

RESPONSE TO COVID-19

Changing the paradigm of healthcare in Pakistan – is more than just a mission at Indus Health Network (IHN). IHN is a not-for-profit Network that operates a system of 12 hospitals, four rehabilitation centers, four regional blood centers, 22 hospital blood banks and 25 primary care clinics with integrated public health initiatives all across Pakistan.

The Indus Health Network has been, and continues to be, at the forefront of the battle against coronavirus in Pakistan. This can be gauged from the swift response of the organization to the pandemic, the brisk

rate of increase of COVID-19 handling capacity of the Network, as well as the multi-faceted response of the organization to the pandemic. The dynamics of the Indus Health Network were rapidly transformed to adjust to the demands placed on the system by the pandemic, including a revision of the scope of services, expansion of the infrastructure, as well as the initiation of diagnosis and treatment of COVID-19 in line with internationally recommended guidelines.









Governance Framework



Testing Initiatives



Treatment Initiatives



Education and Training



Research



Public Health Initiatives



Communication



Partnerships and Resource Generation

POLICY ENGAGEMENT AND COLLABORATION WITH PROVINCIAL GOVERNMENTS

Indus Health Network is supporting the provincial governments right from the onset of COVID-19 pandemic in Pakistan.

CONTRIBUTION IN POLICYMAKING DECISIONS

The Chief Minister of Sindh, Syed Murad Ali Shah included The Indus Hospital (Indus Health Network) in the Anti-Coronavirus campaign. Dr. Abdul Bari Khan, Chief Executive Officer was selected as a member of Chief Minister of Sindh's Corona Task Force. Dr. Bari's contributions were based on the insights derived from the massive COVID-19 workload that The Indus Hospital (TIH) was catering to and were instrumental in the formulation of province-wide policies for pandemic control.



Dr. Abdul Bari Khan at a Corona Task Force meeting

SUPPORT TO THE GOVERNMENT FOR COVID-19 TESTING AND SCREENING

IHN through its' public-private partnership initiatives, is a major testing center for samples collected at government-run hospitals. Currently, TIH is receiving samples from districts Thatta, Badin, South Karachi, West Karachi, Korangi, Central Karachi, Lasbela, and Baluchistan. IHN helped in establishing the Expo center HDU.

IHN also provided COVID-19 testing facility at Multan Institute of Kidney Diseases, in coordination with other stakeholders. IHN established a four bed facility at the Lahore cluster facility. The Government of Punjab declared Manawan and Recep Tayyip Erdogan Hospital (RTEH) were as COVID-19 facilities.



Indus tested the population of districts Thatta, Badin, South Karachi, West Karachi, Korangi, Central Karachi, Lasbela, and Baluchistan.

SUPPORT TO ESTABLISH GOVERNMENT-RUN FACILITIES

The Indus Health Network helped the Government of Sindh in setting up a 100-bed Quarantine Center in Dumba Goth. as well as a 120-bed COVID-19 Hospital in Gadap Town, and a 20-bed COVID-19 Unit in Badin.

COORDINATION WITH OTHER HOSPITALS DEALING WITH COVID-19

A weekly meeting was held among the Managing Directors of seven public sector hospitals to create a central dashboard to oversee the progress.

RECEP TAYYIP ERDOGAN HOSPITAL DESIGNATED AS REFERRAL CENTER FOR SOUTH PUNJAB

The 175-bed facility at the RTEH, Muzaffargarh was dedicated as a major referral center for COVID-19 in South Punjab with a mutual understanding of IHN and the Government of Punjab.



RTEH established a dedicated

175-BED
COVID-19 facility

COVID-19 HAS PUT PEDIATRIC CANCER PATIENTS AT HIGHER RISK

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GOVERNANCE FRAMEWORK

AND FOUNDATION ACTIVITIES

FORMATION OF LEAD GROUP

To streamline the managing and governing of all pandemic-related activities, several committees were formed as a part of the lead group which included members of the Emergency Response Committee, Disaster Management team and Infection Control Committee.

