PARTNERSHIPS FOR BUSINESS
Resilience and Recovery In Southeast Asia

SE ASIA BUSINESS RESILIENCE TOOLKIT:
A Framework for COVID-19 Risk Mitigation

DECEMBER 2021
Partnerships for Business Resilience and Recovery in Southeast Asia

CONTEXT

• On March 11, 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic. As of November 22nd, 2021, there are over 257M global confirmed cases and over 5.15M deaths.

• Many countries in ASEAN continue to see surging COVID-19 transmission or fatality rates per capita. In Q3 2021, Philippines recorded the highest number of cases since the beginning of the pandemic.

• The Nikkei COVID-19 Recovery Index assesses more than 120 countries on infection management, vaccine rollouts and social mobility. The higher the ranking, the closer a place is to recovery. As of Oct. 31, 2021, the rankings for each country was Indonesia (41) Cambodia (47), Thailand & Vietnam (95), Philippines (103), and Laos (121, bottom)

• The economic toll of COVID-19 across ASEAN has been and continues to be significant with, due to their dependence on sectors like manufacturing and construction which in 2020 recorded above 50% job losses collectively.

• Despite a vaccination rate of 44%, embattled Asia-Pacific region (APAC) economies are seeing new outbreaks and sustained lockdowns. New policies are frequently deployed to bring COVID-19 to heal, often at the cost of entire business sectors.

Partnerships for Business Resilience and Recovery in Southeast Asia

ASSIGNMENT AND PARTNERS

• With US Department of State (DOS) funding, FHI 360 and AWR Lloyd are leveraging their existing partnership to contribute to the DOS Fourth Pillar (see below) of the COVID-19 response strategy.

• By combining evidence-based best practices in public health, business analytics and change management principles, FHI 360 and AWR Lloyd will foster a more resilient private sector in across Southeast Asia, with a focus on Thailand, Laos, Cambodia, Vietnam, Indonesia and the Philippines.


FHI 360, a nonprofit organization, is the lead implementer for the Partnerships for Business Resilience and Recover in SE Asia, which is funded by the U.S. Department of State (DOS). They aim to equip private sector businesses in ASEAN with the necessary technical ‘know-how’ to accelerate safe resumption, continuation, or adaptation of business operations.

AWR Lloyd, a specialist corporate advisory firm, will join forces with FHI 360 to provide COVID-19 crisis response to private sectors and support COVID-19 risk communication and community wellbeing through private corporations.
FHI 360 COVID-19 capabilities

FHI 360: INTRODUCTION*

FHI 360 is an international nonprofit working to improve health around the world. With 4,000 staff worldwide, FHI 360 serves more than 60 countries via work grounded in research and science. FHI 360 is currently working on COVID-19 response operations throughout Asia. Activities include:

• Technical assistance to develop emergency response plans and protocols for hospitals and governments
• External quality assurance
• Procurement of COVID-19 related supplies
• Vaccination advocacy
• Assistance with specimen transport
• Training for laboratory staff on biosafety, sample collection and handling, packaging, cold-chain and storage
• Supporting virtual platforms to provide accurate COVID-19 information to citizens, foster civil society collaboration, and link vulnerable community members who may need services
• Technical assistance to develop messaging around COVID-19

*www.fhi360.org
FHI 360 COVID-19 capabilities

FHI 360 COVID-19 PREVENTION, PREPAREDNESS, DETECTION & RESPONSE CAPABILITIES

• Behavioral risk identification and mitigation
• Social behavior change to reduce spillover, amplification
• Product quality and compliance
• Market-related biosecurity
• Vaccine advocacy

• Community and facility-based surveillance
• Strengthening diagnostic networks
• Laboratory and health facility biosecurity

• Equipping frontline healthcare workers
• Risk communication
• Crisis response
• Development of vaccines and medicines

SUPPORT FOR AN ENABLING ENVIRONMENT
Health system strengthening, policy and legal analysis, workforce development and economic strengthening, education in emergencies, mobile technology, gender and social inclusion, research utilization

https://www.fhi360.org/expertise/emerging-pandemic-threats
AWR Lloyd’s COVID-19 advisory services

AWR LLOYD RECOMMENDED COVID-19 RISK MANAGEMENT FRAMEWORK

CONTINUITY BASICS

1. War Room
2. Health & safety first
3. Keep calm, communicate & carry on

SURVIVE & THRIVE

1. Cost Reduction
2. Liquidity measures
3. Offense & long term

AWR LLOYD CORE SERVICE MODULES

AWR Lloyd has a partnership with FHI 360 to provide best practice health and safety protocols and project continuity advisory for major infrastructure, energy and resource projects.

AWR Lloyd is advising its clients on corporate finance resilience and how to use the disruptive forces of the pandemic to accelerate corporate transformation, restructuring and innovation.
## Project Overview

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<th>SE ASIA BUSINESS RESILIENCE TOOLKIT</th>
<th>HEALTH RISK GAP ANALYSIS</th>
<th>BESPOKE TOOLKITS</th>
<th>TRAINING AND EDUCATION</th>
<th>SCALE SE ASIA COVID-19 RESPONSE</th>
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<td>Identifying top private sector players across Cambodia, Indonesia, Laos, the Philippines, Thailand, and Vietnam who can play a key role COVID-19 response (significant outreach potential; important sectors etc.)</td>
<td>A broadly applicable, regionally-specific Toolkit which can be used by companies to facilitate safe and smooth business resilience. The Toolkit contains guidelines regarding health, safety &amp; environment (HSE) fundamentals, vaccines, transport, international travel, workplace and home and community protocols, communication and awareness, digital tools, and mental health.</td>
<td>Interviews, analysis and business / med recommendations across select companies to understand country-specific and industry-specific risk gaps.</td>
<td>Establishing Joint Health and Safety committees to conduct in-depth assessment of engaged companies’ risks and gaps. Customized Toolkits with granular guidelines promoting safe business continuity, such that response is proportional to risk level.</td>
<td>Asynchronous and live video trainings to ensure a strong understanding on use of Bespoke Toolkits at various levels across engaged companies.</td>
<td>Using breadth and depth of information gathered during the project, refine a regionally-specific Toolkit to be used across main sectors. Scale up implementation of this refined Toolkit, which will also include guidelines on resilience to withstand future crises.</td>
</tr>
</tbody>
</table>
About the SE Asia Business Resilience Toolkit

BUSINESS RESILIENCE TOOLKIT PURPOSE

This Toolkit is based on normative guidance and is informed by the latest peer-reviewed evidence.

It compiles, refines and presents global best practices with a view to promoting safe and smooth business continuity across Southeast Asia and beyond.

The Toolkit covers critical business functions and offers recommendations on aspects such as team structure, processes, communication & behavior change.
About the SE Asia Business Resilience Toolkit

TARGET AUDIENCE

Business leaders, managers or health workers in SE Asian businesses of any size may use the Toolkit to inform their COVID-19 risk prevention, mitigation and response guidelines.

Readers are encouraged to select the pages or sections most applicable to their countries or industries to integrate with their existing guidelines.

Readers are also encouraged to cascade the contents of this Toolkit down their companies and across their communities.
About the SE Asia Business Resilience Toolkit

WHEN TO USE THIS TOOLKIT

This Toolkit may be used to mitigate the impact of COVID-19 across businesses with any rate of vaccine uptake or any level of COVID-19 vulnerability, in any sector.

This Toolkit is also broadly (although not specifically) applicable to mitigate the impact of other infectious diseases.

Use this Toolkit in accordance with the laws and current guidelines of your country or countries of operation.
## Contents: SE Asia Business Resilience Toolkit

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SECTION ONE

COVID-19 OVERVIEW

2. Thinking About Risk
3. HSE Governance
4. Workplace
5. International Travel
6. Accommodation
7. Transport and Visitors
8. Communication and Awareness
9. Mental Health
10. Digital Tools
11. Vaccination
12. Future Risk Mitigation
COVID-19: introduction

WHAT IS COVID-19?
Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. The virus can spread from an infected person’s mouth or nose in larger respiratory droplets to smaller aerosols when they cough, sneeze, speak, sing or breathe.

COVID-19 SYMPTOMS
- Fever, red or irritated eyes
- Dry cough
- Loss of taste or smell
- Fatigue
- Headache, aches & pains
- Sore throat
- Rash on skin, discoloration of finger or toes
- Diarrhea
- Loss of speech, mobility, or confusion
- Shortness of breath
- Chest pain
- Sore throat
- Rash on skin, discolouration of finger or toes
- Chest pain
- Diarrhea
- Loss of speech, mobility, or confusion
- Shortness of breath

Source: CDC, WHO, FDA, Press
COVID-19 Overview

**TYPICAL PROGRESSION TIMELINE**

- **INFECTION**
  - Days 0

- **ONSET OF SYMPTOMS**
  - Days 5

- **SHORTNESS OF BREATH**
  - Days 8

- **INCUBATION PERIOD**: Incubation takes 5 days on average and can take up to 21 days

- **INFECTION PERIOD**
- **MILD & MODERATE SYMPTOM PHASE**
  - **Non-specific symptoms**: mostly fevers, dry cough, fatigue, nausea, diarrhea
  - **80% of cases with recovery take on average 14 days**

- **SEVERE & CRITICAL**
  - **Hallmarks**: ARDS¹, shortness of breath (dyspnea), tachypnea², hypoxemia
  - **Usually occurs 8-11 days after onset of symptoms and tends to lead to ICU admission**

- **RECOVERY PHASE**
  - **Recovered patients may not be immune to reinfection or relapse.**

- **POST-COVID-19 CONDITION**
  - **Occurs usually 3 months from symptoms onset, lasting for at least 2 months**
  - **Common symptoms**: fatigue, shortness of breath, cognitive dysfunction, impaired everyday functioning—with no alternative diagnosis
  - **Symptoms may be new following initial recovery, persist from the initial illness, or fluctuate/relapse over time**

**Threshold for hospitalization**
- Oxygen saturation (SpO2) <93% on room air
- Hospitalized patients³ generally recover or die within 10 days
- About 5% of the patients will require critical care support at the ICU. Mortality among ICU patients reduced significantly due to scientific advances
- Full recovery may take 2-14 days after ICU release
- Up to 20% of people with confirmed COVID-19 may require hospitalization

**Source**: WHO, CDC, Press, AWR Lloyd Analysis | **Note**: (1) Acute respiratory distress syndrome, (2) fast and shallow breathing, (3) In general wards
Global impact of COVID-19 pandemic

Globally, WHO has confirmed >258M cases of SARS-CoV-2, including >5M fatalities\(^1\) from COVID-19

Source: WHO, OWID, Note: Data as of 25th November 2021
Sectoral Impact of COVID-19

A truly global event, the COVID-19 pandemic has impacted all business sectors worldwide. In SE Asia, hospitality, construction and manufacturing sectors have been impacted more than others.

**IMPACT ON GLOBAL EMPLOYMENT**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Change in employment relative to no-pandemic scenario, 2020 (%)</th>
<th>Share of employment, 2019 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation and food</td>
<td>-12.9</td>
<td>4.1</td>
</tr>
<tr>
<td>Construction</td>
<td>-8.8</td>
<td>7.5</td>
</tr>
<tr>
<td>Other services</td>
<td>-8.2</td>
<td>5.6</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-7.3</td>
<td>13.7</td>
</tr>
<tr>
<td>Real estate, business and administrative activities</td>
<td>-5.9</td>
<td>4.6</td>
</tr>
<tr>
<td>Wholesale and retail trade etc.</td>
<td>-5.1</td>
<td>14.8</td>
</tr>
<tr>
<td>Utilities (electricity, gas, etc.)</td>
<td>-3.9</td>
<td>0</td>
</tr>
<tr>
<td>Transport, storage and communication</td>
<td>-3.5</td>
<td>6.1</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>-3.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Education</td>
<td>-2.9</td>
<td>5.4</td>
</tr>
<tr>
<td>Health and social work activities</td>
<td>-2.7</td>
<td>4.1</td>
</tr>
<tr>
<td>Public administration and defense; compulsory social security</td>
<td>-0.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-0.3</td>
<td>26.7</td>
</tr>
<tr>
<td>Financial activities</td>
<td>-0.3</td>
<td>1.6</td>
</tr>
</tbody>
</table>

Worldwide, employment in the accommodation and food services sector has been the worst affected by the pandemic.

Source: ILO Flagship Report, AmCham-ERIA Indonesia, AWR Lloyd Analysis
IMPACT ON ASEAN
The collapse of tourism and disruption of manufacturing supply chains took a toll on countries like Malaysia, Philippines and Thailand, making them the hardest-hit countries in the region.

Countries in Asia-Pacific (APAC) need to diversify away from their over-reliance on export-led growth and towards sustainable and inclusive transformation.

Source: ILO Flagship Report, AmCham-ERIA Indonesia, AWR Lloyd Analysis
Sectoral Impact of COVID-19 (3)

CHANGES IN OUTPUT OR REVENUE DUE TO COVID-19

AMCHAM Indonesia’s Survey Response:
Has your firm experienced a significant change in output and/or revenue and/or sales due to COVID-19?

Source: ILO Flagship Report, AmCham-ERIA Indonesia, AWR Lloyd Analysis
COVID-19 Overview

**FACTORS CAUSING REDUCTION OF OUTPUT/REVENUE**

*Survey Respondents:* A total of 264 firms operating in ASEAN.

- Restrictions*: 13.30%
- Distributional Issue: 18.62%
- Lack of demand: 79.26%
- Shortage of inputs: 15.43%

**EXPECTED IMPACT OF COVID-19 ON FUTURE OUTPUT**

- Negligible impact
- Upside: 79.26%
- Downside: 15.43%

Source: AmCham-ERIA Indonesia, AWR Lloyd Analysis
COVID-19 Overview

Sectoral Impact of COVID-19 (5)

BREAKDOWN OF FACTORS CAUSING REDUCTION OF OUTPUT/REVENUE

- **Source:** AmCham-ERIA Indonesia, AWR Lloyd Analysis

- **Aeronautics:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Agriculture:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Automotive:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Banking & Finance:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Dairy, Meat:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **E-commerce, Digital Economy:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Electronics:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Energy:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Fast Moving Consumer Goods:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Healthcare:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Information & Communication Technology:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Infrastructure:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Manufacturing, Textiles:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Mining:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Services:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Trade & Logistics:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Tourism/ Hospitality:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%

- **Water & Sanitation:**
  - Restrictions: 10%
  - Distributional Issue: 10%
  - Lack of demand: 40%
  - Shortage of inputs: 40%
COVID-19 Overview

Mutation of SARS-CoV-2: current variants of concern

**Alpha (B.1.1.7 and Q lineages)**
- **Origin:** United Kingdom
- **First Identified:** September 2020
- **Attribute:**
  - Doesn’t spread as fast as Delta but at the time it was discovered (autumn 2020) it was a much faster spread than other variants

**Beta (B.1.351)**
- **Origin:** South Africa
- **First Identified:** November 2020
- **Attributes:**
  - This variant shares mutations with the strain found in the UK and appears to be 50% more transmissible than earlier strains of the virus
  - This strain is being watched as clinical trials suggest that vaccines may not be as effective as against other strains

**Gamma (P.1)**
- **Origin:** Brazil
- **First Identified:** January 2021
- **Attributes:**
  - Researchers probably know the least about this variant

**Delta (B.1.617.2 and AY lineages)**
- **Origin:** India
- **First Identified:** April 2021
- **Attributes:**
  - Increased transmissibility
  - Potential reduction in neutralisation by some EUA monoclonal antibody treatments
  - Potential reduction in neutralisation by post-vaccination sera
  - May cause more severe cases than other variants, however full vaccination reduces chances of infection and severe illness

“People infected with the Delta variant have double the risk of hospitalization and emergency compared to those with disease from the Alpha variant” - Lancet, August 2021

Source: News.com, CDC, FHI 360
The new super variant, the **Omicron** (B.1.1529) variant, was first identified on November 11, 2021, in South Africa with 32 mutations.

Omicron is now found in all continents and has been responsible for record levels of infections in many countries.

Evidence is still gathering but Omicron appears to be more transmissible than Delta, appears to have a lower risk of severe disease, and to develop in people with previous COVID-19 infection or vaccination.

‘Lambda’ variant has not yet been recognized by the CDC and therefore cannot be discussed at present.

**WHO** has listed the Lambda strain as a ‘variant of interest’, suggesting it is “an emerging risk to global public health” so this will need to be monitored.

Source: News.com, CDC, FHI 360
Vaccine accessibility in the region

VACCINES BEING USED BY SE ASIAN NATIONS

THAILAND: Pfizer | AstraZeneca | Sinovac/Sinopharm

VIETNAM: Pfizer | AstraZeneca | Moderna | Sinovac/Sinopharm

CAMBODIA: AstraZeneca | Sinovac/Sinopharm

INDONESIA: Pfizer | AstraZeneca | Sinovac/Sinopharm | Moderna

LAOS: Pfizer | AstraZeneca | Johnson & Johnson

PHILIPPINES: Pfizer | AstraZeneca | Sinovac/Sinopharm | Moderna | Johnson & Johnson

Source: WHO, Government data, Note: Data as of 19th November 2021.
Vaccine accessibility in the region (2)

VACCINATION RATES IN THE REGION

The table indicates the percentage of individuals in each country who have been fully vaccinated, based on the course of treatment of the specific vaccines received.

Source: WHO, Government data, Note: Data as of 19th November 2021.
Implications of vaccines

Global vaccine roll outs have reduced mortality rates and hospitalizations. Increasingly countries have abandoned the ‘Zero-COVID’ strategy and have now opted for living with COVID-19.

SINGAPORE: FROM PANDEMIC TO ENDEMIC COVID-19

- **May 2021:** The government set plans to transition from ‘COVID-zero’ to ‘Live with the Virus’
- **June-July 2021:** Eased restrictions for dining establishments, workplaces, and entertainment venues as the general public started receiving their vaccinations. Vaccinations were already rolled out for healthcare workers and front-line workers, and for individuals with vulnerable diseases since late December 2020 and early January 2021, respectively.
- **August 2021:** Many businesses were allowed to operate at or near full capacity

Source: Fortune, Strait Times, OWID, AWR Lloyd Analysis
Implications of vaccines (2)

SINGAPORE: FROM PANDEMIC TO ENDEMIC COVID-19 (continued)

**September 2021:** All-time high numbers of delta variant and breakthrough infections
- Cases ticked up to over 100 per day after nearly a year of almost no infections
- Government reintroduced some physical distancing measures, reducing dining groups from five to two people in restaurants, and directing companies to allow employees to work from home
- But their overall strategy has not changed - still committed to reopen the economy and society progressively, without putting too much pressure on the hospital system
- Amongst those infected from August-September, 52% were already vaccinated, yet 98% of those individuals showed no or mild symptoms

**November 2021:** Booster shots available for the general public.

Source: Fortune, Strait Times, OWID, AWR Lloyd Analysis
Implications of vaccines (3)

POSITIVE IMPACT OF VACCINATIONS IN THE UK

Higher vaccination rates proved to help decline the severity of symptoms in British citizens infected with COVID-19 leading to lower mortality rates for the UK.

Phase 1: High mortality rates as vaccines begin to get administered

Phase 2: Mortality rates and cases sharply decline with increasing vaccination rates.

Phase 3: Cases rise as the country reopens. Vaccination rates continue to offset mortality rates. (January – November 2021)

Source: Fortune, Strait Times, OWID, AWR Lloyd Analysis
SECTION TWO

1. COVID-19 Overview

Thinking About Risk

3. HSE Governance
4. Workplace
5. International Travel
6. Accommodation
7. Transport and Visitors
8. Communication and Awareness
9. Mental Health
10. Digital Tools
11. Vaccination
12. Future Risk Mitigation
Safe 3Ps – analytical methodology

When re-opening, operating, or growing an enterprise during COVID-19, a three-step assessment, modification and mitigation process increases operational resilience.

**KEY ASSESSMENT SEGMENTS**

- HSE Governance
- International Travel
- Transport
- Mental Health
- Vaccination
- Workplace
- Accommodation
- Communications and Awareness
- Digital Tools
- Future Risk Mitigation

**STEP 1: RISK ASSESSMENT**

**STEP 2: MODIFICATION**

- Change operating model to eliminate risk

**STEP 3: MITIGATION**

Guidelines to reduce risk

Source: AWR Lloyd Analysis
Step 1: Risk Assessment

A Risk Assessment is a semi-quantitative exercise that calculates the level of risk exposure to an organization. Each industry, business and department requires its own risk assessment. The approach below is broadly applicable and scalable; a set of questions produces a numerical value that can be plotted on a risk matrix. Each organization can calibrate their own risk assessment and matrix to their operational needs, required commercial outcomes, and risk appetite.

