Personal protection equipment
Joint UN industry consultation
Agenda

1. Welcome, objectives and presentation of presenters – UNICEF (10 min)
2. Covid-19 response context and UN coordination – WHO (20 min)
3. Presentation of joint UN PPE forecast – UNICEF (20 min)
4. Journey to date: market history, secured pipeline of deliveries, the challenges in the market – UNICEF (20 min)
5. Market engagement strategy, from emergency spot buying to more strategic engagement – UNICEF (20 min)
6. Selected questions from the industry – UNICEF (20 min)
7. Next steps – UNICEF (10 min)
COVID-19 WHO Essential Supplies Forecasting Tool (ESFT)

Draft as of 5 April 2020
Overview of Calculator’s Structure and Flow

In any given week:

- **Expected Number of Cases**
  - Cases Needing Inpatient Care (critical & severe)
  - Cases Needing Outpatient Care (mild cases)
  - Suspected Cases Tested Negative

- **Amount of Hospital Infrastructure Needed**
- **Amount of Lab Infrastructure Needed**
- **Number of Inpatient Healthcare Workers Needed**
- **Number of Outpatient Healthcare Workers Needed**
- **Number of Lab Staff Needed**

- **Amount of Inpatient Commodities**
- **Amount of Outpatient Commodities**
- **Amount of Lab Commodities**

Optional Constraints:
- Number of hospital beds (ICU and non-ICU) available for COVID-19 response
- Number of healthcare workers available for COVID-19 response
- Number of lab staff available for COVID-19 response
<table>
<thead>
<tr>
<th>Doubling Rate Option</th>
<th>Cases double every...</th>
<th>Source/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Fast</td>
<td>2.3 days</td>
<td>Italy, early-stages of outbreak. Estimated after 3 weeks of local transmission (approx. March 1st)</td>
</tr>
<tr>
<td>Fast</td>
<td>3.2 days</td>
<td>Based on outbreak in Hubei Province, China before slowing of rate of new infections</td>
</tr>
<tr>
<td>Medium</td>
<td>4.0 days</td>
<td>Doubling times 4, 5, and 7 days are provided based on estimates from discussion between WHO and various academic modelling groups</td>
</tr>
<tr>
<td>Slow</td>
<td>5.0 days</td>
<td></td>
</tr>
<tr>
<td>Very Slow</td>
<td>7.0 days</td>
<td>User can input own estimated doubling rate</td>
</tr>
<tr>
<td>Manual</td>
<td>TBD</td>
<td>User inputs an initial and second doubling rate, and indicates the time at which the doubling rate switches</td>
</tr>
<tr>
<td>Combined</td>
<td>TBD</td>
<td></td>
</tr>
</tbody>
</table>

**Doubling Rate:**

- Number of days elapsed for the number of COVID-19 cases to double.
- The doubling rate can change over time
- Doubling rates estimated from the past 5 days of reported cases by country are available here: https://blog.datawrapper.de/weekly-chart-coronavirus-doublingtimes/
Clinical Attack Rate Options: Adding a constraint to the proportion of the population that is expected to become infected and seek clinical care

### Clinical Attack Rate Assumptions and Options

<table>
<thead>
<tr>
<th>Attack Rate Option</th>
<th>% of Pop. Infected</th>
<th>Source/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>30%</td>
<td>Attack Rates of 20% are provided based on estimates that were arrived at through discussion between WHO and various academic modelling groups, based on observed, sub-national attack rates in certain countries. The 30% is from the Diamond Princess cruise ship.</td>
</tr>
<tr>
<td>Medium</td>
<td>20%</td>
<td>Based on outbreak in Hubei Province, China. Upper range of estimates.</td>
</tr>
<tr>
<td>Low</td>
<td>10%</td>
<td>Based on outbreak in Hubei Province, China. Lower range of estimates.</td>
</tr>
<tr>
<td>Very Low</td>
<td>5%</td>
<td>Based on outbreak in Hubei Province, China. Lower range of estimates.</td>
</tr>
<tr>
<td>Manual</td>
<td>TBD</td>
<td>User can input own estimated clinical attack rate.</td>
</tr>
</tbody>
</table>

Note: These are rough estimates. At this point in time, generalizable clinical attack rates for COVID-19 are not known.
## PPE and Equipment Assumptions

These assumptions can be found on the ‘Equipment Assumptions’ tab and are displayed in quantity per day by staff type.

