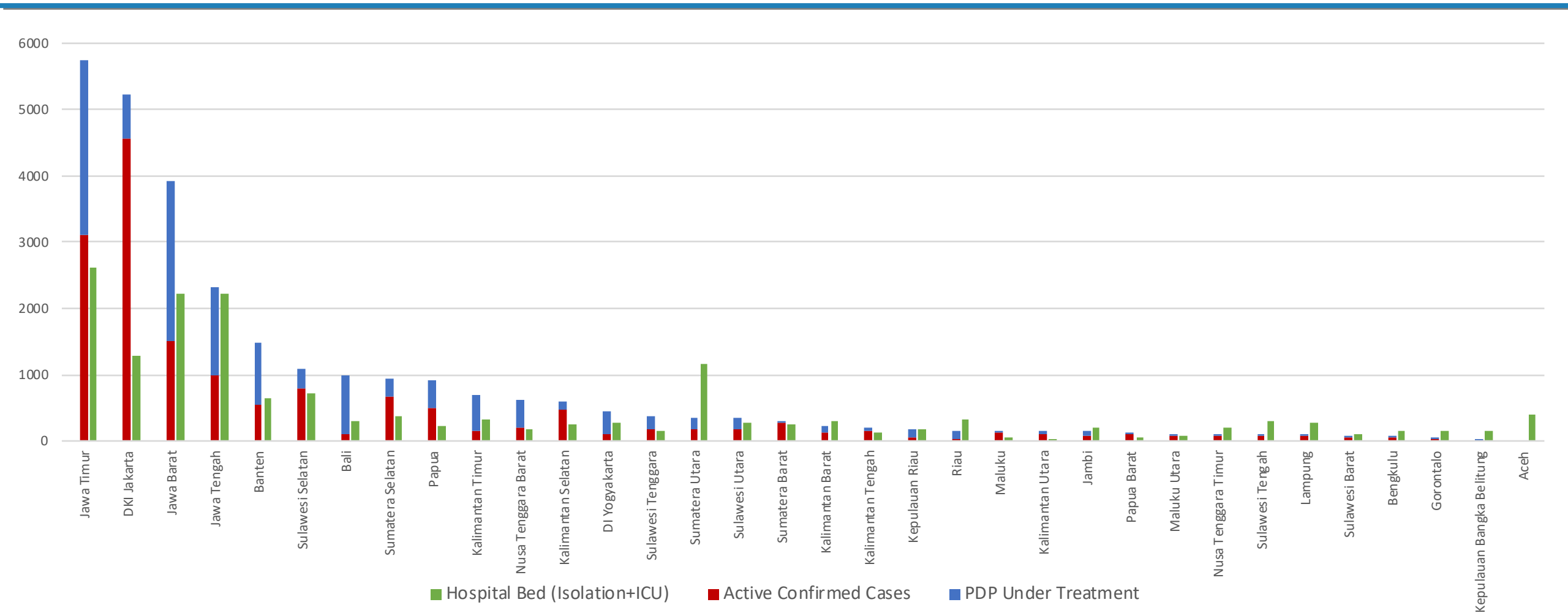
Develop a Strategy for Patient Volume and Complexity

- Approximately 16,633 critical care and isolation beds, are available in Indonesian hospitals today.
- Conservative estimates suggest that we may need almost twice times this amount should the COVID-19 pandemic is sustained. (Current number of PDP and confirmed patients under treatment 28,241 cases)
- Because some patients will be critically ill and need scarce resources, such as extracorporeal membrane oxygenation and mechanical ventilators, hospitals must prepare now for how they will triage patients, allocate resources, and staff wards.