Source: AWR Lloyd Analysis, Note: adapted from John Hopkins Center for Health Security
### Step 1: Risk Assessment (2)

**Example Risk Assessment Questions**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes = 1</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there a high density of people inside facilities (e.g., many employees in an enclosed space at one time)?</td>
<td></td>
<td>0-3 = LOW</td>
</tr>
<tr>
<td>Do your employees travel to numerous sites to conduct business?</td>
<td></td>
<td>4-6 = MEDIUM</td>
</tr>
<tr>
<td>Do you rely on international travel in order to operate?</td>
<td></td>
<td>7-9 = HIGH</td>
</tr>
<tr>
<td>Do your employees directly touch clients or customers?</td>
<td></td>
<td>10-12 = EXTREME</td>
</tr>
<tr>
<td>Do you handle and transfer of goods and other products between employees, clients, customers?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are high-touch surfaces required for operations?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is prolonged close contact between employees, clients, customers required?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do employees interact with clients &amp; customers in person daily?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do employees interact with many clients &amp; customers in person each day?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you work directly with vulnerable populations (e.g., aged care etc.)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there an outbreak currently happening in your community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is your staff vaccination rate under 50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Risk Assessment Total Score (between 0 – 12 points)**

Source: AWR Lloyd Analysis, Note: adapted from John Hopkins Center for Health Security
## Step 1: Risk Assessment (3)

![Risk Assessment Matrix](image)

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Acceptable</th>
<th>Tolerable</th>
<th>Undesirable</th>
<th>Intolerable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Improbable</strong></td>
<td>Implement baseline measures</td>
<td>Implement baseline measures</td>
<td>Enhance baseline measures</td>
<td>Implement maximum restrictions</td>
</tr>
<tr>
<td><strong>Possible</strong></td>
<td>Implement baseline measures</td>
<td>Enhance baseline measures</td>
<td>Implement maximum restrictions</td>
<td>Shutdown</td>
</tr>
<tr>
<td><strong>Probable</strong></td>
<td>Enhance baseline measures</td>
<td>Implement maximum restrictions</td>
<td>Shutdown</td>
<td>Shutdown</td>
</tr>
</tbody>
</table>

Source: AWR Lloyd Analysis, Note: adapted from John Hopkins Center for Health Security

---

**Likelihood**
- **Improbable**: Infection is unlikely to occur
- **Possible**: Infection will likely occur
- **Probable**: Infection will occur

**Severity**
- **Acceptable**: Little to no effect
- **Tolerable**: Effects are felt, but not critical
- **Undesirable**: Serious impact on life and operation
- **Intolerable**: Could result in death & operational shut-down

---

**Thinking about risk**
Step 2: Modification

A modification exercise allows a reevaluation of the risk assessment outcome if measures to significantly reduce transmission of COVID-19 can be implemented. An example of this is a business that can move their entire operation online, eliminating the need to interact with customers or colleagues.

Source: AWR Lloyd Analysis
### Step 2: Modification (2)

<table>
<thead>
<tr>
<th>Modification Assessment</th>
<th>Yes / Partially / In Progress/ No / Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is it possible to move your business entirely online?</td>
<td></td>
</tr>
<tr>
<td>Is it possible to significantly limit the number of people (e.g., employees, clients, customers, other community members) that interact in person during daily business operations?</td>
<td></td>
</tr>
<tr>
<td>Is it possible to restrict or significantly limit travel (domestic or international)?</td>
<td></td>
</tr>
<tr>
<td>Can measures be implemented to ensure physical distancing (minimum of 6 feet) can be practiced?</td>
<td></td>
</tr>
<tr>
<td>Can your business be modified to significantly limit or cancel large meetings, conferences, tournaments, or events?</td>
<td></td>
</tr>
<tr>
<td>Can your business be modified to significantly limit or restrict physical contact between employees or with clients, customers, or other community members?</td>
<td></td>
</tr>
<tr>
<td>Can your business be modified to significantly limit or restrict the goods and other products that are passed between employees and customers?</td>
<td></td>
</tr>
</tbody>
</table>

**Modification Score**

- **Low**
- **Medium**
- **High**
- **Extreme**

Source: AWR Lloyd Analysis
Step 3: Mitigation

For organizations that are unable to eliminate transmission risk, the focus must be on reducing risk through the hierarchy of control measures shown in the following page.

Source: AWR Lloyd Analysis
Step 3: Mitigation (2)

Remove the Hazard
The Hazard (COVID-19) cannot be removed, so we stay home and avoid contact with the hazard (COVID-19)

Replace the Hazard
Cannot replace the Hazard, so substitute or change the work process by physical distancing and remote working

Isolate the Hazard
Thermal scanning, isolating identified workers, maintaining physical distancing by markings and barricades, system screening (including self-screening with online tools), rapid and regular testing in certain settings

Change the Way People Work
Monitoring ventilation through proxy measures such as CO2 monitoring, signs, posters, awareness program, handwashing, sanitizing, information, instruction, training and supervision

Personal Protective Equipment
Mandatory use of gloves and face mask, with strict monitoring on the use of PPE
SECTION THREE

1. COVID-19 Overview
2. Thinking About Risk

HSE Governance
4. Workplace
5. International Travel
6. Accommodation
7. Transport and Visitors
8. Communication and Awareness
9. Mental Health
10. Digital Tools
11. Vaccination
12. Future Risk Mitigation
Recommended COVID-19 SME Crisis Management structure

In the event of a crisis, a crisis management team enables organizations to coordinate and communicate effectively across internal functions and with external stakeholders. Below is a scalable example with roles and responsibilities specific to COVID-19.

- **Senior Manager**
  - Communications
  - Health and Safety

- **Project Coordinator**
  - External Affairs
  - Operations

- **Doctor/Medical Expert**
- **HSE**
  - Compliance & inspection
  - Reporting
  - Risk Assessments
  - Contact Tracing
  - Training
- **HR**
  - Communicate
  - Shield vulnerable workers
  - Vaccination register
  - Comply with national guidelines
  - Isolation and quarantine monitoring
- **FINANCE**
  - Run Scenarios
  - Legal
  - Cashflow
- **COMMERCIAL**
  - Communicate with customers
  - Compliance
  - Reporting
  - Communication
- **SUPPLY CHAIN**
  - Contractor management
  - Critical Supplies
  - Reporting
  - Communication

**External Authorities**
- Police
- National Department of Health
- Ambulance

Source: AWR Lloyd Analysis
Role of Pandemic Warden

In high density work settings such as constructions sites or schools, organizations can consider the deployment of pandemic wardens (PWs). PWs are responsible for overseeing the administration of infection prevention controls and procedures, compliance, reporting and responding to questions regarding safety procedures.

SUGGESTED QUALIFICATIONS OF PWs ON HIGH-RISK INDUSTRIAL SITES

- OSHA certificate or IOSH certificate
- Experience on construction sites
- First aid training
- Able to communicate with workers on site

Source: AWR Lloyd Analysis
Role of Pandemic Warden (2)

KEY DUTIES OF A PANDEMIC WARDEN

1. PROMOTE AWARENESS of infection prevention measures to protect people from COVID-19

2. MONITOR COMPLIANCE of physical distancing, mask wearing, hand hygiene, and other basis protocols amongst personnel

3. REPORT AND RESPOND to non-compliance and COVID-19 exposure in shared spaces

Source: AWR Lloyd Analysis
Role of Pandemic Warden (3)

SUGGESTED TRAINING MODULES FOR PWs

Health, Safety & Environment (HSE)
COVID-19 protocols for safety, hygiene, cleaning and disinfection, transmission, physical distancing, PPE, case management for suspected and confirmed cases

Medical Systems
Recognizing symptoms of COVID-19, health & safety forms, First Aid provision protocols

Source: AWR Lloyd Analysis
Fit-to-Work review

While vaccinations can reduce the risk of death and infirmity in vulnerable employees, it is important to consider an employee’s pre-existing health condition/s prior to assigning a job that may put them at a greater risk of infection. Below is a guideline for organizations when conducting fit-to-work assessments during the pandemic.

Source: Oil and Gas Industry Best Practice, AWR Lloyd Analysis
Employers should consult with vulnerable workers to determine if additional risk control measures could be implemented to mitigate transmission risk:

- Whether the vulnerable worker can fulfil a different role or responsibility which has a lower risk for COVID-19 transmission, such as:
  - Shifting tasks to reduce interactions with other staff, customers, or visitors
  - Moving from areas involving high interactions with patients (with or without COVID-19)
- Whether the vulnerable worker’s environment can be adapted or improved to lower the risk for COVID-19 transmission (e.g., stricter physical distancing protocols or additional hygiene measures)
- Whether the vulnerable worker can be provided with additional hygiene enablement tools (such as their own hand sanitizer)
- Whether the vulnerable worker can be provided with specific PPE appropriate to the risk identified in the risk assessment
- Whether external risks can be mitigated further (for example, reducing interaction with visitors or the use of public transport)
- Whether the vulnerable worker can utilize his/her annual leave or sick leave during different levels of the lockdown

Source: Oil and Gas Industry Best Practice, AWR Lloyd Analysis
Special focus on vulnerable groups

The health risk factors below should be considered when designing fit-to-work policies that shield vulnerable workers.

- Cardiovascular diseases
- Cancer, bone marrow or solid organ transplant
- 65 years and older
- Chronic lung disease
- Underlying psychiatric disease
- Immunodeficiency diseases
- Uncontrolled diabetes
- Severe obesity (BMI >40)
- Poorly controlled HIV/AIDS
- Chronic kidney disease with eGFR<60
- Chronic liver disease
- Prolonged use of steroids or other immunosuppressive

Source: Oil and Gas Industry Best Practice, AWR Lloyd Analysis, Note: Cardiovascular diseases include heart failure, uncontrolled hypertension, ischemic heart disease
Risk Forecasting: Upcoming religious and national occasions

The increase in communal contact and travel during national, cultural or religious occasions increases transmission of COVID-19. Organizations can effectively pre-empt these occasions by providing advice to staff and other stakeholders on measures to stay safe during this time.

Source: Government data, AWR Lloyd Analysis
Risk Forecasting: Upcoming religious and national occasions (2)

RELIGIOUS FESTIVALS

Avoid visiting and attending family gatherings; especially avoid visiting those at most risk from COVID-19 such as the elderly, pregnant women and people with chronic diseases.

Continue to follow physical distancing of 2 meters; wear masks in public and follow other government directives.

Refrain from distributing gifts such as money to children during this period and instead use electronic alternatives.

Employees can discuss the importance of their personal travel with their manager in advance.

Source: Government data, AWR Lloyd Analysis
Risk Forecasting: Upcoming religious and national occasions (3)

CASE STUDY: EID AL-FITR

- **End of fasting month** of Ramadan where families gather, pray together, and share meals.
- Government **banned people from returning to their hometowns**, except for work or other reasons.
- Travelers ignored the restriction and **4123 out of the 6742 people** randomly tested were **tested positive**.
- **3448 COVID-19 cases** were recorded across Indonesia on the **day of the holiday**.
- **1.5 million people** were thought to have **ignored the ban** and travelled home.
- Eid Al-Fitr holiday was the **catalyst for rising cases**, with more than 40% growth rate and more 20% test positivity rate.

Source: Government data, AWR Lloyd Analysis
Body temperature screening protocols

Temperature screening may identify people who have an elevated temperature, which is one of the symptoms of COVID-19. Any workplaces that implement temperature screening should be aware of its limitations and risks such as not being a reliable method for detecting COVID-19, and potential to cause congregation at entry points.

Temperature screening may be considered as an additional control in workplaces in areas where:

- it is difficult to achieve physical distancing
- large numbers of employees work
- employees live together, such as in fly-in fly-out (FIFO) operations or in agricultural work
- employees need to travel together in close proximity
- a high number of external visitors are required to enter the workplace (for example, salespeople or delivery drivers)
- there are people who may be more vulnerable to the effects of COVID-19, such as older workers and/or those with chronic medical conditions
- businesses are public facing (such as retail stores)
- there is high-traffic with the public (such as railway stations)
- people are detained (such as prisons)

Source: AWR Lloyd Analysis
Body temperature screening protocols (2)

**IF TEMPERATURE TESTING IS USED:**

- Thermometers should be calibrated, maintained and cleaned as per manufacturer's specifications.
- The person conducting the testing must be trained in the correct use and cleaning and disinfection of the thermometer and the use of personal protective equipment (PPE) when using the thermometer.
- People conducting temperature screening should wear a mask.

If temperature is above 37.5°C then screening shall be conducted again after 15 minutes.

Make the person wait in an isolated shaded area, if air-conditioning is not provided in the person’s vehicle.

**DELIVERY STAFF/ VISITORS**

If the temperature is confirmed to exceed 37.5°C (after being examined 2 times in a row with time difference of 15 minutes) then **deny entry and advise visitor to visit appropriate medical center for further review.**

**EMPLOYEES**

If the temperature is confirmed to exceed 37.5°C after screening 3 times in a row (with time difference of 15 minutes) or the appearance of apparent symptoms suggestive of flu /COVID-19, then **the guidelines for isolation must be followed.**

Source: AWR Lloyd Analysis
Contact tracing protocols

A ‘close contact’ is a person who was in close proximity (less than 2 meters) for a period of more than 15 minutes (cumulative total) over 24 hr period with an infected employee from 2 days before illness onset (or, for asymptomatic patients, 2 days prior to positive specimen collection) until the time the patient is isolated.

LIST OF EXPOSED CONTACTS

- Family & Friends
- Co-worker contacts
- Roommates
- Classmates
- Other work contacts who share facilities such as toilets, rest shelters and mess-halls
- Exposed healthcare workers
- Transport contacts (flight, car, bus, etc.)

Source: CDC
## Contact tracing protocols (2)

<table>
<thead>
<tr>
<th>COVID-19 Test</th>
<th>Fully Vaccinated</th>
<th>Unvaccinated or Not Fully Vaccinated</th>
<th>Recently Tested Positive for COVID-19 (Past 90 Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Even if you don’t have symptoms, you should get tested 5-7 days after your exposure.</td>
<td>Test immediately after finding out you are a close contact.</td>
<td>If you develop symptoms, consult with a healthcare professional for testing recommendations.</td>
</tr>
<tr>
<td>Monitor Symptoms</td>
<td>Get tested immediately if you develop symptoms.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of Mask</td>
<td>Wear a mask indoors in public for 14 days following exposure or until your test result is negative.</td>
<td>Wear a mask correctly and consistently at all times.</td>
<td>Wear a mask indoors in public for 14 days following exposure</td>
</tr>
<tr>
<td>Quarantine*</td>
<td>No quarantine needed if no symptoms shows</td>
<td>Self-isolation at home</td>
<td>No quarantine needed</td>
</tr>
</tbody>
</table>

- Isolate for 10 Days
- Re-test after 5-7 Days
- Test after symptoms shows

These recommendations (including wearing a mask indoors or in public) might differ according to national requirements.

*Options for stopping quarantine:
- After day 10 without testing
- After day 7 after receiving a negative test result (test must occur on day 5 or later)

Source: CDC
### COVID-19 Test methods and appropriate application

<table>
<thead>
<tr>
<th>TYPE OF TEST</th>
<th>Molecular test or Polymerase Chain Reaction (PCR) test</th>
<th>Serological test or Antibody test</th>
<th>Antigen test or Antigen rapid tests (ART)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PURPOSE</strong></td>
<td>• Diagnoses active coronavirus infection</td>
<td>• Shows if patient was infected in the past</td>
<td>• Diagnoses active infection in pre-symptomatic and early-symptomatic phases</td>
</tr>
<tr>
<td></td>
<td>• Useful to identify, quarantine and trace infected patients</td>
<td>• Useful to identify people who may have immunity</td>
<td>• Useful to isolate infected patients and quarantine close contacts of the patient</td>
</tr>
<tr>
<td><strong>SAMPLE COLLECTION</strong></td>
<td>Nasopharyngeal: the sample is taken with a swab from the nose or mouth</td>
<td>Blood drawn: the blood sample is taken with a finger prick or venous blood draw</td>
<td>Nasopharyngeal: the sample is taken with a swab from the nose or mouth</td>
</tr>
<tr>
<td><strong>USE OF TEST</strong></td>
<td>• Symptomatic individuals</td>
<td>• Differentiate between acute and old infections in cases that test positive for COVID-19</td>
<td>• Screening for pre-event testing</td>
</tr>
<tr>
<td></td>
<td>• Rostered routine testing</td>
<td></td>
<td>• Rostered routine testing</td>
</tr>
<tr>
<td><strong>TURNAROUND TIME</strong></td>
<td>• As early as 24 hours after sample collection</td>
<td>• 1-3 weeks on average</td>
<td>• As early as 30 minutes after sample collection</td>
</tr>
<tr>
<td><strong>LIMITATIONS</strong></td>
<td>• Unable to differentiate between acute and old infections</td>
<td>• Unable to rule out acute/ early infection if the antibody test is negative</td>
<td>• Potentially high false-negative rate in individuals with low viral load</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Higher false positive rate than PCR tests</td>
</tr>
</tbody>
</table>

Source: UK Research & Innovation (UKRI); Tallahassee Memorial Healthcare
Estimated time variation in COVID-19 diagnostic tests

Source: Falzano et. al
Case Management: suspect and probable case flowchart

DEFINITIONS

**Quarantine** is used to keep someone who might have been exposed to COVID-19 away from others.

**Isolation** is used to keep someone who is infected with the virus away from others who are not infected. Confirmed cases using PCR testing can be isolated in shared accommodations with other confirmed cases.

MEDICAL SCREENING at healthcare facility

COVID-19 Symptoms?

- **Mild**
  - Is testing available?
    - **Yes**: Isolate and perform PCR or Antigen test
    - **No**: Quarantine for at least 10 days, and fever resolution without any medication for 24 hours and with improvement of other symptoms

- **Severe**
  - If symptoms worsen to severe
    - Isolation for at least 14 days, and until fever resolution without any medication for 24 hours and with improvement of other symptoms

Source: AWR Lloyd Analysis, CDC, 1Note: If patient displaying COVID-19 symptoms but first PCR test is negative, best practice is to isolate and perform second PCR test after 24 hours to confirm diagnosis
Case Study – How schools are using Antigen Test Kits (ATK)

International School of Bangkok (ISB) is utilizing self-administered home Abbott Panbio ATKs for students and staff members, who are required to follow a weekly self-testing procedure to gain access to campus.

Source: ISB, AWR Lloyd Analysis
Case Study – How schools are using ATKs (2)

1. Staff and students, vaccinated or not, are required to do **home testing twice per week** before campus entry.

2. Results must be uploaded into an **online self-disclosure form**, which is linked to the reporting system and turnstile system that **grants access to campus**.

3. Any student or staff registering a **positive PCR/ATK test** or failing to submit a completed self-disclosure form will **not be granted campus entry**.

4. Student or staff **absent on the day of their designated testing date** must provide a **negative test** on the **next day** they return. They will be tested again on their normal, designated testing date.

5. Any **adults/parents** wanting to enter the academic area of campus would need to provide a **negative ATK/PCR test result**, with a **confirmed appointment notice**.

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Those tested positive from ATK home testing are required to undergo RT-PCR testing within 48 hours.

