

Preterm Birth Initiative



University of California
San Francisco

UCSF Preterm Birth Initiative

Program Update 2018-2019



Strategic Advisory Board Meeting

May 2019

The work of the UCSF Preterm Birth Initiative is made possible by the visionary partnership and generosity of our funders Marc and Lynne Benioff and the Bill & Melinda Gates Foundation.



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May 8, 2019

Dear members of the UCSF Preterm Birth Initiative Strategic Advisory Board:

I look forward to seeing continuing members and welcoming new members at the third annual meeting of the UCSF Preterm Birth Initiative (PTBi) Strategic Advisory Board. We are grateful that you are able to join us in person for this special two-day meeting, which begins on Wednesday, May 8, at 1:30 p.m. and concludes on Thursday, May 9, at noon.

This year's Strategic Advisory Board meeting will feature some early results of our work to date and an opportunity to reflect on lessons learned, share insights and discuss our thoughts on priorities for the next phase of the work. The meeting is designed to be both informative and interactive, with time for your input and feedback that will help guide the direction of this work.

Prior to our meeting, we hope you will review the enclosed Program Update and minutes from last year's Strategic Advisory Board meeting. We will provide you with print copies at the meeting.

Again, I look forward to welcoming you on May 8 and 9. Thank you for your ongoing commitment to UCSF and PTBi.

Best wishes,

A handwritten signature in black ink that reads "Sam Hawgood".

Sam Hawgood, MBBS
Chancellor
Arthur and Toni Rembe Rock Distinguished Professor





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Globally, preterm birth is the leading cause of death in children under 5

15 million preterm births each year

1 million deaths

14 million survivors who are at risk for lifetime disability and chronic health issues that threaten human potential

In California, we continue to see stark racial disparities in preterm birth rates and clinical outcomes, particularly among Blacks/African Americans

Interpersonal and structural racism undermine quality, respectful care and drive social/economic inequalities that lead to chronic stress and increased physiologic risk

Systems of care and support across the reproductive life course are fragmented and unresponsive



California

California Approach

- Embrace community partnership to drive innovation and ownership
- Conduct holistic cell-to-society discovery research to deepen our understanding of modifiable risk and protective factors
- Reimagine and evaluate models of care and support that foster resilience
- Catalyze cross-sector coalitions to mobilize communities and drive policy and systems change

Joint Approach

Invest in building local academic and community research capacity

Increase public awareness about the epidemic of preterm birth

Disseminate research findings to a wide range of stakeholders through multiple channels



East Africa

In East Africa, the high burden of neonatal mortality especially impacts those born small and preterm

Health system limitations, including both poor quality of care and gaps in data and information systems make prematurity an invisible problem

East Africa Approach

- Partner with local researchers to identify context-specific drivers and solutions while increasing system capacity
- Build on local capacity to identify and care for these vulnerable newborns
- Focus on data and information systems, so all babies are counted and policy makers can understand the extent of the problem
- Through these actions, work to improve quality of care for all mothers and babies





Place-Based Approach Fosters Precision Solutions for Preterm Birth

The UCSF Preterm Birth Initiative (PTBi) has developed a diverse and unprecedented global community that is making headway against the devastating epidemic of preterm birth. Our community brings together researchers, clinicians, parents and policymakers from six regions of the world – three in East Africa and three in California. These individuals and organizations are the engine for a global research and implementation platform that enables us to identify, localize and propagate the most promising strategies for reducing rates of preterm birth and improving outcomes when it does occur.

This is precision population health at its best, and the past few years offer evidence that this approach has begun to generate tangible progress. Communities in our target areas and target populations have recognized the depth and breadth of the challenge and are energized to expand this vitally important work. In some regions, rates of preterm birth are already beginning to decline and outcomes are improving. The details of this progress make up the remainder of this report.

Yet none of this progress would have been possible without our tireless efforts to dig beneath what the world already knew about preterm birth. We knew that more than 15 million children are born prematurely each year and that preterm birth remains the largest

killer of children under five. We knew that infants who survive are at increased risk for a lifetime of health challenges, which leave families and communities wrestling with ongoing health, social and financial burdens that prevent a society from reaching its full human potential. We knew that in the United States, prevalence and outcomes for mothers and children are often considerably worse in low-resource communities and among people of color – and that relatively powerless communities in East Africa have worse outcomes than communities in other parts of the world.

We needed to know why – and that meant understanding the drivers of preterm birth in each individual community so that we could deliver solutions that had a real chance of stemming the tide. The one-size-fits-all model of research was never going to work on the problem of preterm birth; the drivers and challenges differ too dramatically from place to place. Understanding local context is crucial, and we have relentlessly sought to better understand the unique drivers in and needs of each affected community.



Identifying Primary Drivers and Immediate Needs

In Kenya, Uganda and Rwanda, where outcomes for both mothers and preterm babies are worse than in other parts of the world, our work with in-country partners and stakeholders made clear that spotty birth data and poor quality of care were the most pressing concerns. Gestational age measurement, the most critical element in accurately understanding preterm birth rates was extremely unreliable. Health care facilities undervalued their maternity registers, leading to inconsistent data for both maternal and newborn outcomes. Many hospitals did not regularly record infant birth weight. Clinicians did not have the tools, knowledge or confidence they need to care for a mother in preterm labor or for a small infant needing extra care at birth.

Our top priorities became clear: (1) believing in maternity registers by creating high-quality data systems to track progress and facilitate delivery of the right services to the right people at the right time and (2) moving aggressively to introduce a package of interventions to improve quality of care during the antenatal, intrapartum and immediate postnatal periods. Process indicators demonstrate that we have made inroads, positioning us to scale our progress and focus more of our work on prevention.

Understanding local context in California moved us in a different direction. When innovative epidemiological research revealed extraordinary disparities by both race and zip code, it became clear that the first step toward reducing the overall burden of prematurity meant erasing the disparities. It is unconscionable that the rate of preterm birth among Black women is 47 percent higher than the rate among all other women; that a woman living in San Francisco's Bayview–Hunters Point neighborhood is nearly three times more likely to have a preterm birth than a woman living in the much wealthier Presidio; that more than 40 percent of Fresno's preterm births occur in about a 2-by-5-mile historically poor sector of the city.

Extensive discussions and partnering with women of color deepened our understanding of how their experiences with persistent interpersonal and structural racism have led to the chronic toxic stress that is not only a known risk factor but also a precursor to other high-risk conditions for preterm birth. It is an inescapable conclusion, therefore, that racism and related social determinants are the most important

drivers of this epidemic in California. In response, we have made health and racial equity the touchstone, frame and lens for all of the prevention and treatment initiatives we develop for and tailor to our partner communities in California. Here too, signs of progress are emerging, including declining preterm birth rates in Fresno and policy changes in San Francisco that address the needs of that city's most affected communities.



Finally, an Inflection Point

The PTBi's growing global community has helped the world to focus on this epidemic, bringing us to a genuine inflection point. We believe we are poised to substantially reduce the number of preterm births and improve outcomes for both mothers and children.

It's a gratifying validation of our approach: respectfully collaborate with and connect affected communities to shape our work, generate evidence and rapidly transform it into effective and sustainable innovations. New challenges have emerged – an indication of how much more we have to do – but our model has begun to produce results built to last.

The rest of this report tells the story of what we achieved in the 2018-2019 academic year.





East Africa

Sowing and Scaling Success Begins With Understanding the Local Ecosystem

Although decreasing the burden of preterm birth in East Africa remains a complex challenge, 2018 offered evidence that the East Africa Preterm Birth Initiative's (PTBi-EA's) work to address the epidemic's drivers is leading to the critical behavior change needed for real and sustained impact.

Our approach of testing facility-based quality-of-care interventions targeting the prenatal and intrapartum periods is rapidly shoring up weaknesses in both provision and experience of care, key factors in the high rates of maternal and newborn death. Tackling flawed data and information systems and inadequate tools for measuring gestational age has enabled us to better understand the scope of the problem. Counting and valuing these women and their babies has made this epidemic visible to families, communities, ministries of health, researchers and funders. Investing in a cohort of early-career East African researchers, helping them to build preterm birth expertise, test innovations and generate important new research questions has spurred growing interest in solving the problem of prematurity in East Africa, while bringing new perspectives and deeper insights. (See Figure 1).

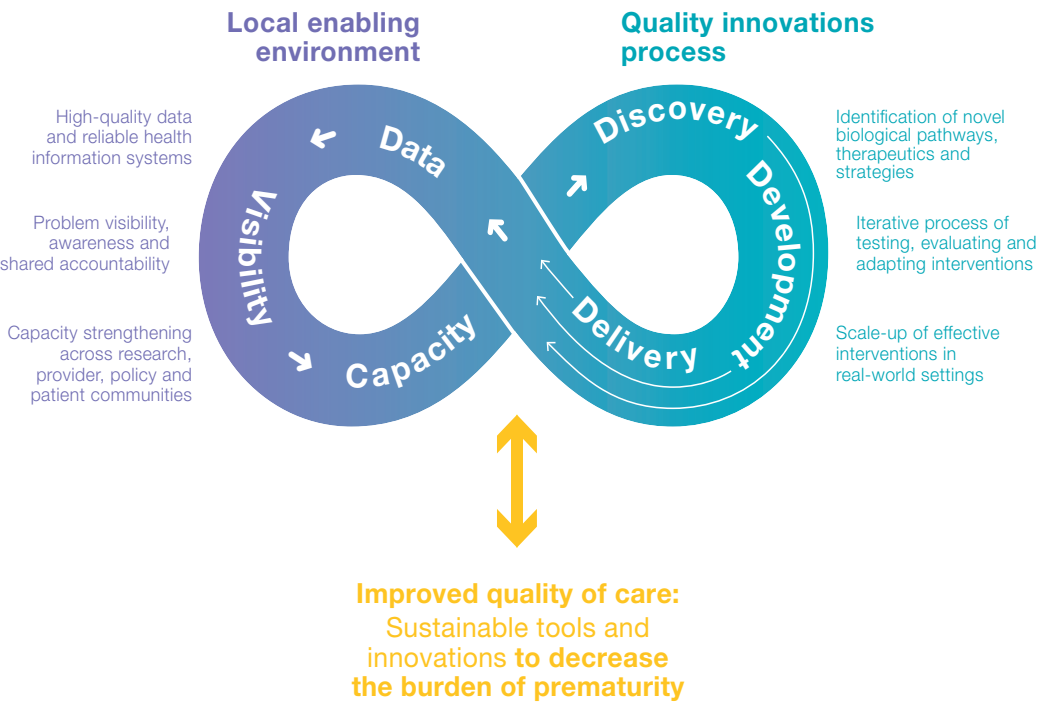
Together these strategies are changing the culture of care across settings to address preterm birth, from health care systems and clinical facilities through individual providers and families. This culture change occurs in a complex ecosystem that will lead to improved quality of care for preterm infants and their

mothers. Sustainable change is only possible in the context of an enabling environment that prioritizes and makes visible the problem of preterm birth, generates capacity necessary to address preterm birth and is capable of accurately measuring the scope and monitoring change. This is the ecosystem that will drive the discovery, development and delivery



of effective tools and interventions that will reduce the burden of preterm birth in the communities where we work. This is the ecosystem we have fostered to introduce our intrapartum and group antenatal care trials.

Figure 1. Pathway to Sustainable Change within the PTBi East Africa Ecosystem



Answers To Key Research Questions - And New Questions Emerge

Three years ago, as PTBi-EA began the work summarized above, we formed a collaborative research team with members from Kenya, Uganda and Rwanda. The goal was to develop and test sustainable tools and innovations that can decrease the burden of prematurity. Three critical questions drove that work:

- Can an intrapartum quality improvement package improve 28-day survival among small and preterm babies? (Aims 1 and 2)
- Does group antenatal care (ANC) impact gestational age at birth? (Aim 3)
- What are the drivers of prematurity and potential solutions as seen through the lens of East African investigators? (Aim 4)

To answer these core questions, we nurtured a process of iterative inquiry that we believe is essential for addressing a complex problem like preterm birth. Insights are emerging and, unsurprisingly, new questions have arisen:

- What is the prevalence of antenatal depression among a subset of Rwandan women attending antenatal care?
- Can a triage checklist and limited obstetric ultrasound improve identification of high-risk obstetric conditions, including preterm birth?
- What are the health and neurodevelopmental outcomes of low birth weight and preterm birth infants at 6, 12 and 18 months?

The answers to these critical questions further our capacity to sustainably improve the quality of care for mothers and babies. The rest of this section on PTBi-EA reviews our work during the 2018-2019 academic year, and includes preliminary data, program highlights, research insights and personal stories.



