Our vision is a world where all mothers experience childbirth safely and with respect, and all newborns get a safe start in life.
Dear Friends,

It’s been a privilege to watch our progress over the last few years – from our beginnings testing public sector innovations, to the package of equity-driven, affordable solutions we’re now deploying to almost a million mums and their babies across 20 of Kenya’s counties. As we grow our capacity to increase the number of mothers and babies receiving life-saving care from skilled providers, we’ve found ourselves well-positioned to address other health system bottlenecks, such as blood shortages for mums in need, lack of data on undervaccinated babies, or uncoordinated emergency and urgent transport systems that get mums to care. Although COVID-19 wreaked widespread disruption on critical maternal health services, we’re proud that our digitally-enabled tools and remote support systems have been able to assist the government in its response. Maternity nurses across the country continue to learn lifesaving emergency skills remotely, pregnant mums can be virtually triaged from their homes, and the data we collect through our platforms helps government health system managers easily identify critical shortages – of medicines, protective equipment, and now vaccines – in facilities. This crisis also deepened existing health inequities for Kenya’s most vulnerable women and babies, yet – at Jacaranda – we’re no stranger to adapting quickly to serve the urgent needs of mums. It’s embedded in our mission to build, test, and roll-out solutions in hard-to-reach or underserved areas, and ensure our solutions are planned, developed, and scaled with and for the mums they serve – down to the last mile.

Now, looking ahead to a post-COVID era, we’re embarking on an ambitious expansion of our evidence-based programs to improve maternal and newborn health in new countries globally – including expansion into new countries in 2022. The transformative impact you’ll read about in this report is thanks to a collective effort from our extended Jacaranda family – our program managers and mentors, researchers and nurses, data analysts and tech specialists, doctors and drivers, national and county governments, and our network of supporters. This diverse team is fundamental to our next chapter of ambitious development, and we deeply appreciate their support.

With Warm Regards,

Sathy Rajasekharan, Cynthia Kahumbura, and Nick Pearson
Jacaranda’s Leadership Team

We are rapidly growing our footprint across Kenya as more and more county governments buy-in to our evidence-based solutions. We collect data on, and partner with health facilities across the country and provide mentorship in emergency care to health providers to give babies a safe start in a well-equipped hospital.
THE CHALLENGE

Health systems focused on improved quality of care - and better access to it - could prevent one million newborn deaths and half of all maternal deaths each year.

Over sixty percent of deliveries in Kenya take place at health facilities but the quality of maternal care mothers receive is inconsistent. Hospitals are often resource constrained, lacking in trained staff, or ill-equipped to deal with emergencies. Inequities in access also contribute to poor maternal and newborn health outcomes - only 8% of women in the lower wealth quintiles in Kenya are able to access quality maternal health services, and many don’t have access to the right information to make informed choices about where to seek care, and when.

+ 6,000
women die each year during childbirth in Kenya.

60%
of global neonatal deaths and half of maternal deaths in health systems are caused by poor quality of care.

Improving quality of care for mums and babies

The Double Burden of COVID-19 on mums and babies

60% of new and expectant mums reported that COVID has impacted their decision to seek care. (Jacaranda Health, 2020). “I am worried because I’m not sure if I will find the facility open or if I will find nurses during delivery.”

Providers reported transportation challenges to facilities during lockdown, limitations in PPE, staffing shortages and concerns about stigma against healthcare workers. “Only one nurse is able to report to her shift and it’s overwhelming to manage obstetric emergencies alone.”

By encouraging more mums to seek care safely, and increasing the quality of care they receive on arrival - we are helping mitigate the burden of COVID-19 on mums, and that of the health challenges we’ll inevitably face in the future.
Jacaranda Health partners with governments to deploy low-cost, innovative, and scalable solutions through public hospitals, where the majority of underserved mothers and babies receive care. In Kenya, we work with the Ministry of Health and with 20 Kenyan County Governments, and our solutions have been deployed across 800+ hospitals and health centers. With our government partners, we address the drivers of poor maternal and neonatal health (MNH) by...