---

Source: ISB, AWR Lloyd Analysis
**Self-isolation and self-quarantine checklists**

### For mildly symptomatic and asymptomatic confirmed cases

- Avoid touching your face with unwashed hands
- Stay in a well-ventilated accommodation with windows facing away from people, animals
- Food/water pick-up and drop-off outside door
- Laundry/delivery pick-up and drop-off outside door
- Self-monitor symptoms*, report if they worsen
- Clean room and toilet daily with disinfectant or cleaner
- Wash or sanitize hands properly and often **
- Use separate bathrooms and laundry
- Ask others to carry out delivery services/errands
- Keep yourself healthy, regularly exercise
- Do not cause yourself stress or anxiety

### For asymptomatic close contacts or recent travelers with negative swab-test results, or asymptomatic personnel advised by health authorities

- Do not leave room for duration of quarantine period
- Separate yourself from others and do not enter shared areas
- Wear a mask when out, dispose after single use
- Cough or sneeze into a tissue and dispose, or into elbow crook

---

*Record frequency, **e.g., before eating, after bathroom

Source: AWR Lloyd Analysis
Case Study: Construction Protocols

HEALTH SECTOR CONSTRUCTION GUIDELINES

PLANNING
• Set phases to avoid large groups and overlaps of workers
• Provide gloves, glasses, and two or more reusable masks
• Set hand washing stations with clean water, soap and additional disinfection products
• Provide basic construction tools to workers and avoid sharing of tools if possible (disinfect regularly if tools are shared)
• Engage workers coming from proximity of the facility rather than labor from other camps or villages
• Strengthen supervision to include COVID-19 prevention principles

WORKFORCE PREPARATION
• Orientation on COVID-19 for all workers, including disease description, symptoms, transmissibility, severity, and key prevention messages by WHO
• Workers must maintain physical distance of 6 feet and adhere to other suggested practices for infection prevention and control
• Workers should not greet each other with handshakes or embraces at any time
• Workers must always wear masks and disposable gloves
• Workers should wash their clothes frequently

Source: Mace, Cox’s Bazar, AWR Lloyd Analysis
Case Study: Construction Protocols (2)

HEALTH SECTOR CONSTRUCTION GUIDELINES

ACCESS TO SITE

• Only workers, supervisors, and managers should be allowed on site
• Monitoring visits should be reduced to the minimum and planned when workers are on breaks (lunch/prayer time)
• Fence off construction site to ensure that no one can enter without authorization
• Clearly guard entry and exit gates
• Measure body temperature for all individuals entering the site
• Workers should be encouraged to reach the site using individual modes of transportation and avoid public transports

DURING CONSTRUCTION

• Construction crews should be segregated, and tasks allocated so they do not overlap
• Mark safe distance of 6 feet on grounds/railings in spaces where queuing may happen
• Instruction to workers should be given in open spaces
• Ventilate the site as much as possible, by leaving doors & windows open for example
• Keep distance from drivers when receiving and unloading goods and construction materials

Source: Mace, Cox's Bazar, AWR Lloyd Analysis
Case Study: Construction Protocols (3)

HEALTH SECTOR CONSTRUCTION GUIDELINES

Anyone falling in one of the following categories should not be allowed on site:

- Has a family member suspected with COVID-19 living in the same household or self-isolating, or in close contact with a confirmed patient in the previous two weeks
- Is showing one or more symptoms related to COVID-19
- Is a high-risk patient (age, health condition, or pregnant)

Source: Mace, Cox's Bazar, AWR Lloyd Analysis
COVID-19 RESPONSE (VIETNAM)

- Disinfect and sanitize construction areas, surfaces, equipment and machines
- Body temperature checks at the beginning and end of each shift
- No more than 30 individuals present on any working floor during a shift
- Limitation of direct contact between people at distances under two meters

"The country's preparedness and rate of response to the crisis has earned praise from the World Health Organization (WHO) and has enabled sectors, such as construction, to safely continue operation."
Case Study: Education Protocols

JAKARTA INTERCULTURAL SCHOOL

Key Guiding Principles

• The health and safety of our students, faculty, staff, and community members are paramount
• A strong education program grounded in the JIS mission and values in accordance with the best health and safety practices
• Mandates and guidelines set forth by the Ministry of Education & Culture, and the Indonesia Government
• Information and advice from trusted health officials, reliable medical organization, and consultation with international schools around the world and in our region
• The feedback and needs of our community

Student, Faculty, Staff, or Household Member Tested Positive?

• Report diagnosis to JIS Nurse’s Office for contract-tracing
• Affected individual(s) must quarantine for 14 days, and submit a written document from a licensed doctor/hospital confirming it is safe to return to campus
• Those that had physical, close (within 2 meters/6 feet), and approximate (in the same room) contact will be notified by the Nurse’s Office, and must be tested
• Individuals must be tested and quarantine for 14 days

Student or Faculty Member shows Symptoms on Campus?

• Taken to isolation room monitored by JIS health team, and then sent home
• Required to seek medical attention and take a PCR test, that must be reported to the Nurse’s Office
• Nurse’s Office will start contract-tracing and notify every member with whom student or faculty member has been in contact
• Individuals must take the PCR test and quarantine for 14 days
• Entire campus will be thoroughly cleaned and disinfected according to standards set by the CDC
• To return to school, students/faculty member must submit an official Medical Certificate from a licensed doctor/hospital verifying they are virus-free and no longer contagious

Source: Jakarta Intercultural School (JIS)
Case Study: Education Protocols (2)

FIVE PHASES ROADMAP

Phase 1: Full Home and Online Learning
- 3 – 4 hours of in-person teaching in the morning
- Students are in pods and must stay together
  - No more than 18 students per pods
  - No more than 5 students per pods in Early Year
- Groups will be determined for rotation of days on and off campus
- Specialist and electives remain online
- Bus transportation possible with enhanced health and safety measures
- No in-person afterschool activities, assemblies, or large student gatherings, and lunch
- No cafeteria and library access – books are ordered online and picked up or delivered

Phase 2: Blended Learning
- 5 – 6 hours of in-person teaching in the morning
- Students are in pods and must stay together
  - No more than 18 students per pods
  - No more than 5 students per pods in Early Year
- Full grade level pods at High School
- Groups will be determined for rotation of days on and off campus
- Specialist and electives remain online
- Bus transportation possible with enhanced health and safety measures
- No in-person afterschool activities, assemblies, or large student gatherings, and lunch
- Library access may become available dependent on relevant guidelines and regulations

Phase 3: Blended Learning with Increased Time on Campus
- 5 – 6 hours of in-person teaching in the morning
- Students are in pods and must stay together
  - No more than 18 students per pods
  - No more than 5 students per pods in Early Year
- Full grade level pods at High School
- Groups will be determined for rotation of days on and off campus
- Specialist and electives remain online
- Bus transportation possible with enhanced health and safety measures
- Bring lunch from home or order Sodexo Box (delivered to classroom or grab & go)
- No cafeteria, outside lunch drop offs, deliveries, in-person afterschool activities, assemblies, or large student gatherings, and lunch
- Library access may become available dependent on relevant guidelines and regulations

Source: Jakarta Intercultural School (JIS)
Case Study: Education Protocols (3)

FIVE PHASES ROADMAP (CONTINUED)

**Phase 4: Blended Learning with Increased Time and Days on Campus**
- 1 full day of in-person teaching
- Students are in pods and Pan bio may mix
  - No more than 18 students per pods
  - No more than 5 students per pods in Early Year
  - Full grade level pods at High School
- Groups will be determined for rotation of days on and off campus
- Specialist and electives will be in-person while some afterschool activities will be in-person, depending on division
- Bus transportation possible with enhanced health and safety measures
- Bring lunch from home or order Sodexo Box (delivered to classroom or grab & go)
- No cafeteria, outside lunch drop offs, deliveries, assemblies, or large student gatherings
- Library access may become available dependent on relevant guidelines and regulations

**Phase 5: All Students on Campus**
- All students return to campus in similar manner to pre-COVID-19 pandemic
- Continue with “new normal” enhanced health and safety protocols

Source: Jakarta Intercultural School (JIS)
Case Study: Hospitality Protocols

Some of the protocols outlined in IHG Way of Clean are outlined below:

- **Reception**: Reduced contact at check-in, touchless transactions, front desk screens, sanitizer stations, sanitized key-cards, paperless check-out

- **Public Spaces and Facilities**: Additional deep cleaning of high touch surfaces, social distancing, guidance to implement ‘last cleaned’ charts, and best practices for pools, fitness centers and lounges

- **Guest Room**: Reduction of in-room furnishings/high-touch items, new laundry protocols, use of electrostatic technology (at select hotels) and the addition of in-room IHG Clean Promise cards with cleaning procedures

- **Food & Beverage**: New standards and service approach to buffets, banquets, room-service and catering

Source: Company data, *adapted from IHG 5-S Process model*
The hotel’s documented action plan includes procedures in the event of a suspected/confirmed case, in line with recommendations, policies and procedures set by local and national Public Health authorities.

- The ill person (guest or staff member) is isolated from other guests and staff at the hotel. The affected person must be provided with their own bathroom
- The affected guest room is removed from service and quarantined:
  - The room will not be returned to service until an enhanced cleaning and disinfection process has been completed, using certified products, approved for use against the virus
- The ill person is provided with a face mask and disposable tissues and advised to follow respiratory hygiene processes when coughing and sneezing.
- When attending an ill person, or entering an affected area where a person is displaying symptoms, additional protective equipment must be worn, removed, and disposed of in line with WHO guidance
- A procedure is in place for managing soiled/contaminated bedsheets, towels, clothes which includes them being bagged directly into special, marked laundry bags whilst in the room, reducing possible dispersing of airborne contaminants and instruction given to staff to wash them at (70°C or more)
Case Study: Retail Protocols

CENTRAL PATTANA (CPN) COVID-19 PROTOCOL FOR EMPLOYEES

CPN is Thailand’s largest developer of retail property, owning and managing 32 premium shopping centers across the country.

- Shopping center staff must have at least one dose and proof of vaccination.
- Employees who have been infected and recovered from COVID-19 must present a medical certificate not older than three months.
- Employees who are waiting to be vaccinated must take the ATK test on the first day, and a periodic ATK test will be applied weekly.
  - On the first day of re-opening, 100% of employees must take an Antigen Test Kit (ATK) and a random ATK test is required every week.
  - Any employee with potential COVID-19 symptoms must stop working and immediately take an ATK test.
  - The employee's ATK test results must be certified by their employer. The certificate is valid for three days from the date of the test.
  - ATK tests must be FDA approved brands only.

Source: Press
Case Study: Retail Protocols (2)

NTUC FAIRPRICE’S RESPONSE TO EMPLOYEE COVID CASE

NTUC Fairprice is Singapore’s leading retailer, serving more than half a million shoppers daily through network of over 370 outlets across the island

- The affected employee was quarantined at a medical facility and necessary assistance was provided to the patient’s family
- All staff at the store were put on leave of absence and underwent swab tests.
- The store was closed for two days to facilitate deep cleaning procedures in line with the National Environment Agency (NEA)’s guidelines

Source: Press
Case Study: Manufacturing Protocols

Employers should assess their workplace for factors that might increase the risk of spreading COVID-19 and develop a health and safety plan using the following prevention recommendations:

ALIGNING MANUFACTURING WORKSTATIONS

**NOT ADVISED**

Workers are within six feet of one another including at side-by-side or facing workstations

**RECOMMENDED**

Workers are spaced at least 6 feet apart, not facing one another. Another setup may be used to achieve similar distancing between workers

Physical barriers, such as partitions, separate workers from each other

Physical barriers, such as partitions, separate workers from each other, including where workers need to perform tasks in tandem across from one another

Consult with a heating, ventilation, and air conditioning engineer for adequate ventilation in work areas to prevent the spread of any airborne or aerosolized viruses

Source: Adapted from CDC for align manufacturing workstations
Case Study: Manufacturing Protocols (2)

Prioritizing the health and safety of employees in all manufacturing plants, as well as of customers and partners:

- Controlled access to Schneider sites aligning to social distancing guidelines
- Use of PPE kits and increased sanitation and disinfection measures, as required
- Coordinating with suppliers and partners to secure alternative sources of supply and shift production, as needed
- Facilitating downstream transportation lines
- Rebalancing any impact global inventories
- Managing service parts stock and delivery

Source: Schneider Electric, AWR Lloyd Analysis
Case Study: Service sector response

PARTNERSHIPS WITH FRONTLINES OF THE PANDEMIC

LEVERAGING DIGITAL TECHNOLOGIES

Worked with the Indonesian Ministry of Health & joint venture Good Doctor to set up and run vaccine centers with drive-through and walk-in services, using Good Doctor’s app as a registration platform to reduce wait times on-site, ensuring physical distancing.

More than 100,000 vaccines have been given out across 11 centers in the country since the launch in February 2021.

ENCOURAGING DIGITAL PAYMENTS

GrabPay was one of the three e-wallets chosen under the Malaysian government’s e-Panjana scheme to spur short-term economic recovery and encourage citizens to use contactless payments by disbursing a collective amount of RM750 Mn collectively (USD180 Mn) to people’s e-wallets.

GrabPay disbursed RM 62.5 Mn, which aided local merchants to purchase groceries, food, and other daily essentials.

MOVING TO DIGITAL PLATFORMS

Created a unique mix-and-match model for Singaporean citizens to order food from multiple stalls in a hawker center under one delivery fee, supporting close to 400 hawkers in 50 centers since May 2020.

Supporting the Philippine government’s initiative to retrain and bring on people as delivery partners on the platform; as of April 2021, 4,321 individuals—street vendors, drivers, and affected workers—have joined Grab.

Source: AWR Lloyd Analysis
Case Study: Service sector response (2)

COVID-19 RESPONSE & EFFORTS FOR THE GRAB COMMUNITY

**GrabFood & GrabExpress**
- Rolled out Contactless Delivery
- Educated merchants and delivery-partners on food hygiene
- Educated partners to maintain physical distancing
- Collaborated with Department of Health to encourage restaurants that retain hygiene

**Grab Rides**
- Increase car hygiene standards
- Collaborated with Lifebuoy to distribute 150,000 units of hand sanitizers
- Collaborating with Central Pattana for special discounts on rides to vaccination centers at all 23 branches of Central department stores

**Driver- & Delivery-partners**
- Medical subsidy to test for COVID-19
- Compensation and Income Protection Insurance for Driver-partners medically affected by COVID-19
- Subsidized interest rates, access to emergency cash loans
- Special support for transport driver partners, may also deliver food and packages

**Merchant-partners**
- GrabFood adjusted commission to 0% for Self Pick-up order
- Supporting small merchant partners through various media

**Grab Help Center**
Temporary suspending partner accounts if infected and updating status based on Medical Certificate

Source: Grab, AWR Lloyd Analysis
SECTION FOUR

1. COVID-19 Overview
2. Thinking About Risk
3. HSE Governance

Workplace
5. International Travel
6. Accommodation
7. Transport and Visitors
8. Communication and Awareness
9. Mental Health
10. Digital Tools
11. Vaccination
12. Future Risk Mitigation
General COVID-19 protocols for the workplace

For majority of the workforce who commute daily between home and their place of work, the measures listed below can help mitigate risk in the “new normal.”

- Get vaccinated
- Wear mask at all times
- Stay 1 meter away from others
- Bring hand sanitizer everywhere you go
- Switch to glasses rather than contact lenses to avoid touching your eyes
- Bring your own cutlery to avoid using office utensils
- Wear covered clothes to protect skin from contaminated surface

Source: Innov8, AWR Lloyd Analysis
General COVID-19 protocols for the workplace (2)

LEAVING HOME
• Prepare and bring your own food to work
• Bring your own mask & alcohol-based hand sanitizer
• If you’re sick, stay home. Don’t go out. Don’t socialize.

OUTSIDE HOME
• Wear a face mask or face covering in all public places to protect yourself and others
• Greet each other with a smile, a nod or a simple hello – no handshakes
• Maintain at least 1 meter between yourself and others
• Wash your hands frequently or use an alcohol-based sanitizer or hand rub
• Sneeze and cough into your elbow, or use a tissue and dispose into bin immediately
• Clean and disinfect frequently touched surfaces such as door handles, phones, keyboards, elevator buttons, handrails
• Reduce public gatherings. Limit large in-person meetings or hold meetings via phone or over the internet

RETURNING HOME
• Leave your shoes outside your home
• Take a bath and change your clothes immediately and before you hug, kiss or touch family members
• Wash your clothes or put in laundry bins if immediate washing is not possible

Source: Innov8, AWR Lloyd Analysis
Office floor and area zoning

Engineering controls such as rearranging the office layout can reduce likelihood of transmission in the workplace.

- Maintain floor/area zoning to limit cross contamination
- Ensure personnel are limited to their designated floors/areas/locations
- Implement one-way systems, entrance and exit into offices and zoned areas
- Distribute multilingual posters and fact sheets (electronic and paper based) to raise awareness
- Restrict designated employees and contractors to certain zones
- Where possible, members/personnel from one team should not interact with other team members/personnel
- Access should be determined according to business needs and may require prior approval.
- Restrict certain contractors to certain floors.

Source: AWR Lloyd Analysis
‘Zero point of contact’ strategy

For certain high-risk workplaces, zero-contact strategies may be required:

**Examples of measures for zero contact protocols**

- Always maintain a safe physical distancing of not less than 2-meters
- Wearing applicable PPE and color-coded high-visibility vests
- One-way systems for entrances and exits
- Reduce contact time: not being within the same physical space for more than 15 minutes at any time
- Do not share communal facilities (such as bathroom, dining facilities, transportation, accommodation etc.);
- Where possible, reduce sharing the same physical contact points or commonly/frequently touched surfaces (such as paper, tools, computers, tablets etc.). Ensure these surfaces and contact points are frequently disinfected.
- Not having the same contact points with third parties (i.e., cleaners, messengers, drivers, catering staff, etc.)
- Where possible, encourage an electronic handover process
- Only one team at a time conducts site visits to verify the preparation before accepting the handover

Source: AWR Lloyd Analysis
‘Zero point of contact’ strategy (2)

OBJECTIVES

01 Determine critical activities that may require ‘zero point of contact’ measures

02 Separate personnel working on such activities that interact with each other

03 Devise additional protocols to protect these critical activities & associated personnel

In the absence of physical distancing, restrict certain activities

Source: AWR Lloyd Analysis
Hand hygiene guidelines

HOW TO HANDWASH

Wash hands if soap and water is available! Otherwise, sanitizer is acceptable.

Duration of the entire procedure: at least 20 seconds

1. Wet hands with water
2. Apply enough soap to cover all hand surfaces
3. Rub hands palm to palm
4. Right palm over left dorsum with interlaced fingers and vice versa
5. Palm to palm with fingers interlaced
6. Backs of fingers to opposing palms with figures interlocked
7. Rotational rubbing of left thumb clasped in right palm and vice versa
8. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa
9. Rinse hands with water
10. Dry hands thoroughly with a single use towel
11. Use towel to turn off faucet
12. Your hands are now safe

Source: Adapted from UAE National Instructions for using hand and surfaces disinfectants
Hand hygiene guidelines (2)

**HOW TO USE SANITIZER**

Use sanitizer for hand hygiene! Wash hands when visibly soiled.

**Duration of the entire procedure: 20-30 seconds**

1a. Apply a palmful of the product in cupped hand, covering all surfaces

1b. Palm to palm with fingers interlaced

2. Rub hands palm to palm

3. Right palm over left dorsum with interlaced fingers and vice versa

4. Backs of fingers to opposing palms with fingers interlocked

5. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa

6. Rotational rubbing of left thumb clasped in right palm and vice versa

7. Once dry, your hands are safe

Source: Adapted from UAE National Instructions for using hand and surfaces disinfectants
Personal Protective Equipment (PPE): specific to potential risk exposure groups

PPE protects users and those around them from potential hazards. Guidelines for specific PPE to be donned by workers in certain job function are laid out below:

<table>
<thead>
<tr>
<th>PPE RATIONALIZATION BY EMPLOYEE RISK EXPOSURE GROUP</th>
<th>FFP2/3 or N95 mask</th>
<th>Surgical mask</th>
<th>Site issued Respiratory Protective Equipment (RPE)</th>
<th>Cloth mask</th>
<th>Surgical gloves</th>
<th>Reusable gloves</th>
<th>Eye protection</th>
<th>Gown</th>
<th>Disposable plastic apron</th>
<th>Disposable coverall</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VERY HIGH</strong></td>
<td></td>
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<tr>
<td>HCW and EMS staff</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
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<tr>
<td><strong>HIGH</strong></td>
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<tr>
<td>Worker in crowded area (e.g., inspectors) w/o issued RPE</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
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<td>X</td>
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<tr>
<td>Transportation worker</td>
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<tr>
<td>Cleaners (disinfection)</td>
<td>X</td>
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<tr>
<td>COVID-19 site screening teams</td>
<td>X</td>
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<td>X</td>
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<td><strong>MEDIUM</strong></td>
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<tr>
<td>Workers working in places with high airborne pollutants</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>Cleaners (general)</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>Security (general)</td>
<td>X</td>
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<td><strong>LOW</strong></td>
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<tr>
<td>Administrative staff</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visitors / delivery</td>
<td>X</td>
<td></td>
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</tr>
</tbody>
</table>

Source: South Africa Department of Mineral Resources and Energy
PPE: managing infection control and supplies

PPE supplies should be carefully managed and prioritized for workers engaged in jobs with higher risk of COVID-19 transmission.

**COVID-19 ESSENTIAL MATERIALS TO BE MANAGED INCLUDE**

- Face masks
- Disposable gloves
- Disposable isolation gowns and/or single-use/disposable coveralls
- Eye protection (goggles)
- Hand sanitizer

**PRIORITIZATION OF THESE COVID-19 ESSENTIAL MATERIALS TO BE AS FOLLOWS**

- Medical personnel and their support staff who are at the **front line**
- Personnel with chronic diseases and those with flu symptoms
- Contact Tracing Teams
- Support staff: security personnel, reception staff, food handlers, housekeeper and cleaning staff, barbers etc.

Source: AWR Lloyd Analysis
PPE: Industrial worksite illustration

In an industrial setting, specific COVID-19 PPE may need to be integrated with other PPE specific to other occupational hazards

- It is recommended that surgical masks are given to workers to use at the worksite.
- Fitted N95 or FFP2 respirators are used by workers in a healthcare setting
- However, note that workers need to be aware of valve releases, which is not protective to other person nearby who are not wearing respirators
- This will help release the heat buildup inside the respirator and is more comfortable for the wearer
- Reusable gloves should always be disinfected before and after every shift as well as in between when entering the rest shelters and toilets.
- Foot-operated spray disinfectant is particularly useful for site locations

Source: FHI 360, AWR Lloyd Analysis
EYE PROTECTION
close fit plastic frames are being used

EAR PLUGS
if necessary

COVERALLS
3x provided for frequent washing

SUITEABLE RESPIRATOR
Provide mask replacement for workers if the mask is damaged (e.g., wet due to work)

RUBBER COATED TYPE SAFETY GLOVES
for worksite inspections

SAFETY FOOTWEAR
Safety shoes, anti-slip soles, if necessary

Source: FHI 360, AWR Lloyd Analysis
Heating, Ventilation and Air Conditioning Systems (HVAC)

The CDC recommends a layered approach to reduce exposure to SARS-CoV-2. This includes improving building ventilation. Protective ventilation engineering can reduce airborne concentrations and help reduce the overall viral dose to building occupants.