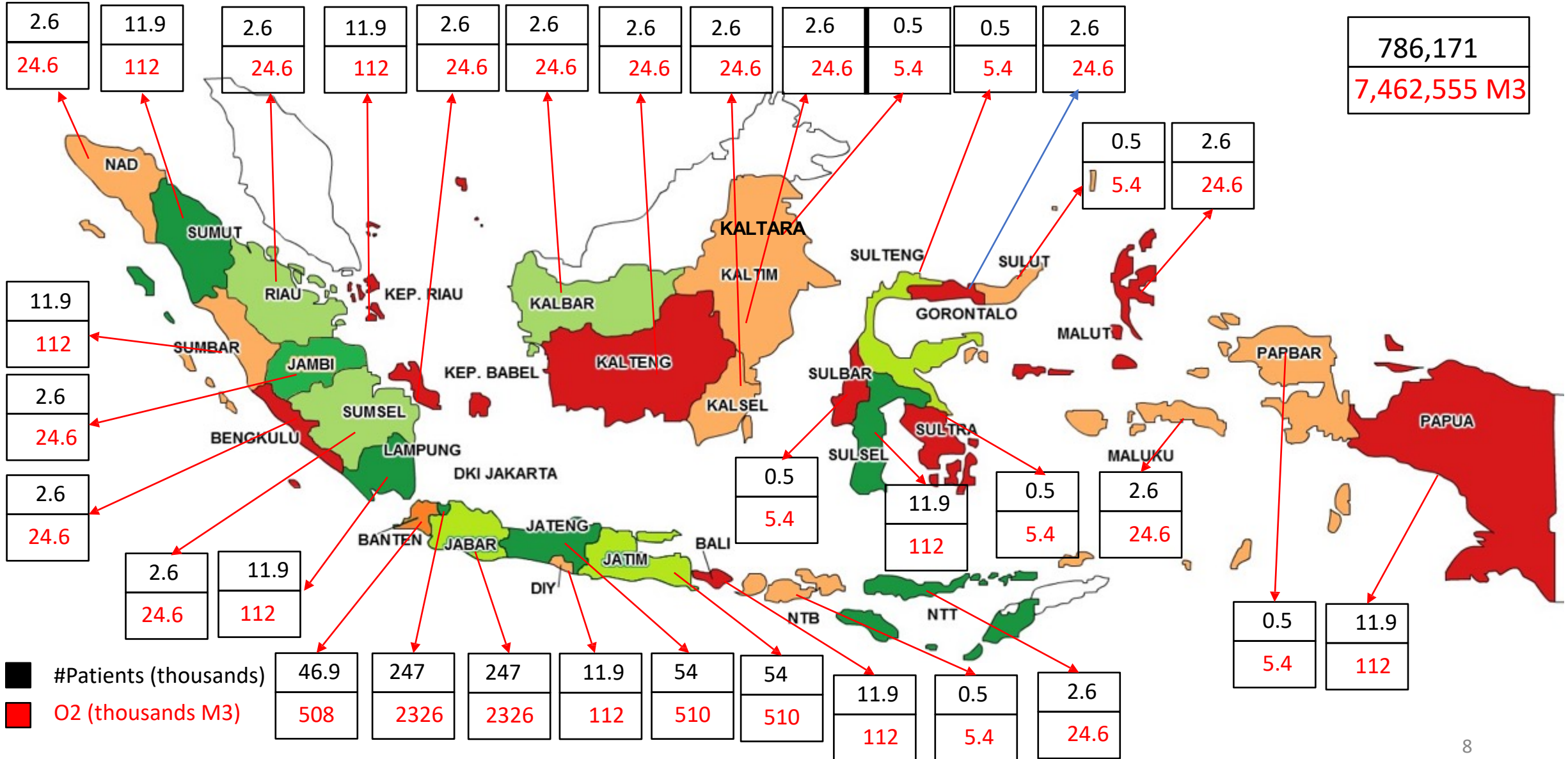
Essential Components of a Hospital Preparedness Plan for COVID-19

Component	Function
Full-time emergency manager	To coordinate and oversee COVID-19 operations
Operational task force	Composed of key frontline personnels (e.g. emergency physicians, critical care physicians, nurses and infectious disease physicians), along with task force managers to support activities such as triage, staffing and facilities management
Well resourced infection prevention control team	Develop and revise PPE protocols and backup plan in the event of shortages, facilitate training, educate about transmission risks, perform exposure investigations and track epidemiology within hospital.
Bed capacity plan	Aim to be able to free up at least 20% of beds for an influx of patients at each facility, develop plans for critically ill patients and managing patients who may require advanced therapies.
Networking	Includes all district and province public health providers and emergency management to coordinate and fulfil bed capacity demands

Cases Under Treatment (Active Confirmed Cases + PDP Under Treatment) & Hospital Bed (Isolation+ ICU)



Provinces Oxygen Needs (in Cubic Metres) if Attack Rate 3.6%



GAPS FOR ESSENTIAL O2 EQUIPMENT

Items	Total quantities	Availabilities	Gaps
Pulse oximeter - fingertip	197,787	NA	?
Concentrator O2, 10 L, with accessories	247,226	NA	?
O2 need (m3)	7,462,555	NA	?
Flowmeter, Thorpe tube, for pipe oxygen 0-15L/min	247,226	NA	?
CPAP, for neonate, with accessories	2,487	NA	?
CPAP, for adult, with accessories	19,789	NA	?
Clinical Chemistry Analyser, portable (PoC)	742	NA	?
Patient monitor, multiparametric w/ECG, with accessories	247,226	NA	?
Self-inflating bag, adult/child	6,204	NA	?
Self-inflating bag, child/neonate	6,204	NA	?
Patient ventilator, intensive care, for adult, paediatric and neonate w/breathing circuits	29,876	8,413	21,463
High Flow Nasal Cannula, with accessories	247,226	NA	?

