



**East Africa 3-year Strategy
& Impact Update: 2020-2022
Dec 2019**

Jacaranda Health's vision is a world where all women and their families experience childbirth safely and with dignity



OUR APPROACH

- 1 We partner with government health systems where 80% of women deliver
- 2 Improve quality of care with a package of proven, low-cost interventions
- 3 Scale to improve health outcomes in a critical mass of public hospitals
- 4 Our innovations adopted as national standard of care

Jacaranda is transforming maternal healthcare with high-quality, sustainable care in the public and private sector

Jacaranda Health focuses on impacting maternal outcomes in the public health sector where 80% of women deliver. We replicate innovations in service delivery from our own hospital providing high-quality, affordable care to Kenyan mothers. The two orgs are managed and financed separately, but work together closely.



Non-profit

Adapts and scales key innovations in public hospitals:

- Proven impact
- Low-cost and sustainable in public health system
- 100+ partner hospitals in five counties across Kenya in 2019 - growing rapidly with government demand.

Patient
Centered
Care



HR Innovations



Quality
Systems



Social enterprise

- Highest quality maternity hospital in East Africa, 1/5th cost of private hospitals.
- Replicable low-cost model
- Raising impact investment capital to grow to largest chain maternity hospitals in Kenya

The challenge: Poor quality of care is at the root of poor maternal and neonatal mortality in Africa

Across Africa, there has been a significant **increase in access** to maternal healthcare: In Kenya, births in facilities have gone from 40% to over 60% in the last 5 years.

80% of those births are in public hospitals.

However, maternal and newborn mortality remains among highest in the world because of the **poor quality of care** received in hospitals. Jacaranda addresses this challenge.



Almost **90%** of facility-based maternal and newborn deaths are preventable with skilled care at the right time during pregnancy

KEY INGREDIENTS IN THE PREGNANCY CONTINUUM

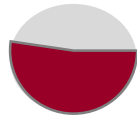


Mothers seek appropriate, high quality care at the right time



GAPS LEADING TO POOR OUTCOMES

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



Childbirth attended by competent, skilled healthcare providers

55% of maternal deaths are caused by delays in action or inadequate care by providers



Our innovations are addressing these critical gaps in quality of care in public hospitals

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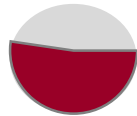


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JACARANDA'S SOLUTIONS ADDRESS CRITICAL GAPS



PROMPTS: a rapidly scaling digital health platform that connects mothers with lifesaving advice and referral to care



NURSE MENTORS: Intensive, on-site nurse mentorship program
Improves and sustains in life-saving emergency obstetric skills



Childbirth attended by competent, skilled healthcare providers



SOLUTION 1: Empower women to visit health facilities at key points during and after pregnancy

KEY INGREDIENTS



Mothers seek appropriate, high quality care at the right time



BEHAVIOR GAPS

42% of pregnant women do not attend 4 antenatal care visits

68% of new mothers have an unmet need for postpartum family planning

47% of mothers do not have postpartum visits

OUR SOLUTION



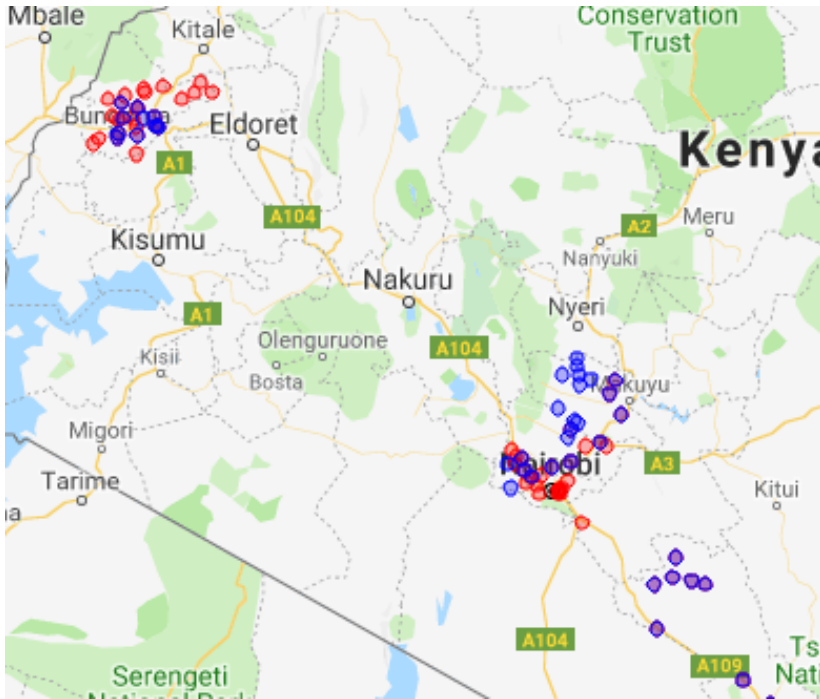
PROMPTS: a rapidly scaling digital health platform that connects mothers with lifesaving advice and referral to care



Childbirth attended by competent, skilled healthcare providers

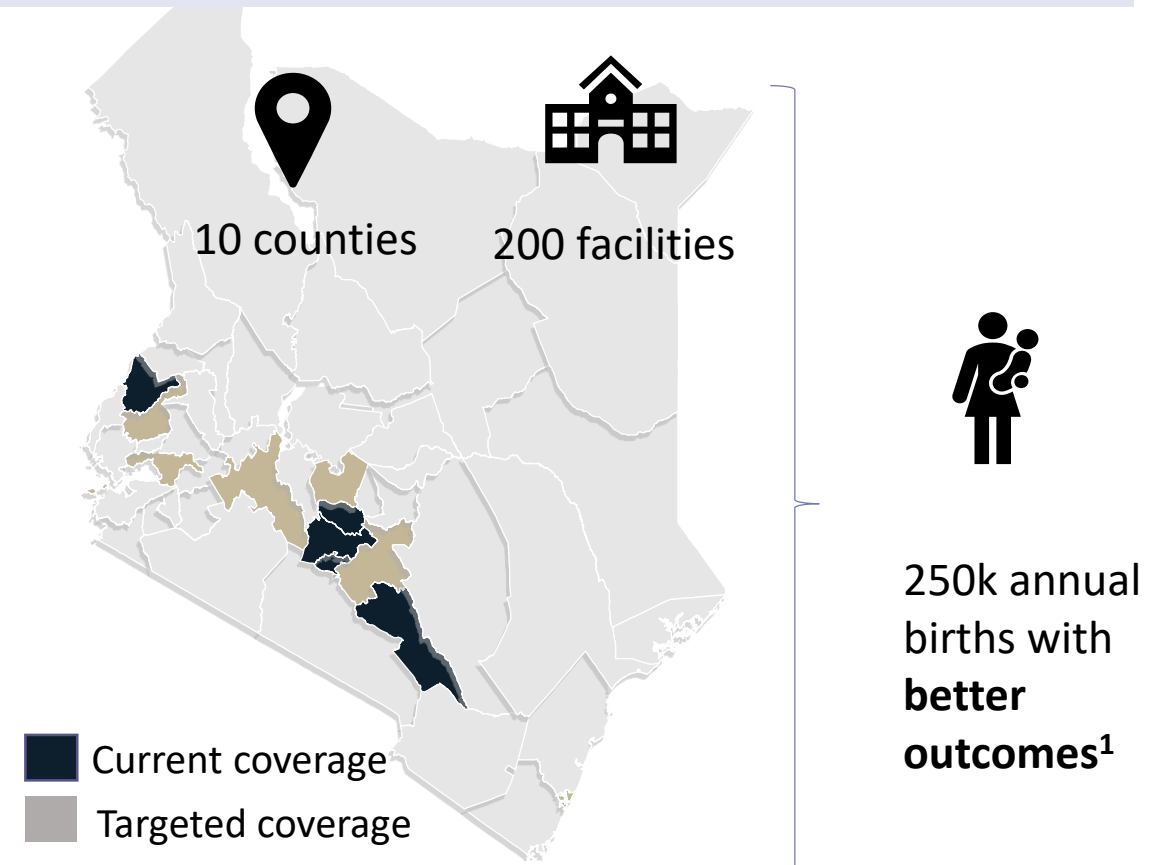
Vision 2022: We will deploy these tools in 200+ public facilities across 10 counties, improving quality of care for over 1M mothers and babies