**TOOLS TO IMPROVE VENTILATION**

- Increase the introduction of outdoor air by:
  1) Opening air dampers to reduce HVAC air recirculation
  2) Opening windows and doors (if possible) to increase air flow

- Use fans to increase the effectiveness of open windows, placing them in a way that will not cause contaminated air to flow directly from one person to another

- Ensure ventilation systems provide acceptable air quality for the current occupancy level in each space

Sources: CDC, AWR Lloyd Analysis
HVAC Systems

TOOLS TO IMPROVE VENTILATION (CONTINUED)

- Turn off any demand-controlled ventilation (DCV) controls that reduce air supply
- Improve central air filtration and set it as high as possible
- Ensure restroom exhaust fans are functional and operating at full capacity
- Use portable high-efficiency particulate air (HEPA) fan systems to enhance air quality
- Use ultraviolet germicidal irradiation (UVGI) as supplemental treatment to inactivate SARS-CoV-2 when there are limited options for ventilation improvements
- Generate clean-to-less clean air movement by evaluating and repositioning the damper settings, supply louvers, and exhaust grilles, as necessary

Sources: CDC, AWR Lloyd Analysis
• Consult experienced heating, ventilation, and air conditioning (HVAC) professionals for any needed changes in HVAC systems
• Buildings that provided healthy indoor air quality prior to the pandemic can be improved for pandemic occupancy using less costly interventions using tools in the toolbox.
• Multiple tools can be implemented at the same time to increase overall effectiveness of ventilation interventions—reducing the risk of exposure to the virus and the spread of the disease.
• It will be up to the building owner or operator (with expert consultation as required) to identify the appropriate tools needed
• Ventilation improvements can be applied to public transportations as well to reduce exposure risk and lower the spread of the virus

Sources: CDC, AWR Lloyd Analysis
## Summary of workplace protocols

**FOR WORK SITES WITH A LARGE LABOR FORCE, CRITICAL MITIGATION MEASURES ARE SUMMARIZED BELOW**

<table>
<thead>
<tr>
<th>Communication &amp; awareness</th>
<th>Testing &amp; vaccination</th>
<th>Delivery of goods &amp; materials</th>
<th>Isolation &amp; quarantine facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Multilingual awareness materials</td>
<td>• Implement one-way systems (e.g., entrances and exits)</td>
<td>• Delivery only at designated zones</td>
<td>• Identify and establish isolation and quarantine facilities</td>
</tr>
<tr>
<td>• At rest shelter (e.g., awareness, occupancy)</td>
<td>• Always wear a mask</td>
<td>• Disinfect all incoming deliveries</td>
<td>• Create evacuation and isolation plans for suspecting cases</td>
</tr>
<tr>
<td>• Trainings for supporting staffs</td>
<td>• Wash hands frequently, and bring hand sanitizer</td>
<td>• Sanitize unloading zones routinely</td>
<td>• Quarantine close contacts of confirmed cases</td>
</tr>
<tr>
<td>• Ensure compliance</td>
<td>• Get vaccinated</td>
<td>• Reduce paperwork</td>
<td>• Isolate confirmed cases</td>
</tr>
</tbody>
</table>

Source: AWR Lloyd Analysis
### Summary of workplace protocols (2)

**FOR WORK SITES WITH A LARGE LABOR FORCE, CRITICAL MITIGATION MEASURES ARE SUMMARIZED BELOW (CONTINUED)**

<table>
<thead>
<tr>
<th>Safe distancing measures</th>
<th>Congestion management</th>
<th>Hygiene &amp; cleanliness</th>
<th>Record keeping &amp; monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Allow safe distancing of <strong>two meters</strong> across sites (e.g., conference rooms, meetings)</td>
<td>• Reduce the number of workers for <strong>each shift</strong></td>
<td>• Provide <strong>pre-packaged</strong> meals</td>
<td>• Daily <strong>cleaning</strong> and disinfection</td>
</tr>
<tr>
<td>• Appoint COVID-19 <strong>Pandemic Warden(s)</strong></td>
<td>• Create movement control plan for <strong>some</strong> spaces</td>
<td>• Follow <strong>PPE</strong> specifications</td>
<td>• Daily <strong>temperature</strong> checks</td>
</tr>
<tr>
<td></td>
<td>• Limit in-person meetings</td>
<td>• Provide adequate hand hygiene facilities in common areas</td>
<td>• <strong>Track</strong> and <strong>record</strong> suspect and confirmed cases</td>
</tr>
</tbody>
</table>

**Disinfect** shared facilities & surfaces **regularly**

Source: AWR Lloyd Analysis
Physical distancing in worksites

Defining physical distance:

- A safe space while having person-to-person interaction to mitigate the risk of potential spreads of airborne biological hazards (e.g., bacteria, viruses) to as low as reasonably practicable.
- Distance needed between yourself and others: 2 meters
- Make physical distancing a corporate advisory

Special attention to maintaining physical distance at:

- Daily Toolbox Talk (TBT) sessions
- Rest shelter
- Third-party trainings
- Queues for receiving food parcels
- Other critical in-person business meetings
- Queues for boarding transport, screening

Source: AWR Lloyd Analysis | Note: (1) Different ASEAN countries have different national laws regarding physical distancing measures
Physical distancing in worksites

HOW TO MAINTAIN PHYSICAL DISTANCE:

- Use rest shelter in rotations
- Designate the role of a Pandemic Warden(s)
- Rearrange meeting rooms, conference rooms, and other facilities to maximize physical distancing (e.g., reduce chairs)
- No traditional greetings/handshaking
- Split into small manageable groups
- Reduce attendance for in-person meetings to no more than 10 people
- Avoid direct interaction by using telephonic and video conferencing for client-contractor communication

Combining the effective use of vaccines and physical distancing measures (e.g., avoiding crowds/confined spaces and close-contact setting) is critical to moving towards a future, where COVID-19 becomes an endemic disease that we can learn to live with, through effective action to control transmission.

Asia-Pacific Strategy for Emerging Diseases (APSED)
Example of work teams, schedules and rosters

Large projects, especially those involving Fly-in Fly-out workers, may benefit from the triaging of personnel into categories with different work patterns.

- Identify **Location Critical Personnel** and **Fully Remote Personnel or non-Location Critical**.
- For contractors and their personnel, discretion to direct personnel to work remotely if continued business support can be maintained.
- Location Critical Personnel can be separated into teams - one team would work from home and one team would work from site/office.
- Ideally, week on/week off rotation with premises deep-clean and disinfection between shifts.

Source: AWR Lloyd Analysis
Example of work teams, schedules and rosters

IDENTIFY LOCATION CRITICAL PERSONNEL AND FULLY REMOTE PERSONNEL OR NON-LOCATION CRITICAL

Location Critical Personnel
- Personnel whose duties require in-person presence at work locations for critical business continuity
- Further segregate between Team Blue & Team White for staff that is not already on shift patterns
- 2-week shift cycle (14 calendar day rotation)

Non-location Critical Personnel
- Personnel who do not require in-person presence at the relevant work location to perform their roles (“Fully Remote Personnel”)

Source: AWR Lloyd Analysis
Example of work teams, schedules and rosters

Further, for supporting operations personnel (site/field operations)

- Shift and shift change over: referring to the arrangement of day and night shifts, which may be, for example, 8 hours or twelve 12 hours rotations instead of 2 weeks on / 2 weeks off.

- Team swap and rotation model: Team Blue and Team White would ideally be deployed in the same team swap/rotation model, when Team Blue is on their rotation then Team White members are rotated off.

- For sites that have multiple shifts in a day, Team Blue and Team White can be comprised of the personnel needed for each of the shifts, which should follow the pattern of rotation that is currently in place

Source: AWR Lloyd Analysis
Zoning plan and risk management

Complex projects and construction sites employing contractors can consider dividing their worksite into zones. Entry to zones can be controlled to shield workers from other work groups of a higher COVID-19 risk rating. Cascade zoning through eating, sleeping, transport, and working environments, keeping bubbles of people apart from each other on a structured basis to build resilience across bubbles.

Source: AWR Lloyd Analysis
Zoning plan and risk management (2)

RISK PROFILE
- **HIGH**
  - Infrequent site and non-essential visitors who live and work locally (essential deliveries, drivers, visitors, vendors)
- **LOW**
  - Frequent visitors to site
  - Essential staff living inside work site

PROJECT STAKEHOLDER
- **HIGH**
- **LOW**

MITIGATION MEASURES TAKEN
- **HIGH**
  - Restrict visitors where possible
  - Video Calls
  - Restricted to Zones onsite (e.g., delivery area)
- **LOW**
  - Video Call, if possible
  - Restricted to Zones onsite
  - Postpone meetings or training
  - Video Call if possible
  - Onsite accommodation with carefully managed crew changes
  - Separate contractors within worksite
  - Restricted Access on Site

STAKEHOLDER ZONING

<table>
<thead>
<tr>
<th>Shift no.</th>
<th>Date: Date:</th>
<th>Staff name</th>
<th>Allocated zone</th>
<th>Zones visited</th>
<th>Time of visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>A</td>
<td>?</td>
<td>00h00</td>
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<tr>
<td>Name</td>
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</tr>
</tbody>
</table>

Source: AWR Lloyd Analysis, Note: Illustration is for illustrative only
SECTION FIVE

1. COVID-19 Overview
2. Thinking About Risk
3. HSE Governance
4. Workplace

International Travel

5. Accommodation
6. Transport and Visitors
7. Communication and Awareness
8. Mental Health
9. Digital Tools
10. Vaccination
11. Future Risk Mitigation
# International Travel: Inbound Travel Regulations

<table>
<thead>
<tr>
<th>Country</th>
<th>International Travel</th>
<th>Quarantine</th>
<th>Quarantine Location</th>
<th>PCR Test</th>
<th>Vaccines</th>
<th>Medical Certificate/Insurance</th>
<th>Mandatory Contact Tracing Apps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INDONESIA</strong></td>
<td>Allowed</td>
<td>Fully Vaccinated: Mandatory (3 Days) Non-fully Vaccinated: Mandatory (5 Days)</td>
<td>Designated Facilities</td>
<td>72 Hr before flight</td>
<td>Required to show vaccination record card</td>
<td>Required medical certificate (All international travelers are required to complete e-HAC before travel at Peduli Lindungi app)</td>
<td>Peduli Lindungi</td>
</tr>
<tr>
<td><strong>PHILIPPINES</strong></td>
<td>Green: Allowed Yellow: Allowed Red: Not allowed</td>
<td>Non-Mandatory Green: Mandatory Yellow &amp; Unvaccinated/Partial</td>
<td>Designated Facilities (Until release of PCR result) Home Quarantine (Until the 14th day for unvaccinated people)</td>
<td>72 Hr before flight</td>
<td>Required to show vaccination record card</td>
<td>Required medical form (All travelers are required to complete e-HDC before travel)</td>
<td>Traze Mobile</td>
</tr>
<tr>
<td><strong>CAMBODIA</strong></td>
<td>Allowed</td>
<td>Vaccinated: Non-Mandatory Unvaccinated/Partial: Mandatory (14 Days)</td>
<td>Designated Facilities</td>
<td>72 Hr before flight &amp; Upon arrival</td>
<td>Required to show vaccination record card</td>
<td>Requires medical certificate (Issued by government as a proof that they are COVID-19 negative for the past 72 hr) Requires medical insurance (Traveler shall buy COVID-19 insurance from FORTE insurance)</td>
<td>Non-mandatory</td>
</tr>
</tbody>
</table>

Source: Visit ASEAN, Note: Last updated on 23 Nov 2021
## International Travel: Inbound Travel Regulations

<table>
<thead>
<tr>
<th>International Travel</th>
<th>Quarantine</th>
<th>Quarantine Location</th>
<th>PCR Test</th>
<th>Vaccines</th>
<th>Medical Certificate/Insurance</th>
<th>Mandatory Contact Tracing Apps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>THAILAND</strong></td>
<td>Allowed</td>
<td>Non-Mandatory</td>
<td>Designated facilities</td>
<td>72 Hr before flight, Upon arrival, &amp; During quarantine (For mandatory quarantined)</td>
<td>Required to show vaccination record card (Min. 14 days before travel)</td>
<td>Required medical certificate (All travelers are required to register on the COE “Thailand Pass”) Required medical insurance (Traveler shall buy COVID-19 insurance with minimum USD 50,000 coverage)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eligible country only</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mandatory (Non-eligible country; 7 Days)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Unvaccinated/Partial; 10 Days)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VIETNAM</strong></td>
<td>Not Allowed</td>
<td>Mandatory (Vaccinated 7 days)</td>
<td>Designated facilities</td>
<td>72 Hr before flight</td>
<td>Required to show vaccination record card</td>
<td>Required health declaration (Required to fill out health declaration upon arrival)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Unvaccinated/Partial; 14 Days)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LAOS</strong></td>
<td>Not Allowed</td>
<td>Mandatory (14 Days)</td>
<td>Designated Facilities</td>
<td>72 Hr before flight &amp; Upon arrival</td>
<td>Required to show vaccination record card</td>
<td>Required medical form (Complete health declaration form upon arrival)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Except: Humanitarian, Medical Evacuation, &amp; Repatriation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Visit ASEAN, Note: Last updated on 23 Nov 2021
**WHAT IS SHA AND SHA+?**

Certificates given by the Tourism Authority of Thailand to hotels and services that meet pandemic-level safety and health standards.

**BASIC REQUIREMENTS FOR SHA+ CERTIFICATE**

- >70% of staff is fully vaccinated
- Unvaccinated staff cannot have close contact with guests
- Every staff member is prepped with COVID-19 emergency solutions.
- Only these establishments can issue SHABA certificates (to confirm bookings for people entering Thailand under government conditions without quarantine) which can then be used to apply for the ‘Thailand Pass’.
## A Case Study: Tourism in Thailand (2)

### WHO CAN ENTER THAILAND AND HOW?

<table>
<thead>
<tr>
<th></th>
<th><strong>Test &amp; Go (Exemption from Quarantine)</strong></th>
<th><strong>The Blue Zone (Sandbox Programme)</strong></th>
<th><strong>AQ (Alternative Quarantine)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eligible Countries</strong></td>
<td>Only eligible countries *must reside in eligible countries for at least 21 consecutive days</td>
<td>All countries</td>
<td>All countries</td>
</tr>
<tr>
<td><strong>Quarantine</strong></td>
<td>No quarantine *Must wait for test result at the hotel for 1 night or until negative result is received</td>
<td>No quarantine *Must wait for test result at the hotel before travelling</td>
<td>Quarantine at the AQ hotel for 10 days</td>
</tr>
<tr>
<td><strong>Vaccination</strong></td>
<td>Fully vaccinated (at least 14 days prior to travelling)</td>
<td>Fully vaccinated (at least 14 days prior to travelling)</td>
<td>Not required</td>
</tr>
<tr>
<td><strong>Accommodation Requirements</strong></td>
<td>1 night reservation at SHA+ or AQ hotel *Payment confirmation req.</td>
<td>7 nights reservation at SHA+ hotel in Sandbox area *Payment confirmation req.</td>
<td>10 nights reservation at an AQ hotel *Payment confirmation req.</td>
</tr>
<tr>
<td><strong>Medical Insurance</strong></td>
<td>Medical insurance with minimum coverage of USD50,000</td>
<td>Medical insurance with minimum coverage of USD50,000</td>
<td>Medical insurance with minimum coverage of USD50,000</td>
</tr>
<tr>
<td><strong>COVID-19 test result before departure</strong></td>
<td>Have a RT-PCR COVID-19 test result issued within 72 hours before travelling</td>
<td>Have a RT-PCR COVID-19 test result issued within 72 hours before travelling</td>
<td>Have a RT-PCR COVID-19 test result issued within 72 hours before travelling</td>
</tr>
<tr>
<td><strong>RT-PCR COVID-19 tests in Thailand</strong></td>
<td>1 test on arrival date.</td>
<td>2 tests (on arrival date &amp; day 8/ 9 of stay)</td>
<td>2 tests (on arrival date &amp; day 8/ 9)</td>
</tr>
</tbody>
</table>

Source: TAT, AWR Lloyd Analysis
### A Case Study: Tourism in Thailand (3)

SHA+ REQUIREMENTS INCLUDE BUT ARE NOT LIMITED TO

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide one way access or screening points at every route</td>
<td>Restrict entry of anyone with a temperature of &gt;37.5°C at screening points</td>
</tr>
<tr>
<td>Allow only customers who wear masks to use the service</td>
<td>Clean public facilities every 2 hours</td>
</tr>
<tr>
<td>Record employees and customers’ travel history and details</td>
<td>Develop new technology to reduce the risk of exposure</td>
</tr>
</tbody>
</table>

Source: TAT, AWR Lloyd Analysis
International travel best practices

When international travel is necessary, some simple best practices can promote the health and safety of staff

- Avoid unnecessary interactions
- Exercise by yourself
- Keep a distance of 2 meters
- Avoid public transport in rush hours
- Avoid touching your face
- Avoid physical contact with others
- Check-in your luggage
- Check-in online
- Contactless payment

Source: International SOS
International travel best practices (2)

When international travel is necessary, some simple best practices can promote the health and safety of staff.

**HYGIENE TOOLKITS**
- Hand sanitizer
- Disinfectant wipes
- Masks
- Gloves

**AVOID TOUCHING**
- Door handles
- Rails
- Switches
- Others’ personal items

**DISINFECT ITEMS**
- Seat handles
- Tray tables
- Bags

Source: International SOS
Evacuation: process to activate International SOS

With the resumption of international travel, organizations should be aware of, and plan around the challenges of assisting employees abroad. Employee Assistance Programs exist to help employees travel safely while border restrictions are in force.

OVERSEAS EMERGENCY PATIENT TRANSFER

1. Connect to International SOS support center for medical consultation
2. If necessary, transfer to local hospital designated by ISOS
3. Discussion on patient status between local doctor and ISOS doctor
4. Determination of transfer country and method
5. Transfer to Home Country
6. Stay in country for treatment

Source: International SOS
SECTION SIX

1. COVID-19 Overview
2. Thinking About Risk
3. HSE Governance
4. Workplace
5. International Travel
6. Accommodation
7. Transport and Visitors
8. Communication and Awareness
9. Mental Health
10. Digital Tools
11. Vaccination
12. Future Risk Mitigation
Key COVID-19 protocols in accommodation

Accommodation can quickly become a COVID-19 flashpoint; these protocols can help reduce transmission in this high-risk setting.

**SAFE DISTANCING MEASURES**
- Allow safe distance of
  - 2 m between individuals
- Allow safe distance of
  - 1 m between dining tables and stations
- Prohibit or limit mass gatherings (max. 5-10 pax)
- Reduce dining hall occupancy rate to 50% - 75%
- Put in place multilingual awareness materials

**CONGESTION & INTER-MIXING**
- Restrict staff movement, incl. during off days
- Limit cross-interaction
- Schedule the use of common facilities/areas
- Appoint dedicated staff for food preparation
- Use one-time utensils, cutleries, containers, etc.

**HYGIENE & CLEANLINESS**
- Disinfect high contact surface at least daily
- Implement safe handling of contaminated laundry
- Manage stock of infection control supplies
- Silent hours for cleaning/disinfection
- Provide sufficient ventilation in all areas

Source: AWR Lloyd Analysis
Key COVID-19 protocols in accommodation

Facilities & recreation
- Closure of communal spaces
- Provide entertainment and communication services

Quarantine and isolation
- Allocate 20% of accommodation as designated isolation facility
- Perform active contact tracing

Health Screening
- Health screening during entry/exit
- Hygiene orientation for visitors

Record Keeping
- Record keeping of persons in quarantine and isolation

Source: AWR Lloyd Analysis
COVID-19 best practices from Singapore dormitories

Singapore modified dormitory standards to reduce transmission risk, and all personnel should be confined into dormitories with daily COVID-19 testing while guests are prohibited from entry.

