Praava Health:
Reinventing Healthcare in Bangladesh

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Introduction

When Sylvana Q. Sinha founded Praava Health in Bangladesh in 2016 she could never have predicted that a worldwide pandemic would accelerate her firm's expansion. When the startup's first medical clinic opened in the capital city Dhaka it attracted 25,000 patients and soon established a nationwide reputation for excellent care.[1] When COVID-19 struck in 2020, Praava Health became the country's first private provider of COVID-19 tests, accelerating its trajectory as Bangladesh's fastest growing consumer healthcare brand.

Praava Health's unique 'click-and-brick' healthcare model combined digital tools with state-of-the-art outpatient care, world-class lab diagnostics, high-quality pharmacy services, and trusted physician/patient relationships to create a new type of health service for Bangladesh's rapidly growing middle class. By 2021 the company served more than 200,000 patients at its flagship clinic and 40 health-test collection points across Dhaka. Since its opening, Praava Health's patient and revenue base had tripled each year.

Looking ahead, with hopes for an end of the pandemic in 2021, Sinha believed Praava Health was well positioned for even further growth. However, scaling up required additional funds and a strategic decision about where to prioritize investments. The firm could expand its digital toolbox, move into new cities, build up its lab diagnostics business, or advance into altogether new fields, such as medical data analytics. Whatever option was selected, Sinha wanted to stay true to Praava Health's mission: to provide high-quality, value-based, patient-centered healthcare anytime, anywhere. Early investors supported this mission and new backers would have to be on board as well. Plus, Sinha needed internal stakeholders to support the strategy if her new plans were to move forward successfully.

Bangladesh's Surging Economy

In 2019, the World Economic Forum cited Bangladesh as having one of the most robust economies in Asia.[2] The country's annual GDP was more than $300 billion[3] and GDP growth was strong, reaching 8% in 2019and projected to be 9% by 2023.[4] The economy was diversifying from its historical base in agriculture and manufacturing, with 53% of GDP now coming from the service industries.[5] As a strong indicator of progress made, in 2020 the nation's GDP per capita exceeded that of neighboring India for the first time in history.[6]

In 2020, there were nearly 160 million Bangladeshis. Rapid economic growth, urbanization, new education initiatives, and a youthful population foretold a robust workforce able to support the Bangladesh economy for the upcoming decade.[7] While 68% of the population was of working age in 2021, this cohort was set to grow larger because 48%of Bangladeshis were under the age of 24.[8] Bangladeshis' per capita income was expected to increase 5.7 times by 2030.[9] There was universal primary education, and the country had achieved gender parity in education, with 51% of students being girls. Educational quality improvements were a priority for 2021 going forward, as both the World Bank and USAID were partnering with Bangladesh's education ministry on programs to expand vocational and new teacher training.[10]

In terms of population density, Bangladesh was ranked tenth in the world in 2019 for inhabitants per square kilometer,[11] nearly three times that of India.[12] Its capital Dhaka was estimated to be the world's most densely populated city. Dhaka had 15 million people living in 325 square kilometers[13] and was increasing in population by 3% to 4% each year.[14] To give a sense of the city's dense living conditions, it would be as if the entire New York State population resided in New York City's borough of Queens.

As its economy strengthened, Bangladesh's middle class grew. The number of employed workers living below the poverty line dropped from 73.5% in 2010 to 10.4% in 2018.[15] Nearly a quarter of the population moved into the middle class by 2020.[16] These were 42 million consumers who, as their livelihoods improved, were very interested in acquiring consumer goods and seeking out new services.[17] When asked about their plans for consumer spending, most said they were willing to spend more for better quality goods. And among those surveyed, four out of five said they cared highly about product brands when making their purchasing decisions.[18]

The nation's civic leaders focused on digitizing the economy, providing cell phone and internet access across Bangladesh, as consumer usage increased rapidly. The number of internet subscribers stood at 108 million as of August 2020.[19] That same year saw the number of mobile phone users at 170 million, equal to the population.[20] With greater access, online shopping was increasing rapidly. Of the country's middle and affluent class consumers, 68% owned smartphones. Of those, more than 66% said they searched for products and services online regularly as part of their shopping habits.[21]

One Nation, Two Healthcare Systems

For years, Bangladesh's long-serving prime minister, Sheikh Hasina Wazed, prioritized public healthcare improvements as a way to combat poverty. There were government funded programs to improve public water and sewage, to improve access to maternal care, to open clinics in rural areas, to dispense vaccines, and to provide basic anti-viral and antibiotic medicines. These initiatives extended life expectancy and reduced maternal and child mortality, as the country made consistent progress to meet health indicators set out in World Health Organization (WHO) Sustainable Development Goals (SDGs). [22] By 2020, free healthcare for vaccinations, family planning, acute infections, and nutrition deficiencies was widely available, but key healthcare challenges remained. More people were suffering from heart disease, stroke, cancer, chronic respiratory disease, and diabetes.[23] And the high cost of hospital care and advanced treatments, plus difficulties in maintaining adequate medical staff, were ongoing problems.[24]

Bangladesh did not have a comprehensive national healthcare policy. [25] The country's healthcare spend was $6.6 billion in 2017, estimated to be about 2.3% of GDP.[26] This was substantially lower than the South Asian and the lower middle-income country (LMIC) average at 5.3% and 5.4% of GDP.[27] More than two thirds of health spending was out-of-pocket expenditures and private spending. As large swaths of the population moved up into middle income status, they sought higher quality care in private settings versus government-run clinics. Even people with the lowest income levels preferred to pay, if they could, to access private doctors for treatment beyond the most basic health needs. Hospitals and clinics focused on one-off treatments rather than preventative care and patients paid for care on an as-needed basis. Less than 1% of Bangladeshis had health insurance. About 67% of total healthcare costs were paid out of pocket in cash. [28] As a result, the number one cause of personal bankruptcies in Bangladesh was catastrophic healthcare costs. Most Bangladeshi families were one accident or one serious illness away from economic ruin.[29]

There was a shortage of physicians and specialists in Bangladesh. The nation averaged just over three doctors per 10,000 people, a significantly low figure. The number of nurses per 10,000 people was even lower, at 1.07. Many medical professionals lived in the capital of Dhaka. Clinical facilities had a 36% vacancy rate as they sought to fill jobs with credentialed, qualified staff.[30] The vast majority of doctors earned a living on a pay-per-transaction basis, charging patients for tests and procedures performed, drug scripts written, and operations completed. Even so, the healthcare sector was doctor-centric, rather than patient oriented or family-relationship based. Doctors were paid by quantity rather than quality of care. The average time a doctor spent per patient was nearly the lowest in the world, at just 48 seconds.[31]

The quality of care was highly variable in all parts of Bangladesh's healthcare system, with only one internationally accredited lab in the country. In addition, the government had yet to establish its legal ability to set and enforce standards of care to protect patients. Consumers saw the health system as unreliable, plagued by corruption, and rife with mismanagement and fraud. Trust levels were low.[32] Counterfeit drugs were common and pharmacist training was

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lax.[33] As a nationwide system, Bangladesh's healthcare industry was ranked 88th in the world by WHO for 2021.[34]

Not surprisingly, Bangladesh's hospital and providers' medical information systems were inefficient or altogether lacking. Preventative checkups and family primary care visits were episodic and records often incomplete. Emergency care was 'one touch,' as patients were treated in a crisis, then sent home with little tracking for follow-up. Consumers carried their own paper-based medical records to doctor's appointments or to see a specialist. Although there was electronic medical records (EMR) technology in some larger hospitals, data-based coordination of care between doctors in other facilities was rare.