Aims 1 and 2: The Intrapartum Quality-of-Care Package Transforms Facility Care

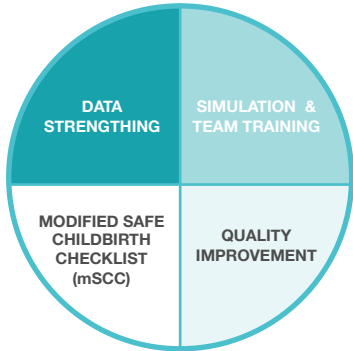
Partners: Phelgona Otieno, KEMRI, and Peter Waiswa, Makerere University

Study Design: A cluster-randomized controlled trial among 20 of 23 public sector health facilities in the Busoga Region of Uganda (six facilities) and Migori County, Kenya, (17 facilities) to evaluate the impact of a package of intrapartum quality-of-care interventions on 28-day mortality rates among babies born small and preterm

Intervention: The intrapartum quality-of-care package (see Figure 2) includes:

- Simulation and team training in obstetric and neonatal emergency response in low-resource settings for providers by trained local mentors in collaboration with PRONTO International (www.prontointernational.org); intervention sites only.
- Quality improvement cycles, delivered through facility-based quality improvement learning collaboratives; intervention sites only.
- Modified Safe Childbirth Checklist, with a focus on preterm birth; all sites.
- Data strengthening, with a focus on maternity registers; all sites.

Figure 2. Elements of the Intrapartum Quality-of-Care Package



Sample Size Target: 3,060 babies born preterm, followed through 28 days for outcome

Sample Size Update: As of March 31, 2019, we have reached enrollment of our target sample size of 3,060, with complete follow-up data collected for just over 3,000. By April 2019, we expect to complete follow-up for our primary analysis and to have collected maternity registry data for over 96,000 individual mother-baby pairs for secondary analyses.



Aim 1 and 2 Insights

- Rotation and staff changes will always impede sustained quality improvement.
- Multicomponent interventions are needed to transform the culture of care.
- The high rate of cesarean delivery for stillbirths is a red flag and a call for us to better understand the root causes.

Population Overview

By March 2019, maternity register data were collected on 93,984 births. These data indicate that preterm birth rates and associated trends in public facility settings are similar to what is seen in many low- and middle-income countries (LMICs). The patterns reveal common challenges or trouble spots, such as high rates of stillbirths delivered by cesarean section.

Table 1. Birth Data from 23 PTBi-EA Facilities in Kenya and Uganda, 2016-2019

DATA ELEMENT	Total Births						Preterm Births					
	Kenya		Uganda		TOTAL		Kenya		Uganda		TOTAL	
	N	%	N	%	N	%	N	%	N	%	N	%
Total births	34,664		59,320		93,984		3,766		8,629		12,395	
Mothers less than 18 years old	3,772	10.7	3,406	5.7	7,128	7.6	568	15.1	661	7.7	1,229	9.9
Cesarean section	2,776	8.0	15,374	25.9	18,150	19.3	383	10.2	2,387	27.7	2,770	22.3
Stillbirth	880	2.5	3,330	5.6	4,210	4.5	383	10.2	1,123	13.0	1,506	12.2
Fresh stillbirth	370	1.1	1,446	2.4	1,816	1.9	123	3.3	432	5.0	555	4.5
Macerated stillbirth	409	1.2	1,000	1.7	1,409	1.5	229	6.1	406	4.7	635	5.1
Unclassified stillbirth	101	0.3	884	1.5	985	1.0	31	0.8	285	3.3	316	2.5
Pre-discharge deaths	342	1.0	873	1.5	1,215	1.3	123	3.3	411	4.8	534	4.3

Of the infants born in PTBi-EA facilities, 4.5 percent were stillbirths. Nearly 25 percent of all stillbirths were delivered by cesarean section. In Uganda, 26 percent of all births were delivered by cesarean section, which reflects the fact that the facilities where we work in Uganda are higher-level facilities: all are able to perform cesarean sections, while about half of Kenyan health facilities in our study lack this capacity. In Kenya, 11 percent of infants were born to mothers under 18 years of age. Importantly, though not surprisingly, our data confirm that preterm newborns are more likely to be born to adolescent mothers, be stillborn, or die before hospital discharge.



The Intrapartum Quality-of-Care Package Improves Care

Our first priority has always been saving the lives of mothers and newborns. When work with in-country partners revealed that they had limited knowledge about how to care for preterm infants and their mothers, we prioritized tailoring and measuring the effectiveness of a package of interventions designed to increase uptake of evidence-based practices for improving intrapartum care in Kenya and Uganda. The interventions included introducing PRONTO simulation and team training for providers, creating quality improvement teams, implementing a modified version of the Safe Childbirth Checklist, and strengthening data, with a focus on maternity registers.

This work has helped us decide not only what to teach and how to teach it but also how long it should be taught in order to sustain these low-tech quality improvements. In turn, more clinicians now have the training, tools and confidence to save preterm babies and their mothers. We believe improved outcomes will follow, as do various stakeholders in both countries, many of whom are poised to scale our models as part of their health system strengthening programs (See page 24).



Improving Capacity and Quality With Provider Training and QI Cycles

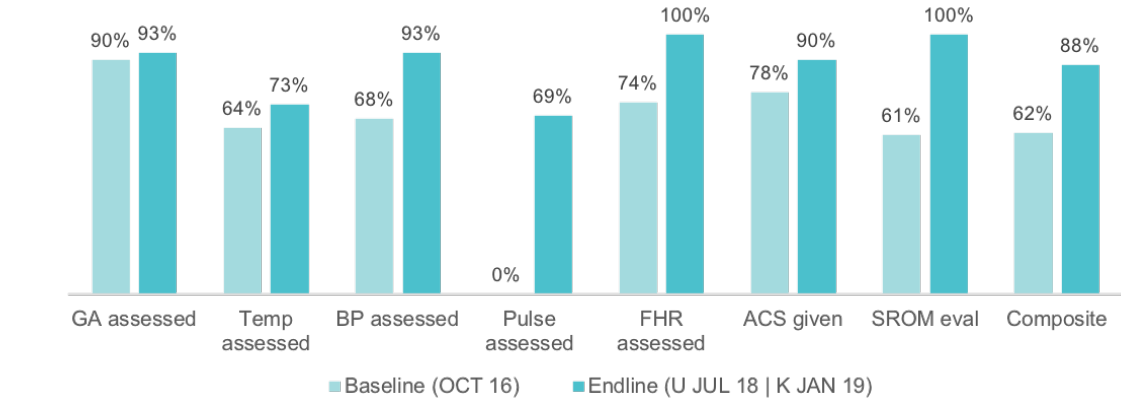
Over the past year, our efforts in Kenya and Uganda focused on concluding the cluster-randomized controlled trial, rolling out intervention activities in the control sites and transitioning intervention activities to sustainable local programs. Sustainability and stakeholder engagement have been central to our efforts since project inception. To facilitate the hand-over of activities to the facility staff and local Ministry of Health (MOH) offices, we have worked with our partners to develop and implement tailored sustainability plans for each of the two settings.



With our central focus on quality of care (see Figure 2), we have seen progress in both clinical knowledge and use of evidence-based practices among facility staff. For example, using simulation and quality improvement (QI) data audits, we have found that appropriate antenatal corticosteroid (ACS) use has increased in both simulation training and actual practice. Simulation video analysis found an increase from 78 percent to 90 percent in appropriate administration of ACS (see Figure 3); in actual practice QI teams documented improvement from 10 percent to 80 percent (see Figure 4). Similarly, assessment scores of knowledge on how to care for mothers in preterm labor increased from 62 percent to 73 percent (see Figure 5).

Our analysis of provider performance during simulation assessments illustrates increases, over time, in use of evidence based practices by providers (see Figure 3).

Figure 3. Intrapartum Evidence-Based Practices Performed in Simulated Case of Preterm Birth to Mother with Preterm Premature Rupture of Membranes (Kenya and Uganda Combined)



Abbreviations: GA, gestational age; BP, blood pressure; FHR, fetal heart rate; ACS, antenatal corticosteroid; SROM, spontaneous rupture of membrane; K, Kenya; U, Uganda.

Figure 4. Quality Improvement Learning Collaborative Run-Chart for Antenatal Corticosteroid Use (Kenya and Uganda Combined)

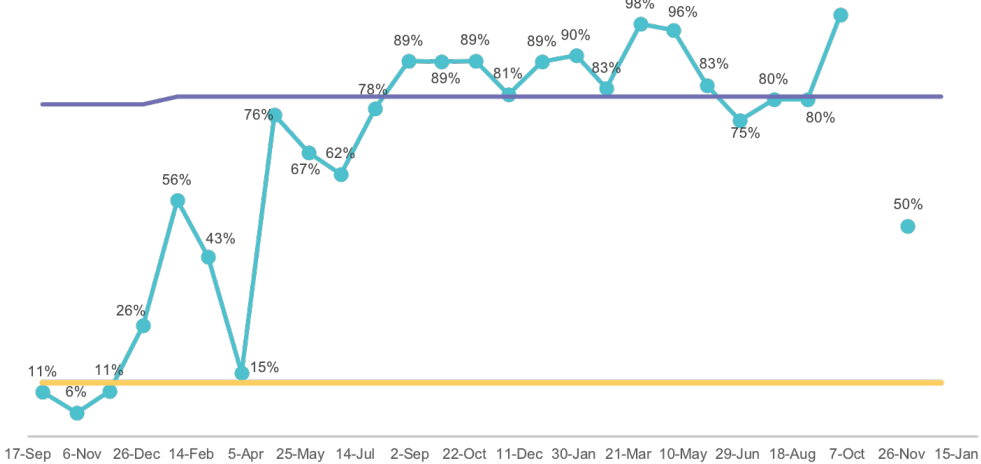
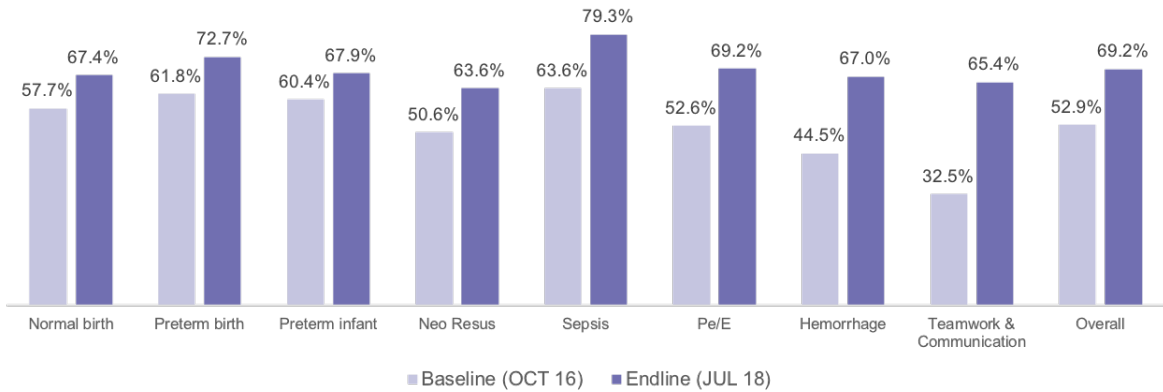


Figure 5. Provider Knowledge Assessment Scores (Kenya and Uganda Combined) in Key Topic Areas Over Time



Abbreviations: Neo Resus, neonatal resuscitation; Pe/E, pre-eclampsia/eclampsia.



The Intrapartum Quality-of-Care Package Improves Data

We implemented data strengthening and introduced the modified Safe Childbirth Checklist across all of our 6 study sites in Uganda and 17 in Kenya. These foundational pieces of our quality-of-care package can improve and standardize documentation and ensure that health workers have basic reminders of evidence-based practices.

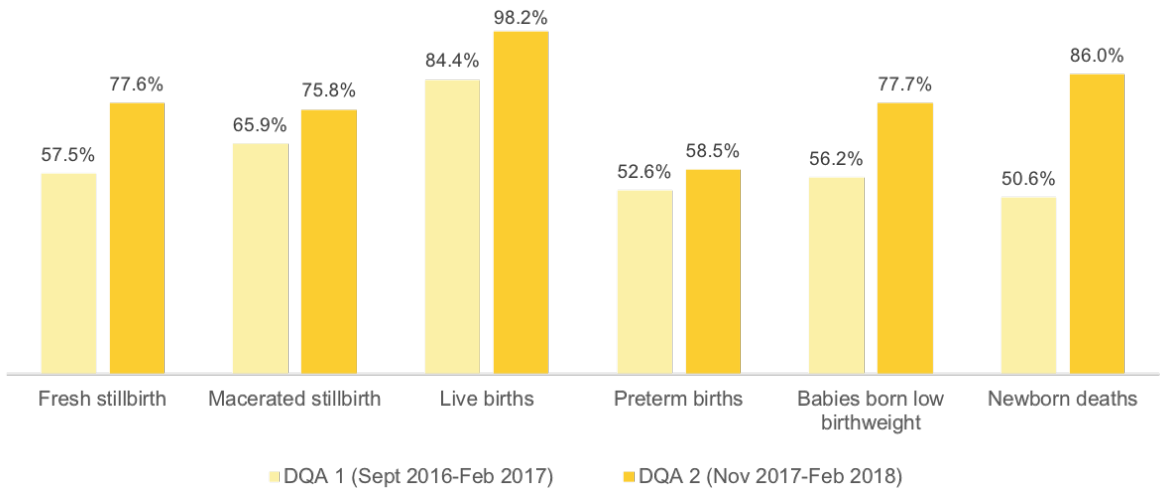
Data Strengthening

At project inception, we found that lack of awareness about preterm birth, poor training, inadequate tools and weak data practices caused facility staff to inaccurately report preterm birth rates. Now, near project completion, our process monitoring data indicate that our data-strengthening activities are working. Our primary focus to date has been the creation and use of reliable and accurate maternity and newborn registers and encouraging documentation best practices in the facilities in which we work. To lock-in the progress we’ve made, we use and strengthen MOH routine

information systems as our primary sources whenever possible. Maternity register completion rates for gestational age, birth weight, Apgar at one minute and birth outcome have increased since baseline. In Uganda, completion rates across all key fields have improved from 33 percent to 77 percent complete, and in Kenya rates have improved from 51 percent to 94 percent complete as of December 2018.