**Empowering Mums with Information:** Ensuring new and expectant mothers get care at the right time and place via our digital health solution PROMPTS.

**Building Provider Capacity:** Equipping frontline nurses with life-saving skills to serve mothers and babies and sustainably improve quality of care in public facilities through EmONC Mentorship.

**Partnering with Governments:** Co-designing solutions with national and county governments to ensure that solutions are context-specific and can be owned by government.

**Leveraging Data & Insights:** Using dashboards and insights to provide ‘finger on the pulse’ health system insights and track the impact of our work.

930+ hospitals and health centers across the country.
EMPOWERING MUMS WITH INFORMATION
Almost a third of maternal deaths are caused by delays in women seeking life-saving care. PROMPTS is Jacaranda’s AI-enabled digital health platform, empowering new and expectant mothers with information and knowledge at every stage of the pregnancy and postpartum period. It improves care-seeking behavior at key moments during and after pregnancy through;

**SMS “Nudge” messages**
Influencing key behaviors linked with better outcomes, including antenatal visits, postnatal care, postpartum family planning, and breastfeeding.

**A Clinical Helpdesk**
Responding to mothers’ questions about pregnancy and the postpartum period, and referring urgent cases to life-saving care.

**Artificial Intelligence**
Triaging and categorizing mothers’ questions and flagging clinically urgent questions to the helpdesk for follow-up and referral.

**Data & Dashboards**
Capturing data on mums’ experience and clinical quality of care in facilities to help health management teams make targeted improvements to service delivery.

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33% of maternal deaths are caused by delays in care seeking.¹

91% of women would seek care at health facilities if they knew and recognized severe pregnancy and postpartum danger signs.²

Ref 1: Confidential enquiry into maternal deaths, Kenya 2017
PROMPTS IN ACTION

Reaching more mums, faster
- **950,000+ mums** enrolled to PROMPTS
- <1hr, response time to danger signs

Promoting positive care seeking behavior
- 80% of mums flagged for danger signs go to hospital
- **2x** increase in uptake of family planning
- **20%** increase in women seeking prenatal care

A cost effective solution
- **0.74USD** lifetime cost of one mother on the platform
  (free for the mother)

I lost two pregnancies before I came across PROMPTS. I signed up for the SMS service in a hospital near me. I’ve since learnt through the messages that bleeding during pregnancy is a danger sign - I know where and when to look for support now.

PROMPTS User,
Murang’a County
CASE STUDY
Josephine Mucoro, PROMPTS User, Bungoma County

Josephine Mucoro was in the later stages of pregnancy when she came across PROMPTS, Jacaranda’s AI enabled digital health platform. Combining SMS “nudge” messages and a rapid response helpdesk service, the platform connects expecting and new mums with lifesaving advice and referral to maternity care when there is risk of complication. After a few months on the platform, Josephine received a message that would save her life. ‘One message warned of pain in the upper abdomen as a danger sign.’ she explains. ‘One Thursday, I started feeling this pain. I thought it’d pass, but it persisted.’ Realizing this correlated with the PROMPTS warning, Josephine headed to a nearby clinic where her blood pressure was tested and found to be high, and she was referred and admitted into urgent care at Chwele Hospital.

The referral proved life saving. ‘From Thursday to Saturday my baby was not moving’ explains Josephine. The hospital took action, performing an emergency cesarean section that would save both Josephine, and her newborn baby’s life. ‘I’m so grateful to Jacaranda for sending these messages.’ she says. ‘Because of PROMPTS, I was able to recognize the pain I was feeling was not normal and I sought care at the hospital. I don’t know what might have happened to me and the baby otherwise.’
Across Kenya, digital health tools like PROMPTS have had a proven impact on the health outcomes of new and expectant mothers, but it’s clear they need context-specific adaptations. In 2019, with support from USAID, Jacaranda Health launched Kuboresha Afya Mitaani (KAM), an urban health project aimed at driving better health outcomes for 60,000 of Nairobi’s most vulnerable women and children. KAM provided an opportunity to test the relevance of PROMPTS for women in two informal settlements - Kawangware and Mathare - where the maternal mortality rate is twice the national average. Understanding that different factors affect women’s health across rural and urban settings, we tailored our SMS content to these contexts, making sure the platform was relevant to mums, communities, and providers in these areas.