Bangladesh's quality of healthcare was so inconsistent that anyone who could afford to leave the country for healthcare would do so. Each year, 700,000 Bangladeshis traveled abroad to seek better medical services in neighboring India, while others travelled to Singapore, Thailand, Malaysia, and Indonesia often for better care too.[35] On average, the Indian embassy in Dhaka issued 1,000–2,000 medical visas daily to those journeying abroad for care.[36] Lab analyses, blood work, and other medical tests were also sent abroad for analysis, primarily to India.[37] An estimated $2 billion in healthcare spending flowed out of Bangladesh to India, Singapore and Thailand in 2012 which one source in 2019 reported had soared to $4 billion in 2019 without factoring in travel expenses.[38] When asked why they were leaving their country to seek healthcare, patients consistently said they didn't trust the system in Bangladesh.

Personal Experiences Identify an Opportunity

Sylvana Q. Sinha was born and raised in the United States. As the child of immigrants, she traveled to visit relatives in Bangladesh every two or three years. As a frequent visitor, Sinha became acquainted with the country's dysfunctional healthcare system through a series of personal family experiences. She had a particularly transformative experience in 2011 when she visited Bangladesh with her parents for a family wedding. While there, her mother needed an emergency appendectomy operation and went to a 'top' private hospital in Dhaka for immediate care. Complications arose, and her mother required medic air evacuation to Bangkok for another surgery. This was followed a year later by yet another operation in the United States, to alleviate complications from the original procedure performed in Dhaka.

On another occasion, one of Sinha's relatives in Bangladesh was discovered to be suffering from cancer, despite being tested at a top private hospital in Dhaka. Sinha said:

> Several of my relatives with cancer were wrongly diagnosed by doctors in Bangladesh, resulting in countless extra doctor visits and scares for our family. When I founded Praava Health, one of my biggest priorities was to offer a full range of world-class diagnostics services, including for cancer.[39]

Luckily, her relative's neglected cancer was properly diagnosed in Bangkok, leading to appropriate treatment and follow up care.

Such troubling experiences drove Sinha to reconsider her career path.[40] As she said, "I observed that there was really no amount of money that could afford you access to quality healthcare in Bangladesh—and that not everyone was as lucky as my family to be able to urgently evacuate" for the care needed.[41] In 2014, she left her US legal practice to become a healthcare entrepreneur, determined to bring reliable, high-quality medical care to the people of Bangladesh.

Sinha started her new vocation by undertaking a global listening tour. She went to Bangladesh and interviewed doctors, patients, technicians, and other health professionals across the country, to understand the pain points and opportunities in the existing healthcare system. She evaluated alternate models of care in other geographic settings, meeting with healthcare innovators in the United States, Brazil, and China. In 2015, she synthesized the insights she had gathered and developed the Praava Health business model—one that put patients at the center of care. (See Exhibit 1 for Bangladesh's typical medical experience versus Praava Health's new model for healthcare delivery.)

In 2015 Sinha finished her 100-page business plan for Praava Health, a document that included 10 years of detailed financial projections. She soon approached investors to fund Praava Health's launch and early development. By the end of the year the new venture had secured $1.4 million in seed funding from angel investors. By 2018 a Series A round secured $4.2 million more and a Series A Prime bridge round closed in early 2021, bringing total funding to $11.1 million. Sinha's investors were top business, science, and tech leaders including retired General David Petraeus, the chairman of the KKR Global Institute;[42] Shaiza Rivazi, chairman of the board of the Acumen Fund; Dr. Jeremy Lim, advisor for digital health at ASTAR (Singapore's national science agency); tech investor Esther Dyson, executive and founder of Wellville and Element3 Health; Geoff Price, co-founder and chief operating officer at Oak Street Health; and Rushika Fernandopoulle, co-founder and CEO of Iora Health.

Praava Health's Brick-and-Click Service Model

Praava Health's mission described its distinct approach to healthcare:

> We believe that everyone should have access to convenient, affordable, and high-quality care. We are on a mission to change how healthcare is delivered in Bangladesh. We know how daunting getting access to the right care can be, which is why we focus on turning a doctor visit into a delightful experience. Our goal is to make the process intuitive for our patients and provide care wherever you are—in person or at home.[43]

Praava Health planned its out-patient clinic model to serve Bangladesh's growing middle class. Sinha identified the country's 21 million urban, middle-class residents as the new venture's addressable market, with the seven million who were in Dhaka considered to be her obtainable market for the launch.[44] Focusing on different market segments even further,

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Praava Health defined its primary target amongst middle income wage earners as those families that had children.

Sinha set up her new venture as a for-profit enterprise to manage a network of family health centers across Bangladesh, opening its first flagship outpatient clinic in Dhaka.[45] The center offered medical care for routine screenings and checkups, conducted on-site diagnostic testing, and performed outpatient treatments for acute and chronic health conditions, including simple procedures such as biopsy, endoscopy, and colonoscopy. Praava Health made sure to integrate care and coordinate patients' records across its three business divisions: the outpatient clinic, where personalized, long-term doctor-patient relationships were formed; the pharmacy, where authenticated, high-quality drugs were guaranteed; and the lab, where high-quality tests and diagnostic imaging occurred. Customers had the option to pay for health services either à la carte or via an annual subscription fee that provided unlimited access to medical services. Initially, all care was delivered in-person on site. Later, telemedicine was introduced, accelerated by the COVID-19 pandemic.

Convenience and customer service were key parts of the Praava Health business model. All appointments were guaranteed to last at least 15 minutes. Doctors practiced protocol-based medicine, using the standards set by the National Institutes of Clinical Excellence. Over 50 doctors from more than 20 specialties were on staff, including family medicine, women's health, pediatrics, dentistry, and ophthalmology. Advanced outpatient specialties included cardiology, gastroenterology, and dermatology, plus allied health professionals in nutrition, counseling, physiotherapy, and health coaching. The firm would call in medical experts in other specialties too, if needed. The pharmacy was located on premise and provided home delivery service. The world-class lab met the standards set by the College of American Pathology. It also participated in RIQAS, the international external quality assessment (EQA) scheme that required 99-100% accuracy. It gathered samples and performed analyses on site, also offering collections for the lab from other clinics and pharmacies in more than 40 collection points across the city. Lab diagnostics included imaging scans, blood analyses, biopsies, and other medical sample tests. The lab also offered patients at-home service, sending staff to gather samples at homes who then delivered specimens directly to the lab.[46]

An important part of Praava Health's management plan involved the creation of a centralized healthcare information system (HIS) and EMR system. The company's divisions were integrated onto a single technology platform, so that staff in any department had access to all a patient's records and test results. This was important because, in many low- and middle-income countries like Bangladesh, EMR systems were rare. Patients found themselves carrying around years of medical records in bags and suitcases. At Praava Health, patients were pleased to find they no longer had to tote heavy paper files from appointment to appointment.

The firm also offered Bangladesh's first patient smartphone app, launched in 2018, which allowed people to access their electronic records and to book appointments. A key factor making this innovation possible was the wide-open marketplace for health data in Bangladesh. Where privacy rules sometimes complicated the development of electronic

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medical systems in other markets, for example HIPAA in the United States, there were fewer constraints in Bangladesh. Praava Health made sure to guard its patients' confidentiality yet was able to exercise creativity in developing new technology platforms.