### Care Setting

- **Category**
- **Commodity**

### Equipment Assumption per person per day

<table>
<thead>
<tr>
<th>Commodity</th>
<th>HCW</th>
<th>Hygienst</th>
<th>Caretaker</th>
<th>Ambulancrd</th>
<th>Patient</th>
<th>Bed</th>
<th>Unit</th>
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</thead>
<tbody>
<tr>
<td>Inpatient care</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>PPE</td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Gloves, heavy duty</td>
<td>0</td>
<td>0.1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Pair</td>
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<tr>
<td>Gloves, examination</td>
<td>6</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>Pair</td>
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<tr>
<td>Gloves, surgical</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Pair</td>
</tr>
<tr>
<td>Face shield</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Each</td>
</tr>
<tr>
<td>Mask, particulate respirator</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Each</td>
</tr>
<tr>
<td>Mask, medical</td>
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<td>2</td>
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<td>Each</td>
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<td>0</td>
<td>2</td>
<td>0</td>
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<tr>
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<td>0.03</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>Each</td>
</tr>
<tr>
<td>Scrubs, pants</td>
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<td>0.03</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Each</td>
</tr>
<tr>
<td>Gown, protective</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Each</td>
</tr>
<tr>
<td>Apron, disposable</td>
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<td>0</td>
<td>0</td>
<td>Each</td>
</tr>
<tr>
<td>Apron, heavy duty, reusable</td>
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<td>0.05</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Each</td>
</tr>
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<td>0.1</td>
<td>0</td>
<td>0</td>
<td>Each</td>
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<td>Pair</td>
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<tr>
<td>Safety box</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Each</td>
</tr>
<tr>
<td>Hygiene</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Bio-hazardous bag</td>
<td>0.5</td>
<td>0.5</td>
<td>0</td>
<td>0.5</td>
<td>0</td>
<td>0</td>
<td>Each</td>
</tr>
<tr>
<td>Liquid soap</td>
<td>0.02</td>
<td>0.02</td>
<td>0</td>
<td>0.02</td>
<td>0</td>
<td>0</td>
<td>Lit</td>
</tr>
<tr>
<td>Alcohol-based hand rub</td>
<td>0.03</td>
<td>0.03</td>
<td>0</td>
<td>0.03</td>
<td>0</td>
<td>0</td>
<td>Lit</td>
</tr>
<tr>
<td>Chlorine, HTH JOR</td>
<td>0</td>
<td>0.05</td>
<td>0</td>
<td>0.08</td>
<td>0</td>
<td>0</td>
<td>Kg</td>
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<td>Case management</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient monitor, multiparametric w/o ECG, with accessories</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

- Severe only
- Non-final
- N/A
- More information needed
Cross-UN/WHO Essential supplies platform

03.04.2020
<table>
<thead>
<tr>
<th>Context and vision</th>
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**Challenge**
In the fight against COVID-19, individual nations have entered into a **race to satisfy individual needs**, thereby leading to **market distortions** (medical equipment, healthcare respondents, transport containers, and all means of transportation), which pose **tremendous risks for the most vulnerable populations**.

**Response**
The **UN** is responding rapidly. A **COVID-19 Supply Chain Inter-Agency Coordination Cell (SCICC)** was set up, with three pillars Supply Markets, Logistics/Distribution, and Donations reporting to a SC Task Force. The UN establishes a **COVID-19 medical equipment and supplies stockpile**, which aspires to identify, certify, source, match, and **deliver essential products** and direct them based on critical need. It may need to cover up to **30-50% of the world’s supply** in this acute phase.