<table>
<thead>
<tr>
<th>CURRENT DORMITORY STANDARDS</th>
<th>NEW DORMITORY STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living space</td>
<td></td>
</tr>
<tr>
<td>≥ 3.5 sqm/person, excl. shared facilities</td>
<td>≥ 4.2 sqm/person, excl. shared facilities</td>
</tr>
<tr>
<td>Room occupancy</td>
<td></td>
</tr>
<tr>
<td>• No maximum # of beds</td>
<td>• ≤ 12 beds</td>
</tr>
<tr>
<td>• In practice, <strong>12-26</strong> beds</td>
<td>• ≥ 1 meter spacing between beds</td>
</tr>
<tr>
<td>• No spacing requirement</td>
<td>• Double-deck beds allowed</td>
</tr>
<tr>
<td>• Mostly double decker beds</td>
<td></td>
</tr>
<tr>
<td>Toilet, bathroom &amp; sink capacity</td>
<td></td>
</tr>
<tr>
<td>≥ 1 set¹ per <strong>15</strong> residents</td>
<td>1 set¹ per <strong>6</strong> residents</td>
</tr>
<tr>
<td>Sick bay &amp; isolation</td>
<td></td>
</tr>
<tr>
<td>≥ 1 sick bay bed per 1,000 bed spaces</td>
<td>≥ 10 sick bay bed per 1,000 bed spaces</td>
</tr>
</tbody>
</table>

Reduce intermixing amongst dormitory residents by modularizing dormitory living and segmenting communal facilities.

Source: Singapore Ministry of National Development, AWR Lloyd analysis, ¹1 set incl. bathroom, sink, and toilet
Cleaning and disinfecting guidelines

GUIDELINES

Guidelines are attributable to following non-healthcare facilities: accommodation, offices, non-office areas (staircase handrails, ladders, shipping and receiving areas, security check points and others), common areas and recreational facilities, control rooms, workshops and transport vehicles.

Source: AWR Lloyd Analysis
Cleaning and disinfecting guidelines (2)

GUIDELINES

GENERAL CLEANING GUIDELINES

• Extra attention given to surfaces touched most often by different individuals
• Routine cleaning of facilities and transport
• Cleaning & disinfecting of high contact surfaces such as elevator buttons, light switches, handrails and doorknob handles
• Dust and wet-mopping and scrubbing of floors
• Cleaning restrooms
• Wiping heat and air conditioner vents
• Spot cleaning walls and carpets

CLEANING FREQUENCY

• Frequently touched surfaces will be cleaned and disinfected daily if not between shifts
• Surfaces with more frequent use will be cleaned more frequently
• Internal or external cleaning staff are responsible for regular cleaning of common areas
• Disposable wipes and other cleaning products will be provided in common areas so that employees can wipe down surfaces before use
• Frequently used surfaces include shared work surfaces, computers, rest rooms and other facilities

Source: AWR Lloyd Analysis
Cleaning and disinfecting guidelines (3)

GUIDELINES

TYPE AND USE OF DISINFECTANTS

• Use of Quaternary ammonium compounds for disinfecting and housekeeping
• Alcohol (Isopropyl 70% or Ethyl Alcohol 70%) will be used where bleach is not suitable
• Use of EPA approved disinfectants
• Special precaution and risk assessment based on the disinfectant's properties and application methods
• Regular preparation and replacement of disinfectants

STAFF: TRAINING, PPE AND HYGIENE

• Cleaning staff will be trained and briefed prior to cleaning tasks on information such as COVID-19 symptoms, instructions if they develop symptoms, and use of PPE
• Cleaning staff shall wear impermeable gloves and N95 masks
• Cleaning staff will report breaches in PPE
• Cleaning staff will wash hands for 20 seconds before and after tasks

Source: AWR Lloyd Analysis
Cleaning and disinfecting guidelines (4)

GUIDELINES

WASTE DISPOSAL

• Dispose used test kits in the waste kit at work.
• Separate the kit from any recyclable material including the packaging, tube holder, or instruction booklet
• Dispose used cloth and wipes in waste bags
• Have a closed-lid receptacle dedicated for contaminated PPE with clear signs for employees to dispose the PPE in the correct bins. Wash hands for at least 20 seconds after PPE disposal
• Face mask strings should be removed to avoid impact on wildlife

Source: AWR Lloyd Analysis
Cleaning and disinfecting guidelines (5)

GUIDELINES FOR SUSPECTED/CONFIRMED COVID-19

Guidelines for cleaning and disinfecting where there has not been any reported case for suspected/confirmed COVID-19

Source: AWR Lloyd Analysis
Cleaning and disinfecting guidelines (6)

GUIDELINES FOR SUSPECTED/CONFIRMED COVID-19

GENERAL CLEANING GUIDELINES

• Cleaners proceed from cleaner to dirtier areas to avoid spreading dirt
• Keep windows open for ventilation
• Avoid using spray pack to apply disinfectants on potentially contaminated areas as it may create splashes which spread the virus
• Clean toilets with separate set of equipment
• COVID-19 related waste will be collected in a separate bag and labelled as COVID-19 waste and disposed by bio-medical treatment and disposal facility

CLEAN HARD, NON-POROUS SURFACE

• Surfaces include stainless steel, floors, kitchen surfaces, countertops, tables and chairs, sinks, toilets, railings, light switch plates, doorknobs, toys, keyboards, remote controls and recreation equipment
• Clean surface with soap and water
• Rinse surface with water and wipe with clean towel
• Apply disinfectant
• Rinse with water and allow surface to dry

Source: AWR Lloyd Analysis
Cleaning and disinfecting guidelines (7)

GUIDELINES FOR SUSPECTED/CONFIRMED COVID-19

CLEAN SOFT, POROUS SURFACE

• Includes carpets, rugs, transportation seats, towels, clothing, sofas, chairs & bedding
• Clean and disinfect routinely
• Remove visible contamination with appropriate cleaners
• Launder using hot water
• Dry on high heat

Source: AWR Lloyd Analysis
Cleaning and disinfecting guidelines (8)

HOW TO CLEAN FREQUENTLY TOUCHED SURFACES

Workstations, countertops, doorknobs, keyboards, remote controls, desks

- Disposable disinfectant wipes to be used, so that commonly used surfaces can be wiped down by employees before each use.
- Cleaning staff to wear disposable gloves when cleaning and disinfecting surfaces. Gloves should be discarded after each cleaning. If reusable gloves are used, those gloves should be dedicated for cleaning and disinfection of surfaces for COVID-19. Manufacturer’s instructions for cleaning and disinfection products to be followed. Hands to be cleaned immediately after gloves are removed.
- If surfaces are dirty, they should be cleaned using a detergent or soap and water prior to disinfection.
- For disinfection, diluted household bleach solutions, alcohol solutions with at least 70% alcohol, and most common EPA-registered household disinfectants to be used.

Source: AWR Lloyd Analysis
Cleaning and disinfecting guidelines (9)

• Diluted household bleach solutions to be used if appropriate for the surface. Follow manufacturer’s instructions for application and proper ventilation. Check to ensure the product is not past its expiration date. Never mix household bleach with ammonia or any other cleanser. Unexpired household bleach will be effective against coronaviruses when properly diluted. A bleach solution with below combination to be used for cleaning purposes:
  - 5 tablespoons (1/3rd cup) bleach per gallon of water or
  - 4 teaspoons bleach per quart of water

• For soft (porous) surfaces such as carpeted floor, rugs, and drapes, remove visible contamination if present and clean with appropriate cleaners indicated for use on these surfaces.

• After cleaning, launder items as appropriate in accordance with the manufacturer’s instructions. If possible, launder items using the warmest appropriate water setting for the items and dry items completely, or EPA-approved products for emerging viral pathogens to be used for porous surfaces.

• All contaminated waste (trash, soiled gloves) from the infected site needs to be disposed of safely.

Source: AWR Lloyd Analysis
Cleaning and disinfecting guidelines (10)

ALL AREA CLEANING

- Close off areas used by ill person and wait as long as possible before beginning cleaning and disinfection to minimize exposure to respiratory droplets
- Increase air circulation by opening windows and doors, wait 24 hours before cleaning and disinfecting
- Clean and disinfect all areas used by ill person
- Keep cleaning equipment to a minimum
- Mop floor with disinfectants or prepared bleach solutions
- Wipe all frequently touched areas with chemical disinfectants and allow to air dry
- Surface of food preparation site is rinsed with water and allow to air dry after applying disinfectants
- Clean toilets and all accessible surfaces of walls with disinfectant or bleach solutions

Source: AWR Lloyd Analysis
Cleaning and disinfecting guidelines (11)

ALL AREA CLEANING (CONTINUED)
• Wash curtains, fabrics, quilts by hot water cycle with detergent or disinfectant at 70 degrees Celsius for 25 minutes
• Steam cleaning for items that cannot be laundered for example furniture
• Items that are heavily contaminated and cannot be cleaned by washing or steaming should be disposed of
• Discard cleaning equipment made of cloth and absorbent materials such as mops and cloths into biohazard bags to prevent cross contamination
• Leave disinfected area and avoid using the next day where possible
• COVID-19 related waste will be collected in a separate bag and labelled as COVID-19 waste and disposed to bio-medical treatment and disposal facilities

Source: AWR Lloyd Analysis
Cleaning and disinfecting guidelines (12)

AREAS USED BY INFECTED PERSON

1. Cleaning staff clean and disinfect all areas (offices, bathrooms, and common areas) used by the ill persons, especially on frequently touched surfaces.

2. Cleaning of soiled areas must be completed prior to disinfection to ensure the effectiveness of the disinfectant product. If EPA- and DEC-registered products for SARS-CoV-2 are not available, disinfect using a disinfectant labeled effective against rhinovirus and/or human coronavirus.

3. If such products are unavailable, use a fresh 2% chlorine bleach solution (approximately 1 tablespoon of bleach in 1 quart of water)

Source: AWR Lloyd Analysis
AREAS USED BY INFECTED PERSON (CONTINUED)

4. Label directions must be followed when using disinfectants to ensure the target viruses are effectively killed. This includes adequate contact times (i.e., the amount of time a disinfectant should remain on surfaces to be effective), which vary between five and ten minutes after application. Disinfectants that come in a wipe form will also list effective contact times on their label.

5. For disinfectants that come in concentrated forms, carefully follow instructions for making the diluted concentration needed to effectively kill the target virus. Information can be found on the product label.

6. Cleaning and disinfecting should be conducted by staff who have been trained to use products in a safe and effective manner.

7. Staff to be reminded to ensure procedures for safe and effective use of all products are followed.
Laundry and dishwashing guidelines

LAUNDRIES AND DISHWASHING
To protect support workers in accommodation facilities, laundry and dishwashers should also take the following precautions

- Do not shake dirty laundry; this minimizes the possibility of dispersing the virus through the air.
- Wash items as appropriate, in accordance with the manufacturer’s instructions.
- Dirty laundry that has been in contact with an ill person cannot be washed with other people’s items.
- Use regular laundry soap and hottest water possible (at least 60-90°C).
- Clean and disinfect hampers or other carts for transporting laundry according to guidance above for hard or soft surfaces.

Source: AWR Lloyd Analysis
Laundry and dishwashing guidelines (2)

LAUNDRIES AND DISHWASHING (CONTINUED)

• Contaminated laundry should be placed into a laundry bag or basket with a plastic liner and shall not be shaken.
• Gloves and a surgical/procedural mask should be worn when in direct contact with contaminated laundry.
• Laundry should be thoroughly dried.
• Hand hygiene should be performed after handling contaminated laundry and after removing gloves.
• If the laundry container comes in contact with contaminated laundry, it should be disinfected using a diluted bleach solution.
• The proper functioning of the dishwashing and laundry equipment should be checked, particularly the operating temperatures, as well as the correct dosage of cleaning and disinfecting chemicals.
Food handling and dining hall protocols overview

Catering facilities tend to be areas where people crowd. In high-risk settings transmission mitigated through the following controls:

SAFE DISTANCING & DE-CONGESTION

- Reduce hall occupancy to **50% - 75%**
- **1 person** per table at a time
- **2m distance** in food parcel queue, between workers in kitchen areas and other food handlers
- **1m distance** between dining tables & stations
- **Stagger** meal timings, **schedule** and allow entry in batches to avoid crowding
- Setting specific timing for identified room occupants
- Post signage to communicate occupancy, physical distancing
- For **shared camps, separate timings** for **separate company** personnel
- **Avoid intermixing** of batches and bubbles
- No self-serve buffet system
- Warden to monitor queues
- Only authorized persons to enter the food preparation/ storage areas

Source: Abu Dhabi Agriculture and Food Safety Authority guidelines for safe handling of food, AWR Lloyd Analysis
Food handling and dining hall protocols overview (2)

CLEANING & DISINFECTION

• **Fruit and vegetables** shall be **pre-washed**
• Follow **sanitizing procedure** as per HACCP Plan
• Specified **training for cleaners** and housekeeping workers
• **Periodic** cleaning and **disinfection of** all food establishment **areas**
• Food handling staff to practice hand hygiene
• Food handling staff should not work if ill

• Tables & chairs (including the underneath) + other high-touch surfaces (equipment, tools, utensils) to be cleaned & disinfected after each meal
• Dish-washing shall be done by designated staff
• Check for proper functioning of the dishwasher, dosage of cleaning chemicals

Source: Abu Dhabi Agriculture and Food Safety Authority guidelines for safe handling of food, AWR Lloyd Analysis
Food handling and dining hall protocols overview (3)

HYGIENE & CROSS-CONTAMINATION

- No common-use condiments and no shared food containers
- Disposable cutleries and pre-packed food
- **Personal** drinking water bottles, disposable bottles & cups
- Hand hygiene prior to meals
- Workers to wear face masks in food parcel queues
- Use approved caterers that maintain high hygiene standards + dedicated food staff
- Temperature checks for catering staff
- Symptomatic employees should not work
- PPE for all food handlers + training on PPE use
- Uniforms of food handlers must be handled as per safe laundry guidelines

Source: Abu Dhabi Agriculture and Food Safety Authority guidelines for safe handling of food, AWR Lloyd Analysis
Food handling and storage guidelines

COLD FOOD STORAGE SPECIFIC PRECAUTIONS FOR COVID-19

1. Food contact surfaces and door handles should be frequently disinfected.

2. Food storage should be well organized with all incoming food deliveries including disinfection and disposal of packaging material as appropriate prior to storage.

3. Access into walk-in cold rooms should be limited to designated food handlers and entry documented to maintain traceability.

4. Disinfect hands and wear a new pair of gloves prior to entry.

5. Wear mandatory PPE (head-cover, beard-cover, hand gloves, facemasks and shoe covers) before entry into the cold rooms.

6. The deep cleaning frequency of the refrigerator and freezer units should be enhanced in line with the operations and potential risk of contamination in cold storage facilities.

Source: AWR Lloyd Analysis
Food handling and storage guidelines (2)

FOOD SAFETY HYGIENE SPECIFIC TO COVID-19 AMONG FOOD HANDLERS

1. Wash hands often with soap and water for at least 20 seconds, especially before, during, and after preparing food and after handling garbage.

2. Wear a surgical mask and follow the physical distancing guidance of at least 2 meters.

3. Disinfect frequently touched surfaces like door handles, countertops, chairs, tables, condiment holders, bathrooms and staff changing rooms. Make sure of frequent cleaning of the food and waste containers.

4. Use and change hand gloves before and after every activity where your hands come into contact with food.

5. Hold a valid medical fitness certificate and valid pass ‘essential food safety training’/‘basic food hygiene’ while working inside the food establishment.

Source: AWR Lloyd Analysis
On-site healthcare options for industrial project sites

For large industrial projects, an overlay of remote expertise on COVID-19 can be introduced via telemedicine in a cost-effective way.

**OPTION 1**
Site clinic with support systems for patients needing critical care
- ✓ Lowest CAPEX / OPEX
- ✓ Relatively easy to setup & maintain
- × Site lacks medical experts and intensive care capabilities

**OPTION 2**
Option 1 with telemedicine expert(s)
- ✓ Cost-effective solution and readily accessible and 24/7 support
- ✓ Informed decision making for patient care & transfer/MEDEVAC of patients
- × Requires ICT

Source: AWR Lloyd Analysis
Key COVID-19 safe transport guidelines

Where transport is provided to the workforce, the measures below can be adjusted to the result of a risk assessment.

**FLEET MANAGEMENT**
- Reduce vehicle capacity to 25% - 75% (subject to risk assessment)
- Allow only max. 3 pax in a light vehicle
- Conduct only point-to-point trip
- Avoid mixing shifts, dorms, offices, etc.

**HYGIENE & CLEANLINESS**
- Disinfect vehicle exterior between trips
- Disinfect vehicle interior at least daily
- Provide hand hygiene facilities/supplies
- Provide adequate ventilation during trips
- Install a driver cabin partition

**PERSONNEL ON-BOARDING**
- Temperature screening before and after trips
- Entry/exit through rear entry doors
- Allocate 2 seats per worker
- Implement zigzag seating arrangement
- Prohibit food consumption during trips and prohibit talking

**RECORD KEEPING**
Vehicle disinfection

Source: AWR Lloyd Analysis
Driving protocols

Those involved in vehicle driving, loading or maintenance can consider the following transmission mitigation measures:

- **Frequently clean, disinfect and sanitize the following surfaces** inside & outside your vehicle several times a day e.g., Steering wheel; radio; controls; door handles; armrests; head rests; company and personal electronic devices; all tools and equipment, especially those shared with others.

- **Thoroughly wash & disinfect your hands regularly**
  - Wash your hands with liquid soap and water for a minimum of 20 seconds.
  - If soap and water is not available, disinfect hands regularly with hand sanitizer before entering and after leaving the vehicle.

- **Always apply safe physical distancing** of at least **2 meters** with all personal interactions. While inside the cabin, make sure there is **1 meter** distance between passengers e.g., leave an empty seat between every person.

Source: AWR Lloyd Analysis
Driving protocols (2)

- **Always wear hand gloves** when at loading and unloading docks, gas stations, customers’ sites and terminals or while interacting with others (while taking signatures or exchanging documents).

- **Report to your supervisor** if you or any passenger shows potential symptoms of COVID-19 such as dry cough, fever, sore throat, difficulty in breathing or headache.

- **Light vehicle:**
  - Ensure a maximum of 3 occupants on board at any time (1 driver + 2 passengers)
  - **Buses:** Ensure a maximum capacity of 75% at any time.

- **Sign transport documents with your own pen** and do not share it with anybody else.

- **Always wear a protective face mask** while inside the vehicle at all times.

- **When on duty, reduce personal interactions** as much as possible.

Source: AWR Lloyd Analysis
Goods and materials delivery protocols

Offices, warehouses or work settings should also practice safe behaviors around deliveries and logistics

Applicable for both worksites and camps

PRIOR TO ENTRY/ON ARRIVAL

- Consolidate deliveries to minimize frequency and required personnel
- E-receipts/e-forms prior to delivery. Find alternatives to all hard-copy signatures
- Disinfect vehicle with a spray solution comprising 1% sodium hypochlorite
- Delivery personnel to undergo contactless body temperature screening
- Delivery personnel to wash/sanitize hands, wear clean hand gloves and surgical/cloth mask

Source: AWR Lloyd Analysis
Goods and materials delivery protocols (2)

DURING DELIVERY PROCESS
- Deny entry if delivery personnel exhibit COVID-19 symptoms
- Checkpoint security to inform duty manager and line HSE about the same
- Delivery staff to preferably remain inside the vehicle and use contactless communication methods
- Delivery staff and goods receiving personnel to maintain 2 m distance at all times
- Goods to be delivered at a well ventilated designated and restricted receiving area
- Delivery staff must return to the vehicle cabin and remain seated inside post unloading.
- Dedicated, separate shared facilities (changing rooms, toilets, etc.) for delivery personnel

Source: AWR Lloyd Analysis
Goods and materials delivery protocols (3)

POST DELIVERY

- Checkpoint security to ensure safe removal and disposal of all PPE & gloves in biomedical waste bins
- Incoming deliveries to be handled by goods receiving personnel wearing appropriate PPE
- Incoming deliveries to be sanitized before delivered to team members
- Outer packing to be removed at a designated de-boxing area
- The receivables areas to be sanitized routinely using industrial grade disinfectants.
- Sanitize frequently touched goods handling equipment

Source: AWR Lloyd Analysis
Case Study: Transportation Protocols

MONTRI TRANSPORT SERVICES

MONTRI transport service works with large international schools in Bangkok to ensure that strong safety measures are implemented. Bussing times have been adjusted to accommodate to physical distancing requirements and student schedules.

Bus Service Operations

- The bus service provided is provided from home to school and back.
- All regular bus service recipients receive an email from MONTRI with pick up and drop off time information.
- If there are any questions specific to transportation, the transportation team should be contacted directly.

Source: Company Data, AWR Lloyd Analysis
Case Study: Transportation Protocols (2)

All buses are disinfected twice daily following disinfection cleaning guidelines and concentration recommendations for infectious disease outbreaks.

Bus monitors have been trained in the use of no-touch infrared temperature monitors and how to best accurately take the temperature of the students.

Students should sit in the same seat during both trips.

Students should avoid eating or drink whilst on the bus.