CSM AS OPERATIONS LEAD FOR COVID-19 ACTIVITIES

As a response to the rapidly evolving international guidelines on COVID-19 management, a Clinical Services

Management (CSM) team was established, and assigned the role of COVID-19 operations lead. This was also endorsed by hospital operations, thus enabling uniformity of command and quick execution of decisions relating to COVID-19 management. CSM was also the focal team dealing with COVID-19 related internal and external affairs, including engagement with the respective government departments and agencies, as well as private donors and other stakeholders.

MOBILIZATION OF HUMAN RESOURCES

With the increase of COVID-19 dedicated beds in the in-patient settings, the number of physicians, nurses and ancillary staff was increased by re-allocating them to the COVID-19 Unit.





Clinical Services Management was established, and assigned the role of COVID-19 operations lead

ARRANGEMENT OF EQUIPMENT

Equipment, including ventilators and monitors were ensured in close collaboration with other hospitals as well as Indus' Supply Chain and Biomedical departments.

AVAILABILITY OF MEDICATIONS

All specialized medicines were made available in TIH and RTEH by the pharmacy department.

CROWD MANAGEMENT

There was a 'No Visitor' Policy to limit the number of attendants and to ensure crowd management.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

A centralized PPE counter was established to control the consumption of PPE at TIH. A protocol was designed for not only providing the front line operators with appropriate PPE but also to ensure its availability.



TESTINGINITIATIVES

COVID-19 PCR TESTING

COVID-19 testing capacity by Polymer Chain Reaction (PCR) was increased at TIH from 0 to 2,500 per day in just 14 weeks. The first SARS-CoV-2 RT-PCR testing was initiated within three weeks of the onset the pandemic. The first batches of PCR testing were done using manual methods. However, as workloads increased, automation was also introduced enabling the lab to continue to respond effectively to the ever-increasing demands placed on its services.



COVID-19 testing capacity by PCR was increased at TIH from

0-2,500 per day in just 14 weeks

TESTING WITH AUTOMATED EXTRACTION

During March 30 - April 6, fully automated RNA extraction was initiated, enhancing the lab's capacity to conduct 7,000 tests a week. Currently we are processing and reporting around 14,000 samples per week.

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TESTING BY GENEXPERT

Using the funds provided by Global Fund for TB, the Global Health Directorate (GHD) team was able to mobilize savings to help get GeneXpert SARS-CoV2 cartridges to the laboratory services. This expanded testing options by utilizing GeneXpert machines (originally used for TB) with a turnaround testing time of two hours.

The lab conducted more than 170,000 SARS-CoV-2 PCR tests

STAFF TRAINING

In order to match the rapidly increasing capacity of the lab, training was conducted for the staff of PNS Shifa Hospital, Abbasi Shaheed Hospital, Faisal Base Hospital, and Recep Tayyip Erdogan Hospital. Initially, the Indus Hospital had 3 technical staff trained to do PCRs but by week 14, a total of 58 staff were working in three shifts. After week 14, the staff requirement was reduced by 40% as efficiencies were improved through staff training, updating of the laboratory Management Information System and more automation in testing.

DIAGNOSTIC FACILITY AT RTEH

A new diagnostic facility for COVID-19 was established at RTEH with the help of the Government of Punjab.

SELF-SCREENING

Indus Hospital Research Center (IHRC) in collaboration with the Infectious Diseases and IT departments, developed the first Pakistan-specific self-screener for COVID-19 based on Infectious Diseases guidelines.

http://covid19.tih.org.pk/



TREATMENT INITIATIVES

RESPIRATORY EMERGENCY ROOM

To ensure staff and patient safety, it was necessary to control the spread of COVID-19 within the Emergency Room. Appropriate ventilation mechanisms to handle airborne infections were designed and installed, modifying the Emergency Room into a Respiratory ER and a non-Respiratory ER, each having 11 beds.