We partner closely with the county governments who manage health systems and budgets. Today, our solutions have been deployed in over **150 health facilities across 5 counties**



We will also pilot expansion of our programs to one new country in the next two years

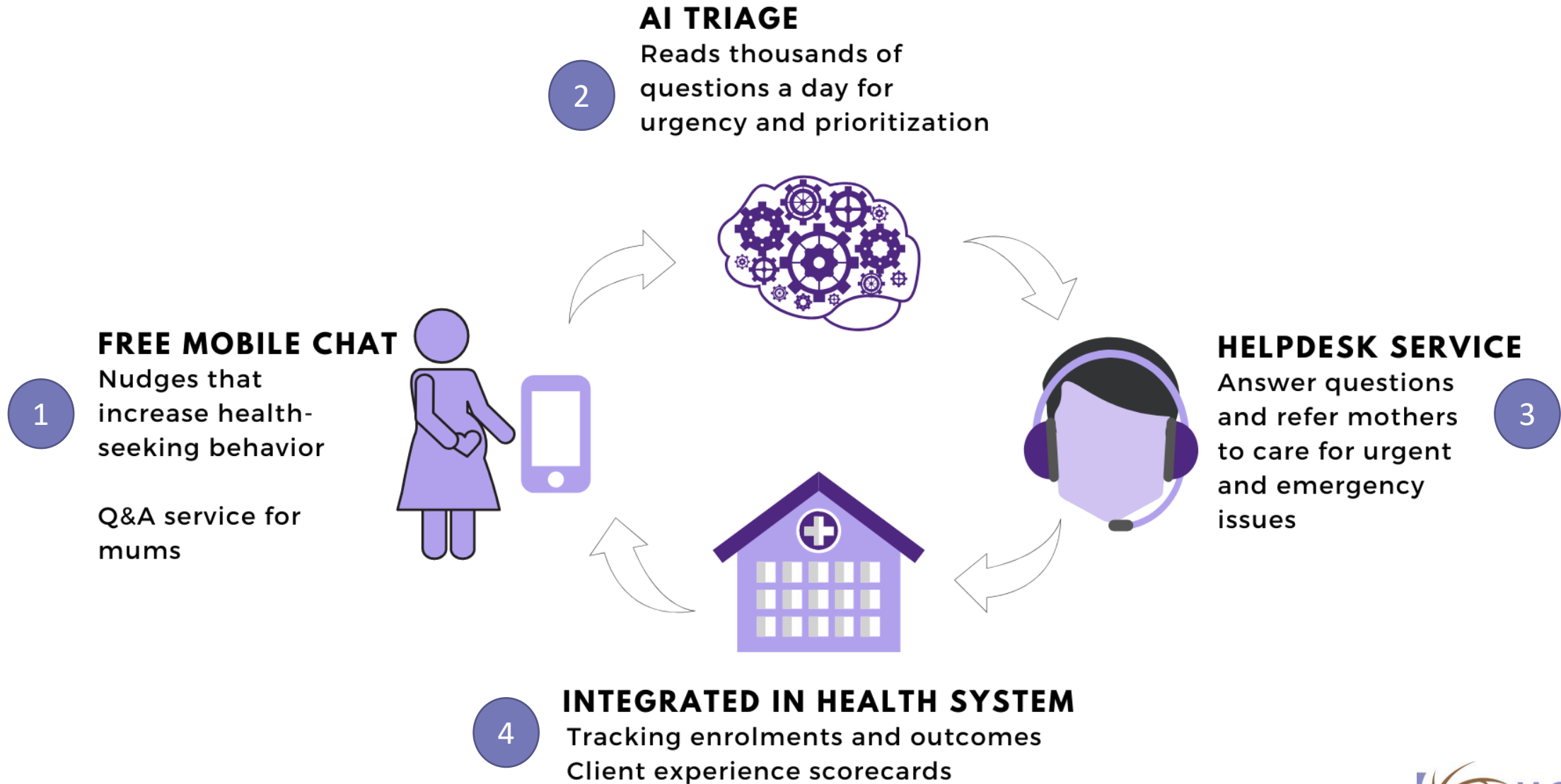
By 2022 we will be working in this densely populated region that accounts for **40% of the births in Kenya**



¹ Estimated coverage for PROMPTS is 240K annual births by 2021; Mentors 90-100K annual births by 2021 (250k cumulative, 2019-2021)



PROMPTS is a platform of digital solutions that connects mothers to lifesaving care