Building Patient Trust by Delivering Top Quality Service

Praava Health had to hire dozens of family health professionals to fill its staff openings. Sinha initially had believed that human capital would be her biggest challenge, but she found it to be easier than expected once doctors realized that Praava Health wanted them to spend more time with patients and offered a team-based approach to care. Many medical professionals were frustrated with the delivery of healthcare in private facilities and were attracted to a vision of patient-centric care enabled by the latest technology. The firm was able to hire a well-credentialed, world-class medical team, whose members averaged 18-plus years of experience. Leadership included a chief medical officer who had global experience in healthcare quality management, including at Georgetown University Medical School and Mount Sinai Hospital; the lab's senior director, who had run labs at Harvard University for dozens of years and taught at Harvard Medical School; a chief technology and product officer with deep digital health and telecom experience; and a chief growth officer who had spent a career building healthcare companies in emerging markets including South America's largest primary care chain, Doctor Consulta.[47]

Praava Health ran its own pharmacy to combat the danger of dispensing counterfeit drugs. In 2014 the World Health Organization estimated that counterfeit medicines potentially made up more than 50% of the global drug market.[48] In Bangladesh a 2020 survey found that adulterated and substandard drugs made up 20% of all sales.[49] The country was home to 250 manufacturers of generic medicines.[50] The Bangladesh government dictated price limits, which meant that low-cost generic medicines were widely available, but wealthier consumers bought imported brand name drugs that were more likely to be authentic. To bypass these issues Praava Health procured its medicines directly from quality-controlled manufacturers. When the flagship clinic's pharmacy opened, it was classified as one of the nation's 600 model pharmacies, out of the 200,000 pharmacies in operation.[51] Praava Health prescription orders were included with patients' data in the electronic health record system, providing another unique integrated care benefit.[52]

Praava Health's new diagnostic testing facility featured six separate kinds of labs. The company was able to handle hundreds of basic and advanced phlebotomy tests in-house, meeting hematology, cytopathology, serology, microbiology, immunochemistry, and other specialty needs. The lab featured Bangladesh's first molecular cancer diagnostics facility, which met all independent Randox International Quality Assessment Scheme (RIQAS) standards measuring lab quality. In all, Praava Health was able to perform over 700 different types of medical lab analyses. The facility served Praava Health patients first, then provided services to other clinics, hospitals, or labs. At full capacity, the lab was able to process 450,000 tests per month.[53]

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Only 1% of Bangladeshis had health insurance and most of those policies covered only the cost of hospitalization.[54] Praava Health was the first firm in the market to offer annual membership subscription plans to cover outpatient care services.[55] As a new concept, it took time for Bangladeshis to see the benefits of this new type of payment scheme. However, by 2020 5% of Praava Health revenues were generated by subscription plans. Sinha pointed out another benefit to this approach: "even the cheapest plan allowed a patient to see a doctor every single day without any additional cost [to the patient, thus] incentivizing Praava to keep patients healthy."[56] Praava Health's subscription plans offered different price points and services, based on the level of diagnostic care needed. More expensive plans were geared toward patients with chronic conditions, such as diabetes, cardiac issues, and hypertension. Low price plans were US$41 per year while the most expensive were US$354 annually.[57]

Most patients paid for Praava Health's services à la carte. The price charged per consult was about US$7 per visit, higher than that at government clinics where visits were usually free. However, this fee was well below the average charged by Dhaka's private hospitals, where consultation prices ranged from US$14 to US$24 per visit. When it came to standard medical tests and lab work, Praava Health charged approximately half as much as expensive private hospitals in Bangladesh. (See Exhibit 3 for price comparisons and the list of annual plan rates.)

Sinha was clear from the beginning that the key to success for introducing a world-class quality healthcare model in Bangladesh was by investing in a structured, process-driven service delivery model. At Praava Health Sinha's approach had served the team well since the launch and the team continued to focus on processes as the company grew. Most of the management decisions were informed by data, generated from organized operations. By 2021 the focus shifted towards converting those processes into scalable capabilities, ones which would fuel the next phase of growth.

A Hub & Spoke Plan for Expansion

From the beginning, back in 2015, Sinha planned a "hub-and-spoke" approach to build out Praava Health's network—a fairly common construct for healthcare systems all over the world. The flagship clinic 'hub' was in Dhaka's Banani neighborhood in a 30,000 square foot renovated space.[58] Once the flagship was well established, smaller clinics were planned in 10 other neighborhoods in Dhaka, adding the first set of spokes to the network. Each spoke site plan was designed with several doctor consultation rooms, a small imaging and phlebotomy testing facility, and an onsite pharmacy, with the three services housed in a single 3,000-5,000 square foot space.[59]

With the flagship hub successfully established by 2018, Sinha calculated the breakeven financials for the smaller spoke locations. The flagship clinic had successfully achieved its unit breakeven in its tenth month of operation, when patient volume reached 70 visits per day. In total, Praava Health had served 10,000 unique patients on site. Full payback on investment in the flagship was expected by year five of operations, when the number of patients reached 300,000 and EBITDA hit 55%. According to Sinha's projections, the smaller spoke locations

required lower investments and would break even at 25 patients per day, achieving payback in three years. For these sites EBITDA was projected to be 67% in year five, as some operations would be supported by the company's already-established centralized resources, such as its electronic health records system, tech platforms for apps, etc. (See Exhibit 4 for Praava Health economic projections for each unit type.)

Key Learnings from the First Years

As Praava Health saw rapid growth in all areas of its operations, management gained important insights from its flagship site to use in planning for future expansion.

CAPACITY

Praava Health grew to employ over 50 health professionals by 2021.[60] The lab processed 17,000 tests per month on average. The pharmacy sold nearly 850,000 medicine orders.[61] Beginning in 2020, the company had increased its physical presence in Dhaka in another way, setting up 40 collection points to gather lab samples. These sites were in pharmacies and other medical clinics,[62] expanding the firm's branded presence across the capital city, an expansion approach that future spoke locations could build upon.

FINANCIALS

Praava Health revenues were nearly half a million dollars in 2018, more than tripled in 2019, and reached US$4.6 million in 2020. Gross margin percentages steadily climbed, from 40.1% in 2018 to 51.6% in 2020. In terms of the service mix, the Praava Health lab was consistently the highest revenue contributor. It provided 39% of revenues in 2018 and 44% in 2019, climbing to 70% in 2020 due to the lab needs of the COVID-19 pandemic. By 2021, Praava Health had a patient base of over 200,000 and was poised for expansion.[63] (See Exhibit 5 for 2018-2020 performance figures.)

IT SERVICES

Bangladesh's advances in mobile communications and the growth of smartphone usage enabled Praava Health to offer a growing array of telehealth and remote services. The company had launched Bangladesh's first patient app and portal in 2018, giving clients 24/7 access to their medical records. By 2020 the app had more than 10,000 downloads and was rated 4.5 out of 5 stars by users.[64] The firm added to the portal's services by launching e-pharmacy access that allowed for easy refills and delivery requests for prescriptions. The firm added an online symptom checker—a site that could help patients get answers to common questions, which was especially helpful to have during hours when the clinic was closed. The company also started to offer concierge care for patients with diabetes and other chronic conditions. This provided remote monitoring of patients with chronic diseases and was used to track important daily stats. If someone's important health marker (e.g., temperature, blood sugar, weight, blood pressure, etc.) took a turn for the worse, the patient was alerted that an in-person medical visit was needed. [65]

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CUSTOMERS

After Praava Health launched, they found that their typical customers lived in Dhaka, with 62% living in low-income neighborhoods. They were proportionately more male than female, were daily wage earners with dependents, had a median age of 38, and earned US$991 in annual mean income.[66] The daily volume of customers served averaged 41 patients per day in 2018, rose to 103 in 2019, and reached 289 in 2020 for both in-person and remote/virtual visits. By 2020 over 360 corporate clients were working with Praava Health as well, offering the firm's services to local employees as a healthcare option. Corporate deals brought the firm to the attention of over five million potential new customers.[67]

Praava Health patients gave the firm a Net Promoter Score of 67 in 2019, rising to a rating of 73 in 2020. These were outstanding results in a healthcare sector where any rating above 70 was considered world-class. By 2020 Praava Health was recognized as one of Bangladesh's fastest growing consumer brands.[68]