**Solution**
An **essential supplies system** is proposed by WHO, WFP, and UNICEF to:

- Establish and implement a **global strategy to ensure access to critical and life-saving supplies**
- Meet demands through collective capabilities of public and private actors
Supply system high-level flow

Country Planning & Financing
- Technical & planning guidance
- National authorities
- Implementing partners
- Donors

Essential Supplies Online Catalogue
- PPE
- Diagnostics
- Therapeutics
- Vaccines
- Oxygen
- Clinical Care

Demand Management
- Demand & supply forecasting
- Consolidation & validation of country requests

Control tower
Allocation & request issuing by special WHO task-force

Warehousing and Distribution

Purchasing and virtual stockpiles

Suppliers and Manufacturers
- Global sourcing
- Price & volume negotiation
- Quality assurance & testing
- Long-term agreements

Country Implementation
- Receipt & local distribution
- Training & capacity building
- Monitoring & evaluation

Information management
Technical strategy
Resource allocation, financing, risk mgmt
Joint UN forecast for Personal Protective Equipment, April to December 2020
Generated via UN forecasting initiatives, both up- and downstream

- Collaboration with WHO: forecast model developed to estimate number of cases and top level assumptions for PPE utilization

- Via each UN agency: survey and data collection from agencies’ local country offices
  - 90+ countries submitted forecasts
  - In most cases, support by each UN agency and figures agreed to with Ministries of Health

- Cross-UN collaboration
  - Collaboration via WHO-led Supply Chain Cell to put in common figures and agree on way forward
  - WHO, PAHO, UNFPA, UNHCR, UNRWA, IAIE, IOM, UNWomen, UNICEF, and interest expressed by others
UN Agencies follow the WHO guidance on rationalizing PPE use

- based on the risk of exposure, which depends on the setting and type of personnel and activity
  - At health facility: healthcare workers involved in the direct care of patients: gowns, gloves, surgical mask
  - At health facility: healthcare workers involved in aerosol-generating tasks: respirators, eye protection, gloves and gowns – or aprons
  - At health facility: those in possible contact with patients: surgical masks, hand-sanitizer and soap
  - At home: those caring for COVID-19 patients to receive surgical masks, hand-sanitizer and soap

- Several agencies have centralized the request management from their local offices, helping rationalize supplies
UN demand for key PPE components: medical clothing & respirators

Medical Clothing includes gowns, coveralls, aprons and surgical caps

Unforecasted demand

Bar chart showing demand for medical clothing and respirator N95 from Apr-May to Sep-Dec.
UN demand for key PPE components surgical masks

Frontloading demand to earlier months will help countries prepare and better control.

Surgical Mask

- Apr-May
- Jun-Aug
- Sep-Dec

Unforecasted demand
UN demand for key PPE components: gloves

- April-May
- June-August
- September-December

Unforecasted demand
UN demand for key PPE components: goggles and disposable face shields.
Until now, UN Agencies have procured a number of PPE for immediate needs. UN Agencies have delivered PPE to 112 countries to date.
Yet, the PPE order pipeline is not enough to meet UN demand

We are currently experiencing a significant gap between the forecasted demand for the coming months and the products procured and expected to be delivered.

The UN counts on industry to help us close this gap

Cases based on UNICEF data
UN Agencies have resources available

• Until now, UN agencies have largely used own resources for procurement of PPE

Going forward:
• WHO and UNICEF are part of the Solidarity Response Fund
• Donors are responsive to UN agencies proposals increasing own resources
• Country governments are closing agreements with financing institutions, e.g. the World Bank
• UNICEF and PAHO procure on behalf of Ministries of Health, who fund their demand but leverage our procurement capacities utilizing their own funding
The COVID-19 situation is very dynamic so we expect the forecast to change