Note: Details for WHO oxygen survey check list and guidance for HFs available at WHO Indonesia website (Bahasa version)

Availability, Needs and Gaps: Ventilators

Province	Need	Available	% Availability
Jawa Barat	6105	1215	20%
Jawa Timur	4023	940	23%
Jawa Tengah	3382	1154	34%
DKI Jakarta	1915	1071	56%
Banten	1645	328	20%
DI Yogyakarta	500	239	48%
INDONESIA	29876	8413	28%

Sources: Gugus Tugas 19 April 2020

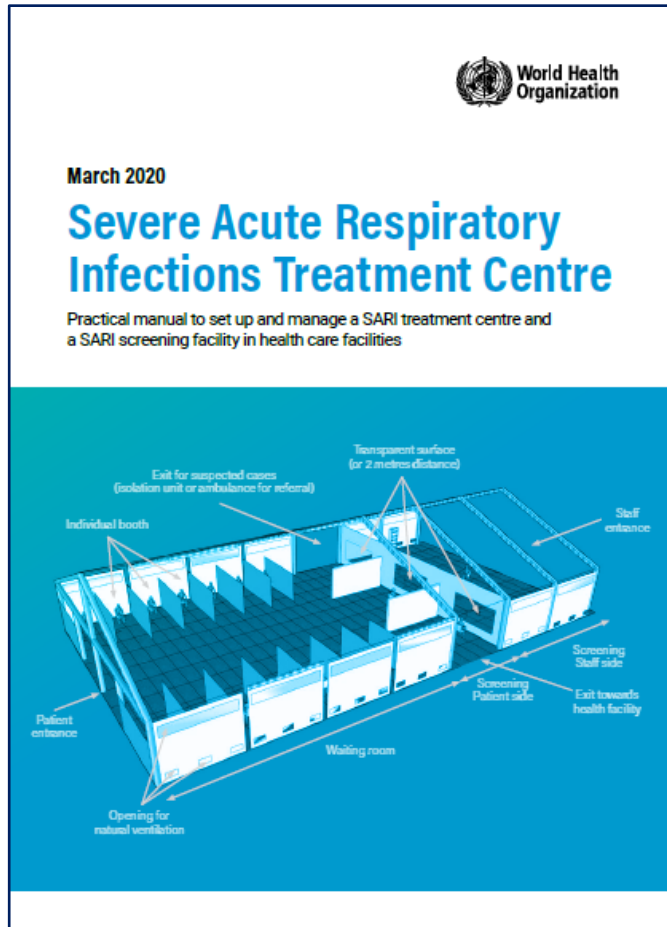
What should hospitals do in case of patient surge?

- Hospitals should attempt to geographically cohort patients with COVID-19 to limit the number of health care personnel exposed and conserve supplies.
- It may be necessary to use innovative approaches, such as converting single rooms to double occupancy; expediting discharges; slowing admission rates; and converting spaces like catheterization laboratories, lobbies, postoperative care units, or waiting rooms into patient care venues.
- Designated beds in critical care units and non–critical care settings for persons under investigation and patients who test positive for COVID-19 should be identified
- Measure availability, needs, and gaps (i.e. Oxygen Capacity) to anticipate surge

What should hospitals do in case of patient surge?

- A dedicated team of hospitalists and critical care team has been established, with clinical schedules and roles for leadership, communication, and activation criteria.
- Contingency plans should be developed, including activation criteria for opening a new respiratory intensive care floor where cohorting of both critically ill and non-critically ill patients can occur.
- Ensuring the ongoing care of vulnerable patients, such as those in the immunocompromised communities, remains imperative.
- Safe locations and staffing plans that separate vulnerable patients from COVID-19 activities have been carefully considered.