Local Competition

In 2019, there were nearly 3,000 registered private hospitals and 5,000 private diagnostic centers in Bangladesh.[69] The quality of care varied widely as government inspectors were not able to regularly monitor all locations. In the city of Dhaka, the top competitors to Praava Health were the services offered by Square Hospital, United Hospital, and Apollo Hospital. These institutions offered an array of doctors, services, diagnostic lab tests, specialty consultations, and pharmacy services. But none had the combination of primary family care, preventative check-ups, integrated digital apps, and home services that Praava Health offered.[70]

In 2020 Praava Health saw 40% of its revenues and volume coming from remote or virtual care. There were other telehealth services available in Bangladesh, but they offered different types of care, with some peddling health information of dubious quality.[71] Telecom giant Grameen offered a 24/7 health hotline called Tonic, which was staffed by doctors to answer questions. It also gave customers the ability to upload and access their own electronic health records.[72] There were also a few non-governmental organizations offering mobile apps that made rudimentary care accessible for people in Bangladesh's rural areas.[73] Looking ahead, there was significant opportunity for telehealth growth. The global market for telemedicine was $1.78 billion in 2019.[74] Companies launching in this space were likely to enter Bangladesh's market too, but Praava Health's deep local knowledge, brand recognition, and reputation for quality put it a step ahead of incoming telehealth rivals.

COVID-19 in Bangladesh

The first case of COVID-19 infection in Bangladesh was reported on March 8, 2020.[75] On March 16, the Ministry of Education closed all schools and on March 26 all public transport, aviation, and nearly all manufacturers and services went into quarantine lockdown.[76] On March 18, Sinha and her team set up a COVID-19 hotline to answer customer questions, referring sick

callers to doctors to assess the need for in-person care. The firm became the first private provider to partner with the government to answer calls at its free COVID-19 hotline during the onset of the pandemic. Virtually the entire flagship pivoted from in-person consultations to telehealth. Sinha and her team found that, in over 80% of its cases, doctors and staff were able to address patient needs online.[77]

In May 2020 Praava Health's lab was the first officially designated facility in Bangladesh to get government certification to conduct COVID-19 testing.[78] Demand for the lab services soared. Praava Health medical teams travelled throughout the city to collect home samples for COVID-19 tests. This helped to protect patients from exposure to COVID-19 at government testing sites, which suffered from long lines and wait times. Praava Health used the strictest WHO-approved PPE protocols to keep its staff and patients safe. The company developed guidelines for safely collecting samples from patients at their homes. Medically trained staff in full protective gear visited, then brought the samples for COVID-19 analysis in Praava Health's dedicated lab.[79] Later, the company opened seven sites across Dhaka, where patients could come by and have COVID-19 testing on site.[80]

Sinha and her team developed a digital health product called Praanno for at-home COVID-19 symptom management, targeting the 80% of COVID-19 patients who did not require hospitalization, which won them their first software award from the government in the summer of 2020.[81] Sinha explained that "86% of Praanno patients successfully recovered [from COVID-19] at home, compared to 49% nationally. Initial data suggests each averted hospitalization [saved] the patient US$8,000, the private [health] system US$5,000, and the public system US$1,500."[82]

After handling the extraordinary conditions that COVID-19 inflicted on Bangladesh in 2020, Praava Health reported massive business growth to its investors in early 2021. The lab had processed more than 56,000 COVID-19 sample tests in less than a year. The company's patient base had increased 350%, to over 135,000 by the end of 2020 and was nearing 175,000 in the first quarter of 2021. Daily telemedicine consults increased 4,000%.[83] Praava Health was Bangladesh's fastest growing consumer healthcare brand.[84] And the company's ability to innovate in a crisis had gained it worldwide renown: US-based Fast Company Media recognized Praava Health among its top innovators list for World Changing Ideas for 2020.[85]

Other Care Models

Having survived 2020, Sinha considered Praava Health's future strategy. To provide context, she examined the business models and strategies used by healthcare innovators in other marketplaces:

- Ping An Good Doctor (China)—Founded in Shanghai in 2014, this healthcare software company connected patients across China to credentialed clinicians via a branded telehealth app. The company made its revenues by charging users for each call. Prices started at US$1.50 to speak to a junior clinician, scaling

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higher to talk to different medical specialists. By 2018 Ping An Good Doctor had 192 million registered users. [86] During the 2020 pandemic, its leaders decided that COVID-related calls could be made for free and the firm served 315 million with remote care. The company also had 1,000 One-Minute Clinics. These were small booths where patients entered, talked to a virtual AI 'doctor" and, after the short conversation, the AI 'doctor' gave a preliminary diagnosis. It then video-connected the booth to a real doctor, who discussed the diagnosis with the patient.[87] Ping An Good Doctor was publicly held, with a market cap of $15 billion.[88] It was the global leader in the telemedicine services market, accounting for 40.1% global market share in 2019. [89] In 2021 the firm was deciding whether to go global by offering its services in English.[90]

- Dr. Consulta (Brazil)—Founded in 2011 to serve urban low-income patients in Brazil, the Dr. Consulta network soon had 44 local clinics and a simple telehealth app connecting patients to care. The company served two million patients in 60 cities across Brazil by 2020. Prices at clinics were low and doctors charged US$20 for simple procedures like biopsies or stitches. The firm's online service used AI to help doctors make better diagnoses and promised patients strict user privacy for the information they shared. Through Dr. Consulta, patients in poor and remote areas were connected to doctors and top specialists for diagnoses, with further care options determined individually afterwards.[91] The firm expanded to over 50 locations by 2019.[92] In 2021 the company was exploring new revenue opportunities, including aggregating its health data for sales to universities and medical firms. These institutions were seeking information for research in Brazil and Dr. Consulta's information was particularly valuable. The firm was told that its data added "significant diversity to existing datasets from Western countries."[93]

- Oak Street Health (US)—Founded in 2012 to serve US Medicare patients in Chicago, Oak Street Health was a network of value-based, primary care centers and a delivery platform. It provided healthcare services in virtual, in-home, and in-center settings. The service was built on an integrated technology platform that provided personalized primary care and proactive health management services to patients over 65 years old. In 2020, Oak Street Health had 67 centers in 16 different US markets and was serving 90,000 patients annually. The network's business model was based on a scalable, standard setup for each center, placing medical, behavioral, pharmacy, and social work experts in each site. Revenues were earned on value-based contracts with Medicare and other insurers. These payers compensated Oak Street Health for keeping patients healthy, for providing care at home, and for keeping patients out of the hospital as much as possible.[94] In August 2020 the company's IPO raised $328 million on the New York Stock Exchange.[95]

2021 Strategy and Investment Options

As Bangladesh entered 2021, the country was gaining recognition for its economic resilience and advancements. The World Bank had recognized Bangladesh for its decades-long work on building climate resilience.[96] The International Monetary fund (IMF) praised the nation for its economic hardiness in weathering the impacts of COVID-19 in 2020.[97] Bangladesh's per capita income in 2020 exceeded India's for the first time, as the economy grew 9%[98] against the backdrop of the COVID-19 global recession.[99] And in March of 2021 Bangladesh achieved a major milestone when "the United Nations' Committee for Development Policy recommended that the country graduate from the least-developed-country categorization, that it has held for most of the 50 years since it became independent" to join the ranks of developing markets.[100]

Looking at the opportunities ahead, Sinha set out to raise US$10.6 million more in equity to fuel new growth.[101] In her presentation to potential backers Sinha highlighted several strategic options to be pursued in the years ahead once she secured proper funding. These included:

- Marketing—The nation's demographic outlook made it likely that Praava Health's target cohort of middle class, urban consumers would grow (see Exhibit 6). Customer acquisition cost (CAC) had averaged $17.81 in 2019 and then $4.26 in 2020, with the sharp dip due to COVID-test-driven volume.[102] Building on Praava Health's newfound brand strength, Sinha developed a multi-channel media plan to bring in new customers. An array of channels would be used in direct-to-consumer marketing, business-to-business partnerships, and referrals (see Exhibit 7A). If Praava Health could sign up these consumers early in their careers, they had the potential to contribute years of subscription revenues as they aged and their families grew.

