The Aga Khan University Hospital, Karachi, Pakistan
Flow of the Presentation

♦ Introduction and Overview
♦ Our Hospital’s COVID-19 Response
♦ Adjusting to the New Normal
♦ Key Learnings
Introduction to AKUH, Karachi
The Presenters

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Part of the Aga Khan Development Network

Other hospitals in East Africa and Afghanistan

Chartered in 1983 as Pakistan’s first private university

Quaternary care hospital started operations in 1985

Not for profit

Healthcare network of 5 hospitals, 290+ labs and 25 + medical centres

766 beds (Main Hospital) + 214 beds (Secondary Hospitals); 980 beds overall

JCI and CAP accredited
AKUH Health Network Volumes - 2019

- **1.36m** Clinic Visits
- **0.45m** Radiology Tests
- **13.7m** Laboratory Tests
- **20.6k** Babies Born
- **29.5k** Surgeries
- **102k** Admissions
Overview of Pakistan
Overview of Pakistan

- 5th Most Populated Country
- Population: 212 m
- Population Karachi: 16 m
- Literacy Rate: 59%
- Expenditure on Health: < 1% of GDP
Pakistan’s COVID-19 Case Load

Summary

Of the 61,000+ cases in the country, > 30% are in Karachi.

Source: [http://covid.gov.pk](http://covid.gov.pk)

*24-27 May estimates for Karachi; actuals not available.*
COVID-19 Task Force

- Set up on 25 Jan 2020, two days before arrival of first suspected cases
- Planning for different COVID-19 influx scenarios
- Worked in areas of:
  - Medical protocols
  - Staffing & Employee Health & Safety
  - Emergency protocols
  - Procurement
  - Facility changes
  - Government relations
  - Public awareness & Media management
  - Internal communications
Hospital Incident Command System (HICS)

- Initiated on 11 March, 2020
- The team met diligently every day, sometime twice a day, without fail since 11th March, with the last meeting taking place on 16th April.
- Review of the circumstances and nature of this pandemic and our learning, it was implied that AKUH-K need to:
  - Accept this new reality and plan operations around it
  - Plan to resume to normal operations; and
  - Define our capacity for Covid-19 patients
- The HICS was concluded on 17 April, 2020
Timeline of Major Events

20 Jan
Emerging Alert Issued

26 Jan
Awareness Campaign Launched

26 Jan
26 Chinese workers screened

11 Feb
Screening and Testing Started

12 Feb
1st COVID detecting test performed

13 Feb
Table Top Drill - John Hopkins

26 Feb
First COVID-19 Patient Admitted

26 Feb
HICS defined

1 March
COVID-19 patient admitted

11 March
Orange Alert Announced – HICS activated

15 March
First PCR kit arrived at AKUH- Lab

16 March
CHC normal operations closed

16 March
Service Curtailment Started

11 March
N95 fit test started for healthcare staff

17 April
Screening and Testing Started

19 March
COVID-19 Helpline for public started

23 March
Staff housing for quarantine & isolation

28 March
Tele clinics started

3 April
CDU converted to COVID bay in ER

23 April
New Screening and Testing Site

31 March
Home health services

27 March
ER patient flow changed for safety purpose

12 May
Resumption of Services

19 March
COVID-19

30 April
New Diagnostic and Treatment Zone

4 April
Decision to convert PW into COVID Hospital

17 April
Orange Alert Lifted

23 March
Govt. Announced lockdown

18 April
CDU converted to COVID bay in ER

18 March
Service Curtailment Started

Preparedness

Response

Recovery
Drop of Avg. census due to COVID-19 suspected & positive admissions
Early Challenges

♦ New Virus:
  ♦ No verified tests available initially
  ♦ No standard treatment
  ♦ No standard medication

♦ Safety concerns:
  ♦ Limited negative pressure areas
  ♦ Testing at Emergency had to be closed
  ♦ Moved to open spaces but high volumes made social distancing impossible as well

♦ Lockdown:
  ♦ Dwindling supplies of PPE, testing reagents and sanitizer
  ♦ Tents and other logistical material
  ♦ Procurement shortages
  ♦ Construction material shortages

♦ Public and Media:
  ♦ Fake news about the hospital
  ♦ Misinformation about the disease
Curtailing Services

♦ **Lockdown**
  ♦ In Karachi: March 22, 2020
  ♦ In Pakistan: March 23, 2020

♦ **At the Hospital**
  ♦ Essential services continued
  ♦ Clinics halted on March 20, 2020 based on government directive
  ♦ Elective cases halted on March 20, 2020

♦ COVID-19 screening and testing had to be stopped on March 21, 2020 for outside patients
Changing Care Paradigms and Processes

♦ Defining algorithms
  ♦ Screening
  ♦ Testing
  ♦ Employee Health

♦ Guidelines for PPE for each area

♦ Clinical rounds for students suspended
Collaboration with the Government

- Experts on provincial and federal task forces
- SOP and guidelines development
- Design and establishment of 1,200-bed field hospital in Karachi
- Testing support
- Training and capacity building:
  - Doctors
  - Nurses
  - Doctor-to-Doctor Tele-ICU Services
Technology and Innovation

- One ventilator for multiple patients in case of a surge
- Low-cost emergency ventilators
- 3-D printing of swabs – expected to produce 400/day
- CoronaCheck – self-screening app
- SehatCheck – employee screening app
- Teleconsultation app
- Remote monitoring of ICUs
Adjusting to the New Normal
Safety Measures at the Hospital

♦ For everyone:
  ♦ Mandatory screening
  ♦ Mask made compulsory
  ♦ No visitors, one attendant policy
  ♦ 2/3 waiting area seats removed
  ♦ Cafeteria made takeaway only
  ♦ Congregational prayer area closed
  ♦ Enhanced infection control protocols employed

♦ For staff:
  ♦ Appropriate PPE made mandatory
  ♦ Rotational schedules for frontline staff
  ♦ Work from home for other staff
Making the Staff Feel Safe

♦ Screening everyday
♦ Free testing and treatment if positive
♦ Availability of full PPE
♦ Guidelines developed
  ♦ PPE
  ♦ Surgical procedures
  ♦ Each service also created own guidelines
♦ Hostels for isolation/quarantine
♦ Separate donning and doffing areas
♦ Transport services
Making Patients Feel Safe…
COVID-19 Testing and Screening Site

♦ Outdoors
♦ Away from clinics and other hospital areas
♦ Separate areas for employees and patients
♦ Modular booths
♦ Free tele-screening, up to 700 tests/day
Making Patients Feel Safe…
COVID-19 Diagnostic and Treatment Zone

♦ Enhanced capacity:
  ♦ Respiratory Care Unit in ED
  ♦ Acute Care Unit converted to negative pressure facility
  ♦ Isolation facility with negative pressure ICU and negative pressure step down unit

♦ Structural changes:
  ♦ Conversion of existing ORs to Negative Pressure ORs
  ♦ Electronic monitors for pressure and airflow
  ♦ Donning and doffing areas
  ♦ Doors modified to put glass panels for external monitoring of patients
Resumption of Services

- COVID-19 screening, testing and treatment away from other patients
- Outpatient options for patients:
  - In-person clinics with mandatory screening before consultation
  - Tele-clinics
  - Home health solutions
  - Outreach and Community Hospital clinics
- Surgeries:
  - Pool testing for elective cases
  - Full PPE for emergency cases
Key Learnings

♦ Accepting the new normal
♦ Learning and unlearning
♦ Collective decision making
♦ Swift action
♦ Investment in staff
♦ Changing culture
♦ Agility
Thank you