Working with Community Health Workers, Sub County Health Management Teams, and child health experts, we deepened our understanding of the relevance, timing, and language of the SMS content by interviewing mothers, communities, and providers. Communities helped us understand urgent, context-driven issues such as social stigma around adolescent motherhood, and common myths about pregnancy and delivery which, in turn, helped us adapt our PROMPTS content. The platform now sends out context-specific advice on accident prevention, mental health, support services for adolescent mums, and water and sanitation, as well as science-backed information to counter misconceptions. The adapted platform is already generating valuable insights for health system managers in urban settings and, in turn, improving the quality of care mums receive.

This project is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents of this document are the sole responsibility of the “Kuboresha Afya Mitaani: Urban MNCH Project” project partners and do not necessarily reflect the views of USAID or the United States Government.

It’s good to understand what barriers there are to mothers seeking care in these areas. We hope PROMPTS will give them the confidence, and information they need to go to the hospital in time.

Sub County Health Management Team, Mathare County
Mental and newborn health outcomes are closely tied to the quality of care mothers receive. Yet, in Kenya, there is a gap in cost-effective training to improve and sustain life-saving emergency obstetric and newborn care (EmONC) skills. Critically, this training takes place in the facility to ensure providers continue to improve their skills as they deliver services. Comprehensive training, supportive supervision, and coaching are effective in giving nurses and midwives the needed skills to avert or mitigate life-threatening pregnancy and postpartum complications, improve clinical performance, and motivate providers and managers.

Jacaranda is partnering with County governments and public hospitals to deploy EmONC Mentorship, a low-cost program focussed on sustainably improving the quality of maternal and neonatal care in facilities. Jacaranda Lead Mentors train and support a cohort of government nurse midwives to become maternal and newborn health quality of care champions in their own facilities. Our model combines:

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<th>A training package with simulation-based training</th>
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<td>In-facility coaching for skill improvement</td>
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<td>Advisory Support helping facilities resolve the system-level bottlenecks hampering life-saving care delivery, and leverage data to identify skills gaps in frontline nurses.</td>
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At the beginning of 2020, Jacaranda’s Mentorship Program was providing lifesaving skills to frontline health providers in six of Kenya’s counties. By the year’s end, this figure stands at thirteen, with four new counties - Kitui, Busia, Kakamega, and Siaya - now partnered with the program. Responding to increased demands on nurses and midwives during COVID-19, the EmONC team have also conducted ‘refresher’ training for some facilities, blending onsite and online learning to reinforce providers’ expertise at a time when their skills are needed most.

Coverage of our Mentorship Program across Kenya has grown by 66%. Jacaranda has mentored 6,000 frontline health providers to date, but the program’s impact spreads far beyond this. EmONC mentees are empowered to share their new skills and know-how with colleagues in their respective facilities, and thousands of patients now receive better care at the hands of capable, confident nurses and midwives.

I really want to appreciate Jacaranda Health for the introduction of the EMONC training drills. They have changed how knowledge is delivered and retained by health care providers, and helped them improve how they take care of the mothers during antenatal and postnatal care.

Catherine Gachanja
Murang’a County Principal Nursing Office

400+
EmONC Mentors have been trained by Jacaranda.

6,000
healthcare providers have received mentorship.

90%
improvement in neonatal resuscitation skills amongst providers.

91%
of essential clinical steps now performed during delivery.
During COVID-19, Jacaranda adapted its Mentorship curriculum onto a digital platform - the Digital EmONC Learning Trainer & Assistant (DELTA) - to enable health care providers to build and refresh their skills in emergency care remotely. Providers across Kenya now enroll through Whatsapp, to access a series of self-paced learning modules, with their progress virtually marked and validated by program mentors.