COVID-19 UNIT

Initially, a 20-bed COVID-19 unit with an ICU facility was established which was later expanded to 55 beds. The unit managed COVID-19 patients of all severity, including critically ill patients needing ventilation.

MODIFICATIONS AT SHEIKH SAEED MEMORIAL CAMPUS (SSMC)

Obstetric Labor Room, Neonatal ICU, and Operating Room were modified at SSMC to continue maternal and neonatal care without compromising on safety and volume. A COVID-19 labor room and operating theater was established to deliver COVID-19 positive mothers in a safe environment.

COVID labor room and an operating theatre was established.



COVID-19 UNIT IN BADIN

The District Headquarter Hospital, Badin, is one of the government-funded hospitals managed by IHN, operating under a public-private partnership. The hospital established a 20-bed COVID-19 Unit which served as the major referral point for Northern Sindh.

COVID-19 CLINIC

The Indus Hospital started COVID-19 clinics for hospital staff and rehabilitation of recovered COVID-19 patients. It also has a dedicated acute and maintenance dialysis facility for COVID-19 positive patients.

FOLLOW UP OF STABLE COVID PATIENTS AT HOME

Patients on home isolation were guided throughout the isolation period whenever required.

BLOOD DONATION

The COVID-19 pandemic has adversely affected all areas of healthcare delivery, blood transfusion services being one of them. Social distancing, reduced mobility, and the lockdown have resulted in reduced blood donor mobilization and blood collections. To overcome the hurdle, the Indus Hospital Blood Center contacted potential donors through social media. It was a mid-scale campaign to connect with donors to organize small scale blood drives at their residences. The Indus Hospital Blood Center managed to conduct 97 blood drives, 42 home collections, and drew 1,858 units of blood in the month of March, 2020.

PHYSIOTHERAPY MANAGEMENT FOR POST COVID-19 PATIENTS

216 patients who underwent hospitalization and treatment with ventilator received physiotherapy support. They received post-COVID-19 rehabilitation help for Post Intensive Care Syndrome and Intensive Care Unit Acquired Weakness.



COVID-19 POSITIVE MOM DENIED TREATMENT BY SEVERAL HOSPITALS, GIVES BIRTH AT SHEIKH SAEED MEMORIAL CAMPUS

"My wife, Uzma was pregnant with our third baby when she got COVID-19 from me."

This is the story of Dr. Ghulam Akbar — a cardiologist at a public hospital — who despite taking all the precautions got infected and transferred it to his wife.

His wife was then denied from birthing at the hospital she was registered for because she was infected with the virus.

"I was assigned the duty to raise public awareness amongst police workers. My work required me to go to different areas and raise awareness about COVID-19," says Dr. Akbar.

However, as fate would have it, Dr. Akbar was infected with the virus during his work.

"Once I felt the symptoms I got the whole family tested. My wife and I tested positive for COVID-19 but luckily our two-year-old daughter was negative."

"The actual problem started when my wife's delivery date approached. She had a medical complication and had already lost our second child because of it, and now she had COVID-19 as well. The hospital, upon knowing her diagnosis, refused to admit her. I tried my level best but no hospital was ready to take her," he shares.

When he had lost all hope, a colleague told him that the Indus Hospital's Sheikh Saeed Campus has agreed to take the case."

"My wife went through a C-section and on May 11, 2020, we were blessed with a baby girl.

Right after her birth, she was tested for COVID and declared negative. Sheikh Saeed was
the only place that kept its doors open for us. I'm grateful to the hospital management and
doctors for helping us in our time of need."

CAPACITY **BUILDING**

DEVELOPMENT OF GUIDELINES

COVID-19 guidelines were developed to bring uniformity in treatment and management. These included COVID-19 treatment guidelines for adults; COVID-19 treatment guidelines for children; COVID-19 home care guidelines; Ethical guidelines for doctors and staff; Burial guidelines (English and Urdu); Policy for exposed healthcare workers; Donning and doffing.

COURSES AND WEBINARS

The hospital conducted several webinars and lectures for clinical and paramedical staff.