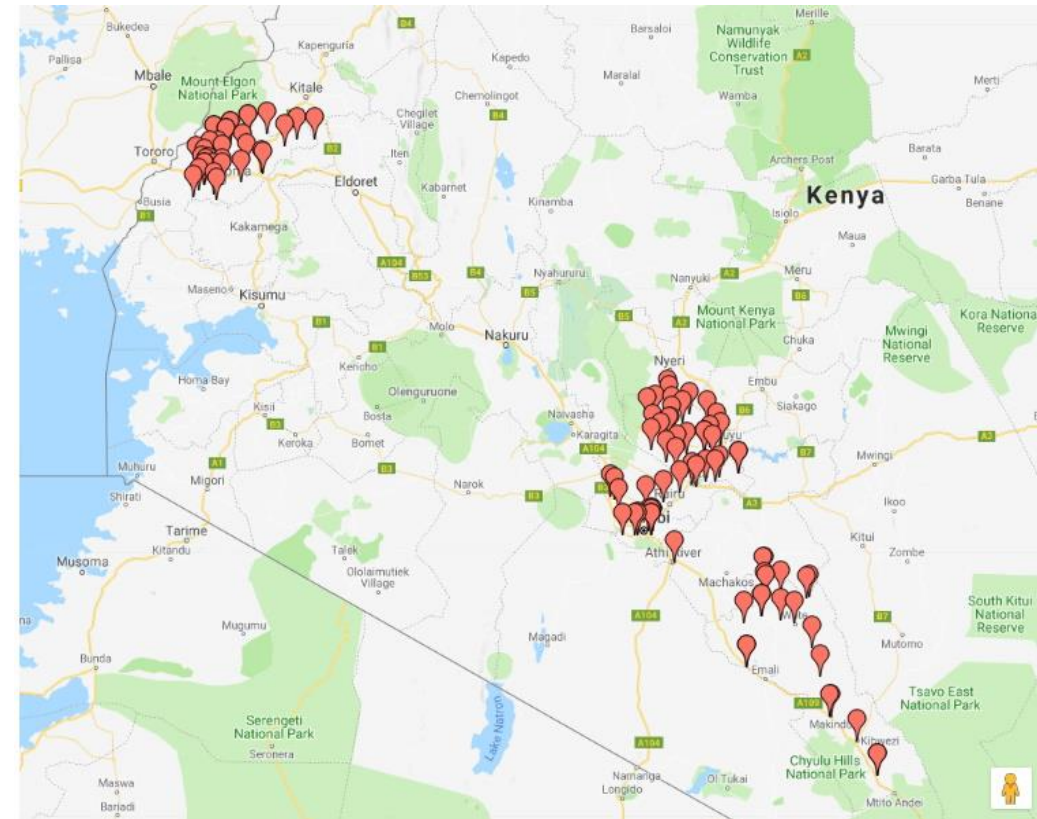
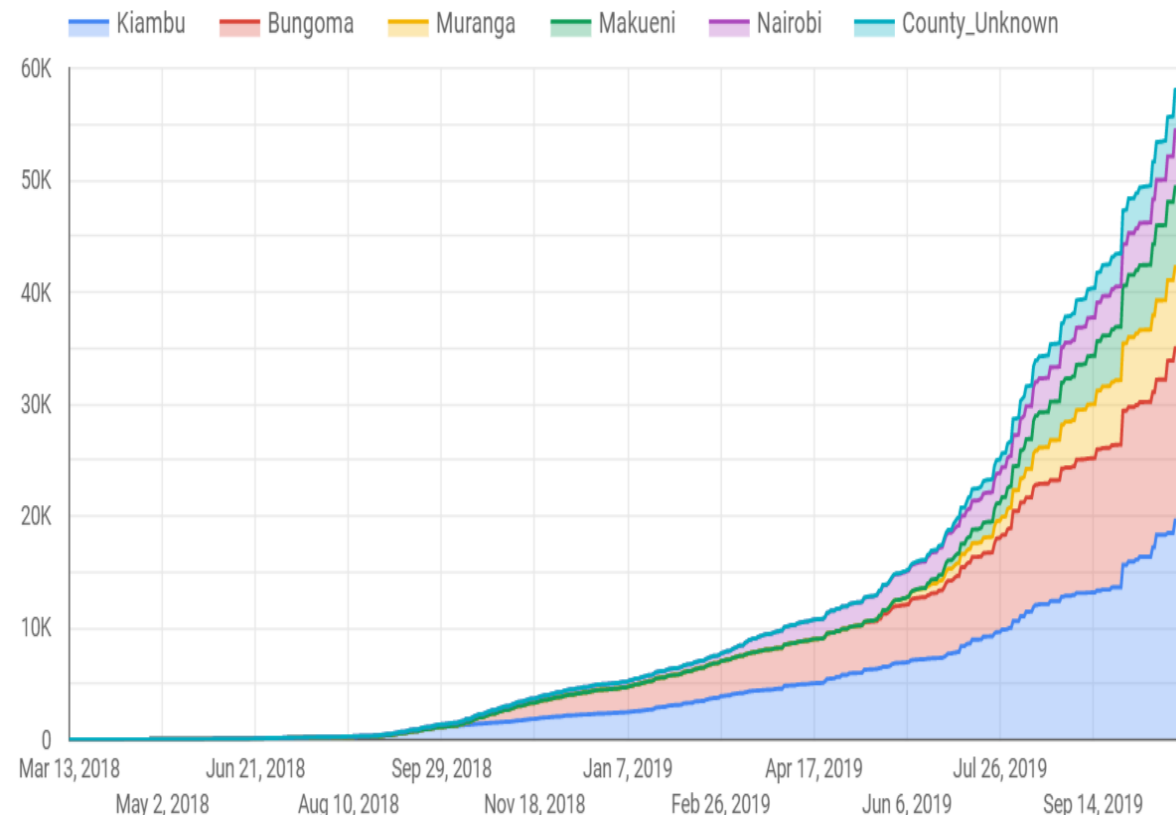




PROMPTS is being rapidly scaled across public facilities

- ~100,000 mothers enrolled to date across 150 facilities
- 12,000 new mothers added every month

A nation-wide platform: our goal is for every pregnant woman and new mother in Kenya to have access to PROMPTS, through a national platform that can reach 750,000 mothers/year and supports over 1M questions/year.





Cost and impact



\$0.74
per mother

83% Of moms seek medical care upon referral

83% of moms PROMPTS flagged with danger signs followed up to seek care at the hospital

27% Increase in 4th ANC visits

Facilities that are using PROMPTS are seeing a 27% increase in number of women attending 4 ANC

1.8x ..more likely to take up family planning

1.85x more likely to take up PPFP
~2x more likely to take up long acting contraceptives.



How our machine learning supports the helpdesk

is it a must discharge 2 flow evry time u are preganant?? #5200

11 minutes ago • First response due in 4 hours

AI prioritizes
urgency of question

High ▾

EchoMobile... / -- ▾

Open ▾

Wiki kamili za mapaja ni ngapi? #5199

11 minutes ago • First response due in a day

Vaginal discharge can be normal in pregnancy, but it is important to distinguish when it is a sign of something more serious. Discharge can be related to normal hormonal changes in pregnancy or can be due to infection. Reasons to contact yo...

AI suggests response for helpdesk agent

Low ▾

EchoMobile... / -- ▾

Open ▾

IBA em

Habari,sasa kesho ni siku yangu ya kurudi clinic nitafanyaje kama wauguzi wamegoma #5198

Urgent ▾

EchoMobile... / -- ▾

Bot can understand content and determine intent in Swahili, English or “Sheng”

TriageBot shows 95% accuracy in categorizing intent, urgency, and suggested response