Additional supplies in each bus:
- No-touch infrared temperature monitor
- A bottle of hand sanitizer
- Disinfectant wipes
- Sick bags for emergency use

Source: Company Data, AWR Lloyd Analysis
SECTION EIGHT

1. COVID-19 Overview
2. Thinking About Risk
3. HSE Governance
4. Workplace
5. International Travel
6. Accommodation
7. Transport and Visitors

Communication and Awareness

9. Mental Health
10. Digital Tools
11. Vaccination
12. Future Risk Mitigation
Communication and leadership can combat the ‘infodemic’

CLEAR COMMUNICATION
Communication, organisation and leadership can improve morale, group cohesion and adherence to safety regulations, and reduce misinformation, frustration and stigma.

- Adhere to set guidelines
- Acknowledge loss of colleagues
- Offer regular forums for open discussion
- Integrate religious and cultural factors
- Engage interpreters and cultural brokers

Source: WHO
Communication and leadership can combat the ‘infodemic’ (2)

1. Adhere to set guidelines
   Adhere to WHO guidelines on combating stigma and develop a coordinated communications strategy throughout the chain of command around dispelling COVID-19 myths by sharing facts about transmission, prognosis, and treatment.

2. Integrate religious and cultural factors
   Death of colleagues needs to be monitored by managers and responded to appropriately. Avoidance or lack of sensitivity can lead to resentment. Managers may need training on how to handle these situations sensitively.

3. Acknowledge loss of colleagues
   Set up regular forums in which leadership and health professionals are available to answer questions and clarify confusion around safety regulations, and log or address complaints.

Source: WHO
Communication and leadership can combat the ‘infodemic’ (3)

Offer regular forums for open discussion
Consider integrating non-medical healers or religious authorities among medical staff and communication channels (e.g., imams and priests) to reinforce messaging and gain legitimacy

Engage interpreters and cultural brokers
Engage interpreters and cultural brokers to facilitate communication between medical staff, workers and leadership.

Source: WHO
Vaccine myth busting

Communicating accurate vaccine information is critical and can prevent common vaccine myths, rumors and conspiracy theories in the workplace

**MYTH**: THE VACCINES ARE FULL OF TOXIC INGREDIENTS.

**FACT** VACCINE INGREDIENTS ARE SAFE

Vaccine manufacturers such as Pfizer and Moderna publish ingredient lists on their websites. To gain approval for use, all vaccine manufacturers must declare their ingredients to various health bodies to gain approval for use. All approved vaccines have also undergone rigorous testing to ensure they are safe for use both in theory and in practice.

**MYTH**: VACCINES CAN GIVE YOU COVID-19.

**FACT** VACCINES CANNOT GIVE YOU COVID-19

There is no live virus present in the vaccine, so it is impossible for them to infect you. Vaccines contain components that prime your immune system to fight off infection, which may cause temporary side effects such as fatigue, fever, or muscle aches, but this is normal for vaccines in general and does not mean you have been infected.

Source: USAID, FHI 360, AWR Lloyd Analysis
Vaccine myth busting (2)

**MYTH:** YOU CAN GET COVID-19 THROUGH 5G NETWORKS.

**FACT:** 5G NETWORKS CANNOT TRANSMIT COVID-19

COVID-19 is spread through droplets that travel through the air when an infected person speaks, coughs, or sneezes. Contaminated surfaces can also give you the virus if you touch your eyes, nose or mouth after contact. However, it is impossible for viruses to travel through radio waves or mobile networks.

**MYTH:** COVID-19 VACCINES CAN ALTER YOUR DNA.

**FACT:** THE VACCINES CANNOT ALTER YOUR DNA

COVID-19 vaccines contain a strand of genetic material called mRNA (messenger RNA), which gives instructions to our body’s natural defenses on how to develop immunity to the disease. However, this mRNA doesn’t ever enter our cell nuclei, which is where our DNA lives. mRNA does not stay in our bodies – it simply disintegrates after its job is done.

Source: USAID, FHI 360, AWR Lloyd Analysis
Vaccine myth busting (3)

**MYTH:** I HAVE HAD COVID-19 SO I DON’T NEED THE VACCINE.

**FACT:** YOU CAN BENEFIT FROM THE VACCINE EVEN AFTER HAVING COVID-19

While your body produces antibodies after you have been infected with COVID-19 that give you immunity to the disease, we still don’t know how long this immunity lasts. While it is uncommon, there have been cases of reinfection already. You will be better protected against reinfection from COVID-19 if you take the vaccine.

**MYTH:** THERE ARE MICROCHIPS IN THE VACCINE.

**FACT:** THE VACCINE DOES NOT CONTAIN MICROCHIPS

A video which went viral on Facebook made false claims about vaccines containing microchips or other tracking devices. This is simply not true. One company is providing the option of a microchip in the label of a syringe to help providers confirm a vaccine dose’s origin, but this is neither injected into the body, nor is it a widespread practice.

Source: USAID, FHI 360, AWR Lloyd Analysis
### Steps to addressing misinformation on vaccines

**EMPLOYERS HAVE A STAKE IN INCREASING VACCINE DEMAND AND REDUCING HESITANCY**

<table>
<thead>
<tr>
<th>FACT</th>
<th>WARNING</th>
<th>FALLACY</th>
<th>FACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lead with the facts</td>
<td>• Misinformation alert!</td>
<td>• Unintentional Explain reasons why facts could have been misinterpreted</td>
<td>• Provide alternative correct information</td>
</tr>
<tr>
<td>• Make them clear, relevant, memorable</td>
<td>• Misleading tactics alert!</td>
<td>• Intentional Flag tactics being used to deceive</td>
<td>• Must replace misinformation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Undermine trust in disinfection authors</td>
<td>• Make correct information more memorable than misinformation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reveal hidden agenda</td>
<td></td>
</tr>
</tbody>
</table>

- **Acknowledgment and response to concerns about side effects**
- **Counter misinformation with accurate, easy-to-understand information delivered through trusted sources and channels**

Source: CDC & ADB
Steps to addressing misinformation on vaccines (2)

CASE STUDIES

India
- Rumors were circulating about how vaccines can cause negative side effects such as infertility
- The government used mass media and influential people to communicate correct information
- Key messages are 1) vaccines provide protection against COVID-19; and 2) vaccines are safe.

Indonesia
- In 2017, the government rolled out the measles-rubella childhood vaccine campaign. However, parents were doubtful if the vaccine is “halal”. Thus, the campaign was not successful.
- During COVID-19, the government assured that Sinovac vaccine is “halal”.

Philippines
- In 2016, vaccine manufacturer released new finding on how vaccines increase risk of severe dengue amid Philippines’ dengue vaccination program, leading to the people’s mistrust of the government.
- During COVID-19, the government is focusing on educating the households and communities by improving communication on the vaccines.

Source: CDC & ADB
Communication & awareness: information signs

Companies can communicate & raise awareness through information signs that align with WHO and European Center for Disease Prevention and Control guidelines:

- Do not enter this site if feeling unwell
- STOP! Have you had your temperature checked?
- Maximum XX persons permitted to work in this area at one time
- Please sit HERE
- Gloves, Masks and Face Shields must be worn in this area
- Use pedestrian walkway; One-way system in place
- Adhere to 2-meter physical distancing

Source: AWR Lloyd Analysis
COVID-19 RISK MITIGATION PLANS SHOULD BE DISTRIBUTED TO THE FOLLOWING:

- Company contractors
- Project managers
- Government entities
- All vendors & suppliers
- Visiting agencies
- All staff & workers
- Clients
- Customers

Source: AWR Lloyd Analysis
Communication & awareness: distribution channels

On large worksites, companies should cascade all relevant HSE communications, updated by the WHO and their own COVID-19 guidelines, to all employees and subcontractors.

COMMUNICATION CAN TAKE PLACE AS PER THE FOLLOWING:

- Daily COVID-19 management meetings
- Weekly progress HSE Meetings
- Safety Moments
- Sharing relevant video clips on the prevention of the spread of COVID-19
- Official letters to all subcontractors
- Official emails
- Daily communications – knowledge of the day
- Daily TBT/ meeting – every shift change
- Interoffice memos/circular

Source: AWR Lloyd Analysis
Program to strengthen knowledge, motivation & compliance

Effective communication within the workforce that leads to behavior change requires planning and coordination.

Source: FHI 360
Program to strengthen knowledge, motivation & compliance (2)

**ENGAGE WORKER REPRESENTATIVES**
- Involving various types of workers in COVID-19 management decisions ensures workers feel heard
- Ensures workers have ownership over measures and mandates

**SELECT CHAMPIONS TO SHARE THEIR STORIES**
- Identify workers, such as those who have recovered from COVID-19
- Train them to share their stories during e.g., transport time to motivate peers to adopt key behaviors

**TRAIN WORKERS FOR PEER COMMUNICATION**
- Training in peer-to-peer communication on COVID-19 virus prevention and control measures and policies
- Train workers of all categories (e.g., camp leaders, supervisors)
- Training should be interactive, involving practice exercises, and tools to use when talking to their peers

Source: FHI 360
Program to strengthen knowledge, motivation & compliance (2)

IDENTIFY RISK AREAS & SOLUTIONS WITH WORKER REPRESENTATIVES
• Assessment results may be shared with workers during training, so they understand risks and measures for specific areas and activities, and the need for compliance.

MONITOR AND REWARD COMPLIANCE
• Workers may feel more motivated if their compliance with prevention and control measures is recognized
• Rewards may include food or an afternoon off work

PRODUCE BEHAVIOR CHANGE TOOLS & MESSAGES
• Tools and messages should address barriers, act as facilitators for desired behavior
• Can be shared by trained peers or made available at rest stations, cafeteria, etc.
• “How to” videos on handwashing steps and time, the correct use of masks, donning and doffing of respirators and symptoms of COVID-19 could be useful.

Source: FHI 360
Trainings to be conducted for company workers

**EMPLOYEES SHOULD RECEIVE FORMAL TRAINING ON COVID-19 RISK MITIGATION MEASURES**

<table>
<thead>
<tr>
<th>Training Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19 awareness training</td>
<td>for all employees (from camp leader to supervisors)</td>
</tr>
<tr>
<td>Specialized training for contractors/third-party</td>
<td>e.g., catering</td>
</tr>
<tr>
<td>Cleaning and disinfecting training for support</td>
<td>staff (e.g., cleaners, housekeeping)</td>
</tr>
<tr>
<td>Training for drivers &amp; passengers</td>
<td></td>
</tr>
<tr>
<td>Training for equipment operators</td>
<td></td>
</tr>
<tr>
<td>Training for correct PPE use</td>
<td></td>
</tr>
<tr>
<td>Peer communication training</td>
<td>for all workers (from camp leader to supervisors)</td>
</tr>
</tbody>
</table>

Source: AWR Lloyd Research
Reputational risk management

Organizations should be aware that their response to COVID-19 may be monitored and scrutinized. This can lead to unforeseen reputational issues.

**BEFORE**
Prepare, appoint, establish, curate

1. **Prepare** templates for social media and press releases in anticipation of possible crises, e.g., negative media coverage on a severe outbreak of COVID-19 at Company.

2. **Appoint** one high-ranking designated spokesperson to rapidly respond in case of interview requests.

3. **Establish** a chain of command to alert and involve in case of a crisis. This should include the marketing and communications team, the CEO, and the COVID-19 manager. List their roles and contact details.

4. **Curate** a list of friendly journalists or media outlets (and their contact details) who will portray the company in a positive light if needed. They should be sent press releases during a crisis.

Source: AWR Lloyd Analysis
Reputational risk management (2)

**DURING**

Listen, identify, review, respond

1. **Listen** to all coverage on crisis. This may be done manually, and automatically through tools such as Talkwalker Alerts. If immediate response is needed, issue a holding statement, e.g. “We will respond shortly, thank you for your patience.”

2. **Identify** the exact concerns raised by the media. Separate into true facts and misunderstandings. Compile past, present and future company actions to address real issues, and use to modify templates.

3. **Review** response with established chain of command to ensure honesty, empathy, clarity, and conciseness.

4. **Respond**. Designated spokesperson should be briefed by chain of command before interviews. Avoid public squabbles, and don’t offer false promises.

Source: AWR Lloyd Analysis | Note: (1) Talkwalker Alerts is a free online tool that tracks usage of your brand’s key words
**Reputational risk management (3)**

**AFTER**

Monitor, update, analyze, learn

1. **Monitor** social media and relevant news outlets to ensure that the public relations crisis is resolved.

2. **Update** your response as needed. Post clearly about how you are working to address any remaining issues. In addition, update all employees on stance and steps taken to ensure a cohesive story throughout the company.

3. **Analyze** the quality of company response once crisis is over with the whole team. Keep records evaluating all actions taken for future reference.

4. **Learn** from issues picked up by media. What are the company’s reputational weaknesses? How can these be strengthened in the long term?

---

Source: AWR Lloyd Analysis
SECTION NINE

1. COVID-19 Overview
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7. Transport and Visitors
8. Communication and Awareness

**Mental Health**

9. Digital Tools
10. Vaccination
11. Future Risk Mitigation
Psychological resilience & wellbeing optimize business and health outcomes

Mental health is part of Corporate and Social Responsibility (CSR)

• Just as a company is ethically responsible for promoting physical health and safety within the workplace, it is also increasingly held responsible for the mental health and wellbeing of its employees.

• For example, the Australian minerals industry have made mental health a key element of their workplace health and safety strategy, with evidence that mining employees in Australia have worse mental health compared to other community members.

“As part of our commitment to the health and safety of our workforce, the Minerals Council of Australia recognises the importance of addressing all aspects of workforce health including mental health.”

Source: Minerals Council of Australia, Harvard Business Review, AWR Lloyd Analysis
Psychological resilience & wellbeing optimize business and health outcomes (2)

Reduce workplace accidents and injuries and boost productivity

• Better mental health means fewer accidents and injuries, as well as improvements in productivity and performance.
• Organizations in which employees feel undervalued and insecure experience 18% less productivity and 16% lower profitability.
• Maximizing productivity through supportive organization cultures is especially critical as physical distancing measures have reduced work output due to fewer on-site man hours.

“In the US, it is estimated that 60-80% of workplace accidents are attributed to stress, and studies show links between psychological distress and increased workplace accidents and occupational injury.”

Source: Minerals Council of Australia, Harvard Business Review, AWR Lloyd Analysis
Psychological resilience & wellbeing optimize business and health outcomes (3)

Improves physical health and takes pressure off general health services
• Mental healthcare services and psychosocial interventions take pressure off general health services, which are under pressure even more than usual due to the pandemic.

---

**HOW STRESS HORMONES AFFECT OUR BODY**

**Cardiovascular System**
- Heart rate ↑
- Blood pressure ↑
- Arterial tension ↑

- Stroke
- Heart attack

**Immune System**
- Thyroid function ↓
- # of killer cells ↓

- Cancer

**Digestive System**
- Blood flow ↓
- Metabolism ↓
- Dry mouth ↑
- Intraocular pres. ↑
- Eyesight ↓

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Source: Minerals Council of Australia, Harvard Business Review, AWR Lloyd Analysis
Key elements for mental health

Simple guidelines and considerations developed by the WHO can be used to support the mental and psychosocial well-being of employees at the workplace or at home, their families, and the local community.

**WHO MENTAL HEALTH GUIDELINES**

- Be empathetic to those who are affected by COVID-19, regardless of their nationality
- Do not refer to those with COVID-19 as “COVID-19 cases”, “victims”, “COVID-19 families” or “diseased”
- Refer to those with COVID-19 as “People who have COVID-19”, “People who are being treated for COVID-19” or “People who are recovering from COVID-19”

Source: WHO Guidelines, AWR Lloyd Analysis
Key elements for mental health (2)

WHO MENTAL HEALTH GUIDELINES (CONTINUED)

Avoid watching, reading, listening or sharing news that causes anxiety or stress to you and others in the office.

Seek information to take steps to prepare your plans and protect yourself and those around you.

Seek information updates from your employers regularly on office policies.

Gather information from the WHO and local authorities’ platforms to distinguish facts from rumors.

Source: WHO Guidelines, AWR Lloyd Analysis
Solutions to boost psychological resilience and wellbeing

EXAMPLES OF PRACTICAL SOLUTIONS

Suggested solutions to problems should follow from the unmet-need workshops. The following are examples of solutions to wellbeing, psychosocial and mental health related problems:

- **Friendship benches**, an evidence-based talk therapy system led by non-mental health professionals such as nurses, or worker volunteers.

- **Teletherapy** in multiple languages (this service is offered by companies like Workplace Options).

- **Fitness programs and access** to organized team or individual sports such as running or cricket.

Source: AWR Lloyd Analysis
Solutions to boost psychological resilience and wellbeing (2)

EXAMPLES OF PRACTICAL SOLUTIONS (CONTINUED)

Access to religious spaces (e.g., mosque, temples etc.). Religious and cultural holidays should be observed or at the least acknowledged.

‘Wellbeing leads’ – workers nominated/trained to encourage participation in meaningful, social activities such as film nights or music groups.

‘Sleep hygiene’ and healthy eating workshops and resources. These could be run by joint physical and mental health teams.

Source: AWR Lloyd Analysis
Solutions to boost psychological resilience and wellbeing (3)

EXAMPLES OF PRACTICAL SOLUTIONS (CONTINUED)

Daily ‘care spaces’, run by a team leader (online or off-line). These give workers space to reflect on how they’re coping, and unmet needs. Workplace support from colleagues and in particular supervisors, is particularly critical for workers under the strictest quarantine measures or with suspected/confirmed COVID-19.

The Pakistan Country Director for the Interactive Research & Development health organization, suggests WhatsApp peer-led support groups of 10-15 people, supported by a counsellor.

Counsellors can share key information on mental health and self-care, but also allows participants to set the agenda for conversation and share experiences (lockdown, financial insecurity etc.)

Source: AWR Lloyd Analysis
Wellbeing workshops and professional support in person and online

WELLBEING WORKSHOPS

1. Deliver wellbeing education workshops to workers led by health team members (e.g., nurses).

2. The purpose is to identify physical and psychological responses to stress, confinement, uncertainty and loss – e.g., disrupted sleep, anxious thoughts, feeling hopeless, stomach aches and headaches, panic attacks, suicidal ideation, anger and irritability, loss of appetite.

3. Leaders should explain that such symptoms are normal in difficult circumstances.

4. Leaders should then identify self-care strategies and practices to manage response symptoms – e.g., scheduling and routine, relaxation, meditation, breathing techniques, eating well, exercise, assertive communication, and how to ask for help. Workers could be provided with wellbeing resources such as relaxation music and fragrant oils.

5. Create a peer support group with counselling opportunities for employees with a health expert.

Source: AWR Lloyd Analysis
Wellbeing workshops and professional support in person and online (2)

PROFESSIONAL SUPPORT (CONTINUED)

1. Identify a clear referral process for workers who want further professional support with these issues (e.g., contacting the medical team for an appointment). Encourage them to reach out if they are experiencing severe symptoms such as suicidal ideation, severe insomnia, or amnesia.

2. Ensure that the medical team are properly resourced – workers should only be offered help that can actually be provided.

3. A mental health lead in the medical team with the required psychiatric/psychological training and experience should be designated – either a current staff member, or a new recruit.

4. The company should have protocols for treating workers who may need psychiatric medication, off-site treatment, time off, or talking therapy options (this could be offered in collaboration with Workplace Options).

Source: AWR Lloyd Analysis
Identifying workers’ unmet needs through workshops

IDENTIFYING UNMET NEEDS

1. Run **bottom-up problem-solving** workshops. These are structured discussion groups/workshops with workers, led by a respected team leader and another staff member such as a nurse or external researcher.

2. Leaders should ask questions like, “What main problems or difficulties are you having at the moment?” to identify issues related to work, health, teamwork, social and personal life. Get an order of importance/priority from the workers for the different problems and difficulties.

3. Elicit suggested or desired solutions – “how would you solve this problem?”

4. Compile the results of this to get a picture of what needs, and problems are currently a priority for the workers, and how they envision a solution.

Source: AWR Lloyd Analysis
Identifying workers’ unmet needs through workshops (2)

CO-DEVELOPING SOLUTIONS (CONTINUED)

1. Can be a springboard for the design of any proposed psychosocial or organizational interventions and changes, which should directly meet the most important needs of the workers, as they see them.

2. Note that several iterations of the discussion will be necessary – solutions should be co-developed by the management and the workers. Different groups of workers may be facing different problems and require different solutions.

3. Team leaders will need training to run these workshop discussions.

4. An occupational and clinical psychologist could form part of the team.

Source: AWR Lloyd Analysis
Sources of psychological resilience and wellbeing

A mental health and psychosocial stress assessment can be conducted to identify which issues are most urgent, and for which workers in particular. This assessment could be integrated as part of routine physical health screenings. Depending on the needs identified, solutions may include:

- Religious or cultural spaces
- Meaningful activities
- Healthy habits
- Fitness and exercise
- Support groups
- Fostering team culture

Source: AWR Lloyd Analysis
Sources of psychological resilience and wellbeing

SOURCES OF PSYCHOLOGICAL RESILIENCE AND WELLBEING EXPLAINED

RELIGIOUS OR CULTURAL SPACES
Spaces for people to celebrate or mourn in religious or culturally appropriate ways (e.g. mosque, temple). Workers need to be given space and time to grieve for the loss of their colleagues or loved ones back home.