DATA MANAGEMENT AND RESEARCH

HMIS is the custodian of all electronic data that is being generated at the Network level and has a stringent mechanism to secure this data as per policies. Electronic Medical Record (EMR) is involved in coding of disease related data, but over the time has managed to successfully analyze large data sets and to arrange this information on specific formats. EMR is also involved in generating customized reports. Following COVID-19 related reports are being generated by EMR on a regular basis:

- Government of Sindh lab data reports with patient's demographic details
- GHD Report with patient's demographic details
- WHO Report with patient's demographic and clinical details
- CM Summary Report
- Daily COVID-19 Stats
- Weekly COVID-19 Stats
- NCOC Report

COVID-19 related reports are being generated by EMR on a regular basis



PSYCHOSOCIAL SUPPORT

The psychosocial team has been playing an active role in providing psychological counseling, morale-boosting activities, and mental health support to patients and caregivers.



WORRY-FREE ZONE

The pediatric complex of the Indus Hospital has an exclusive play area for pediatric patients. During COVID-19, the play area was designated as the Worry-Free Zone for TIH staff. The staff used it for relaxation during the COVID-19 breakout.





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RESEARCH

RESEARCH PROPOSALS AND STUDIES

The Indus Hospital Research Center (IHRC) has conducted multitudes of research on COVID-19. To-date there are nearly 37 research studies at various stages; seven of which are sponsored studies. The sponsored studies are as follows:

DRUG TRIAL

- Solidarity Trial [WHO]
- Efficacy and Safety of Favipiravir on mild COVID-19 pts [Martin Dow]
- Efficacy and Safety of JHQ granules for treatment of mild COVID-19 patients [International Center for Chemical and Biological Science (ICCBS, Karachi University), and Beijing Institute of Biological Products Co.]



VACCINE TRIAL

- Phase III placebo control AD-5 vaccine trial – efficacy, safety, immunogenicity [NIH (Pakistan) and CanSino Biologics (China)]
- Phase I placebo control inactivated vaccine trial – safety, immunogenicity [Int'l Center for Chemical and Biological Science (ICCBS, Karachi University), and Beijing Institute of Biological Products Co.]

DEVICE TRIAL

Efficacy of the Alnno-Ventura CPAP
 System in patients requiring continuous positive airways pressure to reduce respiratory distress [Alsons Group]

POINT OF CARE TEST

Proof of Concept for the Panbio[™]
 COVID-19 Ag Antigen Test in Symptomatic
 Subjects (POC) [Abbott, USA]

As part of the research support, IHRC team has helped faculty develop proposals, analyzed data; helped with grant applications and budgets.

37 research studies being conducted



PILOT ANTIBODY TESTING

GHD along with IHRC collaborated with the Government of Sindh, and Aga Khan University to plan and conduct a pilot antibody testing survey to help influence lockdown decisions. The Indus team was responsible for all epidemiological aspects including sampling and design of the survey.

COVID RESEARCH OVERSIGHT COMMITTEE

The Committee was established to ensure standards and inclusiveness of pertinent stakeholders in all COVID-19 research.





PUBLIC HEALTH INITIATIVES

TRAINING AND LEARNING AT IHN'S GLOBAL HEALTH DIRECTORATE (GHD)

During the pandemic, GHD's training and learning department conducted training on awareness, screening, sampling, sample handling and on the use of PPEs. 333 healthcare professionals from IHN and other partner institutes were trained.

333 PROFESSIONALS

from IHN and partner institutes were trained for screening, sampling, sample handling and on the use of PPEs.

SCREENING OF ALL EMPLOYEES, PATIENTS, AND ATTENDANTS

Screening desks were set up at every significant point of the campus across all IHN health facilities to minimize the spread of disease among staff, patients, and attendants. People with symptoms were directed towards the isolation area or ER for further evaluation and testing. Through integration of these services, over 10,000 individuals have been screened and over 7,000 patients have been tested to date.