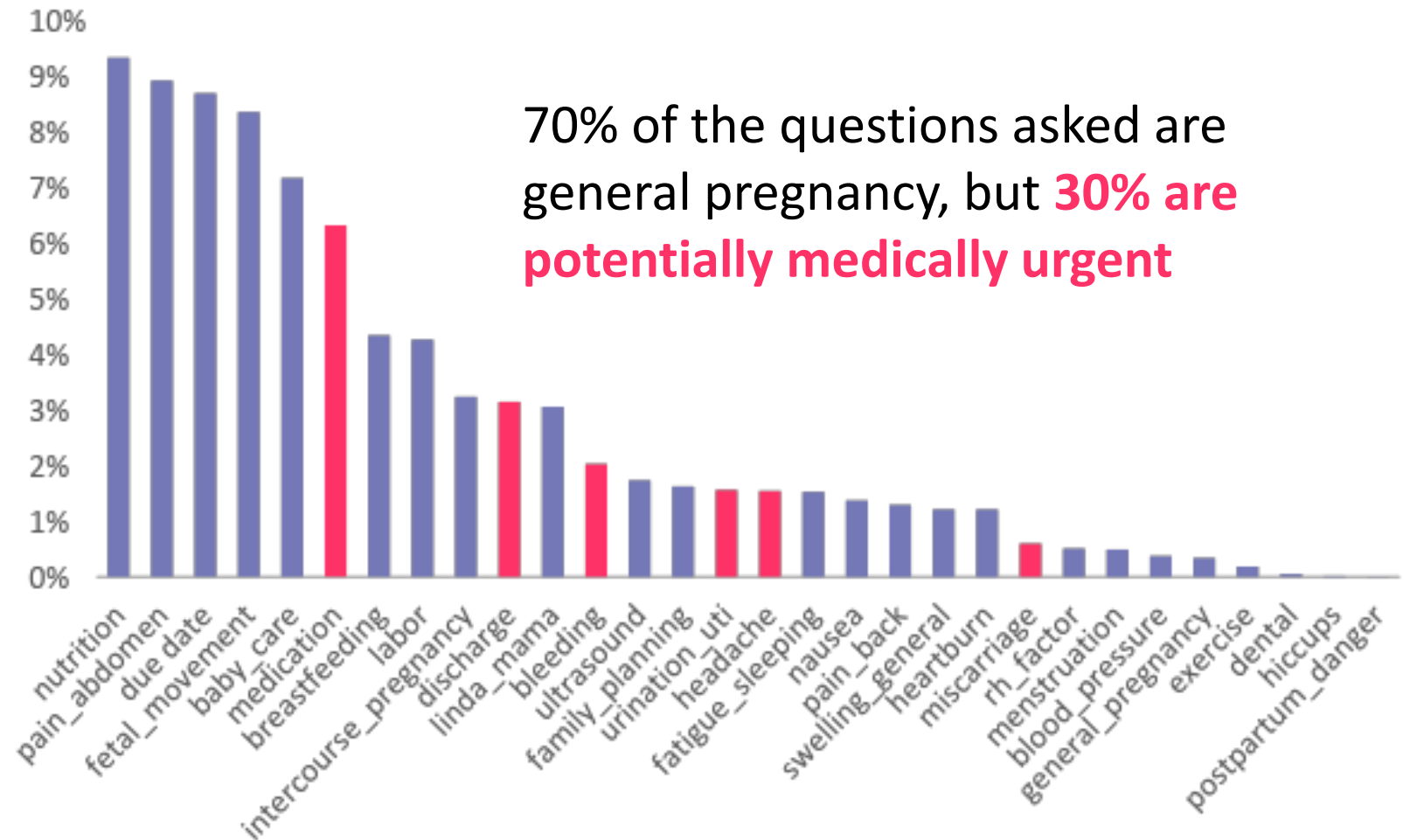
Mothers text in thousands of questions about pregnancy and new babies

We now receive 500+ questions per day

43% of mums ask at least one question.

We created a helpdesk service to answer mothers' questions

- Standardized responses
- Escalation to clinical staff

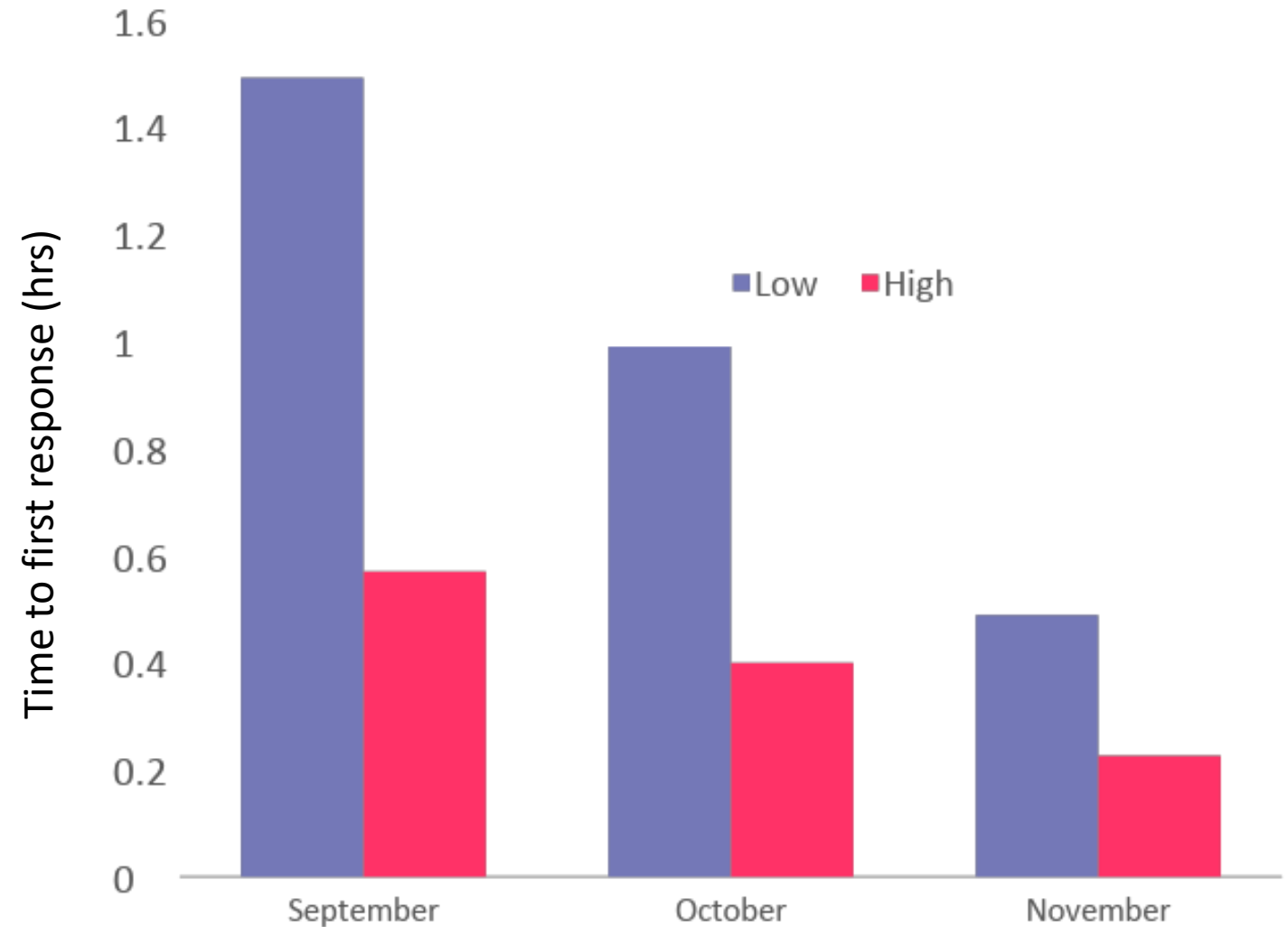




AI-supported helpdesk is designed to maintain quality at scale

Our Machine Learning (ML) “triageBot” help us triage incoming messages, prioritize them for urgency and provide suggested responses

Our helpdesk agents now respond to high priority messages 2x faster than other messages, and time to response has been reduced by over 60% to less than 30 minutes.





