

Technology – Enabled Healthcare

FRONT LINE

IN FOCUS

APAC EDITION 2021



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2021



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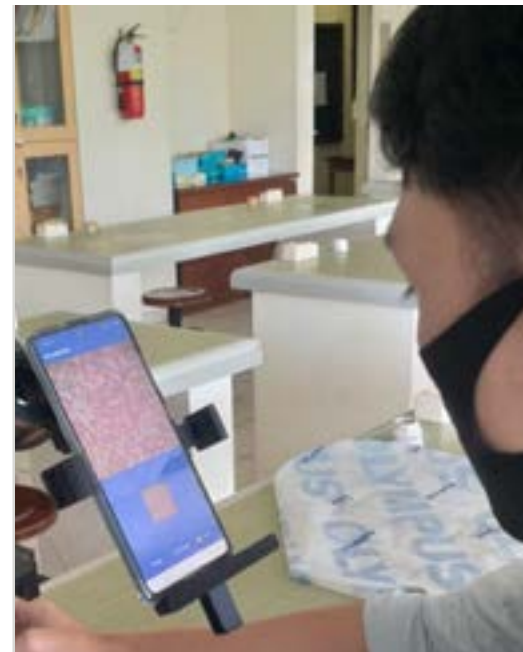
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Technology's Vital Role in Healthcare

The future of healthcare is one in which technology, particularly digital technology, will play a significant role. To truly appreciate how far we've come in adopting digital technology in healthcare, we just need to look back 20 years when we had to do everything in person (register, queue, see the doctor), all records were on paper, and accessing healthcare information was tedious and difficult. Today, physicians can see patients remotely and accurately diagnose a patient's problems through telemedicine.

The COVID-19 pandemic has pushed health systems to adapt even more rapidly and has been the perfect case study for virtual care and remote monitoring at a time when physical consults are challenging. This trend is set to continue.



Source: World Health Organisation (2020)

HOW DIGITAL TECHNOLOGY HAS IMPACTED HEALTHCARE



IMPROVED ACCESS TO HEALTHCARE INFORMATION AND DATA



DATA-DRIVEN INTERVENTION AND PREVENTIVE MEASURES



ENHANCED COMMUNICATION BETWEEN HEALTHCARE PROVIDERS AND PATIENTS



TELEMEDICINE AND TELEHEALTH



HEALTHCARE APPS ENABLE SELF-MONITORING OF HEALTH AND ACCESS TO INFORMATION

But beyond modern conveniences like these, what truly is game-changing (and life-changing) with the application of digital technology to healthcare is the ability to extend healthcare reach to traditionally underserved communities,

enhance health literacy, and provide preventive health services even in the most remote places. Such support is critical to improving healthcare delivery, and reducing mortality rates, in rural and underserved areas.

How We Enable Better Healthcare with Technology

At the Center for Health Worker Innovation (CHWI), we believe digital technology provides cost-effective and scalable opportunities to enhance community healthcare. Digital tools can help bridge health worker gaps, extend healthcare reach, as well as streamline data collection, communication, and collaboration within national health systems. The Center works with global and regional partners to support the development and adoption of technologies that help ensure frontline health workers are connected to each other, to communities, and to health systems.

IMPROVING CHILDREN'S HEALTH THROUGH A MOBILE APP

Many of the world's poorest children suffer from nutritional deprivations and developmental delays due to lack of access available to their mothers and caretakers to health information and services, especially during the critical window of a child's first 1,000 days of life. Seventeen million of these children live in China.

To overcome this shortfall and provide access to essential, targeted health information and services to their mothers and caretakers, UNICEF China and the National Health Commission, with support from the Johnson & Johnson Foundation, developed the Healthy Family App (HFA). Created with technical support from the National Center for Women's and Children's Health, the app collects real-time, individualized health data

and provides stage-based health information, health self-monitoring, timed follow-up reminders, and two-way communication to the user.

The app was launched in 2018 and has since been piloted in six provinces with the aim to accelerate accessibility, availability, and utilization of health information and high-quality interventions, particularly for the most vulnerable and disadvantaged. By the end of June 2021, there were 633,033 registered HFA users across the pilot areas. Through hands-on training, 45,336 health providers in pilot areas were equipped with the knowledge and skills needed to use the HFA to disseminate maternal, newborn and child health information.