- Technology—Sinha saw an opportunity to make IT investments in the next year that would have a strong impact on revenues. These included building a bespoke data warehouse for the firm and creating a Praava Health super app— one that would offer all Praava Health's digital services on a single screen. It would be a one-stop shop for virtual healthcare services, including e-pharmacy, telemedicine, and virtual primary care. By her estimates, creating such a modern fast healthcare interoperability resource (FHIR) interface would help the company's digital health services grow 25-30% from 2020 to 2026.[103] It would also structure the firm's data in a way to make analyses more meaningful, from a population health perspective. In addition, applying AI and machine learning to the firm's data would enable Praava Health to use risk stratification better and develop more preventative care pathways. The program's insights would save costs, improve patient outcomes, and create proprietary IP that would be a lasting strong asset (see Exhibit 7B).

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- Geographic Expansion—Sinha and her team had determined that the moment was ripe to finally add spokes to the network and expand the physical footprint of the brand. The goal was to put a Praava Health outpost close to anyone's home or office across Dhaka. The city's population was expected to double by 2030. By opening ten spoke family health practices in targeted catchment areas, Praava Health would serve more patients. These sites would have pharmacies and act as additional collection points for the lab, to take advantage of the central lab's unused capacity. This would increase revenues because, of all the network's services, the lab was the largest and most profitable segment.[104] (See Exhibit 7C for projections related to opening new spoke locations.)

- New Ventures—Sinha also considered investing in wholly new business ventures. Praava Health could monetize its medical data, similar to the Dr. Consulta data initiative in Brazil, as there were few resources offering granular healthcare data on the population of Bangladesh. Praava Health could provide customer insights that no other firms offered. Plus, a new COVID-19 variant had recently been discovered nearby and the firm was one of the few that could help track its spread. Related patient data was already in demand among pharmaceutical vaccine makers working to address such issues.[105] Once the pandemic was under control, granular patient data on other medical conditions was likely to be in demand.

Sinha weighed her options. Which strategic investment priority would attract new backers? Which would enable the fastest, most sustainable growth? And, of equal concern, which investment would inspire existing key stakeholders to stay and excel? It was important to continue serving the medical staff, specialists, lab technicians, corporate clients, and valued patients who brought Praava Health to this pivotal point.
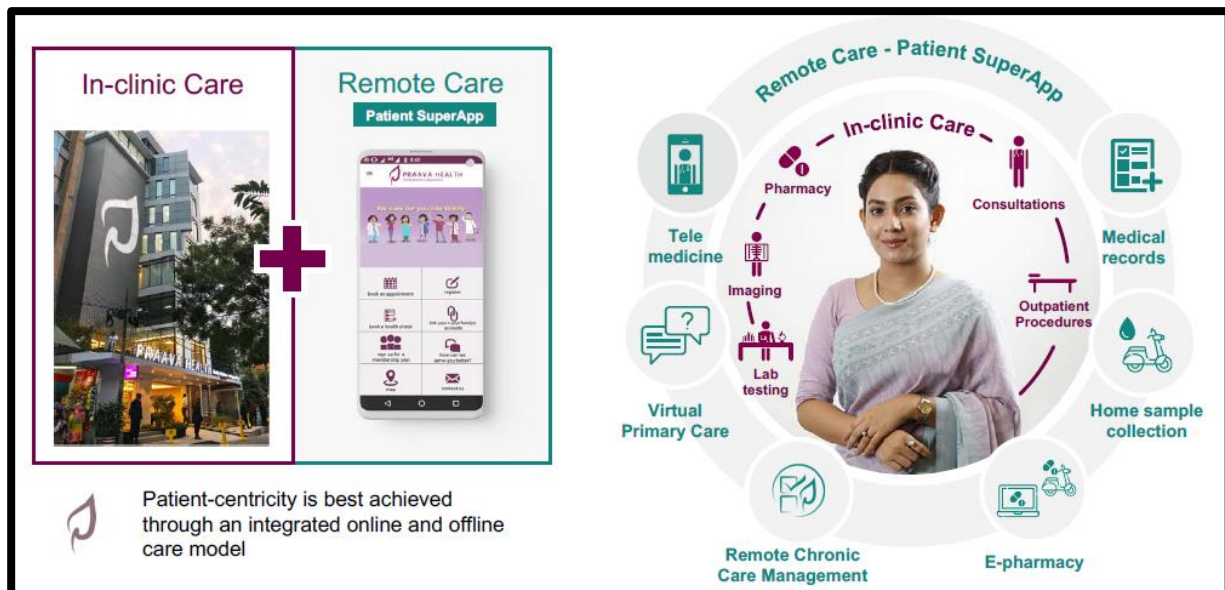
Exhibits

Exhibit 1

Comparison of Bangladesh Typical vs. Praava Health Medical Care Models

Bangladesh's hospital/doctor-centered healthcare model
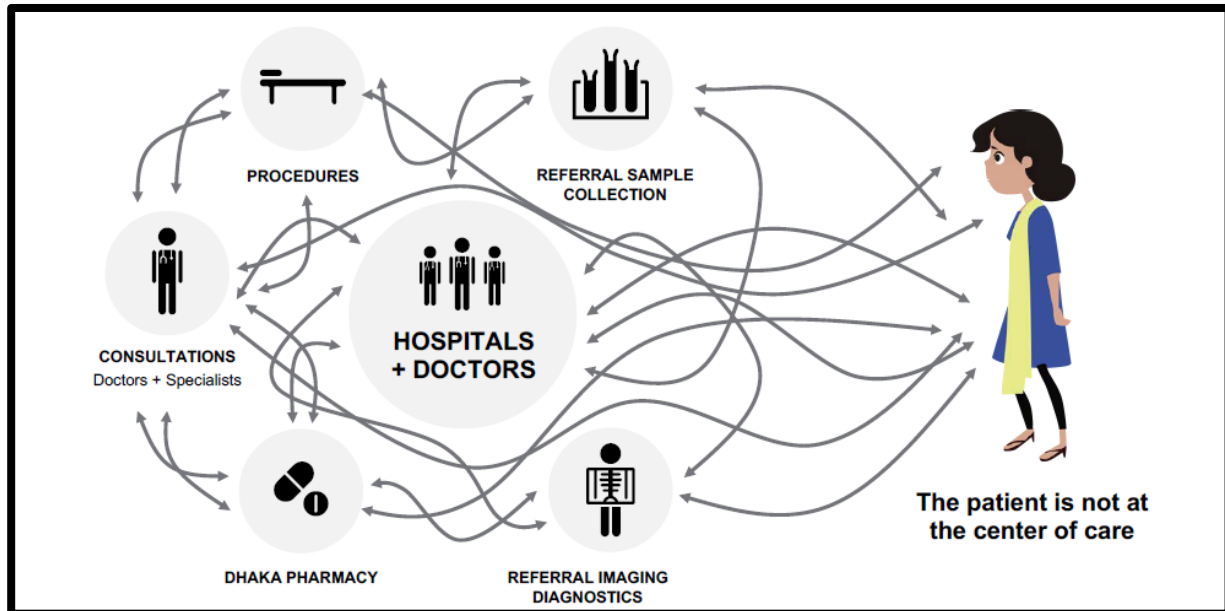
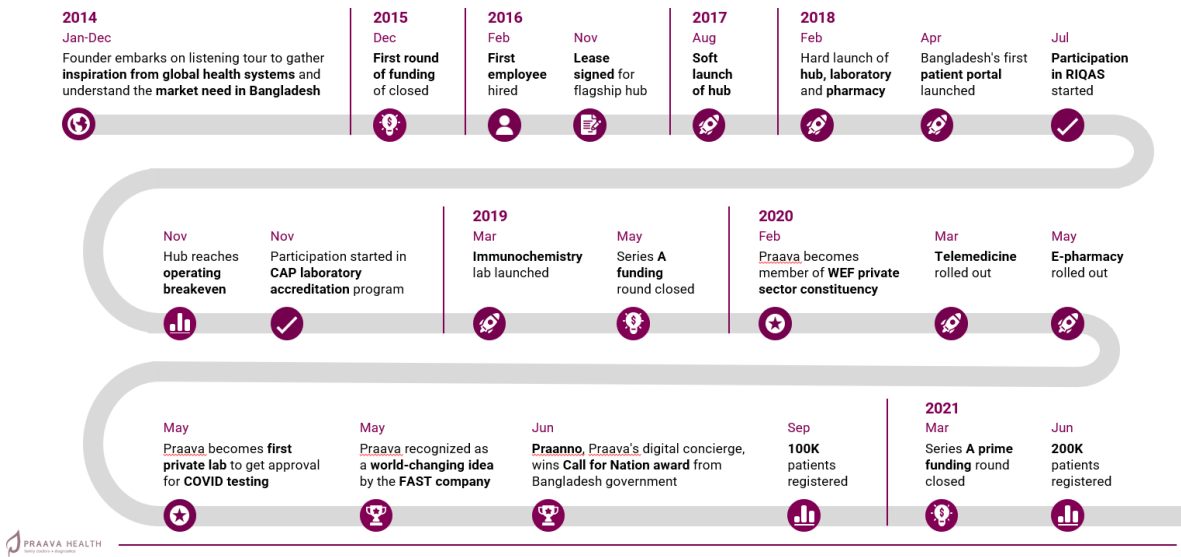Praava Health's brick-and-click, patient-centered healthcare model