We are able to assess client experience with quality of maternity care



- 1 We send an SMS client experience survey to cohorts of mothers every month**

"Were you treated with respect during your last visit?"

I was abused & slapped when I was telling them my problem during delivery

They were friendly and caring. They explained to me what i should be eating because my haemoglobin was low and they also gave me some tablets

- 3 Dashboards are shared with Sub-County Health Officials and Reproductive Health Coordinators**

- 2 Facility in-charges receive their individual scores**

	Monthly new ANC Mums	May 2019	June 2019
Pregnant Women Enrolled (MIMBA)		111	
Post-delivery Women Enrolled (MAMA)		110	

Quality Question Responses

Month	May-June 2019
Total Responses	10ANC 9PNC
Total Satisfied (treated with respect)	10ANC 9PNC
Total Dissatisfied (NOT treated with respect)	0
SATISFACTION SCORE	

	Survey 1	Survey 2	Survey 3	Survey 4	Survey 5
Facility 1	92%	95%	93%	93%	87%
Facility 2			98%	99%	91%
Facility 3	96%	89%	94%	95%	100%
Facility 4	92%	87%	96%	93%	88%
Facility 5	91%	100%	98%	96%	89%



Referrals: Using data to connect mothers to care

Case study of Rose, a new mother in Kiambu County

1 week after delivery and she has been bleeding excessively – she fills a pad before an hour is over.

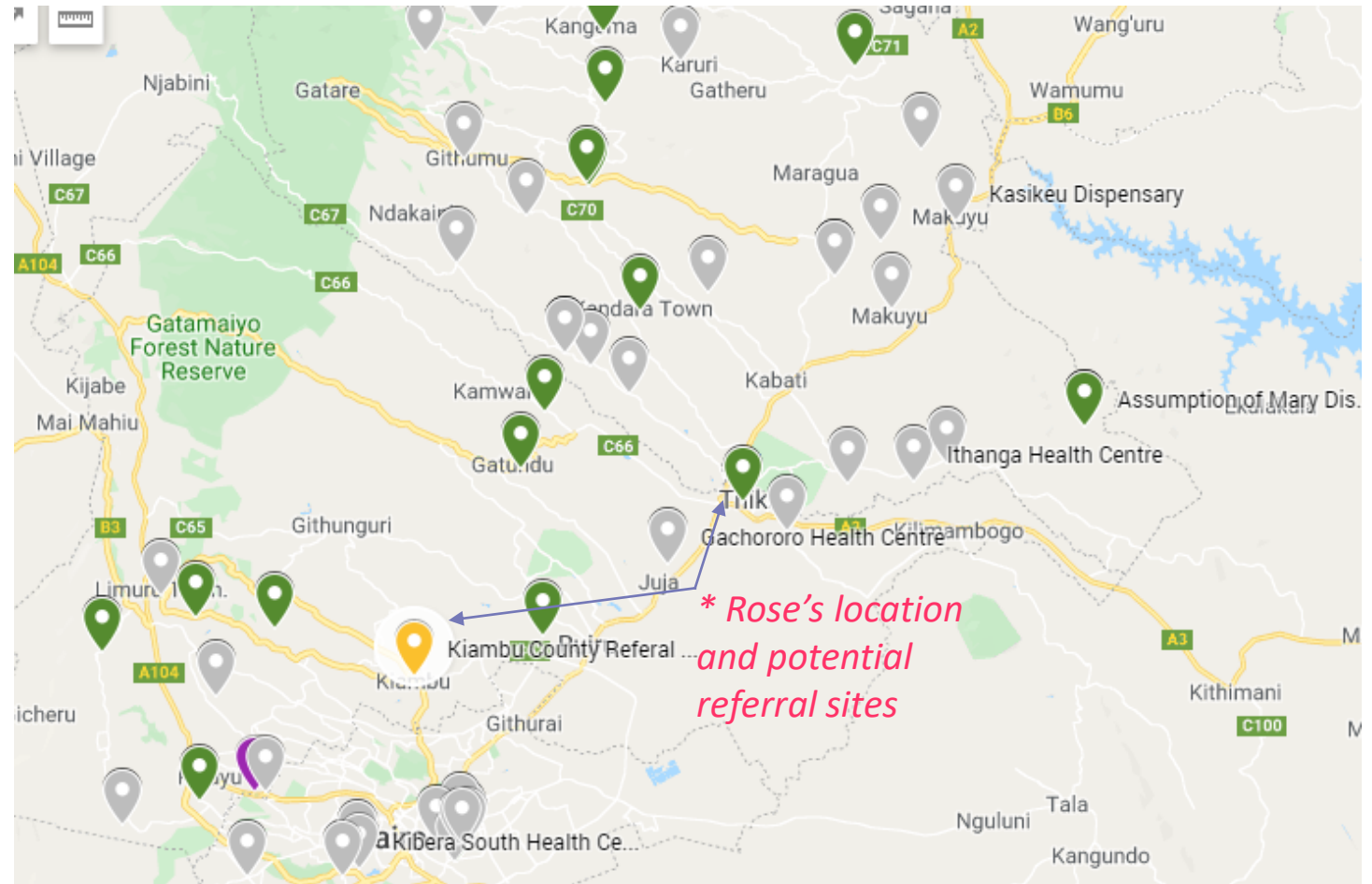
1

When her message is seen, she is called by a helpdesk agent. She is reluctant to go to a health facility because there is no one to watch her baby. However, she consents to share her phone number with the facility and her location.

2

The helpdesk agent uses the referral map to find the contact of a champion nurse at the facility near Rose. The champion calls her, convinces her to go, and prepares the in-charge to receive her so she won't have to wait.

3



Our helpdesk agent's referral map



SOLUTION 2: Nurse Mentorship empowers providers with skills to provide consistent high-quality care during childbirth

KEY INGREDIENTS



Childbirth attended by competent, skilled healthcare providers

BEHAVIOR GAPS

Maternal health nurses in Kenya scored **under 50%** on skills related to emergency obstetric care and newborn care.



OUR SOLUTION

NURSE MENTORS: Our intensive, on-site nurse mentorship program improves and sustains in life-saving emergency obstetric skills



APPROACH: Experienced Nurse Mentors work alongside government nurses in public hospitals to build a culture of quality and sustained improvements in obstetric skills. The approach aligns with government objectives and is cheaper and more sustainable than existing training options.



Our Nurse Mentorship program is improving life-saving care at public hospitals and creating a sustainable culture of quality

KEY COMPONENTS

1

A training package that includes simulation-based training

2

In-facility coaching that improves and sustains skills

3

Problem-solving advisory support that resolves bottlenecks to delivery of life-saving care.