DRIVE-THROUGH SCREENING AND TESTING

In March 2020, a public-private partnership between the Karachi's District South administration and GHD was initiated to screen and/or test individuals for COVID-19. The district administration set up the country's first drive-through COVID-19 screening and testing facility. Citizens can make a phone call to the helpline 1,166 to get an appointment for PCR testing after answering a few basic risk-assessment questions. Due to the low COVID-19 numbers and decreased demand it is currently functioning as a walk-in clinic. The on-ground operations of the facility which includes verbal symptom screening, assessment by a medical officer, chest X-Ray and nasopharyngeal swab collection - are all managed by the GHD team. The goal of this testing facility is to screen and test masses while minimizing physical contact by limiting individuals to their own personal vehicles. Through this initiative, more than 1,800 people have been screened and tested and more than 1,100 cases have been identified.

More than 1,800 people were screened and tested and more than 1,100 cases were identified through the drive-through service.



ACTIVE SCREENING COVID-19 CLUSTERS

In collaboration with the district governments, GHD provided screening, triage, and swab collection facilities in sub-sets of different districts in Karachi that had been identified as high-burden areas for COVID-19.

In districts Malir and West, GHD teams have been working alongside the deputy commissioner and district health office teams in high-burden areas identified based on case detection. The mobile X-Ray vans were mobilized on a need basis near hotspots where they would set up a screening and testing camp. As District West was identified as a high-burden vicinity, a fixed screening and testing facility was set up at Qatar Hospital, Organi Town by the Indus Hospital, District West administration, and GHD. It facilitated walk-in patients, six days a week without

PUBLIC HEALTH INITIATIVES

prior appointments. GHD made its screening and testing services available for public and private sector organizations — people at Baldia Police Training Center, SITE police station, Binoria University hostel and a number of factories and offices were screened and tested for COVID-19 through this facility.

CONTACT TRACING

This component functioned when the District would alert the GHD team for the cases that had been detected through the PCR testing and had close contacts that fell under the criteria of high-risk populations. The District Health Office would manage to bring in all such people to a nearby health facility where the GHD team would set up a contact screening and testing facility with a mobile X-Ray van. In all such instances the X-Ray image was also read for TB indica-



PRIMARY CARE COMMUNITY HEALTH CENTERS

The Community Health Centers remained open while most public health programs operations were impacted. The Tuberculosis, HIV, Maternal and Neonatal Child Health, Malaria and Hepatitis C teams came up with solutions to ensure continuation of medication supply for those under treatment to prevent treatment failures. These solutions included: provisions of medicine for a longer period; delivery of TB medicine at the patients' homes; active follow-up etc. Teleconsultation was provided to those patients that suffered from chronic conditions.

TB, HIV, Maternal and Neonatal Child Health, Malaria, and Hepatitis C teams continued providing medication to patients during the lockdown

COMMUNITY HEALTH

Community Health Workers (CHW) have been integrated into COVID-19 response. They were initially involved in delivering COVID-19 awareness sessions in the community before lockdown. CHWs conducted 186 sessions in communities across Karachi, interior Sindh, and Punjab, having engaged 1,753 participants. CHWs

are now involved in COVID-19 screening, testing, data collection and management across all the Primary Care Program sites in which Community Engagement Center is operational. These operations have reached thousands of individuals seeking care for COVID-19. They also conducted follow-up phone calls and voice note engagements with community members during this time to understand their experiences of COVID-19 and link them to help where possible.

CHWs have also, with the help of community engagement center (CEC) teams, identified 4,250 vulnerable families in need of immediate support during the pandemic. Through funds from external donors, CEC was able to provide 3,226 families with ration support.

CHWs conducted 186 sessions in Karachi, interior Sindh, and Punjab, engaging 1,753 participants.