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Exhibit 2
Praava Health Launch Timeline: From Vision to Reality

In less than four years, Praava Health went from vision to reality
Praava timeline

2014
Jan-Dec
Founder embarks on listening tour to gather **inspiration from global health systems** and understand the **market need in Bangladesh**

2015
Dec
First round of funding of closed

2016
Feb
First employee hired

Nov
Lease signed for flagship hub

2017
Aug
Soft launch of hub

2018
Feb
Hard launch of **hub, laboratory** and **pharmacy**

Apr
Bangladesh's first **patient portal** launched

Jul
Participation in RIQAS started

Nov
Hub reaches **operating breakeven**

Nov
Participation started in **CAP laboratory accreditation** program

2019
Mar
Immunochemistry lab launched

May
Series **A funding** round closed

2020
Feb
Praava becomes member of **WEF private sector constituency**

Mar
Telemedicine rolled out

May
E-pharmacy rolled out

May
Praava becomes **first private lab** to get approval for **COVID testing**

May
Praava recognized as a **world-changing idea** by the **FAST company**

Jun
Praanno, Praava's digital concierge, wins **Call for Nation award** from Bangladesh government

Sep
100K patients registered

2021
Mar
Series **A prime funding** round closed

Jun
200K patients registered

PRAAVA HEALTH

Source: Praava Health, "Investor Presentation," (slide deck), June 2021, p. 40.

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Exhibit 3
Praava Health Pricing

Per visit - price comparison in USD, converted from Bangladesh Taka

	Public hospitals	**Praava Health**	**Private hospitals**
Consultation fee	Free	7.07	14.15–23.58
Blood test (CBC)	0.12	2.95	5.89

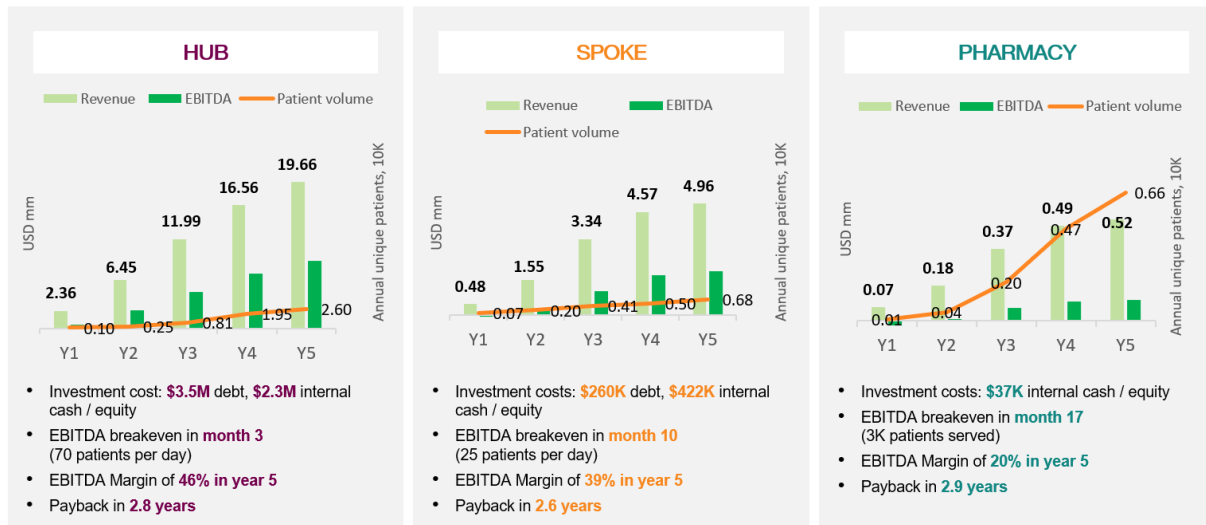*Source:* Praava Health, "Investor Presentation," (slide deck), February 2021, p. 42.

Praava Health Subscription Plans - Patients get unlimited access to MD services

Type of Annual Plan	**Price (US$ per year)**
Silver	41
Gold	88
Platinum	177
Pre-diabetes	231
Diabetes	354
Maternity	349
Cardiac & Hypertension	354

Source: Praava Health, "Investor Presentation," (slide deck), February 2021, p. 13.

Columbia CaseWorks

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Exhibit 4

Praava Health Projections for Hub, Spoke & Pharmacy Unit Economics

Source: Praava Health, "Investor Presentation," (slide deck), June 2021, p. 11.

Exhibit 5
Praava Health Results 2018-2020

MD Services Offered

Medical staff—Family medicine, women's health, pediatrics, dentistry, ophthalmology

Other health professionals—Physiotherapy, counseling, nutrition

Financial and Performance Indicators

Year	Revenue (US$ thousands)	Gross Margin %	Avg. # of Patients per Day
2018	$ 473.6	40.1	41
2019	1,343.3	44.8	103
2020	4,624.9	51.6	289

Source: Praava Health, "Investor Presentation," (slide deck), February 2021, p. 29.