We also track alignment with and adherence to reporting standards in our data quality assessments (DQAs) to ensure that data reported in the national systems (on Health Management Information Systems [HMIS] Form 105 and MOH Form 711) and in the PTBi database are consistent, reliable and accurate. PTBi teams in Kenya and Uganda have performed two facility-level DQAs in all PTBi-EA sites. Results from Kenya’s DQAs indicate that the accuracy of preterm birth-related register data reported to national systems has improved over time (see Figure 6).

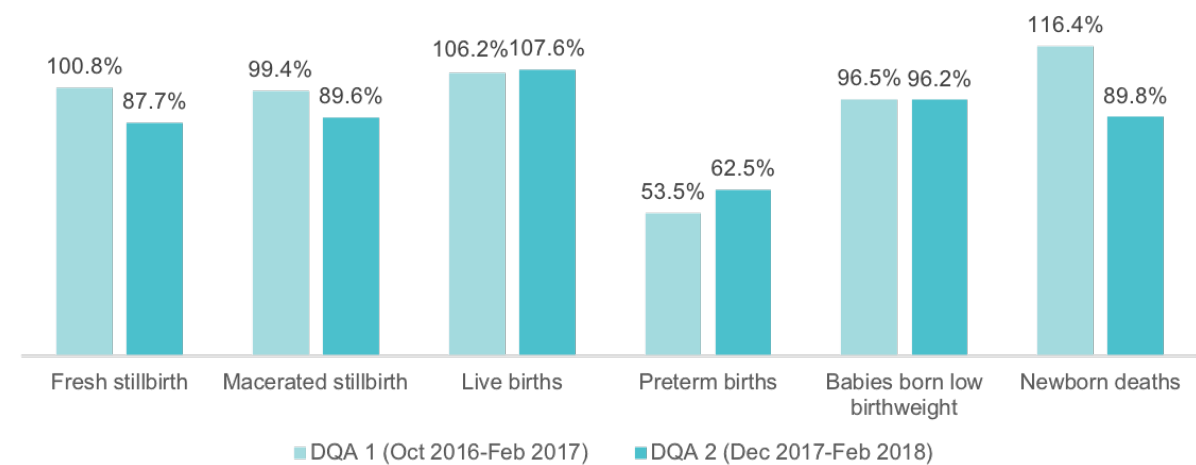
Figure 6. Data Quality Assessment Results in Kenya



Results from Uganda also show improvements (see Figure 7), including a decrease in over-reporting on some indicators. These DQAs allowed us to focus our data-strengthening activities. For example, we discovered that facility staff were not reporting preterm births based on gestational age less than 37 weeks, but were rather reporting only those births classified as preterm in the diagnosis fields in the register. As a result of our training of health facility staff in referencing the correct column in the maternity register for these national indicators, our facilities now report preterm birth more accurately, which will improve national data systems and resource

allocation. Facility staff members have also gained understanding of the rates of preterm birth in their facilities and are therefore better able to advocate for themselves when requesting additional resources, such as pediatricians and newborn units.

Figure 7. Percentage of Key Indicators in the Maternity Register Reported to MOH, Uganda



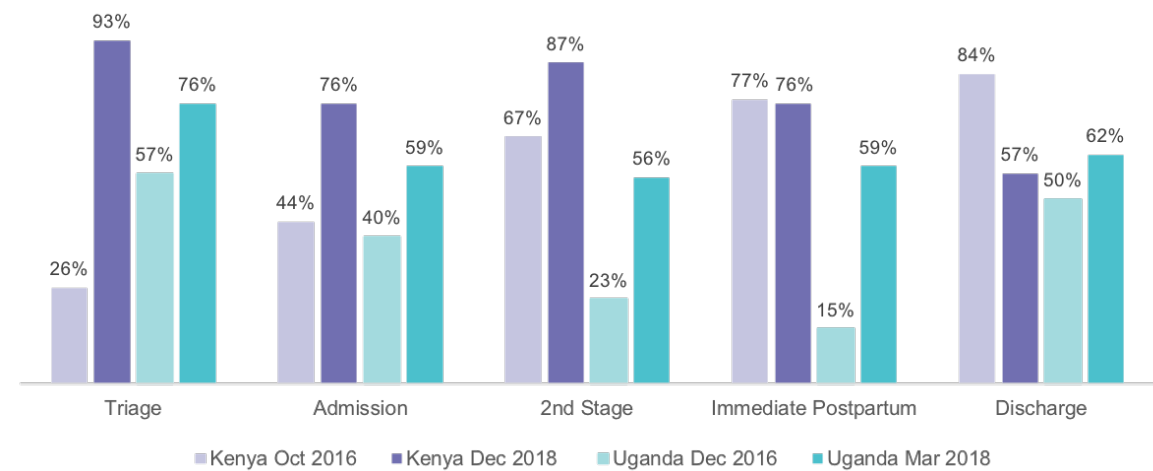
Note: Percentages over 100% reflect over-reporting of these key indicators.

The Modified Safe Childbirth Checklist

To increase and maintain workers’ awareness of evidence-based practices at the time of birth, we adapted the WHO Safe Childbirth Checklist and introduced it to all facilities. Monitoring health workers’ completion of our modified Safe Childbirth Checklist (mSCC) provides some evidence of its use, which has increased over time, although health workers do not use it equally at all pause points (see Figure 8). They

seem to value it most at the first point of contact, and completion rates diminish over the time a patient is in the facility. This could be related to gaps in handover practices as the woman moves through the health care facility, or to the way current tools make the checklist more relevant in early pause points, or to health workers being overwhelmed by the number of tasks they must complete.

Figure 8. Modified Safe Childbirth Checklist Completion Rates

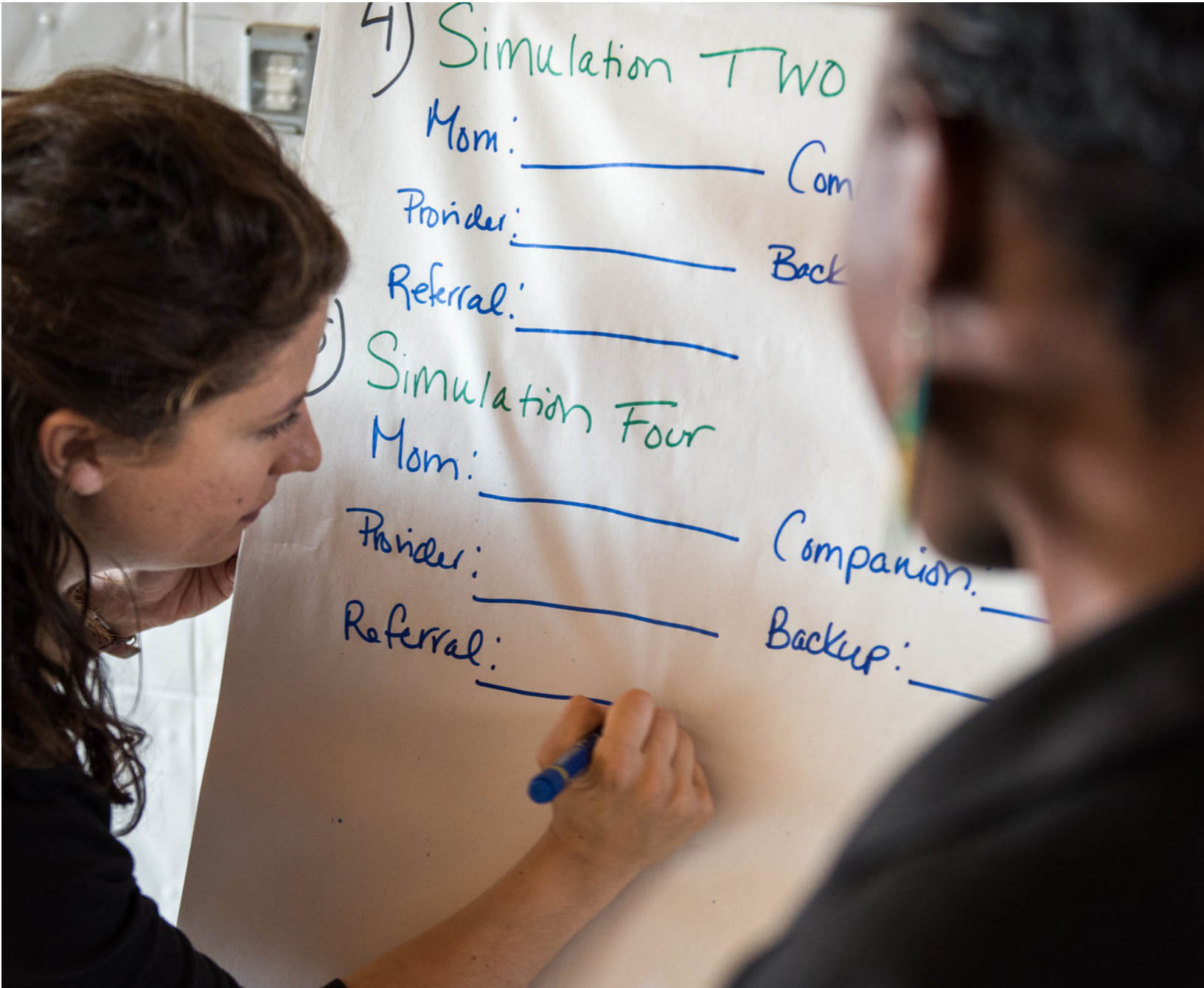


In surveys of health workers aimed at monitoring their adherence to our intervention, we also found differences in uptake of the mSCC between control sites, which received only data strengthening and the mSCC, and intervention sites, which also received PRONTO and QI:

- 97 percent of staff in intervention sites reported having used the checklist, compared to 81 percent in control sites.
- Staff in intervention sites were more likely to agree that the checklist could help them identify gestational age and prematurity, identify pre-eclampsia and maternal infection, and prepare their workstation for a birth and a patient for a referral.

■ While most health workers (97 percent in intervention sites and 93 percent in control) knew that the checklist includes clinical prompts, more health workers in intervention sites (73 percent versus 51 percent in control sites) felt the checklist was easy to read, suggesting that the reinforcement from QI and PRONTO improve acceptability of the checklist.

These findings are consistent with the Better Birth Trial and other studies, which found that the checklist requires close engagement and mentoring for optimal use. We will assess the impact on outcomes at the completion of the trial.





Leakey Masavah

Leakey Masavah received PRONTO training as a nurse in Kakamega, Kenya in 2013. He is now a PTBi-EA PRONTO and QI mentor.

“

I worked as a provider in Kakamega County, a busy rural hospital where there was no doctor or obstetric specialist and the closest village was 15 kilometers away on earth roads. Then PRONTO training arrived and brought in a new dawn of giving quality attention to obstetric emergencies in Kakamega. As a clinician I gained skills in patient stabilization and even became the focal person in pre-eclampsia management. This reduced the number of calls I made to the RH [reproductive health] coordinator.

As a mentor for PTBi in Migori, I got a better picture of the frustrations rural health care workers feel when they come in contact with obstetric emergencies. The fear of using drugs, like hydralazine and magnesium sulfate, is common among nurses. I worked with nurses to equip them with the prerequisite knowledge.

To me, quality improvement became the magic bullet in my work in PTBi. Getting at root causes of system problems without stepping on people's toes was a game changer. In Migori County Referral Hospital, for example, we identified long waiting times for emergency attention as a major setback to quality of care. This was evident from the data collected in the maternity files and led to the generation of change ideas, such as fixing up the doctors' quarters so they could stay in-residence while on call, and ongoing system changes.