LEVERAGE FOR SCALE



Each Jacaranda **mentor**



works with **3-4 facilities** at a time for 4 months (10-12/year)



training and coaching **10-20 frontline nurses** per facility



who oversee **1000+ deliveries/ year**



Nurse Mentorship program: Key components for impact

1

Mentor Recruitment & Training



6 weeks training:

- Obstetric skills
- Rotation in Jacaranda Maternity
- Shadow mentors

2

Rotation in public hospitals



Minimum 4 months in each facility

- Observe & improve
- Run Continuing Medical Education
- Simulation Drills
- Mentorship, identify champions

3

Monitor progress and gaps in real-time

Avg. AMSTL Score				
Avg. Clinical Score (%)				
Avg. Supply preparation (..				
Avg. Teamwork/Communi..				
Avg. AMSTL Score				
Avg. Clinical Score (%)				
Avg. Supply preparation (..				
Avg. Teamwork/Communi..				
Avg. AMSTL Score				
Avg. Clinical Score (%)				
Avg. Supply preparation (..				
Avg. Teamwork/Communi..				

Targets achieved?

Rotate to next batch of facilities

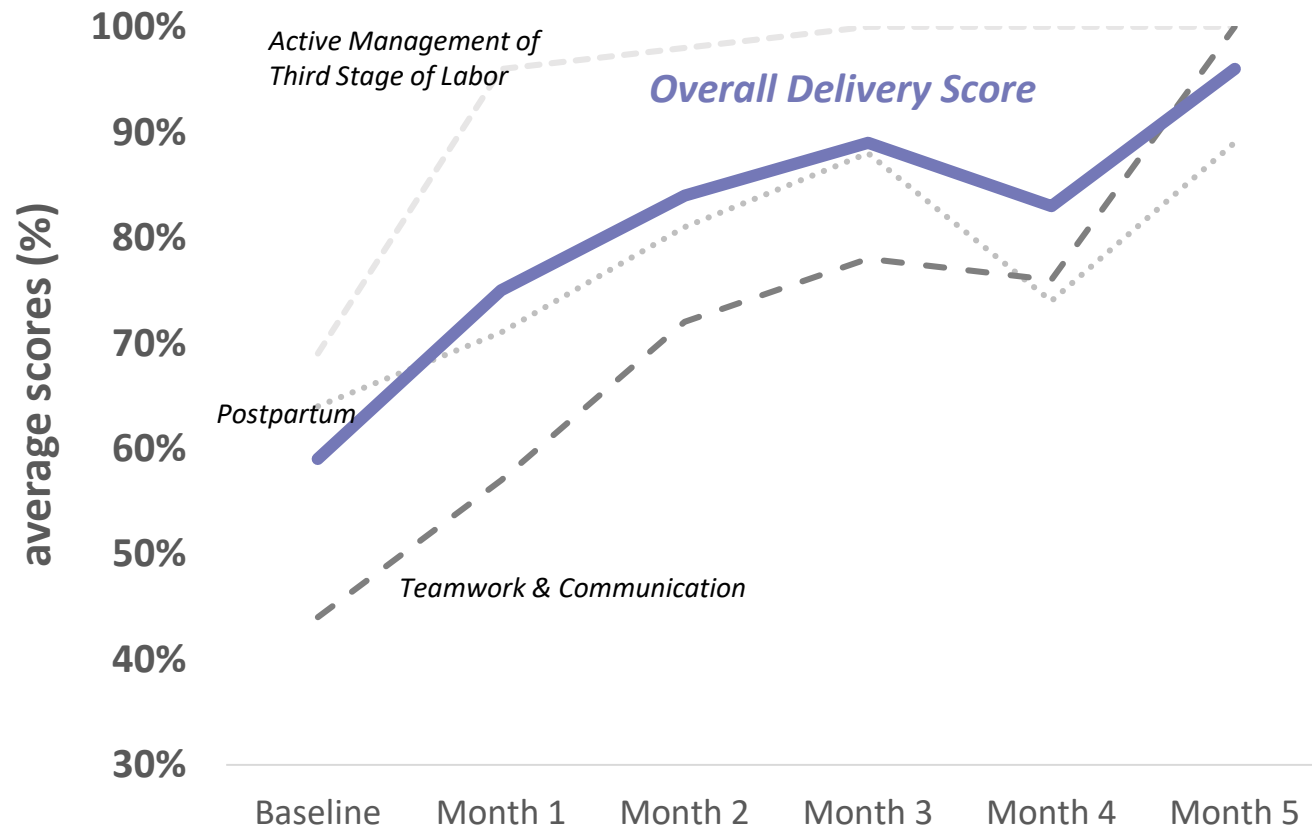
We measure and report on:

- Improved clinical scores from observations
- Partograph completion and neonatal resuscitation
- Teamwork and communication
- Health outcome data at a facility level



Nurse Mentorship program: Sustained improvements in quality

Mentors observe and score performance of staff during **live deliveries** using a scorecard of 15 essential steps that should be taken during any delivery.



TAKEAWAYS

Clinical scores improve to 90%

Quality is sustained over time

Unlike traditional training, scores are sustained 6 months after mentors end their rotation in a facility



Nurse Mentorship program: scaling status and impact to date

SCALE 54 facilities have been mentored and 550+ providers directly trained by mentors

IMPACT

80% newborn resuscitation skills score

90% Mentored facilities consistently perform 90% of **essential clinical steps** during a delivery