Revenue (US$ millions) Breakdown % by Service Type
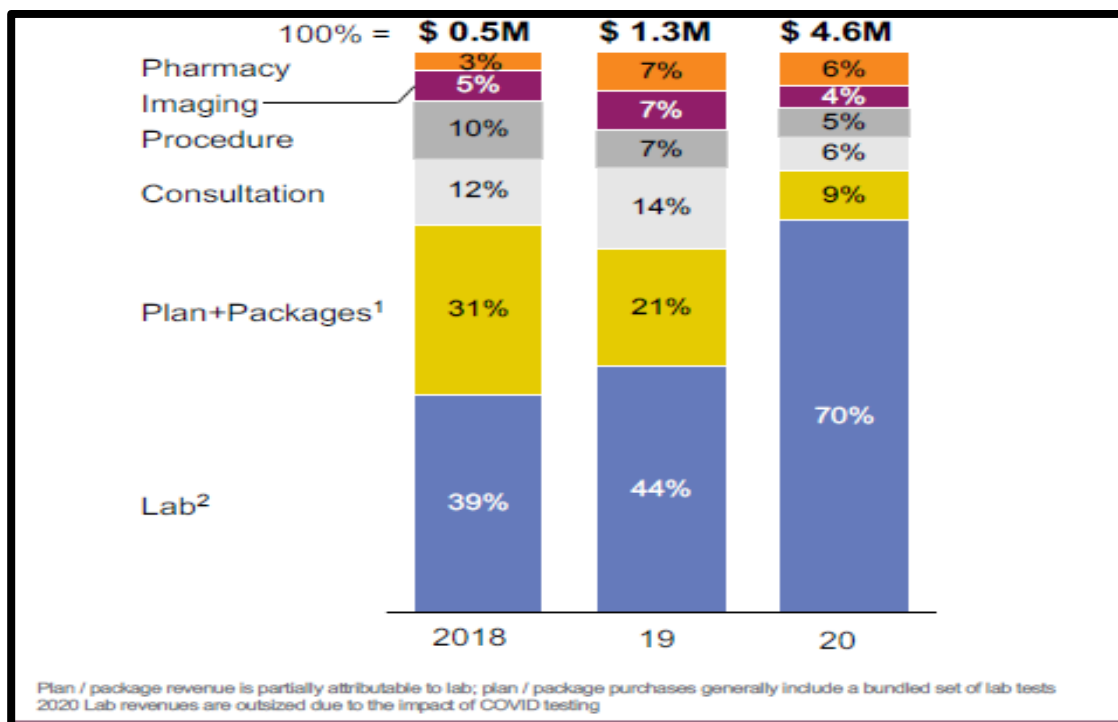
Source: Praava Health, "Investor Presentation," (slide deck), February 2021, p. 30.

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Exhibit 6

Praava Health's TAM / SAM / SOM Population by Service Line
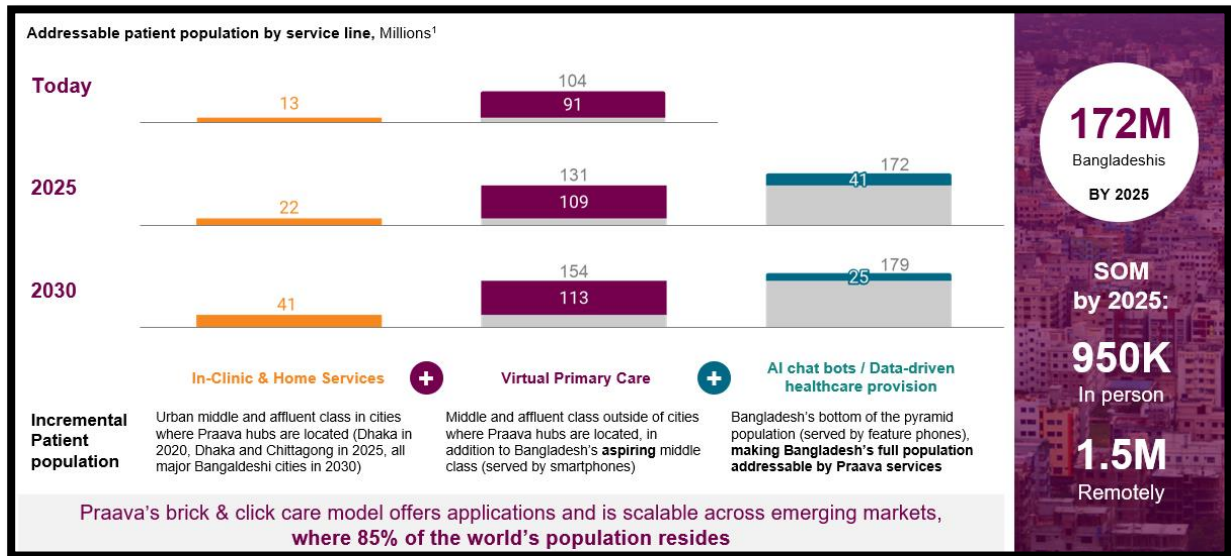
Source: Praava Health, "Investor Presentation," (slide deck), April 2021.

Exhibit 7
Strategic Options

A. Multiple marketing channels add scale rapidly and cost effectively
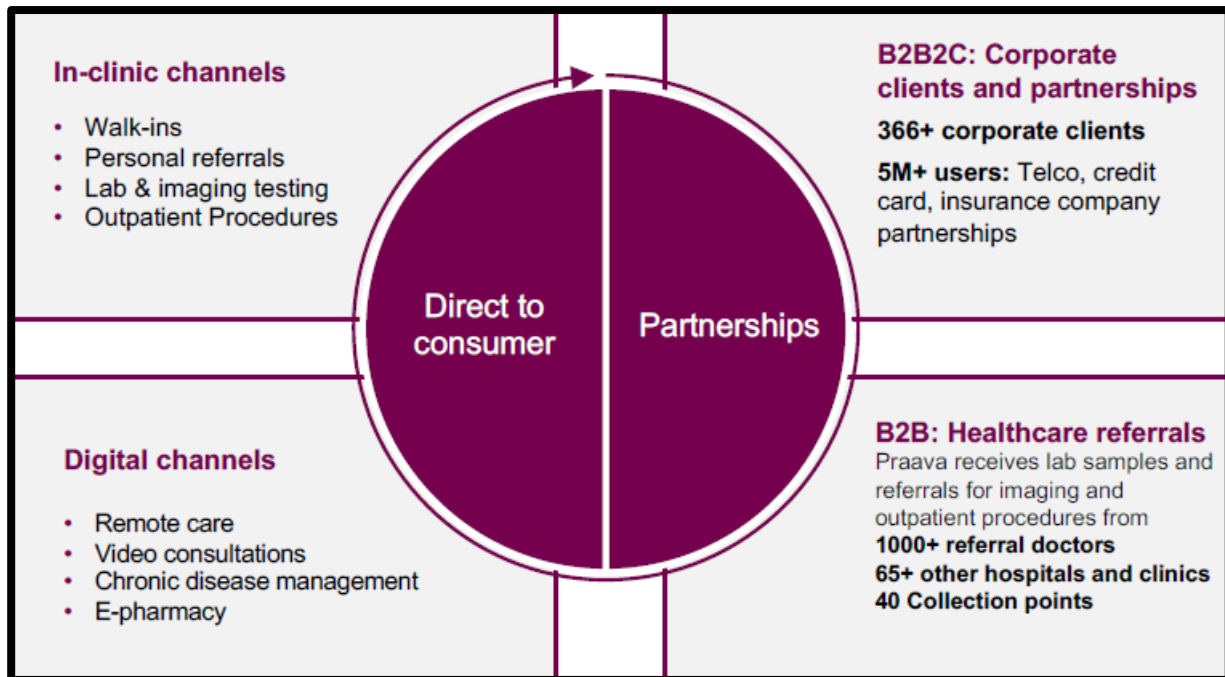
Source: Praava Health, "Investor Presentation," (slide deck), February 2021, p. 14.