PRONTO is one of the best models in teaching health care workers because it tests behavioral, technical and analytical skills.

– Leakey Masavah
QI Mentor

”



Martha Asimwe

Martha Asimwe is a PRONTO mentor and a medical officer in one of the PTBi Uganda sites.

“

The PRONTO simulation-based training, as opposed to the old-fashioned lecture method, was a new and exciting way to train health workers in the Busoga Region.

One of the biggest highlights of my time as a trainer was working with a young, newly qualified midwife who had been recruited at St. Francis Hospital, Buluba. She was timid and quite lacking in clinical skills.

Our efforts to train her on the job didn't seem to make a difference until the PRONTO facility-based simulations and team training started. She acquired knowledge and skills in managing obstetric and neonatal emergencies.

Once I was called in to review a sick pregnant mother who had been admitted with severe

pre-eclampsia. This previously timid midwife gave an excellent SBAR [Situation, Background, Assessment, Recommendation is one of the communication techniques learned during the training] and further informed me that she had given all the emergency drugs needed for this particular patient. She even suggested that she thought this patient needed an emergency cesarean section if we were to save her life and her newborn baby.

She has gone on to train other new midwives in the area of newborn resuscitation. She is now confident in the knowledge and skills and is not afraid to take on any challenge.

– Martha Asimwe
PRONTO Mentor

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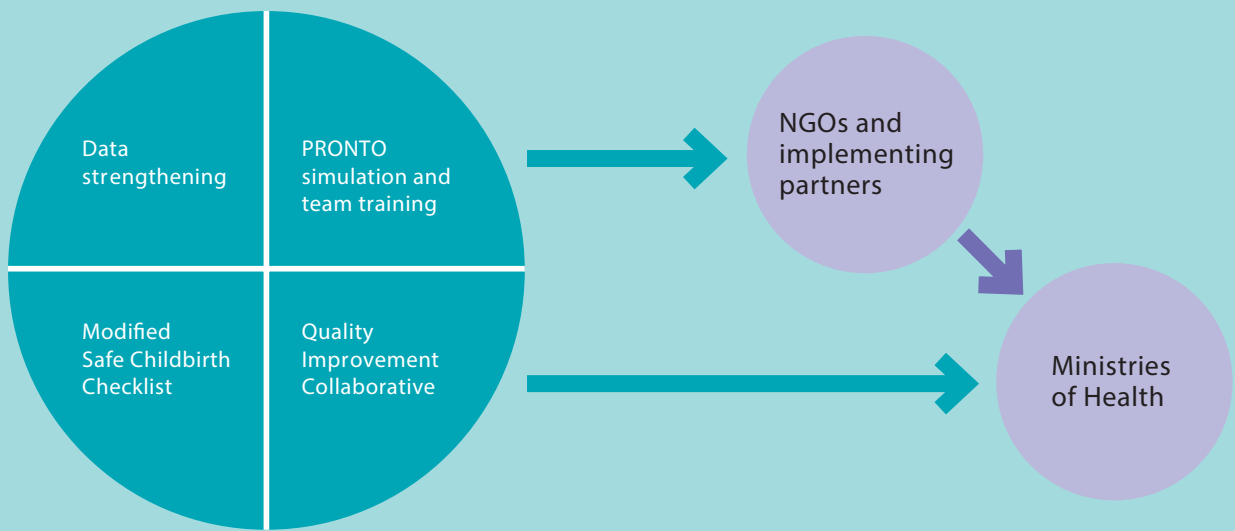
Seed to Scale for High Quality Intrapartum Care

As noted in our introduction to the PTBi-EA section of this report, process indicators indicate that our facility-based package for quality-of-care improvements during the intrapartum period is changing the culture of care in Kenya and Uganda. The indicators have convinced numerous partners to consider components of our models for scale-up as part of their health system strengthening programs.

- Ugandan facility staff, hospital leadership, and MOH officials worked with us to design, implement and monitor our sustainability plan.
- The USAID and its implementing partner Regional Health Integration to Enhance Services (RHITES) are seeking strategies to improve health service delivery and are considering using components of our intrapartum package (PRONTO and QI) in Uganda.
- For nationwide use, the Uganda MOH has formally adopted the neonatal register that our Makerere-based team developed in previous work and implemented across Busoga in the PTBi Intrapartum Quality-of-Care Package. In Kenya the MOH has also exhibited interest and is piloting a version of the newborn register.

- The Kenyan-based branch of Global Health Strategies (GHS) has prioritized promotion and scale of the mSCC. With Migori County support, GHS, the Kenya Medical Research Institute and UCSF are seeking additional funding to support this effort.
- PRONTO’s Kenyan representative, who also works for the Kenyan Pediatric Association, is leading a national movement to integrate PRONTO simulation and team training into the new EmONC (emergency obstetrical and newborn care) national training curriculum currently under development.
- Migori County health leadership officials have indicated that they would like to integrate countywide PRONTO trainings into their annual action plan, which the United Nations partners fund. They intend to modify the training program so county-based trainers can conduct it on a regular basis to orient new nurses and clinical staff when rotation occurs. To facilitate that, we are training the county reproductive health coordinators and representatives from each of the facilities in the trial as PRONTO simulation facilitators.
- QI capacity-building efforts have equipped our trainers to work with large-scale national initiatives in Kenya and Uganda to integrate and expand the PTBi QI work in their health service delivery programs.

Pathway to Sustainability for PTBi Intervention Package



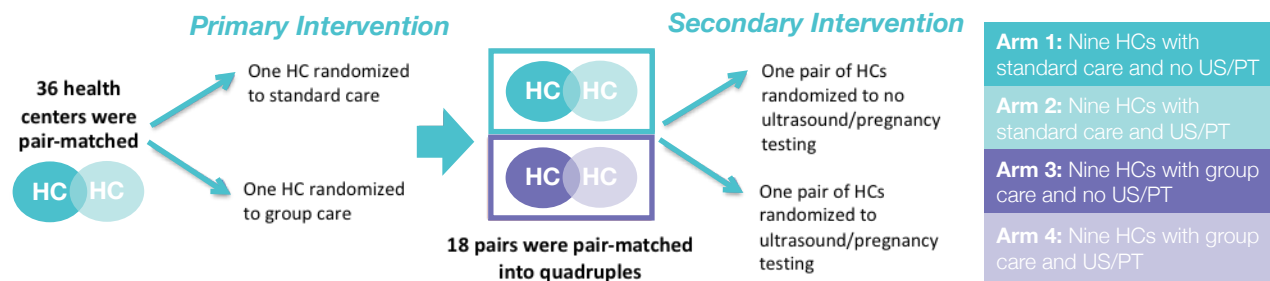
Aim 3: Ibaruke Neza Mubyeyi the Rwandan Group Antenatal and Postnatal Care Trial

Partners: Sabine Musange, University of Rwanda, and Felix Sayinzoga, Rwanda Biomedical Center, Rwanda MOH

Study Design: Cluster-randomized controlled trial with four arms across 36 health centers in five districts of Rwanda to assess the impact of group care on gestational age at birth

Intervention: Individual first visit followed by up to the recommended three visits for group antenatal care, plus one group postnatal visit. The group antenatal care curriculum used was developed by the Rwanda Technical Working Group. Two of the four arms have a secondary intervention that includes urine pregnancy testing by community health workers and ultrasound offered at the health center during antenatal care.

Figure 9. Ibaruke Neza Mubyeyi Study Design



Sample Size Target: 7,704 women with birth outcomes

Sample Size Accrual: As of March 2019, we have complete data available for 8,199 mother/baby dyads, exceeding our target sample size. In April 2019 we will focus on completing follow-up data and data cleaning for our primary analysis and approximately 15,000 women for secondary analyses.

Aim 3 Insights

- Group care can be introduced at scale and is welcomed by clients and providers.
- The introduction of antenatal ultrasound requires close attention to quality controls and system disruption.

The Group Care Trial:
Update and Highlights

The trial concluded enrollment in December 2018 and continues its longitudinal follow-up on antenatal care visits and outcomes. We expect to have collected all trial data by April 2019. (See Table 2 for enrollment by arm.) In addition to the quantitative data collected for outcomes, in March 2019 we collected a final round of qualitative data to more deeply understand the experiences of women, providers and the health system. As of March 2019, we have completed more than 2,500 group sessions, with a projection of 2,700 sessions by the trial's end. We are encouraged by the initial results, and once we complete our analysis, we look forward to identifying future actions, such as potential scaling by our colleagues at Rwanda's MOH.

Table 2. Enrollment by Arm as of March 1, 2019

STUDY ARM	Women Enrolled	Women Enrolled < 24 Weeks GA	Women Enrolled < 24 Weeks GA +2 ANC	Women Enrolled < 24 Weeks GA +2 ANC w/ Delivery Information
1. Standard ANC	7,301	4,868	3,501	1,979
2. Standard ANC + US	5,693	3,453	2,429	1,493
3. Group ANC	7,279	4,939	3,962	2,579
4. Group ANC + US	6,188	4,257	3,197	2,148
TOTAL	26,461	17,517	13,089	8,199

Abbreviations: GA, gestational age; ANC, antenatal care; US, ultrasound.

What we are learning is consistent with other reported trials: Women are enthusiastic and respond well to group care. Nearly 90 percent of women approached at group care sites agreed to participate in our study, and among those, only 1 percent returned to only individual, rather than group visits. Providers are also enthusiastic. The Rwanda MOH has embraced the Group Antenatal and Postnatal Care Model and intends to continue and expand this model, possibly as a platform for attaining the goal of eight antenatal care contacts that the WHO now recommends. However, this change in the health service delivery model comes with significant impact to the health system. Health centers that have introduced both ultrasound and group care bear the largest burden because of the additional time that ultrasound demands.

The Technical Working Group that developed the Rwanda Group Antenatal and Postnatal Care Model plans to further refine and explore modifications to the existing group care model. Possible iterations include (1) using group care as a way to attain eight contacts, as the WHO recommends, (2) identifying / integrating components that resonated well with participants and incorporating them into a refined model, (3) increasing the role of community health workers as facilitators and (4) integrating culturally significant touch points as a running theme throughout the model. Each of these presents opportunities for implementation research and global learning.



Providers are Receptive to Group Care

Although nurses and midwives in the study believe group care improves antenatal care, they recognize that the health system is not yet structured to fully support it.

The overwhelming majority (86 percent) of Rwandan nurses and midwives in the study prefer the group model to the traditional model of individual antenatal care. Provider focus group participants spoke of the “love” and “closeness” that develop among the clients and providers during group visits. This group dynamic creates new levels of openness to both sharing and receiving knowledge.

This new knowledge can save lives.

As one nurse recounted,

[A] woman shared her personal story of eclamptic seizure with the group. The members of the group were shocked by their previous beliefs about seizures, because before they understood a seizure to mean that a person was possessed by a demon. The group made up their minds that they would go at once to the health center as soon as they experienced any of the danger signs of pre-eclampsia described by that very woman.

However, providers confess that the time required to sit with women and facilitate a group discussion is hard to come by.

Table 3. Observed and Self-Reported Model Fidelity

OBSERVED MODEL FIDELITY (Five-point scale, N = 61)	Completed Observations	Average Fidelity Score
Group care observations: June – Aug. 2017	31	3.84
Group care observations: Sep. 2018 – Jan. 2019	30	4.43
SELF-REPORTED GROUP DEBRIEFS (N = 2,494) as of Dec. 31, 2018	Total	Average
Participants per group	NA	9.05
Time for physical assessment	NA	51 min.
Time for discussion	NA	62 min.

Because of too much work, you may fail to render good service. On the same day, the facility director may give you one or two group visits and also assign you to attend to all women in maternity. When there is a very urgent case in maternity, you must go to attend to it. You leave the group care visit without anybody else to provide group care, after apologizing to the women because you must leave them.

- Group Care Participant

Group antenatal care requires that providers have protected time to conduct group visits, without simultaneous assignment to other services. Some health centers have operationalized this ideal, but other health centers find group care implementation challenging when health care workers are in short supply.

Ensuring Fidelity to the Group Care Model

To ensure fidelity to the model that the Technical Working Group designed, Rwandan master trainers – five midwives and one physician – observed 150 antenatal and postnatal group visits. These master trainers hold regular clinical and teaching jobs, but they dedicate a few days per month to visiting PTBi study sites and providing mentorship and assessments related to group care. In this way they have extended the network of skilled group care providers to support ongoing implementation across Rwanda. As seen in Table 3 below, model fidelity scores have increased over time. Based on self-reported data, it appears that groups are also adhering well to recommended time allocations for assessments and discussion. Self-reported debrief data also reveals that only 144 men and 86 next of kin have attended sessions.

One of the master trainers, Yvonne Nsaba Uwera, described what she has observed:

At the first visit, [the women] are a bit shy, but soon they are like sisters. Women love group care because it helps them to open up, express themselves and support each other. In one group I observed, the women donated clothes to a group member in need. Another member proposed that the group put in some money every month, in case one of them had financial issues after the babies were born. And they made plans to bring food to group members who didn’t have family nearby.