MENTAL HEALTH

In partnership with IRD's 'Pursukoon Zindagi' program a comprehensive mental health response to the pandemic was developed that catered to various populations, such as COVID-19 patients, caregivers, employees, parents with children who are differently-abled,

PUBLIC HEALTH INITIATIVES

and the general public. Psychosocial support for patients tested for COVID-19 was provided during their isolation or guarantine period to provide mental health support as well as check-ins regarding physical health, contact tracing and referrals to facilities. Between April and June 2020, over 6,000 patients were reached out to provide integrated support. Mental health support to frontline service-providers was provided through webinars, support groups and check-in calls for clinicians in isolation. Between April and June 2020, 144 healthcare providers were provided mental health check-ins.



Over **6,000 patients** were provided with mental health support

TELE-COUNSELLING

In addition, a reactive helpline was launched for community members to call in and avail free-of-cost crisis counselling.

471 people were provided psychosocial support through the helpline



PSYCHOSOCIAL SUPPORT INTERVENTION

The COVID-19 pandemic called upon an immediate psychosocial response to the emerging public health emergency at both facility and community levels; this was done by responding to the needs and supporting healthcare staff and daily wage earners. The staff have contributed in the sample collection of 4,300+ individuals at the facility in Karachi.

MOBILIZATION OF TB VANS

GHD runs 55 TB mobile vans across the country that are mobilized in the community as well as private and public hospitals to screen for tuberculosis. 28 of those vans were used to help battle the COVID-19 along with screening for tuberculosis. The mobile X-Ray vans aided with artificial intelligence-based software that detect pulmonary infiltrates and other abnormalities providing real-time screening for communicable diseases such as TB and COVID-19. The vans are being used in several different facility and community settings to help with the COVID-19 response.

In areas of Sindh, specifically Karachi, the vans are being used by teams of trained healthcare workers to screen and triage for COVID-19 in the Emergency Department at the Indus Hospital, Civil Hospital, Karachi, and Qatar Hospital, Orangi Town to help lessen the overwhelming burden in the ERs. In order to ensure thorough screening, all individuals were also provided a chest X-Ray in the van. Between March-June, 2020 more than 27,000 individuals were screened and redirected to testing areas ensuring that presumptive cases were separated to control further transmission. From this more than 1,100 COVID-19 cases were identified.



AWARENESS

The Indus Hospital and Indus Health Network have played an important role in supporting the COVID-19 frontline teams by providing multifaceted services: communication: resource generation; creating public awareness: establishing partnerships with corporate organizations; receiving in-kind, and monetary donations: collaboration with donors, volunteers, and other stakeholders: writing stories and articles of faculty members and COVID-19 survivors; and running social and digital media campaigns to secure blood donations. The Indus Health Network's faculty appeared on print, electronic, and digital media to provide expert opinions. Multiple partnerships were made in order to facilitate the clinical teams.

PAKISTAN'S FIRST SELF-SCREENER FOR COVID-19



You can now log on to **http://covid19.tih.org.pk/** and answer some questions regarding your symptoms to assess yourself.



Disclaimer: This is a screening tool and not a diagnostic test.
Please consult a doctor for diagnosis

A MESSAGE OF GRATITUDE

During this time of great uncertainty, we have been comforted, encouraged, and humbled by the outpour of generosity and support from our donors.

Individuals, organizations, community groups, small businesses, big corporations, and the government have all stepped up to support our efforts.

Our donors helped us by providing face shields, masks, PPEs, sanitizer, medical supplies, electrical appliances, equipment, machines, food items, and monetary gifts. We are incredibly grateful for every single item.

I'm grateful to the Government of Pakistan and especially the Government of Sindh. Your generosity and confidence in our work mean the world to us.

I thank the doctors, nurses, paramedical and other staff for helping us meet the challenges of that time, so we can continue to provide the highest order of care with inclusion, integrity, compassion, accountability, respect, and excellence.

Last but not least, there's no room for complacency. Pakistan is facing the second wave of the pandemic combined with winter and it can take a heavy toll upon the people. When I send you my best wishes, I would also like to remind you that hundreds of thousands of our patients and their families await your generous support in the form of Zakat, Sadaqat, and donation.

Qua/

Dr. Abdul Bari Khan Chief Executive Officer Indus Health Network



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