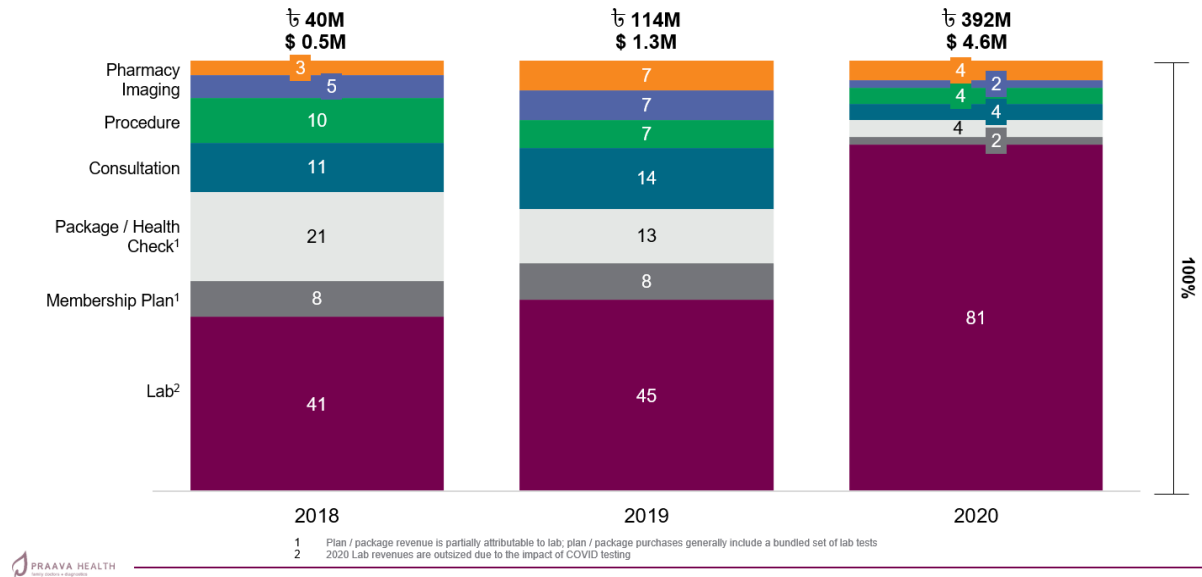## B. Technology: Develop HIS, patient support programs, and data services
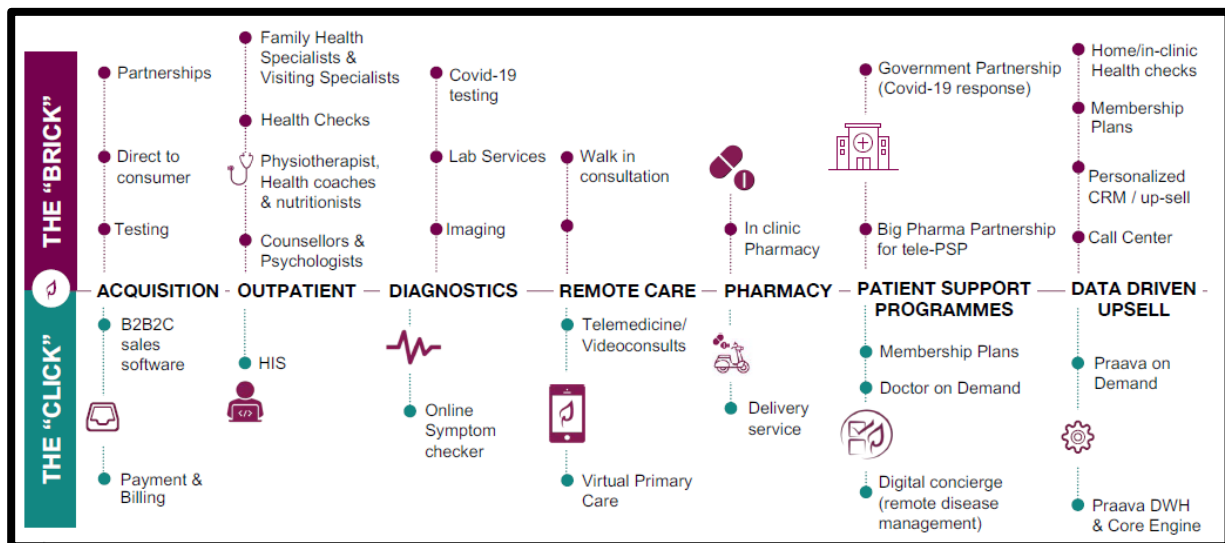
Source: Praava Health, "Investor Presentation," (slide deck), February 2021, p. 18.

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Exhibit 7
Strategic Investments Options (cont.)

C. Geographic Spread: Revenue Projections for Hub & Spoke Growth (US$ MM)

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Exhibit 7
Strategic Investments Options (cont.)
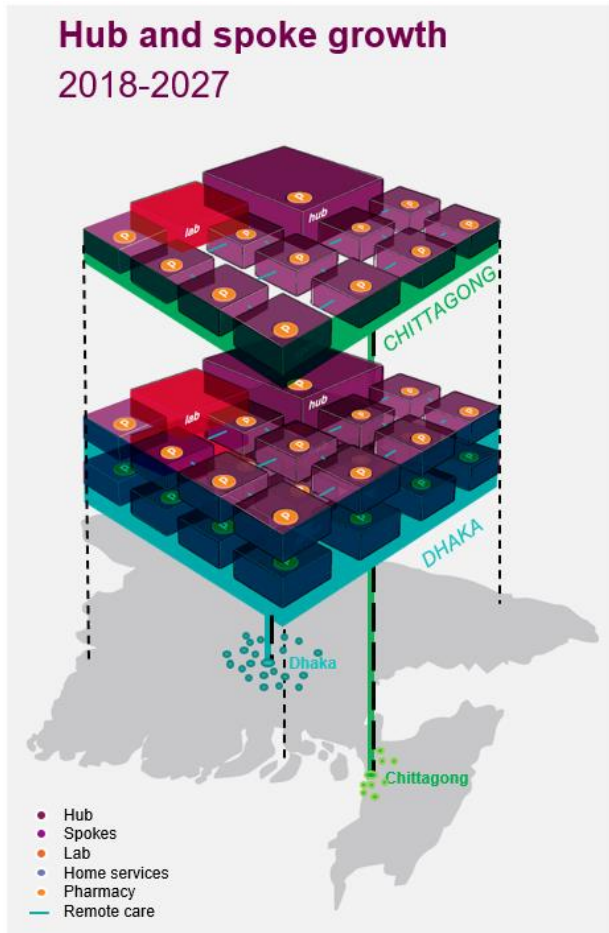
Source: Praava Health, "Investor Presentation," (slide deck), June 2021, p. 20.

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GLOSSARY

BDT – Bangladesh taka (the national currency)

DWH – data warehouse

EBITDA – earnings before interest, taxes, depreciation, and amortization

FHIR – Fast health interoperability resources

HIPAA – Health insurance portability and accountability act (in the US)

HIS – health information system or hospital information system

JLN – joint learning network

LMIC – low- and middle-income countries

MAC – middle and affluent class

MFS – mobile financial services

MoLGRDC – Ministry of Local Government, Rural Development & Cooperatives

NBFI – non-banking financial institution

NCD – non-communicable diseases

OOP – out of pocket

PATH – Program for Appropriate Technology in Health, a nonprofit organization

PHC – public healthcare

PHCPI – primary healthcare performance initiative

PPP – purchasing power parity

PSP – patient support program

RIQAS – Randox International Quality Assessment Scheme

SAM – service addressable market

SDG – sustainable development goals

SOM – service obtainable market

TAM – total addressable market

UHC – universal healthcare

VBC – value-based care

WHD – wearable health devices

WHO – World Health Organization

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