Mothers Find “Two Heads Are Better Than One”

Qualitative evidence from our research conducted within the large-scale group care trial reinforces the findings from similar studies in other settings. As an example, in focus group discussions, group antenatal care participants describe finding trust, affection and cooperation among providers and pregnant mothers, as well as increased knowledge related to healthy behaviors and danger signs. Many women find the open exchange of ideas can result in problem solving and new understanding quite different from their previous experiences in individual antenatal care.

This finding and others from interviews and focus groups have led us to identify a new hypothesis that may explain the success of group care: Perhaps the “magic” is no more than the result of the formation of effective and functional teams among the groups of women and their facilitators, with a clear leader, mutual support, a shared vision, effective communication and situation monitoring. This presents another exciting venue to explore in future iterations of this model.

One mother explained the benefit of the group care model this way:

Two heads are better than one. When you are alone, you may be misguided by your thoughts. Being in group care helps you get more knowledge from other mothers and from the nurse, who takes time to talk with you.

- Group Care Participant

Introducing Ultrasound With Group Care Has Its Challenges

As of February 2019, 31 percent of eligible pregnant women (n = 3,693 women) received a basic obstetric ultrasound examination at PTBi study sites. According to mentors from the Rwanda Society of Radiologists, antenatal care providers (mostly nurses and some midwives) are not able to offer every eligible woman an ultrasound examination because health centers are “understaffed and overloaded.” Nurses and mentors report that each basic pregnancy ultrasound requires 15 minutes of provider time (on average), and this extra work time is added to their other responsibilities.

“These days, we are supposed to provide ultrasound services to as many pregnant women as possible. Providing antenatal consultations, then ultrasound services, then adding the work of conducting group care discussions – it becomes very difficult,” one nurse told us.

- Group Care Provider

Nevertheless, nurses are happy to work with the improved gestational age data that ultrasound provides, with one noting,

“Ultrasound has increased our satisfaction because when one predicts the date of delivery, she is sure of what she says, thanks to that tool. You can give sure information also when you happen to transfer that woman to the hospital.

- Group Care Provider

Implementing Early Ultrasound at Health Centers

Half of the study sites (n = 18) have implemented ultrasound at the health center level as part of antenatal care. To date, the average gestational age at the time of ultrasound was 19.5 weeks by fetal measurements, and 67 percent of all ultrasound examinations were done before 22 completed weeks of gestation. Almost 2,500 women in the cohort have gestational age data obtained before 22 weeks. (See Table 4.)

Table 4. Ultrasound Breakdown by Gestational Age at Scan

ULTRASOUND TIMING	Number of women
US before 9 weeks GA	208
US 9-16 weeks GA	1,077
US 17-21 weeks GA	1,200
US 22-28 weeks GA	712
US 29-40 weeks GA	496
TOTAL	3,693



The Global Group Antenatal Care Collaborative

The Global Group Antenatal Care Collaborative (www.groupantenatalcare.org) is an open forum where researchers can learn, share and build partnerships. A Steering Committee, comprised of the eight founding members, manages the collaborative and includes a community of practice open to anyone actively conducting research in group care or interested in learning more. The collaborative’s objective is to inform an active research agenda around group antenatal care by undertaking the following tasks:

- Defining the minimal necessary components
- Identifying principles and best practices
- Prioritizing key research questions and identifying gaps and opportunities
- Recommending core indicators to track in research and implementation
- Advocating for group antenatal care at major conferences and symposia
- Providing tools and resources to support a growing community of researchers

As the principal investigator of the largest trial of group antenatal care, UCSF physician Dilys Walker was invited to the founding meeting and later asked to serve as a vice chairperson. In October of 2018, she became chairperson, and her research group at UCSF became the secretariat of the collaborative. Since then, UCSF has expanded both the membership and the activities of the collaborative.

The collaborative’s achievements in the past year include the following:

- The Steering Committee authored a commentary paper titled “Group Antenatal Care – Building a Global Research Collaborative to Address Gaps and Define Opportunities.” The committee has submitted the article to the *Journal of Midwifery and Women’s Health*.
- In December 2018, the collaborative held a webinar on the new Monitoring Framework for Antenatal Care with a presentation by Allisyn Moran, scientist in epidemiology monitoring and evaluation in the Department of Maternal, Newborn Child and Adolescent Health at the WHO.

- In May 2019, the collaborative launched a website.
- In May 2019, the collaborative will host a roundtable discussion at the 64th annual meeting of the American College of Nurse-Midwives, titled “Group Antenatal Care (GANC) Research in Low- and Middle-Income Countries: An Introduction to the Work of the Global GANC Collaborative and a Call for Midwives to Join Our Community of Practice.”

Dilys Walker will serve as Chairperson through October 2020.

Steering Committee

Blair Darney
Oregon Health and Science University

Carrie Klima
University of Illinois, Chicago

Crystal Patil
University of Illinois, Chicago

Dilys Walker
University of California, San Francisco

Jody Lori
University of Michigan

Lindsay Grenier
Jhpiego

Sheela Maru
Boston University

Stephanie Suhowatsky
Jhpiego

Expanding Prevention Research through PTBi Cohorts

PTBi-EA has a unique opportunity to conduct epidemiological and intervention research to better understand how to prevent recurrent preterm birth and to care for preterm babies and their families.

Across our geographies we have demographic, clinical, outcomes and contact data for more than 14,000 mothers and 11,000 babies. Leveraging this cohort would allow us to pursue new and exciting areas of inquiry.

- What are the rates of recurrence among mothers who experience a preterm birth in LMICs?
- Are there effective prevention strategies that can cost-effectively help governments identify and treat women most at risk of preterm birth?
- What are the long-term impacts of a preterm birth on the baby, mother and family?
- What are the best approaches for addressing the needs of preterm babies in LMIC health settings?

PTBi-EA Cohorts and Their Potential for Further Research

	KENYA	RWANDA	UGANDA
Setting	1 county 13 hospitals 4 health center	5 districts 36 health centers	1 region 1 regional hospital 5 district hospitals
Number of babies	3,260	1,278	7,095
Data on babies	» GA, birthweight, sex » Apgar scores » Diagnosis/complications » Discharge status » 28-day survival » Breastfeeding/KMC		
Number of high-risk mothers	3,766	2,429	8,629
Data on high-risk mothers	» Age, LMP, GA » HIV status, postpartum family planning (subset) » Pregnancy and delivery complications » Discharge status		
Traceable	88%	60%	80%

High-risk mothers are those that have had a preterm birth or stillbirth.
Abbreviations: PTB, preterm birth; GA, gestational age; KMC, kangaroo mother care; LMP, last menstrual period.

Areas for further research within PTBi-EA cohorts

High-risk mothers

- PTB recurrence
- Prevention strategies and interventions
- Impact on maternal mental health

Preterm babies

- Neurodevelopmental outcomes
- Morbidities and mortality, 28 days and beyond

Aim 4: Discovery Research Informs Development of Preterm Birth Interventions

Our Discovery Research portfolio contributes to global knowledge about preterm birth and supports testing of tools to improve preterm birth prevention and management. We support projects through two distinct mechanisms: (1) a competitive request for proposal (RFP) process for East African investigators and (2) targeted studies that address priority research areas. By focusing on locally driven research questions (see Grants Portfolio, page 37), we are further defining this previously invisible problem.

The RFP program is shedding much needed light on preterm birth etiology and epidemiology in East Africa, and it is accelerating the development of promising East African researchers interested in prematurity-related research. Since 2015, we’ve selected 15 projects for funding. These projects span the life course – from elucidating risk factors associated with prematurity to developing clinical tools to improve preterm care to understanding what happens when these babies go home. Through this program, we also promote capacity-strengthening activities that include training at UCSF laboratories, in-country data analysis and writing workshops, and formal connections with research mentors. Among the 16

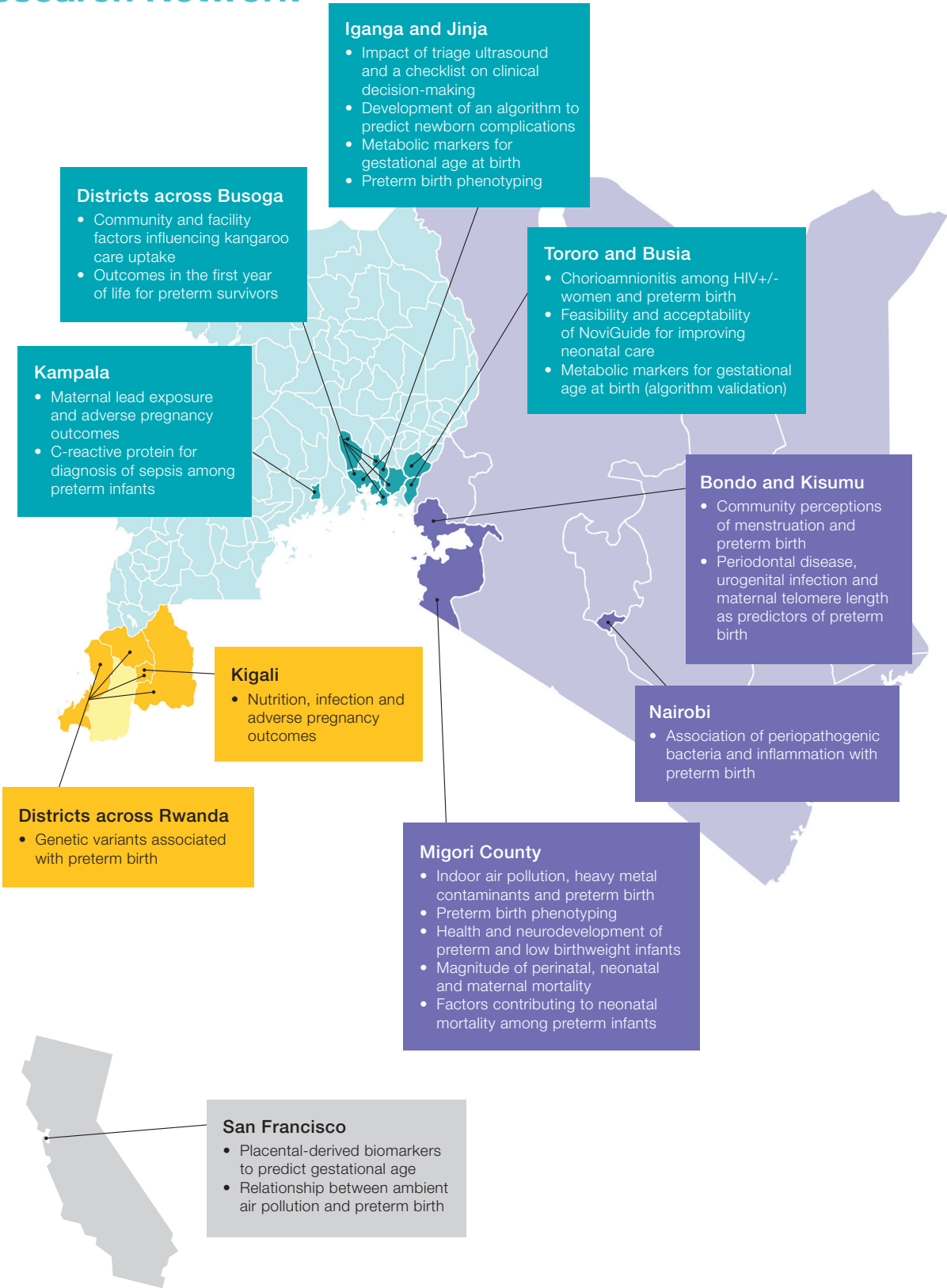
East African principal investigators we support, 14 are early career investigators, seven receive formal research mentorship from UCSF faculty, and three are mentored by current PTBi-EA principal investigators.

Targeted studies, the second arm of our Discovery Research portfolio, represent key topic areas that organically surfaced from our measurement and implementation research efforts. Project topics include new biomarkers and approaches to accurately assess gestational age, preterm birth phenotyping, and exploration of preterm outcomes after facility discharge. Most of these projects leverage the research platforms of the large trials, and they will add much-needed knowledge about preterm birth epidemiology and community drivers of post-neonatal outcomes.

“A positive approach with PTBi-EA is their strategy of twinning a mentor to a local researcher. I feel confident and supported. When we met for the first time, she contributed in designing the implementation phase... She is an enthusiastic academican who is open to new research ideas and excited from them.”
– 2017 RFP grantee



PTBi-EA Discovery Research Network



Ultrasound During Labor Triage | System Disruption or Clinical Asset?