- This forecast represents the situation and our expectations at the end of March
- The forecast will change and we will keep updating it frequently and posting it online, for your use and consultation
Our Journey to date
UNICEF historical engagement in the PPE market

• UNICEF has been historically procuring PPE products used in emergency response and as part of health kits

• UNICEF has established Long Term Arrangements for a range of PPE items

• These are time bound, multi-year agreements, with two or more suppliers per product

• PPE products are on the Emergency Supplies List (ESL), and stocks are held at the CPH warehouse for emergency response.
UNICEF’s historical PPE procurement volumes

• UNICEF procurement of PPE items has had an annual average spend of $3,8 million USD over the past 5 years.

• The actual procurement quantities vary per product and over time, dependent on types and levels of outbreak and emergency response.
COVID-19
Outbreak Response Procurement

• Global outreach to now over 1,000 PPE suppliers

• Leveraging the UNICEF Global networks
Thus far, UN agencies have managed to procure a range of PPE quantities.
UNICEF Scheduled Deliveries

- Majority of PPE scheduled for delivery in April and May
- Over 90% of products being produced and shipped out of China
- Bonded Warehouse established in Shanghai to facilitate Distribution
- Pre Delivery Inspections to ensure quality
UN agencies’ deliveries to 112 countries include

- 70,660 goggles and face shields
- 6,390,400 gloves
- 1,035,909 gowns and coveralls
- 254,826 N95 respirators
- 1,827,315 surgical masks

UNICEF has shipped PPE supplies to 23 programme countries.
COVID-19 PPE Current Market Environment

• Extremely high global demand
• Demand and Supply shifts as the outbreaks spread
• Multiple Government bans on exports, including raw materials
• US and European Governments surge procurement, willing to pay higher prices.
• Multiple buyers competing in the market, including intermediary/trader speculation
• Severe constraints on raw materials for N95 masks, surgical masks and coveralls, where the highest demand is seen.
• Advanced payment required to secure raw materials and manufacturing capacity
• Poor quality products present in the market
• Changing environment on a daily basis
COVID-19 PPE Current Market Environment - Impact on procurement

• New Suppliers, unfamiliar with UN procurement
• Significant price increases
• Advanced payment requests to secure production capacity and raw materials, requiring at least 50% advance payment and remaining balance payment on delivery.
• Offer validity for 24 hours
• Suppliers failing to deliver despite receiving orders
• Purchase Order cancellations
• Increased risk of Fraud
Tension Points

- Multiple Buyers competing in the market
- Need to ensure Equity
- Technical Standards and Quality Assurance Requirements
- Securing access to raw materials and manufacturing capacity
- Payment Terms
- Offer Validities
- Public procurement requirements vs Market Dynamics
- Short term emergency buying vs longer term supply security
Strategic Market Response to Supply Constraints (Medium-to-Long-Term, Global Perspective)

<table>
<thead>
<tr>
<th>Programmatic Guidelines</th>
<th>Demand Organization</th>
<th>Procurement &amp; Special Contracting</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Country Execution Capacity</td>
<td>Political Advocacy</td>
<td>Accessible Supply Financing</td>
</tr>
<tr>
<td>Partnership &amp; Country Coordination</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Persistent demand fragmentation addressed at country-level with single-product/single supply chain, complemented at the global level with effective demand coordination and transparency.

Rationalized and coordinated procurement at-scale. Market discontinuities addressed and de-risked via non-traditional contracting tools.

Flexible financing made available both at transaction level, but also to support special contracting, procurement at-scale, demand credibility and liquidity needs.

Political advocacy with national counterparts for fast-tracking of regulatory clearances, easing of border/export restrictions, equitable prioritization across all country types.

Develop future technical and programmatic guidance in core areas where there are gaps including post-outbreak continuation, surveillance and epidemiology testing, combining to existing disease platforms, HSS for respiratory diseases, waste management.

Support absorptive capacity of people and country systems, ranging from traditional logistics to installation, training, commissioning and maintenance.