90% Partograph* completions increased from **42% to 90%**

**A key WHO-recommended labor & delivery documentation tool*

Cheaper and more effective than the current system of off-site trainings

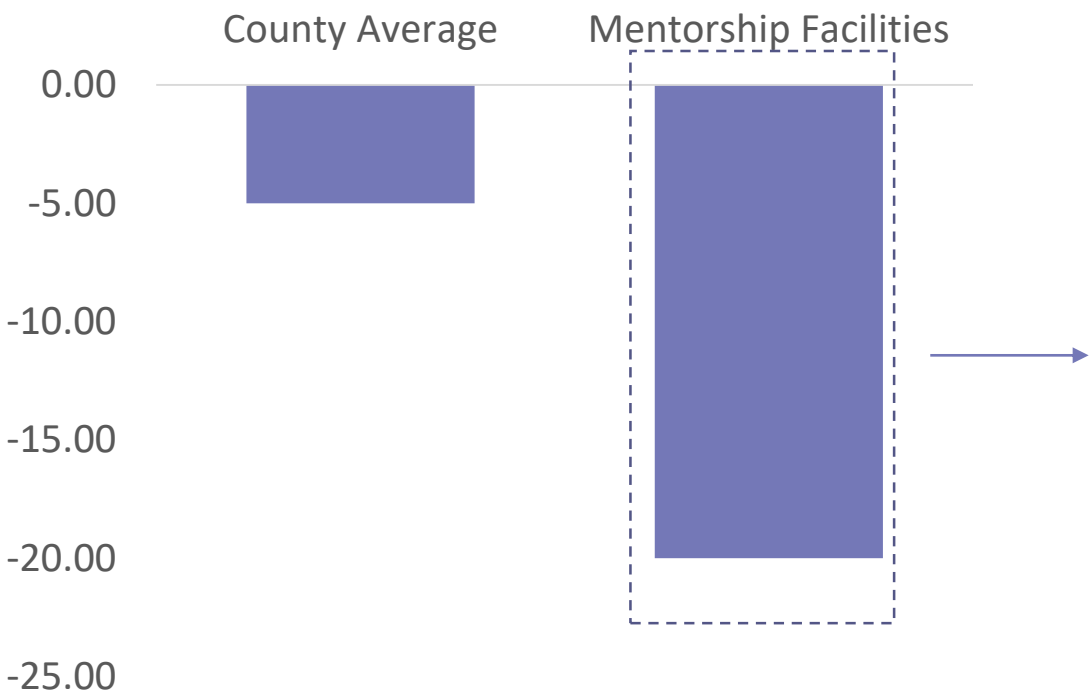




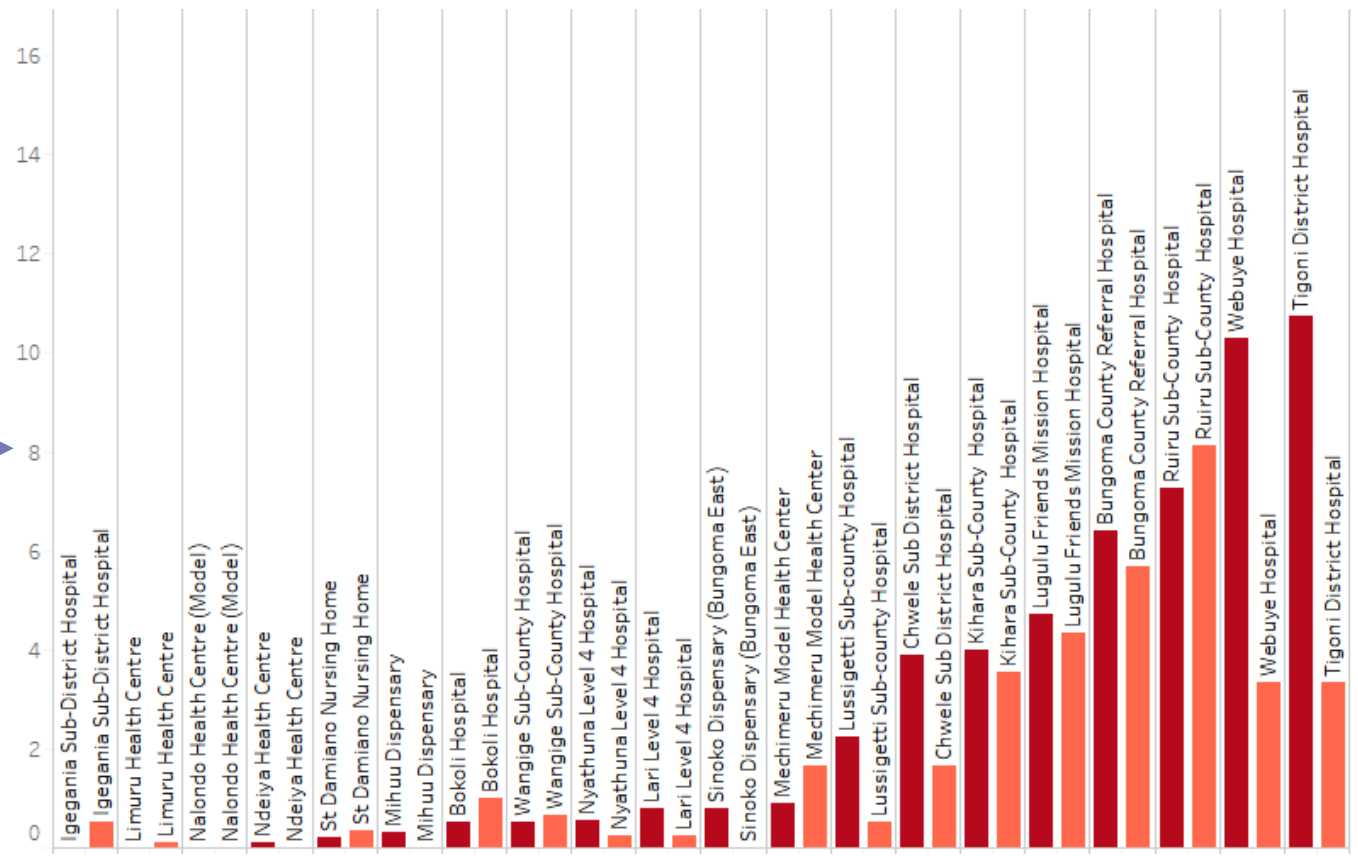
Sample Outcome Results: Nurse Mentor facilities show a decline in cases of postpartum hemorrhage (PPH)

The nurse performance data we track (previous slides) are strongly correlated in the literature with improved maternal and newborn outcomes. To support this, we recently extracted the last 12 months of data from Kenya's Health Informatics System (DHIS2) on cases of PPH, before and after introduction of the Mentorship program. Here's an example of early outcome data:

% Percent Change in rate of PPH, before/after Mentorship Program



Average PPH cases/month



Path to integration: What is the value proposition to counties?



Cost of sending PROMPTS to one mother

\$0.74

This is the fully loaded cost per mother at scale for SMS and teams to coordinate enrollment and return questions.