WHO Preparation Guidance for Treatment Centre




- Available in Bahasa (WHO Indonesia website)
- Online course available ([www. open.who.org](http://www.open.who.org))
- Consists of several standards to set up permanent and temporary treatment centre for SARI (COVID-19)

WHO Clinical Management Guidance

Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected. Interim guidance V 1.2.

Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected.

Interim guidance
13 March 2020



This is the second edition (version 1.2) of this document for the novel coronavirus SARS-CoV-2, causing COVID-19 disease. It was originally adapted from the publication *Clinical management of severe acute respiratory infection when MERS-CoV infection is suspected* (WHO, 2019).

This document is intended for clinicians involved in the care of adult, pregnant and paediatric patients with or at risk for severe acute respiratory infection (SARI) when a SARS-CoV-2 infection is suspected. Considerations for paediatric patients and pregnant women are highlighted throughout the text. It is not meant to replace clinical judgment or specialist consultation but rather to strengthen clinical management of these patients and to provide up-to-date guidance. Best practices for infection prevention and control (IPC), triage and optimized supportive care are included.

This document is organized into the following sections:

1. Background
2. Screening and triage: early recognition of patients with SARI associated with COVID-19
3. Immediate implementation of appropriate infection prevention and control (IPC) measures
4. Collection of specimens for laboratory diagnosis
5. Management of mild COVID-19: symptomatic treatment and monitoring
6. Management of severe COVID-19: oxygen therapy and monitoring
7. Management of severe COVID-19: treatment of co-infections
8. Management of critical COVID-19: acute respiratory distress syndrome (ARDS)
9. Management of critical illness and COVID-19: prevention of complications
10. Management of critical illness and COVID-19: septic shock
11. Adjunctive therapies for COVID-19: corticosteroids
12. Caring for pregnant women with COVID-19
13. Caring for infants and mothers with COVID-19: IPC and breastfeeding
14. Care for older persons with COVID-19
15. Clinical research and specific anti-COVID-19 treatments

Appendix: resources for supporting management of severe acute respiratory infections in children

These symbols are used to flag interventions:


- ✔ Do: the intervention is beneficial (strong recommendation) OR the intervention is a best practice statement.
- ✘ Don't: the intervention is known to be harmful.
- ⚠ Consider: the intervention may be beneficial in selected patients (conditional recommendation) OR be careful when considering this intervention.

This document aims to provide clinicians with updated interim guidance on timely, effective and safe supportive management of patients with suspected and confirmed COVID-19. It is organized by the patient journey. The definitions for mild and severe illness are in Table 2, while those with critical illness are defined as patients with acute respiratory distress syndrome (ARDS) or sepsis with acute organ dysfunction.

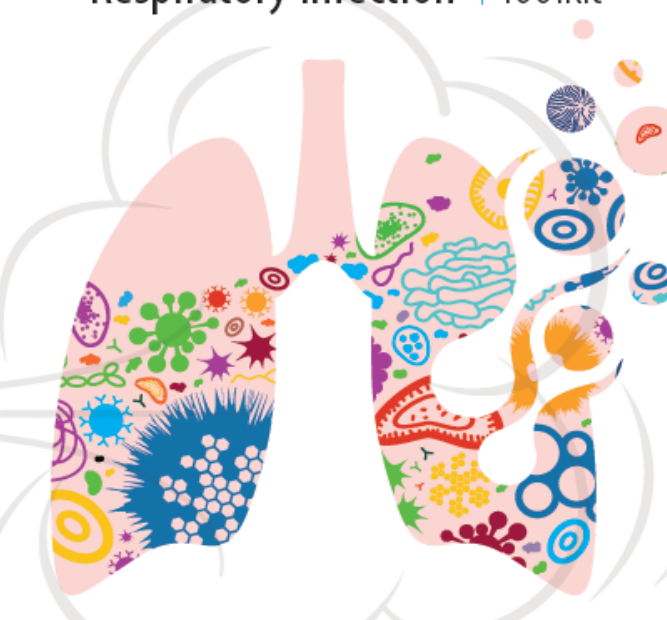
The recommendations in this document are derived from WHO publications. Where WHO guidance is not available, we refer to evidence-based guidelines. Members of a WHO global network of clinicians, and clinicians who have treated SARS, MERS or severe influenza patients, have reviewed the recommendations (see Acknowledgements). For queries, please email: zulfarah@who.int with "COVID-19 clinical question" in the subject line.