Transparent partnership (not just partners) and country coordination on markets, leveraging core competencies, fora.
Addressing current market issues

Capacity & access:
- Seeking diversified, high capacity market access, and equitable allocations
- Info on what scale up & access require (time, money, upper limits, etc.) to increase weekly production capacity by X%, including understanding of raw material market impact and mitigation options

Finance & liquidity:
- The role of payment terms; working with partners on targeted supplier Financing, Liquidity & Performance issues that can unlock access and good terms.
- While prioritizing access and scale-up, target reasonable price discounts to market rates on the basis of longer-term commitment and sustainable supply.

External factors:
- High-level advocacy to prioritize supplies to be delivered to UN with equitable allocations to programme countries
- Explore solutions for bottle-necks such as export bans, regulations via pursuit of other market opportunities i.e. tech transfers.
Planned Procurement Approach

• Need to address the current bottlenecks
• Address immediate needs and build supply security, adjusting to the ‘new normal' level
• Need Industry engagement to understand challenges and how these can be addressed
• Issuance of a survey to capture Industry needs and challenges
• UNICEF to issue an emergency agile tender for PPE products to cover the PPE needs for COVID-19 response
Tender Timelines, form and objectives

<table>
<thead>
<tr>
<th>Activity</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tender preparation and launch</td>
<td>Week of 6th April 2020</td>
</tr>
<tr>
<td>Tender remains open until</td>
<td>30th June 2020</td>
</tr>
</tbody>
</table>

- Response time of offers key to address the immediate needs for PPE
- Address medium term demand of PPE - the dynamic nature of the tender allows proposers to submit their proposals during a three-month timeframe, including proposal terms that may mitigate bottlenecks and inform longer term engagement.
- While prioritizing access and scale-up, targets reasonable price discounts to market rates on the basis of medium/long-term commitment and sustainable supply.
- Technical and commercial evaluations will be done on a running basis.
UNICEF Procurement

In accordance with:

• Public Procurement Principles
• UNICEF Rules and Regulations, Procurement Policies and Procedures
• Agreement to UNICEF General Terms and Conditions
• Ethical provisions and standards
• For additional information please visit
• www.unicef.org/supply
# Product Scope

<table>
<thead>
<tr>
<th>UNICEF Material number</th>
<th>Description</th>
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<tbody>
<tr>
<td>S0305109</td>
<td>Mask, high-fil., FFP2/N-95, no-valve, none sterile</td>
</tr>
<tr>
<td>S0305135</td>
<td>Mask, surgical, type IIR, tie strap, disp./PAC50</td>
</tr>
<tr>
<td>S0305117</td>
<td>Coverall, protection, Cat III, type 6b, L</td>
</tr>
<tr>
<td>S0305126</td>
<td>Coverall, protection, Cat III, type 6b, M</td>
</tr>
<tr>
<td>S0305127</td>
<td>Coverall, protection, Cat III, type 6b, XL</td>
</tr>
<tr>
<td>S0305144</td>
<td>Goggles, protective, indirect-side-venti</td>
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<tr>
<td>S0969026</td>
<td>Gloves, w/o powder, nitrile, L, disp./BOX-100</td>
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<td>S0969025</td>
<td>Gloves, w/o powder, nitrile, M, disp./BOX-100</td>
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<td>Gown, surgical, non-sterile, non-woven, disp., L</td>
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<td>Apron, protection, plastic, reusable</td>
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<tr>
<td>S0305116</td>
<td>Faceshield</td>
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UNICEF Supply Catalogue

• UNICEF Supply Catalogue
  https://supply.unicef.org/

• UNICEF issued COVID-19 Supply Note
  https://www.unicef.org/supply/files/Novel_CoV_HEPI_Supply_Note_v2.pdf
Q & A session

We will address some of the questions submitted to us. All questions and answers will be shared in writing shortly after the industry consultation.
Thank you