By June 2021, the HFA had more than

633,000

REGISTERED USERS

45,336

HEALTH PROVIDERS WERE TRAINED TO USE THE HFA

VIRTUAL PSYCHOSOCIAL SUPPORT FOR FRONTLINERS' WELLBEING

Across the world, frontline health workers are exhausted from carrying the burden of COVID-19 for more than a year. In India, the under-resourced health system and the overwhelming second wave of the pandemic in May 2021 have compounded the tremendous workload of frontline health workers and caused severe stress. While Johnson & Johnson Foundation had been supporting them with essential equipment and PPEs, we realized that it was equally crucial to care for their psychosocial wellbeing. That is why the Foundation funded UNICEF and the National Institute of Mental Health and Neuro-Sciences (NIMHANS), a premier institution for mental health and neuroscience in India, to jointly develop the Share Care app, which provides mental health and psychosocial support to these health workers as they continue to battle COVID-19 daily.

The Share Care app comprises a comprehensive self-care and resilience building suite, self-assessment tools, wellness checks, and a built-in help center feature that connects the user to mental health experts across the country through a telehealth platform.

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A MOBILE FRIEND THAT SAVES LIVES

In India, an estimated 26,437 women die each year during pregnancy¹, childbirth, and postnatal period due to complications, while 522,000 babies never make it past the first month of their lives². This loss of lives is preventable if mothers have access to healthcare information that can help them make better and timely decisions to seek care during those critical periods.

Johnson & Johnson Foundation partnered with ARMMAN, a non-profit organization in India, to launch mMitra, or Mobile Friend, in 2014. Leveraging the ubiquity of the mobile phone in India, mMitra sends preventive healthcare information through free voice calls to pregnant women and mothers in urban slums in their chosen language and timeslot twice a week, timed to the stage of the pregnancy or age of the infant.

AS OF 31 DECEMBER 2020, A TOTAL OF

2,049,703

NEW AND EXPECTANT MOTHERS HAVE ENROLLED IN THE MMITRA CALL SERVICE.

¹ UNICEF. <https://www.unicef.org/india/what-we-do/maternal-health>

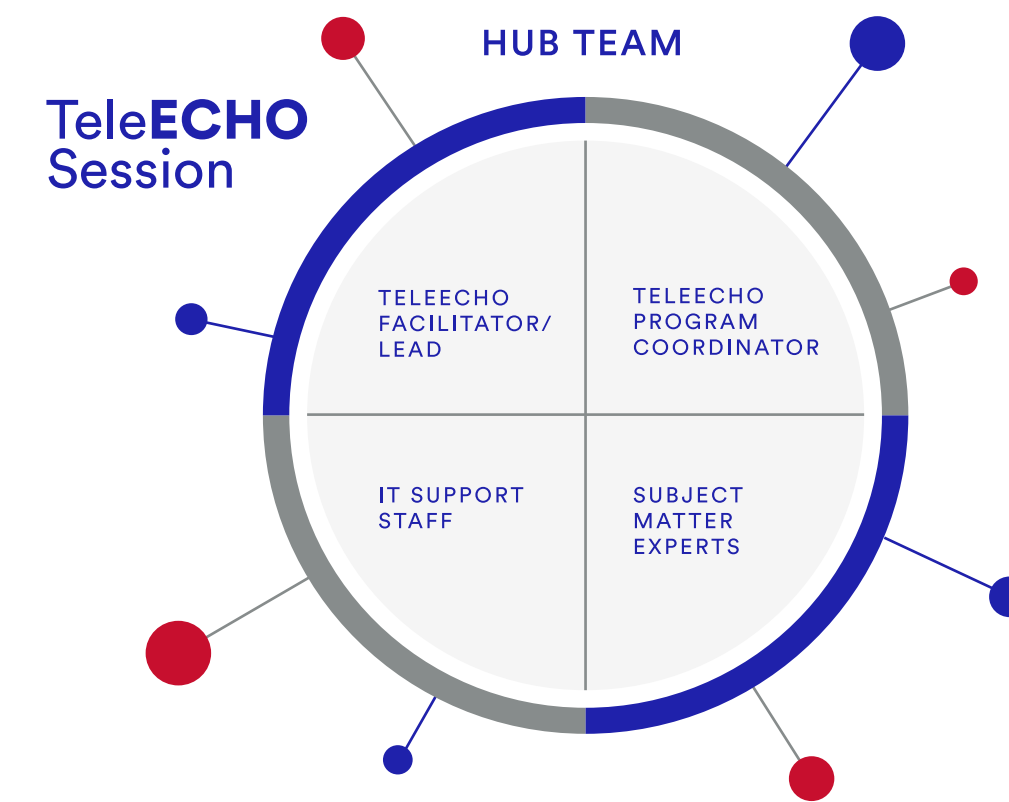
² Levels and Trends in Child Mortality, UNICEF (2020). <https://data.unicef.org/resources/levels-and-trends-in-child-mortality/>

TRANSFORMING HEALTHCARE EDUCATION FOR COMMUNITY HEALTH WORKERS

To help expand the capacity of healthcare professionals in India to manage the unprecedented challenges of COVID-19 and other allied health issues, Johnson & Johnson Foundation will be supporting ECHO India to facilitate capacity building programs for community health workers and mid-level healthcare providers through its “hub and spoke model,” so that they can become a critical frontline healthcare workforce for COVID-19 prevention, community preparedness, and other related conditions.