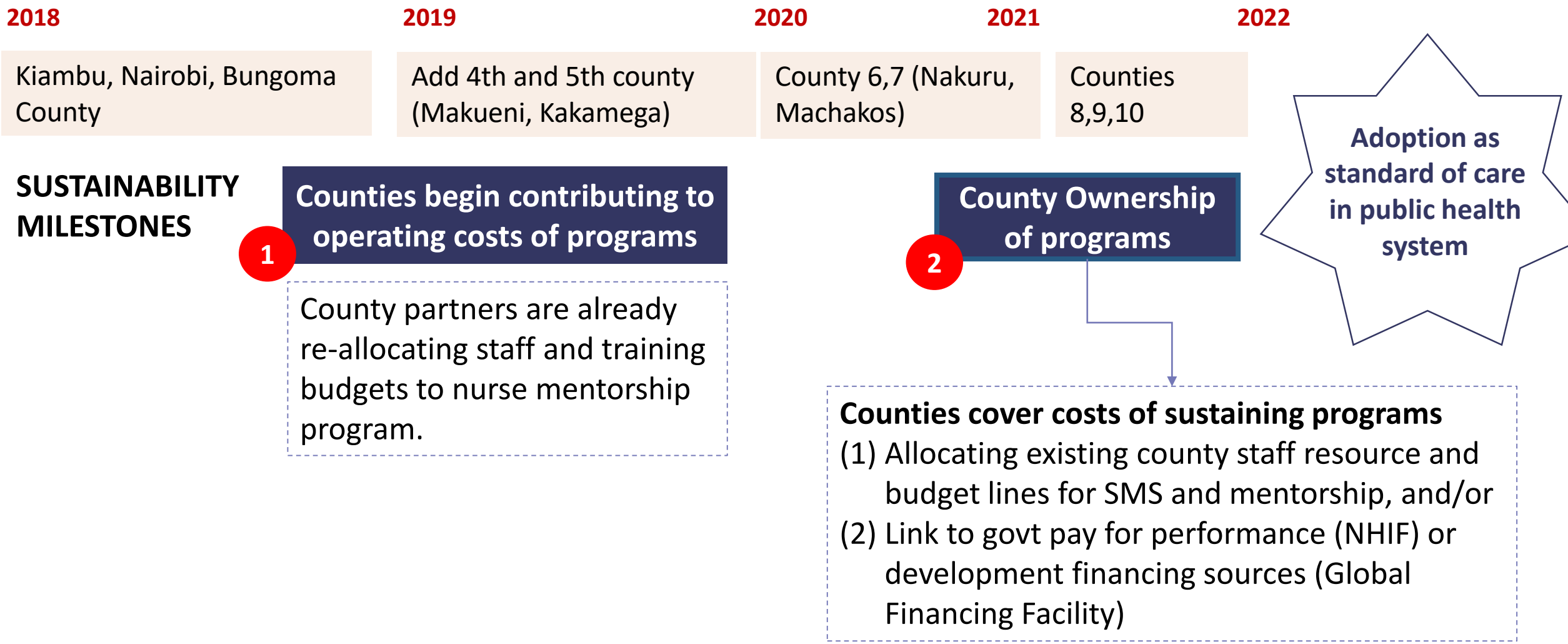
Cost of mentoring a nurse over 6 months

<\$152

Current alternative: Off-site trainings @ 250-2000 per nurse

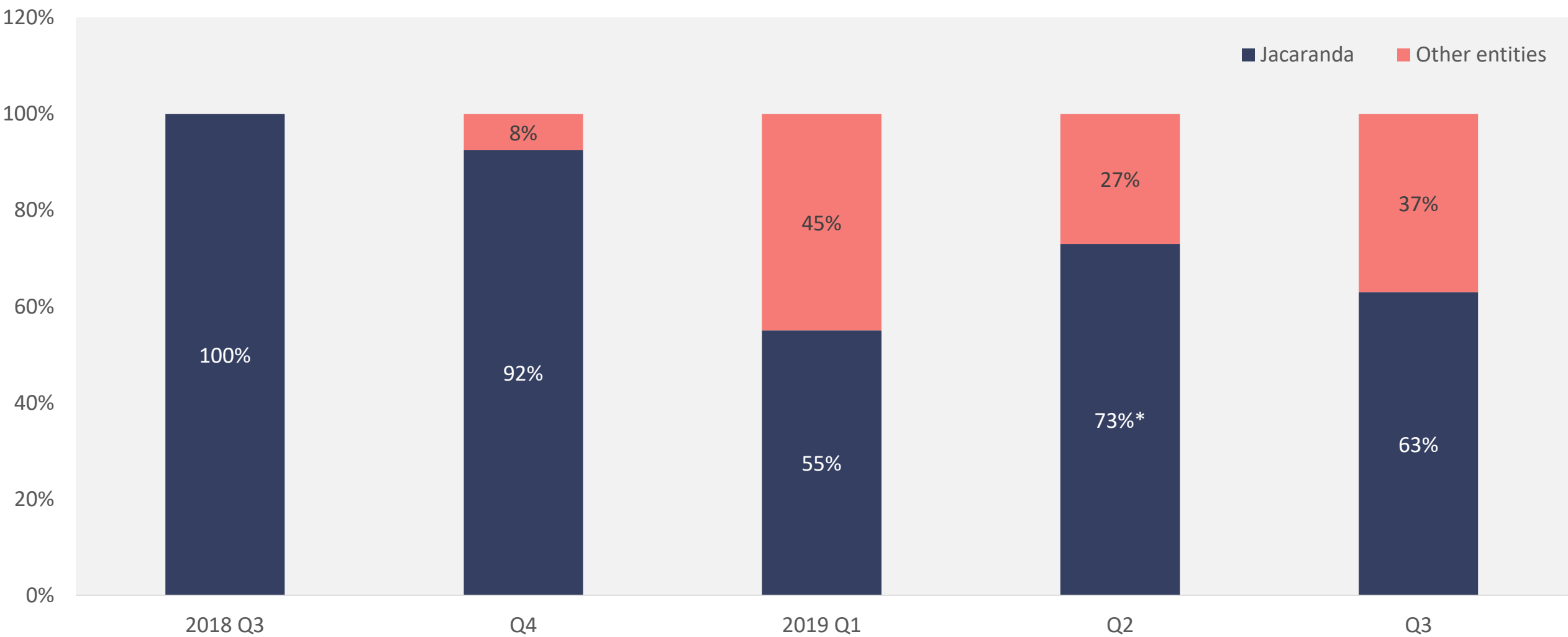
On-site supportive supervision has been shown to be more effective (by us and others) than traditional off-site workshops

Sustainability II: A step-wise approach to ensure long-term government ownership of these programs



Counties are absorbing the cost of the nurse mentorship program

Counties have begun to allocate training budgets towards mentorship. By Q4 2020, we expect that other entities will bear over 65% of the program cost of the nurse mentorship program based on current trends.



*We added two new counties in Q2 2019 and anticipate cost-sharing to increase in the next government financial year

Progress towards Vision 2021: County health systems are requesting and deploying these solutions



2018

Partnerships and MOUs with 3 county executives. Set up office in Western Kenya to test expansion.

2019

In discussions to roll out another 2 county partnerships and demand from others.

2020-21

On track toward our goal of 10 key counties covering 40% of Kenya's mothers and babies in 2021.

Counties are already allocating their own budgets to cover the cost of these programs.

Scale targets and projections for Kenya expansion 2019-2022

	2019	2020	2021	2022
Number of Counties in Kenya	5	7	10	10
Total Number of Facilities Reached (mentor facilities)	48	75	120	155
Total Number of MNH Providers mentored (completing required curriculum)	384	600	960	1,240
Total number of deliveries impacted in facilities	70,546	135,073	222,897	288,967
Total number of mothers and babies (2x # of deliveries)	141,092	270,145	445,794	577,934
Cumulative # of mothers and babies, lives improved	141,092	411,237	715,939	1,023,728

Key Health Outputs and Outcomes in Target Facilities: 2022 Goals

Challenge	Programmatic Targets	Impact
Mothers do not seek care at the right time and place during pregnancy	<ul style="list-style-type: none">70% of women complete 4 ANC visits80% of women act on pregnancy and newborn danger signs	20% reduction in severe postpartum hemorrhage 20% reduction in neonatal mortality
Frontline providers have the obstetric and newborn care skills to save the lives of mothers and babies	<ul style="list-style-type: none">Providers conduct essential clinical steps in 90% of observed deliveries90% of providers pass newborn resuscitation skill test95% of women initiate breastfeeding within 1 hour of delivery	
Mothers seek care at the right time and place after pregnancy	<ul style="list-style-type: none">60% of mothers take up postpartum family planning at 8 weeks60% of mothers exclusively breastfeeding at 6 months	

Jacaranda's team and board