1,200+ health providers learnt critical emergency care skills through DELTA, with modules covering subjects like neonatal resuscitation, postpartum hemorrhage (excessive bleeding after pregnancy), respectful maternity care, infection prevention, and post-abortion care.
CASE STUDY
Stephen Opiyo, Akala Health Center Nurse & DELTA User

Stephen Opiyo’s work centers around bringing new life into the world. A nurse at Akala Health Centre, he manages the safe delivery of babies, and the health and wellbeing of expectant and new mothers. At the height of COVID-19, Stephen enrolled in DELTA through Whatsapp. The virtual learning assistant equips providers with the needed skills in emergency care to avert life-threatening complications, and is helping improve clinical performance in facilities across ten of Kenya’s counties.

Having completed all self-paced learning modules online, Stephen is now empowered to help providers in his facility adopt the same knowledge and convert them into practice. ‘I provided the providers in my facility detailed feedback leveraging the aspects I’d been trained on.’ explains Stephen. ‘They took Jacaranda tests around enhancing safety care in obstetrics, and I motivated them to do better.’ Stephen shares that his mentees never tire of asking questions - a critical part of self-assessment and improvement. ‘I thank God I was blessed with the knowledge and skills from Jacaranda to answer them’.

Through DELTA, I learnt that when a mother comes to a maternal ward you need to treat her with dignity. The program provided us with a tool for effective communication so if an obstetric emergency happens, you’re able to explain what’s happening and reassure the mother in a way that is not too wordy.
Representatives from Jacaranda Health attend a Council of Governors meeting in March 2021 to ensure our solutions offer support to advance county health priorities, and influence county policy towards equitable maternal and newborn care.
We leverage our expertise in maternal and newborn health and the data collected through our platforms to help Kenya’s national and county governments make targeted health system improvements, and inform policies that advance equity in care delivery.

Co-designing solutions with governments to ensure sustainable integration in health systems.

Our solutions are designed with government ownership in mind. Our PROMPTS platform is built on open source tools to give our government partners comfort over its sustainability and integration with existing national data systems. Learnings from our EmONC mentorship program are also informing a National EmONC Mentorship Package, aimed at upskilling nurses across the country. We also ensure their cost-effectiveness. This year, our county partners embraced the opportunity to cost share PROMPTS as a high impact innovation at less than 0.80USD per mum. 13 counties are contributing 50% of EmONC costs - a solution proven to be 40% cheaper per health provider than a five day classroom training.

Representatives from Jacaranda Health attend a Kiambu Stakeholders Meeting in November alongside the county’s Deputy Governor, Chief Officer of Health, county representatives, and 18 other health sector partners to collaborate on solutions to support county health priorities.
While in many low-middle-income countries, more mothers are giving birth in facilities than ever before, maternal mortality continues to rise. In Kakamega, one of Kenya’s most populous counties, only 37% of deliveries take place in a facility equipped to deal with maternal complications like caesarean sections, blood transfusion, and care for sick mothers and newborns. Other births happen at home or in primary care facilities which lack the basic equipment (such as blood pressure machines) or trained providers to avert emergencies when they happen.

Under Kakamega’s County leadership, Jacaranda is working to reorganize maternal care so that all women in the county deliver in advanced facilities that offer definitive care for complications. Through a coalition of partners, our Service Delivery Redesign project aims to address the bottlenecks driving poor maternal and newborn outcomes, such as shortages of available and affordable emergency transport and lack of opportunities for nurses and health providers to refresh and improve their clinical skills. We are also working with county health managers to ensure that these solutions are sustainable by helping them identify existing health system gaps, and make smarter, evidence-based investments in quality of care and equitable access to it. Move the needle on maternal and newborn health indicators in the county, and improve overall health system efficiency.

Successful redesign in Kakamega will not only lead to better health outcomes for women and newborns in the county, but also overall health system efficiency by concentrating obstetric and neonatal services in fewer facilities, and offering more opportunities for providers’ continuous learning.

**Improving Access to Care**
Introducing low-cost transport options to get mums to care faster.

**Expanding Hospital Capacity**
Building better infrastructure, equipment and therapies to ensure mums deliver in well-functioning hospitals.