One of our targeted discovery studies is investigating whether the introduction of a labor triage checklist and ultrasound can improve the identification and management of six high-risk obstetric conditions prior to birth, including multiple gestation, malpresentation, oligohydramnios, placenta previa, fetal distress/demise and preterm labor. Since this phased-intervention study began (see Figure 10), 18 midwives from Iganga District Hospital and three of its referring health centers have been trained in limited obstetric ultrasound, and over 800 women have received a triage scan. Along the way, the study has produced many insights into the use of ultrasound in this context.

Figure 10. A Three Phase Temporal Comparison of Interventions to Improve Care at Labor Triage



Burden Extends Beyond Care in the Hospital

In high-income settings, studies have established that preterm and low birth weight babies are at higher risk for health and neurodevelopmental challenges, such as reduced cognitive functioning and sensory impairments (e.g., vision and hearing loss), and more rarely, cerebral palsy. Unfortunately, health outcomes data from LMICs are limited, often due to poor postnatal follow-up. Current evidence suggests that in these regions, preterm and low birth weight infants have an increased risk of mortality after the neonatal period and have higher rates of acute illness, rehospitalization and poor growth (including higher rates of stunting and wasting). Ongoing discovery and targeted studies in Kenya and Uganda aim to better understand what happens when a baby goes home.

In Kenya, for example, the Health and Neurodevelopment (HND) study is a sub-study

assessing 549 infants at 6, 12 and 18 months of age. These infants were enrolled in the Intrapartum Quality-of-Care Package Trial and initially followed up at 28 days. As of April 2019, of 332 children assessed, 7.8 percent had died after 28 days and 8.4 percent had identified health, nutritional or neurodevelopmental conditions that required referral for care. Of children requiring referral, the most common identified conditions were nutritional compromise (36 percent) and concern for neurodevelopmental delay / cerebral palsy (28.5 percent). Eleven percent had an identified seizure disorder, and 17.8 percent had either vision or hearing impairment. Three-quarters of the children in this study have already completed referrals and evaluations specific to these concerns. This study will result in important insights on long-term outcomes for these vulnerable infants and areas for potential intervention.



Grants Portfolio

East Africa Fall 2015 - Summer 2019

Projects supported by the Discovery Research Portfolio are listed below.

**Data analysis and dissemination ongoing; †Data collection ongoing; ‡Study launch pending*

RFP Grants | Prevention & Prediction of Preterm Birth

The prevalence of chorioamnionitis and Group B streptococcus among HIV infected and uninfected pregnant Ugandan women and its association with preterm birth*

[John Ategeka, Infectious Diseases Research Collaboration](#)

Understanding knowledge and perceptions about menstruation, preterm birth and related care seeking practices to inform new health interventions in rural Bondo, Western Kenya*

[George Ayodo, Jaramogi Oginga Odinga University of Science and Technology](#)

Is the association between ambient air pollution and perinatal outcomes causal? A systematic review and meta-analysis*

[Rakesh Ghosh, UCSF](#)

Genetic associations with preterm birth in Rwanda‡

[Leon Mutesa, University of Rwanda](#)

[Janet Wojcicki, UCSF](#)

Maternal lead exposure in pregnancy and risk of preterm birth among women attending Mulago National Referral Hospital, Uganda†

[Fatuma Namusoke, Makerere University](#)

Maternal periodontal disease, bacterial pathogens and leukocyte telomere length as predictors for preterm birth among women in Kisumu County, Kenya†

[Linus Ndegwa, Kenya Medical Research Institute](#)

[Julius Oyugi, University of Nairobi](#)

[Janet Wojcicki, UCSF](#)

Nutrition and infection in relation to preterm delivery and other pregnancy outcomes in Rwanda*

[Etienne Nseruko, University of Rwanda](#)

Exposure mapping of household and environmental toxicants associated with adverse pregnancy outcomes in Migori County, Kenya*

[Lydia Olaka, University of Nairobi](#)

[Margaret Oluca, University of Nairobi](#)

Prospective phenotyping of preterm birth in Busoga Region, Uganda†

[Phillip Wanduru, Makerere University](#)

Periopathogenic bacteria serotypes and the association with preterm birth in Kenya†

[Veronica Wangari, University of Nairobi](#)

RFP Grants | Management & Care of Preterm Birth

Newborn complications and outcomes within the neonatal period following preterm birth – Uganda†
[Joseph Akuze, Makerere University](#)

Kangaroo mother care in Eastern Uganda: A feasibility study to assess the factors influencing uptake, adherence, and acceptability into routine healthcare*
[Doris Kwesiga, Makerere University](#)

Feasibility and acceptability of NoviGuide: A mobile health device for the management of neonates*
[Mary Muhindo, Infectious Diseases Research Collaboration](#)

Evaluation of the utility of C-reactive protein among preterm infants with sepsis in a resource-limited setting: A retrospective study*
[Victoria Nakibuuka, St. Francis Hospital Nsambya](#)

Newborn outcomes following preterm birth in the post-neonatal period in the first year of life, Uganda†
[Charles Opio, Makerere University](#)

Targeted Discovery Studies

Placental proteins as a clock for gestational age*
[Susan Fisher, UCSF](#)

Gestational dating at birth by metabolic profile: Testing and adaptation in African settings*
[Laura Jelliffe-Pawlowski, UCSF \(co-funded with Grand Challenges Explorations\)](#)

Gestational dating at birth by metabolic profile: Translation into hospital settings in Uganda†
[Laura Jelliffe-Pawlowski, UCSF](#)

Clinical phenotyping of preterm birth in Migori County: A retrospective chart review*
[Lara Miller, UCSF](#)

Use of a checklist and ultrasound at labor triage to improve identification and management of high-risk obstetric complications†
[Jude Mulwooza, Makerere University](#)

Magnitude of perinatal, neonatal, and maternal mortality in Migori County†
[Leah Kirumbi, Kenya Medical Research Institute](#)

Understanding causes and determinants of neonatal preterm deaths in Migori County, Kenya, using verbal and social autopsy†
[Beatrice Olack, Kenya Medical Research Institute](#)

Health and neurodevelopmental status of preterm and low birth weight babies in Migori County, Kenya†
[Phelgona Otieno, Kenya Medical Research Institute](#)
[Susanne Martin Hertz, UCSF](#)



Investing in Local Research Capacity

When the Discovery Research Program issued its first RFP from East African researchers in 2015, Ugandan physician and researcher Mary Kakuru Muhindo applied.

Muhindo’s initial proposal identified the challenges nurse-midwives face in delivering high-quality care to preterm infants. Working with UCSF pediatric infectious disease specialist Theodore Ruel and pediatrician Joshua Bress, current president of Global Strategies, she crafted what would be her first qualitative research study around that challenge: testing the feasibility and acceptability of Ugandan nurse-midwives using the Global Strategies-developed NoviGuide, a mobile health technology for the management of neonatal care. She worked closely with the Ugandan MOH to align NoviGuide with national guidelines and then brought the nurse-midwives aboard, helping to teach them how the tool works.

The study was successful, with the midwives using it regularly and reporting that it saved them time and prevented mistakes. This success points the way to

more expansive studies in the future. Muhindo says the study also helped inspire Tororo Hospital to hire more midwives and create a neonatal ward, with a focus on skin-to-skin contact between mother and child. She, Ruel and Bress are currently at work on the first manuscript from the study, and Muhindo presented the results at a 2017 UNICEF event in New York City.

Muhindo is a 2019 recipient of the two-year Postdoctoral Transdisciplinary Research Fellowship, a joint program cosponsored by PTBi-EA and PTBi-CA. She will use her time to expand her research network and explore how new functionalities in NoviGuide can further improve newborn care and reduce neonatal mortality in resource-limited rural settings.

“The fellowship will provide me with new skills in qualitative research and implementation science,” she says. “I am grateful that this will help me transition to becoming an independent investigator who can make a significant contribution to transforming newborn health, especially for vulnerable preterm babies.”
- Mary Muhindo

East Africa Publications and Presentations

We're committed to broadly disseminating our research. As results begin to emerge, we hope to expand our publications in the year to come.

Publications to Date

Ategeka J, Wasswa R, Olwoch P, Kakuru A, Natureeba P, Muehlenbachs A, Kamya MR, Dorsey G, Rizzuto G. The prevalence of histologic acute chorioamnionitis among HIV infected pregnant women in Uganda and its association with adverse birth outcomes. *PLoS One*. 2019 April 11;14(4):e0215058. doi: 10.1371/journal.pone.0215058. [PubMed](#) PMID: 30973949.

Williams P, Murindahabi NK, Butrick E, Nzeyimana D, Sayinzoga F, Ngabo B, Musabyimana A, Musange SF. Postnatal care in Rwanda: facilitators and barriers to postnatal care attendance and recommendations to improve participation. *J Glob Health Rep*. 2019 Mar. [Epub ahead of print].

Keating R, Merai R, Mubiri P, Kajjo D, Otare C, Mugume D, Weissglas F, Waiswa P, Otieno P, Kirumbi L, Wanyoro A, Namazzi G, Achola K, Myrick R, Butrick E, Walker D. Assessing effects of a data quality strengthening campaign on completeness of key fields in facility-based maternity registers in Kenya and Uganda. *East Afr J Appl Health Monitor Eval*. 2019 Feb. [Publication](#).

Morgan M, Spindler H, Nambuya H, Nalwa G, Namazzi G, Waiswa P, Otieno P, Cranmer J, Walker D. Clinical cascades to assess facility readiness for the care of small and sick neonates in Kenya and Uganda. *PLoS One*. 2018 Nov 21;13(11):e0207156. doi: 10.1371/journal.pone.0207156. [PubMed](#) PMID: 30462671.

Sayinzoga F, Lundeen T, Gakwerere M, Manzi E, Nsaba Y, Umuziga M, Kalisa I, Musange S, Walker D. Use of a facilitated group process to design and implement group antenatal and postnatal care program in Rwanda. *J Midwifery Womens Health*. 2018 Sep 25. doi: 10.1111/jmwh.12871 [Epub ahead of print]. [PubMed](#) PMID: 30251304.

Otieno P, Waiswa P, Butrick E, Namazzi G, Achola K, Santos N, Keating R, Lester F, Walker D. Strengthening intrapartum and immediate newborn care to reduce morbidity and mortality of preterm infants born in health facilities in Migori County, Kenya and Busoga Region, Uganda: A pair-matched, cluster randomized controlled trial. *Trials*. 2018 Jun 5;19(1):313. doi: 10.1186/s13063-018-2696-2. [PubMed](#) PMID: 29871696.

Conference Presentations

May 2018 – 2019

Uganda Pediatrics Association Conference; August 10-11, 2018; Kampala, Uganda.

Feasibility and acceptability of NoviGuide: A mobile health technology application for management of neonatal care in resource constrained clinical settings in Sub-Saharan Africa. Muhindo M, Bress J, Rogers K, Armas J, Danziger E, Kamya M R, Butler L M, Ruel T. *Oral*.

Joint Annual Scientific Health (JASH) Conference; September 26-28, 2018; Kampala, Uganda.

Bridging regional, socioeconomic and urban inequalities: Advancing reproductive maternal, neonatal and child health care to achieve SDG targets. Waiswa P. *Oral*.

Data as a primary driver for health systems strengthening; experience of the Preterm Birth Initiative in Eastern Uganda. Mubiri P, Kajjo D, Keating R, Namazzi G, Butrick E, Walker D, Waiswa P. *Oral*.

Feasibility and acceptability of NoviGuide in neonatal care. Muhindo M. *Oral*.

Improving kangaroo care for small babies: What is the missing link? Kwesiga D, Moses K.

Improving service delivery for care of preterm babies: lessons from the Preterm Birth Initiative in Busoga, Uganda. Namazzi G. *Oral*.

Improving survival of preterms: The Nsambya hospital experiences. Nakibuuka V. *Oral*.

Innovations for preterm care. Walker D. *Oral*.

Outcomes for preterm babies following discharge from hospitals. Waiswa P. *Oral*.

Outcomes of preterm birth at 28th day after birth in a large cohort in six hospitals, Eastern Uganda. Waiswa P, Mubiri P, Kajjo D, Namazzi G, Wandulu P, Mandu R, Keating R, Nambuya H, Kazibwe L, Walker D. *Oral*.

Preterm care in Uganda: Current challenges and potential solutions. Ndeezi G. *Session*.

Survival time and its predictors among preterms in the neonatal period post-discharge in Busoga region in Uganda, June – July 2017. Opio C, Malumba R, Kagaayi J, Ajumobi O, Kamya C, Mukose A, Adoke Y, Muneza F, Nalwadda C, Waiswa P. *Poster*.

5th Global Symposium on Health Systems Research (HSR); October 8-12, 2018; Liverpool, United Kingdom.

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International Federation of Gynecology and Obstetrics (FIGO) World Congress of Gynecology and Obstetrics; October 14-19, 2018; Rio de Janeiro, Brazil.

Adapting the preterm birth phenotyping model to a low-resource setting: A retrospective chart review. Miller L, Wanyoro A, Lester F, Santos N, Butrick E, Wanduru P, Otieno P, Walker D. *Oral*.