MEANINGFUL ACTIVITIES
Team leaders should be responsible for encouraging participation in meaningful and social activities, such as film evenings, professional development workshops, music groups, or cricket matches.

HEALTHY HABITS
‘Sleep hygiene’ and healthy eating workshops and resources, run by joint physical and mental health teams.

Source: AWR Lloyd Analysis
Sources of psychological resilience and wellbeing

SOURCES OF PSYCHOLOGICAL RESILIENCE AND WELLBEING EXPLAINED

FITNESS AND EXERCISE
Fitness programs (there is some evidence that participation in workplace fitness programs can enhance health-related fitness and reduce risk-taking behaviour).

SUPPORT GROUPS
Daily ‘care spaces’ for workers, especially those with COVID-19, to reflect on their wellbeing or unmet needs. Workplace support from supervisors in particular protects against mental health problems.

FOSTERING TEAM CULTURE
Support team leaders and managers to apply evidence-based best practices to create workplace culture that boosts health, positivity and resilience, including fostering social connection, compassion, teamwork, loyalty and trust.

Source: AWR Lloyd Analysis
Mental health considerations

In addition to physical health measures, the company’s return-to-work strategy should include solutions to the mental health and organizational impacts of COVID-19, including:

- Promote psychological resilience of workers and management teams
- Implement optimal coordinated communications strategy

Source: AWR Lloyd Analysis

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**PSYCHOLOGICAL RESILIENCE**

The process of *adapting well* in the face of adversity, trauma, tragedy, threats, or significant sources of stress.

- American Psychological Association
Mental health considerations (2)

The following psychological stressors may be aggravated:

- Loss of usual routine and coping mechanisms, e.g. exercise, religious practice
- Loss of family member(s), inability to attend funerals
- Reduced income, lower remittance sent back to family
- Uncertainty about the future, unclear direction from management
- ‘Infodemic’ of COVID-19 fake news, conspiracy theories

These stresses may increase interconnected negative outcomes:

- Non-compliance towards instruction, aggression
- More workplace accidents and injuries
- Increased absenteeism, poor performance and efficiency
- Poor memory, lack of concentration

We recommend hiring a professional global health support organisation

Workplace Options

Source: AWR Lloyd Analysis
## Workplace Options COVID-19 Response

### PANDEMIC-RELATED CASES: IN 139 COUNTRIES

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2 20</td>
<td>16.7% peak</td>
</tr>
<tr>
<td>Q3 20</td>
<td>10.3% average</td>
</tr>
<tr>
<td>Q4 20</td>
<td>8.04% current</td>
</tr>
<tr>
<td>Q1 21</td>
<td>10.3% average</td>
</tr>
</tbody>
</table>

### New crisis hotlines supported in 36 languages
- 209+

### 85% VIRTUAL VS. 15% IN-PERSON CASES

- **43%** of all cases Single-Session Therapy
- **20%** of all cases Video Therapy Cases
- **22%** of all cases Telephonic Therapy Cases

### Sources:
- Company Data

---

Mental Health

1 2 3 4 5 6 7 8 9 10 11 12
Workplace Options COVID-19 Response (2)

- **Workplace Options** is the world’s largest privately-owned and independent provider of integrated employee wellbeing solutions.
- It offers **emotional, practical, and physical support** to employees and families **worldwide**.
- Offers **more than 209 new crisis hotline services** in **36 languages** worldwide.
- Offers virtual webinars, live events, calls, and training, supporting **more than 1 million individuals**.
- **85%** of the cases are reported **virtually**, while **15%** of the cases are reported **in-person**.
- **Single-session therapy is highly demanded**, followed by telephonic therapy and video therapy.

Sources: Company Data
SECTION TEN

1. COVID-19 Overview
2. Thinking About Risk
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Digital Tools
10. Vaccination
11. Future Risk Mitigation
Contact tracing is an essential epidemiological tool in the fight against COVID-19. However, the magnitude and transmissibility of the disease has outstripped the capacity of health authorities to track, trace, and treat infections as they arise.

<table>
<thead>
<tr>
<th>TRADITIONAL METHOD</th>
<th>DIGITAL METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expensive, slow tracing, and challenging to scale</td>
<td>Scalable and low-cost</td>
</tr>
<tr>
<td>Higher effectiveness at reducing transmission rates for a fixed number of individuals</td>
<td>Higher feasibility for large-scale implementations</td>
</tr>
</tbody>
</table>

Countries developed smartphone applications for digital contact tracing using GPS or Bluetooth data to track.
Digital tools: An overview (2)

Digital tools as of June 2021 (from 77 countries):

- **124** Released as smartphone or as web-based platforms
- **11** Still in development
- **17** Cancelled
- **152** Total

Source: Khmer Times, HDSR, AWR Lloyd Analysis
Digital tools: An overview (3)

CAMBODIA’S QR CODE SYSTEM

All individuals must scan the QR code through the application when visiting ministries, institutions, hotels, guesthouses, restaurants, entertainment venues, condominiums, companies, factories, enterprises and other public places. Site owners can create their QR code at stopcovid.gov.kh.

Blue Screen – Entry allowed
This person is fully vaccinated and has not been involved with any COVID-19-infected patient. Vaccine status is connected to personal identification card.

Green Screen – Entry allowed
This person is normal with no involvement with any COVID-19-infected patient. If already fully vaccinated, the person can update their vaccination record on the application to reach the BLUE status.

Source: Khmer Times, HDSR, AWR Lloyd Analysis, System updated on October 18, 2021, to include vaccination records
Digital tools: An overview (4)

CAMBODIA’S QR CODE SYSTEM (CONTINUED)

**Yellow Screen – Entry can be denied**
This person has been involved with a COVID-19-infected person or travelled somewhere in the last 14 days and has not yet completed quarantine.

**Red Screen – Entry not permitted**
This person has been infected with COVID-19 and should be reported to the Ministry of Health (Call: 118).

Source: Khmer Times, HDSR, AWR Lloyd Analysis, System updated on October 18, 2021, to include vaccination records
Digital Tools: Self-assessments

Self-assessment tools are available for individuals who have concerns in relation to COVID-19 to evaluate whether they need to seek testing or medical care if they suspect that they or someone they know has contracted COVID-19 or has come into close contact with someone infected with COVID-19.

MORCHANA APPLICATION FOR SELF-ASSESSMENTS

The application offers a contact tracing solution that enables smartphone device users to perform self-assessment and determine the risk level of infection based on exposure and travel history. It is designed to track the spread of the novel coronavirus, prompt quick and accurate public health responses, and ensure effective and measurable physical distancing measure.
USE OF TECHNOLOGY FOR SELF-ASSESSMENT & CARE

The online tool asks a series of questions and provides recommended actions and useful resources based on the user’s responses:

- Self-isolate
- Test for COVID-19
- Seek medical advice

Benefits: helps prevent our healthcare system from being overwhelmed through:

- Real-time data collection
- COVID-19 databases and analysis
- Management of people with COVID-19 concerns

Following a series of questions, the application will provide individuals with a QR code in specific colors based on risk levels:

- **LEAST RISK**
  - Normal
  - Low risk; isolation and test are not required
  - Self-Isolated for 14 days
  - Seek Medical Attention

- **MOST RISK**

If the QR Code is:

- Seek Medical Attention
- Self-Isolated for 14 days
- Low risk; isolation and test are not required
- Normal

CDC, PubMed, WHO, AWR Lloyd Analysis
# Digital tools: Comparison

<table>
<thead>
<tr>
<th>Type</th>
<th>Contact Tracing / Proximity Data</th>
<th>Test Result Notification &amp; COVID-19 Status</th>
<th>Quarantine Monitoring</th>
<th>Updates and Awareness</th>
<th>Telemedicine</th>
<th>Health Self-assessment</th>
<th>Compliance Reporting</th>
<th>Location Check-in/Barcode</th>
<th>Vaccination Information</th>
</tr>
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<tbody>
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</table>

Source: AWR Lloyd Analysis
## Digital tools: Comparison (2)

<table>
<thead>
<tr>
<th>Source: AWR Lloyd Analysis</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Contact Tracing / Proximity Data</th>
<th>Test Result Notification &amp; COVID-19 Status</th>
<th>Quarantine Monitoring</th>
<th>Updates and Awareness</th>
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<th>Health Self-assessment</th>
<th>Compliance Reporting</th>
<th>Location Check-in/Barcode</th>
<th>Vaccination Information</th>
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<tbody>
<tr>
<td>VMN VMN</td>
<td>App</td>
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<td>LAOKYC</td>
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<tr>
<td>AOK PASS</td>
<td>App</td>
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<td>✓</td>
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</tbody>
</table>

Source: AWR Lloyd Analysis
Case Study: Singapore digital solutions for safe return to work

Digital tools in Singapore have been successfully used to map activities and issue quarantine orders during the course of COVID-19 pandemic. The use of digital contact tracing enabled government to save time through integrating data collected from applications with other data sources and sub-system. These measures led to cost savings by developing more scalable solutions that don’t rely on heavy infrastructures or manpower efforts. Currently, the three applications widely used in Singapore are SGworkPass, FWMOMCare, and TraceTogether.

Source: Singapore Ministry of Manpower
Case Study: Singapore digital solutions for safe return to work (2)

**SGWORKPASS ACCESSCODE STATUS**

SGWorkPass incorporates ‘AccessCode’, which displays whether a foreign worker is permitted to leave their dormitory for work.

- **FWMOMCare**
  Mobile application to monitor foreign workers' health and declare their health status to the Ministry of Manpower (MOM)

- **TraceTogether**
  Mobile application (also available as a physical token) to identify close contact with confirmed COVID-19 cases

- **SGWorkPass**
  Mobile application that gives workers permission to leave work and return to work

Source: Singapore Ministry of Manpower
Case Study: Singapore digital solutions for safe return to work (3)

ACCESSCODE COLORS AND DESCRIPTION ARE SHOWN BELOW:

**Red**
- FWMOMCare is not installed and updated
- TraceTogether is not installed and updated
- QR code address and dormitory records do not match
- Employer has not been given approval to operate
- If the worker:
  - Is confirmed to be infected with COVID-19 or serving a Quarantine Order / Stay-Home Notice
  - Missed Rostered Routine Testing (RRT)
  - Requires re-test
  - Requires swab

**Green**
- Worker is safe to exit dormitory & return to work
- Employer is given approval to restart operations

**Black**
- Worker's place of stay temporarily cannot be used to determine AccessCode status
AOK Pass

Blockchain-based app is safe, efficient and monitors compliance for work resumption

**HOW DOES THE AOK PASS WORK?**

**A DIGITAL HEALTH PASSPORT**
AOKpass is a “Digital Health passport” or application developed by International SOS together with International Chamber of Commerce that helps users to verify their COVID-19 compliance status anywhere for return to business travel purposes

**CREATE A PASS WITH ATTESTED MEDICAL INFO**
• Users consult with a medical practitioner to get tested/vaccinated by accredited providers for medical results to create a pass
• Unique code gets generated to show medical practitioner for them to attest validity of user information

**PRESENT THE PASS WHEN AND WHERE REQUIRED**
• Users can select the pass to display AOK QR code for verification
• Verifiers check for COVID-19 compliance status and other work-related vaccinations using blockchain

Source: AOK Pass Website
AOK pass (2)

OTHER IMPORTANT REMARKS

Hardcopy certificates issued by medical professionals are digitized, authenticated and made available for verification.

Data entered into ICC AOKpass remains localized within the user’s app and does not rely on centralized data records or external systems.

Successfully pilot tested in July with Singapore employees for resumption of work in Thailand.

Source: AOK Pass Website
Remote site inspections using drones

Even before COVID-19, companies across various industries have been integrating the use of drones. Specifically, drones are being utilized in oil & gas industry and construction to enable remote site inspections. This improves efficiency, saves time, and reduces transmission risk for workers during COVID-19.

**BENEFITS OF USING DRONE FOR SITE INSPECTION**

- **Reduced risk.** The site inspector doesn’t need to be put in a potentially risky situation.
- **Savings—downtime.** Certain assets (e.g., nuclear power plants and pressure vessels) that need to be shut off before inspection can keep performing without loss of downtime.
- Increased safety through **increased inspections.** Given the relatively low cost of drone inspections, many companies are using them to perform inspections more regularly, which means that potential problems can be surfaced and addressed more quickly.
- **Better records.** By archiving visual data, companies have a digital footprint of the asset’s life history that can be accessed at any time.
- Help company cope with **COVID-19** situations: physical distancing, reducing exposure of one worker to other worker – hence, safer workspace with lower infection possibility.

EHS Today, NS Energy, Flyability
Remote site inspections using drones (2)

Occupational Safety and Health Administration (OSHA) uses drones to conduct safety inspections of employer facilities – with the employer’s consents during COVID-19. Drones quickly provide OSHA inspectors detailed view of facility, significantly slashing the time required for direct ground inspection.

Since 2012, ExxonMobil has deployed drones for aerial surveillance and inspection of operations in North America, UK, and Australia. The company has mainly been targeting offshore platforms and refining and petrochemical complexes.

BP was the first oil & gas company in US to receive license to operate commercial drones in 2013. BP also deploys crawlers and other robotic tech to undertake risky tasks in operational areas. Today, drones are not only used in risky operational areas – but also in inspecting sites and oilfields as to comply with safe-distancing and reducing workers number on site.
SECTION ELEVEN

1. COVID-19 Overview
2. Thinking About Risk
3. HSE Governance
4. Workplace
5. International Travel
6. Accommodation
7. Transport and Visitors
8. Communication and Awareness
9. Mental Health
10. Digital Tools

Vaccination
12. Future Risk Mitigation
COVID-19 vaccine development

The COVID-19 vaccines produce protection against the SARS-Cov-2 virus. This immunity helps reduce the risk of developing the illness and its consequences, and helps you fight the virus if exposed. Since the beginning of the pandemic, many pharmaceutical companies have been racing to develop safe and effective vaccines to fight against COVID-19.

**CORONAVIRUS VACCINE TRACKER**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Vaccines testing safety &amp; dosage</th>
<th>Vaccines in expanded safety trails</th>
<th>Vaccines in large-scale efficacy tests</th>
<th>Vaccines in early or limited use</th>
<th>Vaccines approved for full use</th>
<th>Vaccines abandoned after trials</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHASE 1</td>
<td>30</td>
<td>18</td>
<td>10</td>
<td>34</td>
<td>19</td>
<td>9</td>
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<tr>
<td>PHASE 1/2</td>
<td>21</td>
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<tr>
<td>PHASE 2</td>
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<td>PHASE 2/3</td>
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<td>PHASE 3</td>
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<td>APPROVED</td>
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<tr>
<td>ABANDONED</td>
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</tr>
</tbody>
</table>

Source: New York Times, Yale Medicine, AWR Lloyd Analysis. Last updated 28 December 2021
# COVID-19 vaccine development (2)

## HOW DO THEY WORK?

### Viral Vector (non-replicating)
- Uses a harmless virus which is altered to contain part of COVID-19’s genetic code.

### RNA (Nucleic Acid)
- Contains a synthetic version of part of COVID-19’s genetic code (messenger RNA).

### Inactivated Virus
- Contains a weakened or inactive version of the COVID-19 virus so it doesn’t cause disease.

### Protein Subunit

## COVID-19 VACCINES

- **Viral Vector (non-replicating):** Oxford-AstraZeneca, Sputnik V, Johnson & Johnson
- **RNA (Nucleic Acid):** Pfizer-BioNTech, Moderna
- **Inactivated Virus:** Sinovac, Sinopharm
- **Protein Subunit:** Novavax, EpiVacCorona

## SIMILAR VACCINES

- **Viral Vector (non-replicating):** Ebola
- **RNA (Nucleic Acid):** None (new tech)
- **Inactivated Virus:** Cholera, Polio, MMR, Yellow fever, TBC
- **Protein Subunit:** Seasonal Influenza, Hepatitis B, Tetanus

---

Source: New York Times, Yale Medicine, AWR Lloyd Analysis

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This tells cells to make the COVID-19 ‘spike’ protein which triggers an immune response.

This triggers an immune response.

---
COVID-19 Vaccines: benefits and challenges

COVID-19 VACCINES AIM TO

1. Elicit production of protective levels of antibodies to SARS-CoV-2
2. Establish immunological memory in the vaccine recipient
3. Ultimately, stop the transmission of SARS-CoV-2 thereby:
   - Halting the pandemic
   - Preventing morbidity and mortality due to COVID-19

Current vaccines are not 100% efficacious in preventing infection or transmission but they reduce the risk of severe illness or death. As seen in the U.S., compared to the fully vaccinated, unvaccinated people are:

- 5x more likely to test positive for SARS-CoV-2
- 11x more likely to be hospitalized
- 11x more likely to die of COVID-19

Source: Healthcare IT News, CDC, WHO, AWR Lloyd Analysis
COVID-19 Vaccines: key issues

- Authorized or approved vaccines are very safe—adverse effects are generally uncommon. However, adverse effects surveillance is essential.

- COVID-19 vaccine is recently approved for children 5-11 years old, and trials are ongoing for smaller children.

- Pregnant women are at higher risk for severe COVID-19. Data on vaccination pregnant women are increasing. The American College of Obstetricians and Gynecologists say that vaccination should not be withheld for women who choose it. COVID-19 vaccine is recommended for people who are pregnant (CDC).

- Duration of protection is uncertain, so boosters are required.

- Global bodies such as CDC and WHO monitor variants.

Investigations are ongoing to understand variants’ impact on:

- Clinical safety of vaccines
- Public health preventive measures
- Severity of disease
- Diagnostics
- Development of immunity & vaccines
- Transmission
## COVID-19 Vaccines: comparison

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Effectiveness*</th>
<th>Type</th>
<th>Dosage</th>
<th>Suitable for</th>
<th>Storage</th>
<th>Possible side effects</th>
<th>FDA warnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer-BioNTech</td>
<td><strong>95%</strong></td>
<td>RNA</td>
<td>x2 shots 21 days apart</td>
<td>&gt;12 years</td>
<td>-80 to -60°C (6 months)</td>
<td>Chills, headache, pain and fatigue</td>
<td>Heart inflammation in young adults</td>
</tr>
<tr>
<td>Moderna</td>
<td><strong>94.1%</strong></td>
<td>RNA</td>
<td>x2 shots 28 days apart</td>
<td>&gt;18 years</td>
<td>-25 to - 15°C (7 months)</td>
<td>Chills, headache, pain and fatigue</td>
<td>Heart inflammation in young adults</td>
</tr>
<tr>
<td>Sinopharm</td>
<td><strong>79%</strong></td>
<td>Inactivated Virus</td>
<td>x2 shots 2 – 4 weeks apart</td>
<td>&gt;18 years</td>
<td>2 to 8°C (24 months)</td>
<td>Headache, fatigue and muscle pain</td>
<td>Blood clots, stroke</td>
</tr>
<tr>
<td>Covaxin</td>
<td><strong>78%</strong></td>
<td>Inactivated Virus</td>
<td>x2 shots 4 – 6 weeks apart</td>
<td>&gt;18 years</td>
<td>2 to 8°C (12 months)</td>
<td>Body ache, headache, fever, nausea, rashes</td>
<td></td>
</tr>
<tr>
<td>Oxford Uni-AstraZeneca</td>
<td><strong>76%</strong></td>
<td>Viral vector</td>
<td>x2 shots 4 – 12 weeks apart</td>
<td>&gt;18 years</td>
<td>2 to 8°C (6 months)</td>
<td>Tenderness, muscle pain, fever, fatigue</td>
<td>Thrombocytopenia syndrome - a clotting disorder</td>
</tr>
<tr>
<td>Covishield</td>
<td><strong>76%</strong></td>
<td>Viral vector</td>
<td>x2 shots 4 – 12 weeks apart</td>
<td>&gt;18 years</td>
<td>2 to 8°C (6 months)</td>
<td>Tenderness, muscle pain, fever, fatigue</td>
<td>Thrombocytopenia syndrome - a clotting disorder</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td><strong>72%</strong></td>
<td>Viral vector</td>
<td>x1 shot</td>
<td>&gt;18 years</td>
<td>2 to 8°C (3 months)</td>
<td>Fatigue, fever, headache and muscle pain</td>
<td>Neurological disorder, blood clots</td>
</tr>
<tr>
<td>Sinovac</td>
<td><strong>51%</strong></td>
<td>Inactivated Virus</td>
<td>x2 shots 2 – 4 weeks apart</td>
<td>&gt;18 years</td>
<td>2 to 8°C (12 months)</td>
<td>Headache, fatigue and muscle pain</td>
<td>Blood clots, stroke</td>
</tr>
</tbody>
</table>

Source: WHO, Yale Medicine, AWR Lloyd Analysis.

1. The adverse effects that the FDA has warned about are very rare, and the benefit of vaccines greatly outweighs the risks.