**Increasing Human Resources**
Ensuring there are enough specialized, well-trained clinicians to deliver timely, advanced, and dignified care to mothers.

**Ensuring Community Acceptance**
Taking a participatory approach where communities inform and play a role in making the health system fit for purpose.
Digital health and data science holds promise for significant advances in health care access, quality and affordability. By leveraging innovations in technology, Jacaranda is able to track the impact of its solutions on mums around the country, and share this with our government partners to help them make targeted improvements at the health systems level. We use data and insights to improve government decision-making, identify challenges in real-time to rapidly deploy resources to specific places, and close a feedback loop within the government health system by bringing administrators closer to their clients.

Generating high-frequency, real-time data on where, when and how to reach babies who have missed vaccinations is one approach to closing the immunization gap in Kenya, ensuring all babies receive their full dose of vaccines as a basic human right. We are able to track geographic hotspots of weak child immunization through our PROMPTS dashboards, showing where mothers reporting missed vaccinations are, and numbers of basic vaccinations missed (identified by the different colors).
Postpartum hemorrhage (excessive bleeding after delivery) is the most common cause of maternal death. Last year, Jacaranda noticed maternity nurses in Kenya were struggling to identify blood supplies, which was costing lives. Nurses were losing precious minutes as they manually called neighboring facilities, hoping for enough units of the right blood type and product for their emergency. Realizing low-cost technology could streamline the process, we launched a simple blood tracker tool connecting providers needing blood to the closest facilities who could provide it.

The blood tracker has massively shortened the turnaround time for getting critical blood stocks to mums in an emergency - which is saving lives

Esther Hinga, Senior Program Coordinator, Nurse Mentorship

With 31 facilities now using the tool, we’ve been asked by providers to improve the tool to help track when to replenish stocks, why facilities might be short stocked, and where to quickly obtain blood supplies of the right type and product. By empowering providers with real-time information, we’re helping limit the unnecessary, life-threatening delays in clinical emergencies – all meaning they can focus on what’s really important – their patients.
Bringing providers closer to their patients in Nakuru East.

It’s impossible to improve health systems without first understanding the experiences of those they serve. Each month, PROMPTS mums across 930+ facilities in Kenya receive an SMS. It asks them to fill out a client experience survey, aimed at better understanding the quality of care they received in facilities. The data is collected in ‘scorecards’ that rate facilities on factors such as respectful care, or number of clinical steps performed which, in turn, helps them take targeted action.

Over the last three years, Nakuru County has seen a decline in maternal mortality, linked to health facility improvements and more trained maternity staff and equipment. But there’s still a lot to do. We assessed Nakuru over a period of nine months, and found its sub county – Nakuru East – was receiving reports of malpractice in some facilities. We realized the situation could be reversed by simply providing direct feedback from mums. Scorecards were shared weekly with providers and health system managers, helping identify gaps and dig deep into why and where these negative responses were stemming from. Within a month, Nakuru East was the highest performing sub-county of those where Jacaranda operates.

By giving mums a voice in the health system, Jacaranda is able to close the feedback loop between patients, providers, and health system managers and drive targeted improvements in care quality.

205,000 PROMPTS users across Kenya have shared feedback on their experience of care.

Because of the feedback from PROMPTS, we’re able to better understand our clients and their needs. Sometimes we receive feedback from patients saying they are grateful for our care - it really motivates us.

Christine Nowerukoi,
Nurse Midwife,
Lanet Health Center, Nakuru East
Our impact to date would not be possible without our partners. By working hand-in-hand with county and national governments, alongside implementing, research, and financial partners, Jacaranda have been able to bridge gaps in health access and care quality for nearly a million women across Kenya. Over the next two years, we aim to scale up to a critical mass of public hospitals, setting the stage to make sustained improvements in maternal and newborn outcomes, strengthen Kenya’s health system, and expand our model to serve mums in new countries.

By the end of 2023, we will be directly improving the quality of care for over 1.5 million mothers and babies by rolling out PROMPTS at a national level in Kenya, and deploying our mentorship solutions in over 200 high-volume public hospitals to 8,000 frontline nurses as a national standard of care.