The program includes virtual training sessions and e-mentoring strategies for rapid dissemination of knowledge and uses proven case-based adult learning techniques and video conferencing technology to connect healthcare workers with specialists at hubs or knowledge centers. Health workers can present their patient cases for review by specialists, discuss new trends and techniques, and gather advice from their peers. Through these Tele-ECHO clinics, online learning communities are created for these frontline workers to be upskilled.

The program aims to establish four hubs and 32 learning/spoke sites across states, and train 2,000 health workers on COVID-19 response and other allied health services.



In the Spotlight

Mobile-driven community-based care for the underserved

In rural and remote areas of Asia, like Western Visayas, Philippines, people find it difficult to access primary healthcare services because it is simply too far away or expensive. The result: living with untreated diseases or worse, a loss of life.

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Johnson & Johnson Foundation has been working with our social enterprise partner reach52 to reach these traditionally underserved communities. reach52's use of mobile applications to enable a digital public health approach has been critical in upskilling rural health workers and connecting people in low-resource settings to essential health information during the COVID-19 pandemic.

Building on the success of its COVID-19 intervention, we expanded our partnership with reach52 to launch a new program in 2021. Powered by mobile apps that work both offline and online, the program seeks to develop virtual primary healthcare systems for communities in Western Visayas, Philippines, empowering community health workers (CHWs) to manage more of their community's needs within the community itself and enhancing community-based care.

Focusing on three key health areas - non-communicable diseases, maternal and child health, and infectious diseases, the program will deploy a data-driven approach that uses the mobile digital health platform to collect data about healthcare needs and capture health records for the community. The data will be risk-scored and analyzed to provide targeted programs and tasks for community health workers, with personalized resident interactions (such as a targeted hypertension screening or recommendation to attend a rural clinic for a check-up) scheduled directly on the app.



OUR GOAL IS TO IMPROVE

3,000

COMMUNITY HEALTH WORKERS' ABILITY TO MANAGE PROACTIVE OUTREACH, RUN LOCAL COMMUNITY HEALTH CAMPAIGNS, PROVIDE COMMUNITY-LEVEL SUPPORT, SCREENING, AND REFERRAL-TO-CARE.

Global Community Impact

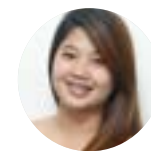


We spoke to the reach52 team – Edward, Anjelou and Li Jen, to find out more.

THIS REACH52 PROGRAM IMPROVES COMMUNITY HEALTH BECAUSE ...

traditional digital models don't often work due to a lack of internet and lower digital literacy within lower-income or older populations. So, we've built our app to work offline, on very low-spec phones. Our approach involves getting community health workers to use the app to support their communities, rather than depending on community members to log on directly themselves, which can prove to be a barrier,

especially for low health seekers. When we train community health workers, they sign up their community members to the platform and collect data on health needs. Based on this data, we can schedule and run more targeted services. Such data also provide real insights to population needs.



ANJELOU ESTRELLA
Senior Manager, Implementation

USING TECHNOLOGY TO ENABLE BETTER HEALTHCARE ...

doesn't just mean deploying the fanciest technology, rather it is about understanding and meeting needs.

Community health workers play a vital role in reaching out to people to understand their health statuses, but most of this information stays in their record books until a midwife or a nurse reaches them. Giving them access to technology changes everything. Recording what they know in an offline platform can give insights on the health status of the community as soon as the users are connected to the internet and allow such information to be acted upon.

[That is why] we blend simple, offline-first tech with community health worker and community training and empowerment. It is really about enabling the behaviors that can lead to better community health outcomes. Before, some community health workers seldom or never used a mobile phone. Over the course of the training, we observed that they gained more self-confidence and could navigate the app much more easily and independently. This allowed them to follow up with the residents and monitor their health progress with ease.



LI JEN LEE
COO



A DIGITAL HEALTH APPROACH IS CRUCIAL BECAUSE ...

Most of the communities in the region are based in rural areas where access to healthcare services is limited.

Traditional health infrastructure can't effectively serve these dispersed populations. Many health systems in developing countries are also still paper-based, resulting in huge risks of information loss, miscommunication, and discontinued or fragmented care.

Digital platforms would help speed up the process of understanding the needs and health status of the community while leveraging technology to deliver healthcare services directly and efficiently to them.