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Application of a U.S. based metabolic gestational age dating algorithm to newborns in Busia, Uganda. Oltman S, Jasper E, Kamya M, Kakuru A, Kajubi R, Ochieng T, Adrama H, Okitwi M, Olwoch P, Bedell B, Dagle J, Jagannathan P, Clark T, Dorsey G, Rand L, Ruel T, Rogers E, Ryckman K, Jelliffe-Pawlowski L. *Poster*.

Assessing group antenatal care model fidelity in 18 Rwandan health centers: the first 6 months. Lundeen T, Musange S, Sayinzoga F, Butrick E, Walker D. *Poster*.

Assessing the effect of nurses’ strike on intrapartum care in Migori County, Western Kenya. Merai R, Otare C, Keating R, Otieno P, Kirumbi L, Wanyoro A, Nalwa G, Achola K, Myrick R, Butrick E, Walker D. *Oral*.

Evaluation of the utility of CRP among preterm infants with sepsis in a resource-limited setting. Nakibuuka V, Nazziwa R, Abdullah Y, Sebunya R, Nyagabyaki C, Tumwine G. *Oral*.

Food security and nutritional screening at initial antenatal care visits in Rwanda. Butrick E, Musange S, Lundeen T, Ndahindwa V, Murindahabi N, Azman H, Nyiraneza L, Nzeyimana D, Sayinzoga F, Hemmady A, Walker D. *Oral*.

Grappling with gestational age in low-resource settings: Learnings from the Preterm Birth Initiative. Miller L, Waiswa P, Otieno P, Wanduru P, Keating R, Santos N, Butrick E, Benitez A, Walker D. *Oral*.

Implementation Science Approaches to Preterm Birth. Walker D. *Session*.

Intervention coverage at first antenatal visit among a cohort of women in Rwanda. Musange S, Azman H, Lundeen T, Ndahindwa V, Sayinzoga F, Murindahabi N, Nyiraneza L, Nzeyimana D, Butrick E, Hemmady A, Walker D. *Oral*.

Is group antenatal and postnatal care feasible and acceptable in Rwanda? Qualitative results. Ngabo B, Musabyimana A, Musange S, Sayinzoga F, Lundeen T, Butrick E, Walker D. *Oral*.

PRONTO simulation training to improve intrapartum and post-natal care for preterm babies in Kenya. Wanyoro A, Miller L, Calkins K, Spindler H, Nyaketch A, Osimbo A, Masavah L, Kirumbi L, Otieno P, Walker D. *Oral*.

Simulation and team training with PRONTO in India and East Africa: What do simulation videos tell us? Walker D, and members from Helping Mothers Survive Bleeding after Birth Projects. *Session*.

[International Conference on Family Planning \(ICFP\); Nov 12-15, 2018; Kigali, Rwanda.](#)

Family planning use and its relationship to maternal characteristics and obstetric outcomes in Migori County, Kenya. Miller L, Wangira J, Kirumbi L, Butrick E, Santos N, Otieno P, Walker D. *Poster*.

[International Meeting on Simulation in Healthcare \(IMSH\); 26-30 January, 2019; San Antonio, Texas.](#)

Thinking big: Going to scale with simulation and team-training programs in limited resource settings. Calkins K, Cohen S, Baayd J, Dyer J, Sterling M, Walker D. *Workshop*.

[9th KEMRI Annual Scientific and Health Conference \(KASH\); February 13-15, 2019; Nairobi, Kenya.](#)

Effect of patient waiting time on clinical outcome and client satisfaction in Migori County Referral Hospital maternity. Kizili L, Owoko C, Okore J, Osimbo A, Nyakech A, Wangia J, Ogolla D, Otare C, Achola K, Olack B, Kirumbi L, Wanyoro A, Otieno P. *Oral*.

Feeding practices among preterm and low birth weight babies in selected health facilities in Migori County. Olack B, Otieno P, Moshi V, Santos N, Nalwa G, Lihanda P, Otare C, Walker D. *Oral*.

Laminated chipboard as a wall cushioning improves thermal comfort in newborn resuscitation room: Results of a prototype experiment at Awendo Sub County Hospital, Migori County. Nyakech A, Kizilli L, Otieno T, Kirumbi L, Achola K, Walker D, Otieno P. *Oral*.

Quality improvement approach promotes uptake of modified safe childbirth checklist: The case of Awendo Sub County Hospital, Migori County. Mijwanga F, Omware P, Nyakech A, Achola K, Otieno P. *Oral*.

[43rd Kenya Obstetrical and Gynaecological Society Annual Scientific Conference \(KOGS\); February 20-22, 2019; Nairobi, Kenya.](#)

Are caesarean sections safer than vaginal delivery? Assessing the effect of mode of delivery on maternal and neonatal outcomes in selected health facilities in Migori County, Kenya. Wanyoro A, Moshi M, Olack B, Otieno P, Kirumbi L, Walker D. *Oral*.

[Africa Health Agenda International Conference 2019 \(AHAIC\); March 5-7, 2019; Kigali, Rwanda.](#)

Effect of postnatal gestational age assessment training of health care providers on newborn care practices in Migori County, Kenya. Ojee E, Musoke R, Murila F, Otieno P. *Poster*.

First implementation of basic obstetric ultrasound by antenatal care providers at 18 health centers in Rwanda. Nzeyimana D, Musange S, Murindahabi N, Butrick E, Azman H, Ndahindwa V, Sayinzoga F, Lundeen T, Walker D. *Poster*.

Improving quality of service delivery for care of preterm babies: Lessons from the Preterm Birth Initiative in Eastern Uganda. Namazzi G, Mubiri P, Wanduru P, Mandu R, Kajjo D, Nambuya H, Kazibwe L, Butrick E, Keating R, Miller L, Walker D, Waiswa P. *Oral*.

“It helped us to love our job”: Reactions from nurses and midwives implementing group antenatal and postnatal care in Rwanda. Musange S, Nzeyimana D, Murindahabi N, Butrick E, Azman H, Ndahindwa V, Sayinzoga F, Lundeen T, Walker D. *Oral*.

[Consortium of Universities for Global Health Annual Conference \(CUGH\); March 8-10, 2019; Chicago, Illinois.](#)

Current utilization and perceptions of ultrasound at labor triage: Initial findings from a baseline survey in Eastern Uganda. Santos N, Mulowooza J, Isabirye N, Inhensiko I, Butrick E, Shah S, Waiswa P, Walker D. *E-poster*.

The importance of male involvement and postnatal care integrated services for postpartum family planning uptake in Rwanda: A mixed methods analysis. Williams P, Santos N, Azman-Firdaus H, Musange S, Walker D, Sayinzoga F, Chen Y. *Poster*.

[Kenya Paediatric Association Annual Scientific Conference; April 9-12, 2019; Mombasa, Kenya.](#)

Effect of postnatal gestational age assessment training of health care providers on newborn care practices in Migori County, Kenya. Ojee E, Musoke R, Murila F, Otieno P. *Poster*.

Maternal and neonatal outcomes by mode of delivery in selected health facilities in Migori County, Kenya. Moshi V, Wanyoro A, Olack B, Otieno P. *Poster*.

Preterm and low birth weight babies mortality in selected health facilities in Migori County: Preliminary results of verbal and social autopsy study. Olack B, Walker D, Wanyoro A, Moshi V, Oyoo P, Bange T, Nalwa G, Otare C, Otieno P. *Poster.*

The 23rd Edition of International Conference on Neonatology and Perinatology; April 23-24 2019; United Kingdom.

Using a regional approach of a network of facilities to address mortality due to prematurity: Lessons from Eastern Uganda. Namazzi G, Wanduru P, Mandu R, Kajjo D, Mubiri P, Nambuya H, Kazibwe L, Namala A, Butrick E, Miller L, Walker D, Waiswa P. *Oral*

Pediatric Academic Societies (PAS) Annual Meeting; April 28-May 1, 2019; Baltimore, Maryland.

Neurodevelopmental trajectory in infants born in Uganda in a randomized trial of intermittent preventive therapy of malaria during pregnancy (IPTp). Andra T, Oltman S, Kajubi R, Kakuru A, Dorsey G, Ryckman K, Jelliffe-Pawłowski L, Ruel T, Rogers E. *Oral.*

Observation of neurodevelopmental recovery in infants after preterm birth in a Ugandan birth cohort. Andra T, Oltman S, Kajubi R, Kakuru A, Dorsey G, Ryckman K, Jelliffe-Pawłowski L, Ruel T, Rogers E. *Poster.*

29th International Pediatric Association Congress; March 17-21 2019; Panama City, Panama.

Effect of postnatal gestational age assessment training of health care providers on newborn care practices in Migori County, Kenya. Ojee E, Musoke R, Murila F, Otieno P. *Poster.*

Other Select Presentations

May 2018 – May 2019

Addressing maternal, child and neonatal morbidity and mortality in line with the SDGs. Priority actions for low and middle-income countries. Walker D. Joint Annual Scientific Health Conference (JASH). Kampala, Uganda. September 2018. *Plenary session keynote speech.*

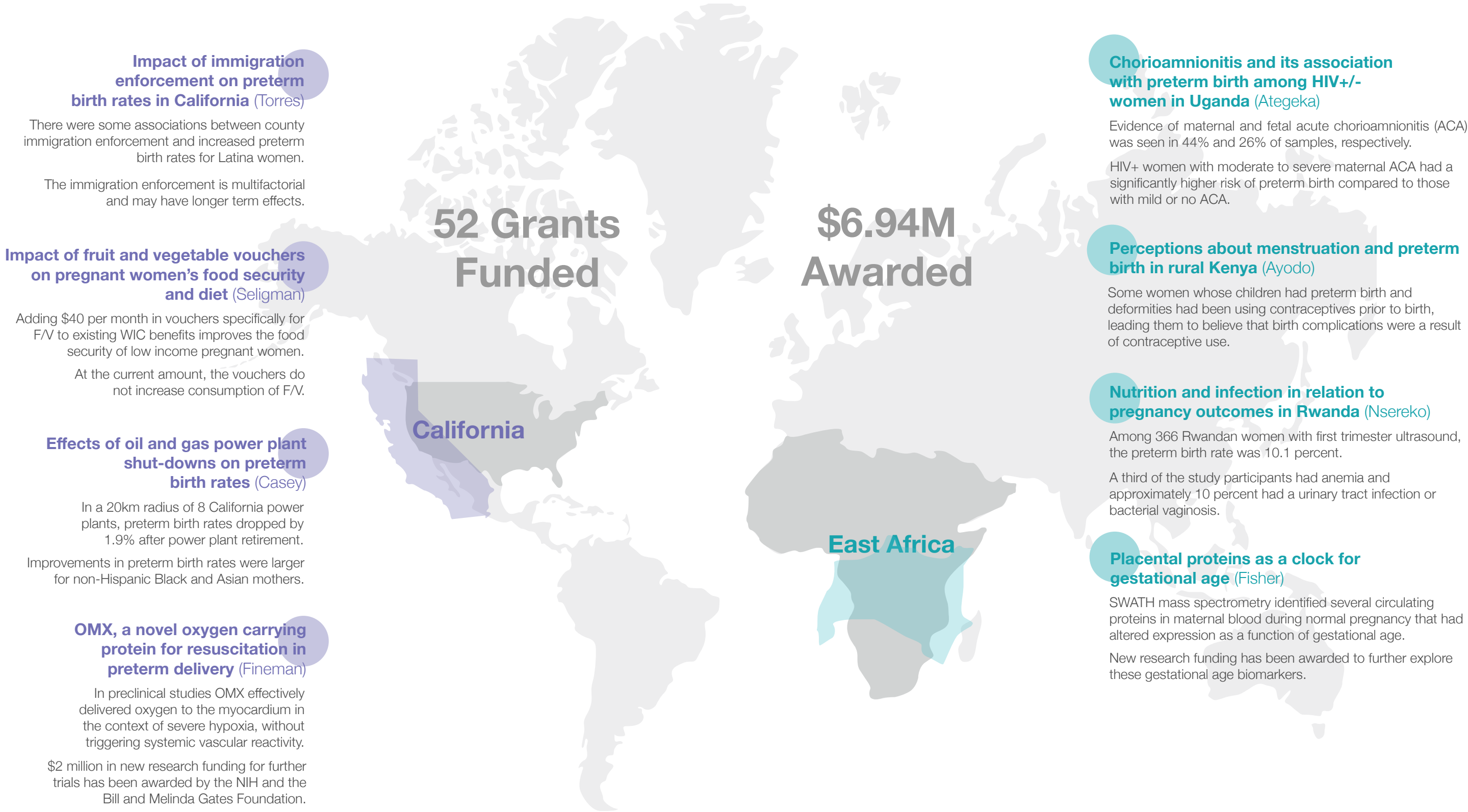
Why I work in East Africa. Butrick E. Joint Bixby and Maternal and Newborn Health Research Cooperative Symposium. San Francisco, California. December 2018. *Oral.*