*Reduced efficiency against recent variants such as Delta. The effectiveness of all vaccines wanes over time.
**COVID-19 Vaccines: herd immunity**

**Herd immunity** is achieved when enough people are immune to the disease to the point where that disease can no longer spread within a population.

As a result, the **whole community becomes protected**—not just those who are immune.

Initial estimates were that 60-70% of the population would need to have immunity to **stop SARS-CoV-2 transmission** but much is still being learned as vaccinations roll out, new variants emerge and cases surge.

**Source:** WHO, CDC, Nature
COVID-19 Vaccines: herd immunity (2)

FACTORS HAMPERING EFFORTS TO REACH HERD IMMUNITY

- Inability of vaccines to prevent infection
- Inequitable vaccine availability
- Vaccine hesitancy
- Uncertainty about the duration of protection of infection or vaccination
- SARS-CoV-2 variants affecting transmission dynamics and vaccine efficacy

Source: FHI 360
Willingness and hesitancy towards the vaccine

Despite efforts to increase vaccination coverage, people in southeast Asian countries are still hesitant towards getting vaccinated. The chart below shares the trend of COVID-19 vaccination willingness in these Southeast Asian Countries based on surveyed samples’ response to whether they will get vaccinated when the vaccines are ready to be administered.

**COVID-19 VACCINATION WILLINGNESS IN SOUTHEAST ASIAN COUNTRIES**

<table>
<thead>
<tr>
<th>Country</th>
<th>COVID-19 Vaccination Willingness (as of October 2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>98%</td>
</tr>
<tr>
<td>Vietnam</td>
<td>96%</td>
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<tr>
<td>Thailand</td>
<td>88%</td>
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<tr>
<td>Malaysia</td>
<td>87%</td>
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<tr>
<td>Indonesia</td>
<td>89%</td>
</tr>
<tr>
<td>Philippines</td>
<td>86%</td>
</tr>
</tbody>
</table>

Source: [YouGov UK](https://www.yougov.com), AWR Lloyd Analysis

Disclaimer: Vaccine hesitancy is reducing as more and more people get vaccine and get to know more about vaccine. However, certain pockets of population of age groups are more hesitant that others such as young Thais are more hesitant than older age groups.
Willingness and hesitancy towards the vaccine (2)

MAIN REASONS FOR HESITANCY

Government
In Thailand, the government’s vaccination strategy caused delays in vaccine roll outs. People are also doubting the government’s reliance on Sinovac and locally-produced AstraZeneca doses as well.

Religious beliefs
In Indonesia, Muslim citizens expressed concerns against Sinovac vaccines, classifying them as ‘haram’ vaccines, due to no official statement by the company on the matter. The vaccines were later deemed ‘halal’.

Vaccine side effects
In the Philippines, people expressed fear on the possible side effects of the vaccines. In 2016, the same happened when a study indicated that dengue vaccines increases the risk of severe dengue.

Source: YouGov UK, AWR Lloyd Analysis
Mixing Vaccines

A widespread policy of mixing different vaccines are implemented in some countries to ease pressure on vaccine supply and may even boost immune response.

**ASTRA ZENECA - PFIZER**

Combination between Pfizer & AstraZeneca seemed to jolt the immune system. There is an increase of antibodies that were able to recognize and inactivate SARS-CoV-2 in laboratory tests.

**Com-Cov Study**

A study done in UK to 850 volunteers (aged >50) given the combination of Pfizer – AstraZeneca vaccines doses four weeks apart.

**Result**

- AZ followed by Pfizer induced higher antibodies and T cell responses than Pfizer followed by AZ
- Both of these mixes induced higher antibodies than two doses of AZ
- The highest antibody response was seen after two doses of Pfizer, and the highest T cell response from AZ followed by Pfizer

Source: Bangkok Post, AWR Lloyd Analysis
Mixing Vaccines (2)

JOHNSON & JOHNSON – MODERNA/PFIZER

Johnson & Johnson – Moderna  
National Institutes of Health, found:  
J&J - Moderna  
Antibody levels rise 76-fold in 15 days  
2 Shots of J&J  
Antibody levels rise a fourfold in 15 days

Johnson & Johnson – Pfizer  
The study also suggested that Johnson & Johnson recipients might benefit from a shot of the Pfizer-BioNTech vaccines, where it also raised the antibody levels of Johnson & Johnson recipients more than Johnson & Johnson did, although not as much as Moderna did.

Source: Bangkok Post, AWR Lloyd Analysis
Mixing Vaccines (3)

CASE STUDY: THAILAND

Thailand was the first nation to start administering the Sinovac-then-Astra Zeneca combo, with the goal of increasing protection against the more contagious delta variant and addressing vaccine shortages.

Binding Antibody Units (BAU) per milliliter:

- Sinovac-Pfizer 2,181.8 BAU/ml
- Sinovac-Astra 1,049.7 BAU/ml
- Two doses of Astra 278.5 BAU/ml
- Astra-Sinovac 172.1 BAU/ml
- Two doses of Sinovac 164.4 BAU/ml

Sinovac - Astra Zeneca Elicited a weaker immune response than a Sinovac-Pfizer or Astra Zeneca-Pfizer

Mixing and matching vaccines will increase options for physicians and patients, enhancing vaccination programs. Result of early study demonstrate that boosters work effectively against some of the stronger variants. Studies are still ongoing, currently there are still insufficient data to conclusively determine the risk and other possible combinations.

Source: Siraraj Institute of Clinical Research, 2021
Vaccine Boosters

WHAT IS A BOOSTER VACCINE?
A COVID-19 booster shot is an additional dose of a vaccine given after the protection provided by the original shot(s) has begun to decrease over time. Typically, booster vaccines are injected after the immunity from the initial dose(s) naturally starts to wane. The booster is designed to help people maintain their level of immunity for longer.

Global vaccine supply and global and national equity
National vaccination program policy decisions to add a booster dose should take into account the strength of evidence regarding the need for these doses, their safety and effectiveness, as well as the global availability of vaccines. Prioritization of booster doses over speed and breadth in the initial dose coverage may damage the prospects for global mitigation of the pandemic, with severe implications for the health, social and economic well-being of people globally.

Sources: WHO, AWR Lloyd Analysis
Vaccine Boosters (2)

WHO CAN GET BOOSTER VACCINES?

Booster vaccine doses will be available for people most at risk from COVID-19 who have had a second dose of a vaccine at least 6 months ago. This includes:

- People aged 50 and over
- People who live and work in care homes
- Frontline health and social care workers
- People > 16 y/o with a health condition that puts them at high risk of getting seriously ill from COVID-19
- People > 16 y/o who are a main caretaker for someone at high risk from COVID-19
- People > 16 y/o who live with someone who is more likely to get infections, such as someone who has HIV, has had a transplant or is having certain treatments for cancer, lupus or rheumatoid arthritis

Sources: WHO, AWR Lloyd Analysis, Note: *Booster vaccinations will depend on the country’s policy (e.g., The US has approved boosters for every > 18 y/o)*
Vaccine Boosters (3)

THE EFFECT OF BOOSTER VACCINES

The FDA has authorized three vaccine boosters. These vaccines are determined safe for individuals to receive a COVID-19 vaccine booster or additional dose that is a different brand than the initial dose or doses.

- Pfizer-BioNTech
- Moderna
- Johnson & Johnson

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Effectiveness against Hospitalization</th>
<th>Effectiveness against Severe Disease</th>
<th>Effectiveness against COVID-19 Related Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer-BioNTech</td>
<td>95%</td>
<td>92%</td>
<td>81%</td>
</tr>
<tr>
<td>Moderna</td>
<td>93%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: WHO, AWR Lloyd Analysis, Note: 1Two months after J&J single dose
Employee Vaccination Guidelines

THE 3C MODEL FOR EMPLOYEE VACCINATIONS

Conviction

Convenience

Costlessness

Source: McKinsey, CDC, AWR Lloyd Analysis
Employee Vaccination Guidelines (2)

CONVICTION

Educate on the facts
Share credible, accessible information on the safety, efficacy, and side effects of available vaccines

Engage relevant experts and community leaders
Bring in key experts to address the workforce to provide scientific information, answer employee questions, and address concerns

Highlight role models
Create an atmosphere where COVID-19 vaccinations are supported by creating a network of vaccinated ‘employee ambassadors’ or by having executives or managers share their vaccination experiences with workers

Source: McKinsey, CDC, AWR Lloyd Analysis
Employee Vaccination Guidelines (3)

CONVENIENCE

Share practical information
Provide updated details about local vaccination sites, scheduling sites, or best practices for securing an appointment

Simplify the experience
• Reserving appointment slots at nearby vaccination sites to minimize wait and travel times
• Partner with medical organizations to help with vaccine questions and scheduling

Increase proximity
Setting up on-site COVID-19 vaccination clinics for employees to help accelerate vaccine rollout, broadening the reach to include eligible family members, if feasible

Source: McKinsey, CDC, AWR Lloyd Analysis
Employee Vaccination Guidelines (4)

COSTLESSNESS

Create direct and structural support
- Bring vaccinations to the company and/or provide group vaccination
- Provide incremental sick days and any needed recovery time
- Adjust shift times to accommodate to employee vaccination appointments

Cover direct costs
- Pay for transportation or offer free rides to vaccination sites
- Work with healthcare providers, or directly with employees to reimburse any vaccine administration costs incurred

Offer rewards and recognition
- Financial rewards include cash bonuses, retirement contributions, and other gifts
- Nonfinancial incentives include prioritization of vaccinated employees to return on-site

Source: McKinsey, CDC, AWR Lloyd Analysis
Employee Vaccination Guidelines (5)

WORKPLACE VACCINATION PROGRAM

Potential benefits to employers

- Keep the workforce healthy by preventing employees from getting infected
- Help protect clients and visitors
- Reduce employee absences due to COVID-19
- Improve productivity
- Improve morale, build trust, and be responsive of employee needs and cultural norms

Potential benefits to employees

- Prevent COVID-19 illness and long-term complications
- Reduce absences and doctor visits due to COVID-19
- Help protect family and household members from COVID-19 illness
- Improve individual morale

Source: McKinsey, CDC, AWR Lloyd Analysis
Promising COVID-19 Treatments

The FDA has authorized treatments that may be used for people who have been hospitalized with COVID-19 and other medications to curb the progression of COVID-19 in people who are not hospitalized but who are at risk for developing severe illness. Researchers are taking a wide range of approaches to find effective and safe drugs. The three main approaches are: antivirals, anti-inflammatory drugs and antibody treatments.

**Antivirals**
- Virus particles multiply inside the body
- Antiviral drugs prevent virus from multiplying

**Anti-inflammatory drugs**
- Immune system dangerously overreacts to virus
- Anti-inflammatory drugs calms immune system

**Antibody Treatments**
- Antibody specific to coronavirus binds to it and kills it

Source: Wellcome | Note: (1) There is no conclusive evidence that antivirals improve survival
Promising COVID-19 Treatments (2)

**REMDESVIR**
- **Type of drug:** Oral antiviral drug
- **Mechanism of Action:** Remdesivir binds to the viral RNA-dependent and inhibits viral replication
- **Methods of use:** Infused (injected slowly) into a vein over 30 to 120 minutes
- **Recommended for:** Hospitalized adult and pediatric patients (aged ≥12 years and weighing ≥ 40 kg).

**DEXAMETHASONE**
- **Type of drug:** Anti-Inflammatory type of steroids
- **Mechanism of Action:** Mimics the action of the compounds that body produces to quell inflammation, naturally.
- **Methods of Use:** Taken orally or Injection/Infusion (drip) into vein
- **Recommended for:** Adults and adolescents (>12 y/o & weighing > 40 kg) who require supplemental oxygen therapy.

WHO issued a conditional recommendation against its use in hospitalized patients, regardless of disease severity – “currently no evidence that remdesivir improves survival and other outcomes in these patients”

The WHO suggests not to use corticosteroids in the treatment of people with non-severe COVID-19 (conditional recommendation, based on low certainty evidence).

Source: NEJM, FDA, NIH, NEJM, WHO, Press Release
Promising COVID-19 Treatments (3)

INVESTIGATIONAL ANTIVIRAL THERAPY

MOLNUPIRAVIR

- **Type of drug:** Oral antiviral Drug
- **Produced by:** Merck & Ridgeback Biotherapeutics
- **Current Status:** Some countries have granted approval. Recently approved by FDA
- **Recommended for:** People with high risk of bad outcomes from COVID-19
- **Mechanism of Action:** Orally administered form of potent ribonucleoside analog that Inhibits the replication of SARS-CoV-2.
- **Clinical Trial:** At the interim analysis, molnupiravir reduced the risk of hospitalization or death by approximately 50%

PAXLOFID

- **Type of drug:** Oral antiviral Drug
- **Produced by:** Pfizer Inc.
- **Current Status:** Recently approved by FDA
- **Recommended for:** People that shows first sign of COVID-19 infection.
- **Mechanism of Action:** Block the activity of the SARS-CoV-2-3CL protease, an enzyme that the coronavirus needs to replicate.
- **Clinical Trial:** Paxlofid found to reduce the risk of hospitalization or death by 89% compared to placebo in non-hospitalized high-risk adults with COVID-19

Source: NEJM, FDA, NIH, NEJM, WHO, Press Release
## Disputed COVID-19 Treatments

**THE FOLLOWING HAVE NOT BEEN APPROVED AS EFFECTIVE TREATMENTS FOR COVID-19 BY WHO OR CDC**

<table>
<thead>
<tr>
<th>HYDROCHLOROQUINE</th>
<th>IVERMECTIN</th>
<th>AZITHROMYCIN</th>
<th>CONVALESCENT PLASMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>A drug used to treat malaria and rheumatology conditions.</td>
<td>Anti-parasitic drug used to treat diseases caused by parasitic worms.</td>
<td>Amacrolide antibiotic that can be used systemically and topically for the treatment of susceptible bacterial infections.</td>
<td>Convalescent plasma (or hyperimmune plasma) contains specific antibodies that are generated after being exposed to a certain pathogen.</td>
</tr>
</tbody>
</table>

⚠ NIH treatment guidelines recommend against the use of hydroxychloroquine for COVID-19, in both hospitalized and non-hospitalized patients. ⚠ The World Health Organization (WHO) recommends that ivermectin should not be used to treat COVID-19 outside of clinical trials because there isn’t enough evidence about its benefits. ⚠ Randomized trials have found that azithromycin is not an effective treatment for patients who are admitted to hospital with COVID-19, either alone or in combination with hydroxychloroquine ⚠ Recovery Trial found no convincing evidence of its effect on clinical outcomes in patients admitted to hospital with COVID-19.

Source: NIH, American Therapeutics, The Lancet, Autoimmunity Reviews
SECTION TWELVE

1. COVID-19 Overview
2. Thinking About Risk
3. HSE Governance
4. Workplace
5. International Travel
6. Accommodation
7. Transport and Visitors
8. Communication and Awareness
9. Mental Health
10. Digital Tools
11. Vaccination

Future Risk Mitigation
The COVID-19 pandemic has exposed fragilities and inequalities in economies and societies around the world. It has also exposed our preparedness in responding to other emerging threats:

**FINANCIAL CRISIS**
How much will COVID-19 cost, and how will we pay for it?

**GLOBAL PANDEMIC**
Will the next pandemic be worse?

**MAJOR CONFLICT**
Cyber-attacks (e.g., on critical infrastructure) have been shown to wreak havoc in developed economies.

**CLIMATE CHANGE**
ASEAN countries are geographically located in one of the most disaster-prone regions of the world.

**CIVIL UNREST & REGIME CHANGE**
Inequalities will continue to grow, stoking more civil unrest.

**ENERGY TRANSITION**
Market forces lead to fossil fuel demand peaking and the energy transition accelerates.

Source: AWR Lloyd Analysis
Spotlight I – Natural Disasters

Rising sea-levels have been driven by greenhouse gas emissions, climate change, and an accelerating pace of ice melting from continued urbanization and economic growth.

**TOTAL POPULATION (%) AFFECTED BY SEA LEVEL RISE FOR APAC**

<table>
<thead>
<tr>
<th>Country</th>
<th>Affected in 2°C scenario</th>
<th>Additional affected in 4°C scenario</th>
<th>Total affected in 4°C scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>29</td>
<td></td>
<td>52%</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>8</td>
<td></td>
<td>32%</td>
</tr>
<tr>
<td>Japan</td>
<td>14</td>
<td></td>
<td>27%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>6</td>
<td></td>
<td>24%</td>
</tr>
<tr>
<td>Thailand</td>
<td>9</td>
<td></td>
<td>23%</td>
</tr>
<tr>
<td>Myanmar</td>
<td>10</td>
<td></td>
<td>23%</td>
</tr>
<tr>
<td>Philippines</td>
<td>8</td>
<td></td>
<td>22%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>7</td>
<td></td>
<td>18%</td>
</tr>
<tr>
<td>China</td>
<td>5</td>
<td></td>
<td>11%</td>
</tr>
<tr>
<td>South Korea</td>
<td>2</td>
<td></td>
<td>8%</td>
</tr>
</tbody>
</table>

The figure above indicates that at least 18% of the population are affected by rising sea levels in ASEAN countries.

**PROBLEMS**

- Some of the population live in riverine plains, low-lying coastal plain, and deltas, where flood mortality risk is much higher in those areas.
- Flood risk is expected to increase significantly in the future with further increases in population density in the low-lying areas which are prone to floods.
- Sea-levels are expected to increase flood risk that can lead to high socio-economic losses.

Source: Press, UNDRR & Climate Central | Note: Countries in bold are in ASEAN | Data is based off 2010 population baseline | Data not available for Cambodia & Laos
Spotlight I – Natural Disasters (2)

FLOOD DISASTER MANAGEMENT CYCLE

1. Preparedness for Prevention & Mitigation
2. Readiness
3. Emergency Response
4. Recovery & Rehabilitation

THAILAND FLOOD (2011) DISASTER RESPONSE

Invested USD 10 billion on a new flood management project in the Chao Phraya Basin, which includes:

- Reforestation and construction of reservoirs
- Retention facilities with a capacity of 3 BCM
- Rehabilitation of flood river channels for flood diversion
- Construction of bypass channels and 2 main flood channels

Source: Press, UNDRR & Climate Central | Note: Countries in bold are in ASEAN | Data is based off 2010 population baseline | Data not available for Cambodia & Laos
Spotlight II – Cyberthreats

Interpol identified some prominent cyberthreats trends facing southeast Asian countries in 2020, emerging from increased online transactions due to work-from-home.

**CYBERTHREAT TRENDS**

- **Compromising business email**: Scams which target companies conducting wire transfers and have suppliers in foreign countries.
- **Cyber fraud**: Most common and threatening form of fraud perpetrated internationally via computer or computer data.
- **Ransomware**: Malwares preventing or limiting users from accessing their system by locking system’s screen or users’ files unless ransom is paid.

Source: Interpol & A.T. Kearney analysis
Spotlight II – Cyberthreats (2)

CYBERTHREAT TRENDS (CONTINUED)

**Phishing:** Scammers use authentic-looking emails from legitimate businesses to trick recipients into giving out confidential and personal information

**PROBLEMS**
- Cybercriminals are exploiting widespread use of global communications on COVID-19 related information to **deceive unsuspecting victims**
- Cybercriminals targeting **hospitals, medical centers, and public institutions** for ransomware attack increased rapidly
- Some **impersonate governmental and health authorities**, providing COVID-19 phishing schemes to lure victims into providing **personal information** and **downloading malicious content**

Source: Interpol & A.T. Kearney analysis
### REGIONAL CYBERSECURITY DEFENSE PLAYBOOK

<table>
<thead>
<tr>
<th>Category</th>
<th>Actions</th>
</tr>
</thead>
</table>
| Elevate cybersecurity on the regional policy agenda | • Concerted coordination to steer implementation of Rapid Activity Cybersecurity (RAC) Framework<sup>1</sup>  
• Elevate cybersecurity to the top of the agenda in economic dialogue |
| Secure a sustained commitment to cybersecurity | • Pursue a commitment to address the regional cybersecurity spending gap  
• Define and track cybersecurity metrics through a cyber-hygiene |
| Fortify the ecosystem                          | • Foster a risk-centric mindset in the corporate sector  
• Instil a culture around sharing threat intelligence  
• Extend cyber resilience across the supply chain (i.e., to business partners)  
• Implement regional public-private partnerships and encourage industrial alliances |
| Build the next wave of cybersecurity capability | • Develop the next generation of security professionals  
• Strengthen the local cybersecurity industry through deeper cooperation and collaboration with global players  
• Drive research & development around emerging threat vectors, including AI and blockchain  
• Anchor world-class capabilities |

Source: Interpol & A.T. Kearney analysis  | Note: (1) RAC focuses on addressing current weaknesses in cyber resilience and aims to fix the basics related to cybersecurity across ASEAN regions
PARTNERSHIPS FOR BUSINESS RESILIENCE AND RECOVERY IN SOUTHEAST ASIA

SE ASIA BUSINESS RESILIENCE TOOLKIT

A framework for COVID-19 risk mitigation

DECEMBER 2021