EDWARD BOOTY
CEO

Insider Look

USING TECHNOLOGY TO TRANSFORM THE FUTURE OF HEALTH

Johnson & Johnson Impact Ventures (JJIV) and Instellar launched the Strengthening Entrepreneurship for Health Advancement and Transformation (SEHAT) Impact Accelerator in May 2021, the first program of its kind to support purpose-driven, tech-enabled enterprises in Indonesia that are using innovative business models to make quality healthcare more accessible for everyone.

Nine promising teams were selected to go through a four-month acceleration program, which will conclude with a final Hot Seat Pitch for further support from JJIV!

We checked in with two of the start-ups to see how they are progressing on this exciting journey to change the future of healthcare.



Founded by Chita and her team, Ibunda.id is an online-to-offline (O2O) health tech platform that helps people who are struggling with mental health issues.

THE PROBLEM

Access to mental healthcare is extremely limited in Indonesia — there are only 350 hospitals that provide mental healthcare and 3,500 mental health practitioners in the country. This means there is less than one mental health practitioner per 100,000 people. In addition, stigma around mental health issues due to low literacy and lack of information may prevent those affected from seeking treatment.

OUR SOLUTION

Ibunda.id seeks to provide easier and wider access to mental healthcare information and services through the use of mobile technology. With just a smartphone, we connect people with psychologists and psychiatrists at Ibunda to access mental health assistance on our platform, overcoming the barriers of limited availability and stigma. We also expand mental health literacy through social media. Through our platform, we hope to normalize the treatment of mental health issues and increase the standard of mental healthcare for people in Indonesia.

THE OUTCOME

Since we started six years ago, our journey was not easy and it was filled with challenges all the time. But we persevered by listening attentively to each and every one of our clients regarding their mental health issues. We now have more than one million active users on our platform from all over Indonesia.

The SEHAT program has provided us with comprehensive insights and guidance in every workshop. The mentoring by Mr. Ajeesh Ashraf of Johnson & Johnson was very insightful yet fun at the same time. We always leave each session with lots more to do. With his experience and knowledge, and his eagerness to know more about Ibunda.id, we made much progress during this time.



Chita, Founder of Ibunda

Winning the final Hot Seat Pitch will help us move one step closer toward achieving “Indonesia Sehat Mental” and reach more people across Indonesia.

Find out more about Ibunda at ibunda.id.



“The passion and drive of the team – trying to make a difference to humanity – is simply amazing.”

I see mentoring them in this endeavor as nothing short of a privilege.”



AJEESH ASHRAF
Associate Director, Commercial Excellence APAC
Johnson & Johnson Vision Care

Founded by Indarto, Neurabot is the first Indonesian start-up company to offer a digital platform specifically designed for cancer diagnosis.



The Neurabot team

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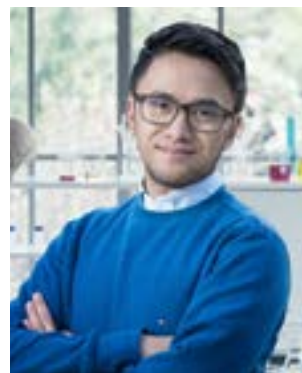
INDARTO
Founder/CEO



ARDY
Co-founder/CTO



Dr. BAGUS
In-House Expert



THOMHERT
Head of AI



FINDA
CMSO

THE PROBLEM

Indonesia has seen an increasing rate of cancer cases and cancer diagnostic demand since 2013. This increasing demand was not met by a sufficient number of pathologists, creating a highly imbalanced pathologist-to-patient ratio. Diagnoses also take a long time to reach patients due to logistical challenges posed by Indonesia's geography. Unequal access to diagnostic practitioners and technology can directly impact the well-being and further impact the survivability of cancer patients.

OUR SOLUTION

Neurabot seeks to solve this problem by creating a more efficient cancer diagnosis process using digital technology for image and data analyses, bypassing the conventional diagnostic route that requires the cancer specimens to be physically delivered and stored. This will allow pathologists to work more efficiently and for patients to receive their results quickly.

By utilizing a smartphone camera/detachable camera to create a makeshift digital microscope from a conventional binocular microscope, Neurabot brings the digital laboratory out of the hospital.

Using its diagnostic platform, it then applies a trained artificial intelligence algorithm to the image of the specimen to speed up the image analysis process.



THE OUTCOME

The SEHAT program has been very helpful, particularly for us to set up our priorities and explore the potential problems that are still ongoing around the topic of cancer diagnosis. SEHAT has also improved our knowledge and awareness in designing our solution to be impact-oriented. We really value the openness and willingness of everyone involved in the program to share their knowledge and experience.

Find out more about Neurabot at neurabot.io/en.

“We hope that every healthcare and laboratory facility in Indonesia can have access to digital technology without having to completely replace the devices that already exist. When that condition is achieved, we are convinced that the survivability and the overall well-being of cancer patients can be improved.”



INDARTO
Founder of Neurobot