Clinical management of COVID-19


Interim guidance
27 May 2020



Clinical Care for Severe Acute Respiratory Infection Toolkit



COVID-19 Adaptation



PROTECT AND SUPPORT HEALTH CARE WORKERS ON THE FRONT LINES

Protect and Support Health Care Workers on the Front Lines

- The best evidence currently available suggests that COVID-19 spreads primarily via droplet transmission and direct contact. With the appropriate precautions, nosocomial transmission can be mitigated.
- Health care personnel should receive training on proper donning and doffing of personal protective equipment, including fit testing of N95 masks, as well as basic infection prevention tenets, such as hand hygiene.
- Hospitals should monitor rates of equipment use to ensure an adequate supply of personal protective equipment for those on the front lines. Extended use or limited reuse of N95 respirators may become necessary, and communication about preservation is important.

Protect and Support Health Care Workers on the Front Lines

- To limit the total number of personnel engaged in patient care, hospitals should institute overtime and extended hours with appropriate compensation strategies.
- Clear exposure criteria with detailed plans outlining management of personnel in regard to work restrictions or other quarantine requirements must be developed.
- Hospitals must also safeguard their own by keeping logs of staff who care for patients and monitoring them for signs or symptoms of infection.
- If care of patients with COVID-19 will be provided by a subset of providers, it is important not to lose sight of the needs of their family members and other staff.

DEFINE A STRATEGY TO ALLOCATE HEALTH CARE RESOURCES

How to allocate health care resources?

- During crises, health care resources should be allocated in an ethical, rational, and structured way to do the greatest good for the greatest number of patients.
- Hospitals and health systems must set aside a “business as usual” mentality and focus on how best to accommodate the patients likely to benefit the most from care.

Define a Strategy to Allocate Health Care Resources

- A plan that outlines what services and types of procedures will be provided (for example, invasive mechanical ventilation) and what will not (for example, elective cases) must be developed.
- Clinical guidelines for use (or denial) of scarce services, such as mechanical ventilation and critical care, should be outlined, in consultation with ethics and medical staff. Protocol that defines how patients will be triaged for admission, observation, early discharge, and quarantine is important.
- Hospitals should anticipate that normal staffing ratios and some standards of care are unlikely to be maintained; plans for contingency and crisis standards that lay out a legal and ethical framework for care decisions, including who will make decisions, how, and under what circumstances, must be readied.

DEVELOP A ROBUST, TRANSPARENT, AND OPEN COMMUNICATION POLICY

Develop a Robust, Transparent, and Open Communication Policy

- Hospitals and health systems must develop agile ways to transmit timely and critical information in times of crises.
- A designated communication team that is integrated into the work so they have a strong understanding of the clinical care being provided and the communication needs of the workforce, patients, and public is recommended.
- Crisis communications should ideally occur via several media, such as a telephone hotline, the hospital Web page, social media platforms, or text-based messages. Important metrics, including the number of cases being triaged, investigated, or managed; bed capacity and availability; and new or emerging data on treatments or care strategies, should be provided.

Develop a Robust, Transparent, and Open Communication Policy

- Timely communication of national updates on travel restrictions, policies for self-monitoring and quarantine, and trends in infection rates must occur.
- The hospital management must remember that patients and their families are as much in need of actionable information as hospital personnel. Comprehensive communication strategies for both internal and external stakeholders are key.

Six changes caused by pandemic that should continue: the “new normal”

- Speed of learning
- Value of standards
- Protecting HCW
- Telehealth
- Preparedness for future threats
- Addressing inequity of care

JAMA Published online May 4, 2020

Telemedicine

- The growth in the use is exponential in many places around the globe
 - Because patients prefer it!
- Changes in the laws to deal with
 - Licensure issues
 - Privacy/confidentiality (zoom-bombing)
 - Tariffs and payment parity (consultation reimbursement)
 - Health Insurance
- Need to ensure quality care



Resources:

- WHO Country Office for Indonesia, SITREP #9, May 2020
- WHO, Hospital Preparedness for Covid-19 Checklist, March 2020
- WHO, Severe Acute Respiratory Infections Treatment Centre, March 2020
- WHO, Adjusting PH Measure Criteria, May 2020
- CDC, Comprehensive Hospital Preparedness Checklist for Coronavirus Disease 2019, March 2020
- ECDC, Checklist for hospitals preparing for the reception and care of coronavirus 2019 (COVID-19) patients, Feb 2020
- Vineet Chopra, Eric Toner, Richard Waldhorn, Laraine Washer: How Should U.S. Hospitals Prepare for Coronavirus Disease 2019 (COVID-19)?, EPUB 2020

TERIMA KASIH