Reducing the burden of prematurity in East Africa. Walker D. Partnerships for Discovery and Training the Next Generation of Global Health Leaders UCSF and Kenyan Collaborators Meeting. Kisumu, Kenya. February 2019. *Oral.*

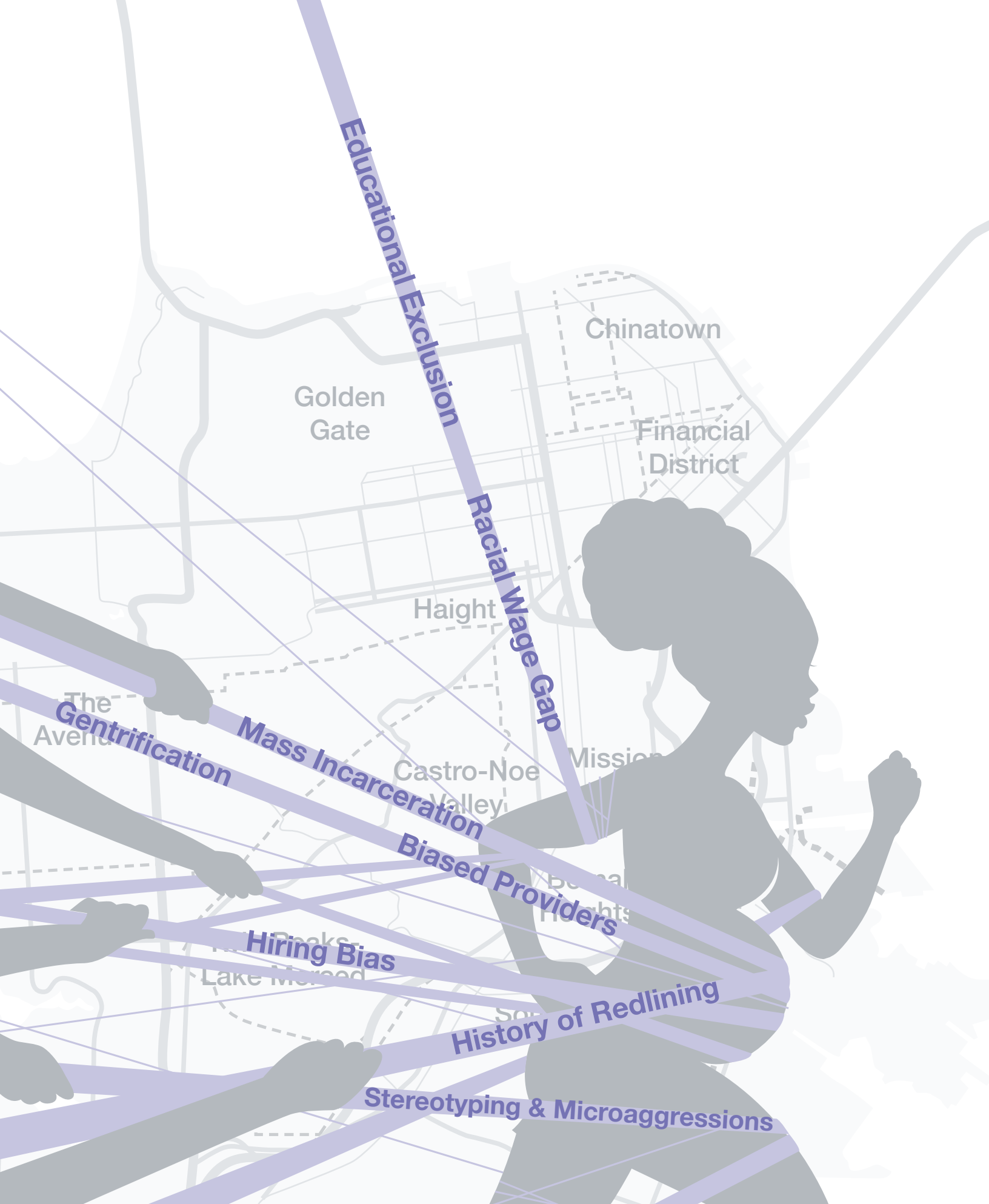


PTBi - A Preterm Birth Research Incubator to Accelerate Discovery and Intervention

Highlights from Select Completed Studies







California

A Racial Equity Lens Spurs Progress and Innovation in Preterm Birth Research

Since we began our work in California, one fact has loomed large: Inequities in care and disparities in outcomes persist for women of color, even when they've escaped many other known stressors, such as income inequality, living in unsafe neighborhoods and lack of higher-level education. Research shows that the relentless impact of institutional, interpersonal and internalized racism results in chronic toxic stress that puts childbearing women and their babies at risk for preterm birth and other serious adverse health outcomes. This explains why the concept of health and racial equity drives everything we do.

To make that concept more than words and good intentions, we've designed the California PTBi (PTBi-CA) as a sustained, multipronged research effort that's grounded in community-academic partnership and committed to a "place-based" approach that incorporates an understanding of how racism plays out in local communities. Our tight focus on place and the specifics of affected communities facilitates authentic partnership and helps us better understand how local social determinants of health affect women's biology. A place-based approach also drives policy change because it allows us to catalyze alignments among non-health sectors that can impact the social determinants.

We have been especially focused on ensuring that women of color from these communities – those most affected by preterm birth – have a full voice in shaping

our work in California. These women have become our essential partners. They are fellow researchers and advisors, doulas and community advocates – and it is their voices that inform everything we do. They are why we've expanded our scope to develop ambitious solutions that go beyond the health system to directly counteract structural racism's impact on childbearing women of color. They are why we work to identify and confront racism's insidious effect whenever we tailor, develop and implement broad-based interventions across the lifespan.



We believe the past year has validated our approach. Early results have shown a decline of preterm birth rates in Fresno. Our use of human-centered design has generated excitement and engagement in San Francisco and Oakland that should accelerate and amplify our impact in those cities. Consider below some highlights of the past year's results, which we will present in more detail in the body of this report.



Many Avenues, One Destination

As part of our Discovery research effort, we launched the SOLARS study (Supporting out Ladies And Reducing Stress to Prevent Preterm Birth), the largest prospective cohort study in the nation focused on understanding risk and resilience factors affecting birth outcomes in women of color (See page 59). By exploring the relationships among psychosocial stress, molecular stress signaling and other molecular signaling that affects immune, metabolic and epigenetic function, the study allows us to understand how chronic stress gets under the skin and changes women's biology.

In our policy work, we're seeing successes emerge from our Collective Impact framework, which aligns multiple non-health sectors around the issue of prematurity. For example, San Francisco's Collective Impact effort, Expecting Justice, consists of city agencies, community-based organizations, health care providers, researchers and community members. In the past year, Expecting Justice spearheaded a campaign that led to San Francisco passing an ordinance that entitles all Black and Pacific Islander women – the communities most deeply affected by the prematurity epidemic in the city – to receive care from a culturally and racially concordant doula (See page 72). In 2019, Expecting Justice hopes to enhance the doulas' impact with two other components: a pregnancy income supplement program to address the upstream impacts of structural racism by reducing poverty and associated stress, and racial equity trainings with social service providers and clinicians to reduce the number of policies, practices and interactions tainted by conscious and unconscious racism.



In our Intervention Research programs, we continued pursuing innovations across the lifespan that considered the needs of families affected by racism and associated social determinants of health. For example, our landmark postnatal project – mobile-enhanced Family Integrated Care (mFICare) – made excellent progress on mitigating the impact of preterm birth on babies born too soon and their families. The project is based on a Canadian trial that actively trained and involved parents in caring for their low birth weight infants in the neonatal intensive care unit (NICU). The study demonstrated improved infant weight gain, decreased parent stress and anxiety, and increased high-frequency exclusive breast milk feeding at discharge. Our trial enhances some of the Canadian interventions – including offering new parents a one-to-one mentorship with a previous NICU parent – and leverages mobile technology to involve parents who are unable to be in the NICU with their baby during daytime hours. This year, three additional NICUs joined the study.

A Better Birth Experience for All

Simultaneously addressing a major health epidemic like preterm birth and a massive societal wound like structural and interpersonal racism is an ambitious task, but significant change in the former is possible only if we focus our healing efforts on the latter.

The PTBi-CA team is proud to have been a leader in changing the way people think and talk about disparities in preterm birth, moving the discussion from one of race, which merely describes the disparities, to one of racism, which is a root cause of the epidemic of preterm birth in California. Our work has helped change the local and national narrative around birth equity. The March of Dimes has shifted its focus to birth equity, and the California Department

of Public Health has launched the Perinatal Equity Initiative, investing \$8-10 million annually to help California jurisdictions develop policies and interventions focused on improving perinatal equity; it resulted from PTBi's partnership with the California Department of Health and other disparities-focused research groups across California.

We believe strongly that by reframing the problem of preterm birth as one that is rooted in racism, we can dramatically reduce both disparities in preterm birth rates and poor outcomes for infants born too soon. The result will be a better birth experience and healthier pregnancies and newborns for all.



Aim 1: Discovery Research in California

Place-based precision health guides our Discovery research into the prevention of preterm birth. This concept asserts that achieving optimal health at both a community and an individual level requires intense partnering with women, families, community organizations and other professionals to understand cell-to-society patterns of disease and disease states.

Figure 1. Areas of Aim 1: Cell-to-Society Investigation of Preterm Birth



Within this frame, we are particularly interested in understanding and addressing patterns and drivers of preterm birth among Black and Hispanic/Latina women and infants in San Francisco, Oakland and Fresno. In these three geographies, women and infants in these groups experience higher rates and greater burdens of preterm birth. Consequently, our work focuses on understanding rates, onset, and outcomes of preterm birth among women and infants in these groups, as well as risk and resiliency factors. Four specific goals guide our Aim 1 work:

- 1. Establish and maintain a place-based research collaborative
- 2. Create and cultivate a data and specimen resource
- 3. Evaluate phenotypes of preterm birth and related outcomes and the role of stress in place-based patterns
- 4. Translate findings into place-based interventions

The Transdisciplinary Collaborative

Our transdisciplinary discovery collaborative spans ten departments at UCSF and includes partners from UC Berkeley, UC San Diego, Stanford University, Fresno State University, the University of Iowa, and Cincinnati Children’s Hospital. Since April 2018, the collaborative – which plays a key role in all of our Discovery research efforts in that it allows for the contribution of expertise from multiple perspectives – has produced 22 published manuscripts, and as of the end of February 2019, 11 additional manuscripts are in review or in revision. (See page 86).

Phenotypes of Preterm Birth and Related Outcomes

Our work examining patterns of preterm birth in urban, suburban and rural areas of Fresno (Baer et al., *J Epidemiol Res.*, 2018) was powerful for PTBi-CA, allowing our initiative to launch an interactive mapping website that allows parents, community members, public health professionals, clinicians and researchers to interactively explore patterns of preterm birth in Fresno County (<https://delphidata.ucsd.edu/ptbi/ui/home/>). For example, using this tool, users can examine patterns of preterm birth within county neighborhoods along with levels of air pollution in those same communities (See Figure 2). Given the established links between preterm birth and air pollution by our group and others, this mapping information could lead to interventions aimed at decreasing exposure to air toxins and particulate matter.

In addition, PTBi-CA research has helped elucidate patterns of and risks for preterm birth among Black and Hispanic/Latina women in California and in our communities of focus, and our work examining the role of structural racism, community-level income and racial segregation in patterns of preterm birth has

been especially impactful (Chambers et al., *J Urban Health.*, 2018). This work demonstrated that the rates of preterm birth and infant mortality were highest in neighborhoods with the highest percentage of Black compared to White households (a metric referred to as the Index of Concentration at the Extremes [ICE]) (see potential ICE figure at end labeled Figure 3).

Our work on molecular drivers was also key. In 2018 and early 2019 we used data from the SMART Diaphragm (SMART-D) and the California 1000 (CA1000) studies to better understand how molecular patterns behave in combination with clinical and other factors to contribute to parturition and preterm birth. For example, we published results from the CA1000 showing that poverty status and maternal age along with immune and growth factors could be used to predict a woman’s level of risk for preterm birth at 15-20 weeks of gestation (Jelliffe-Pawlowski et al., *J Perinatology.*, 2018). Preliminary results presented in 2018 and early 2019, which we expect to publish in the year ahead, include (1) results from the SMART-D study showing that there are parturition-specific patterns of bile acid and steroid biosynthesis and (2) results from the CA1000 study demonstrating that women who go on to deliver preterm have a different patterning of telomeres, pathogens, lipids and proteins in mid-pregnancy than do women delivering at term.

Figure 2. Patterns of Preterm Birth and Air Pollution in Fresno County as Visualized Through the PTBi-CA Online Data Portal

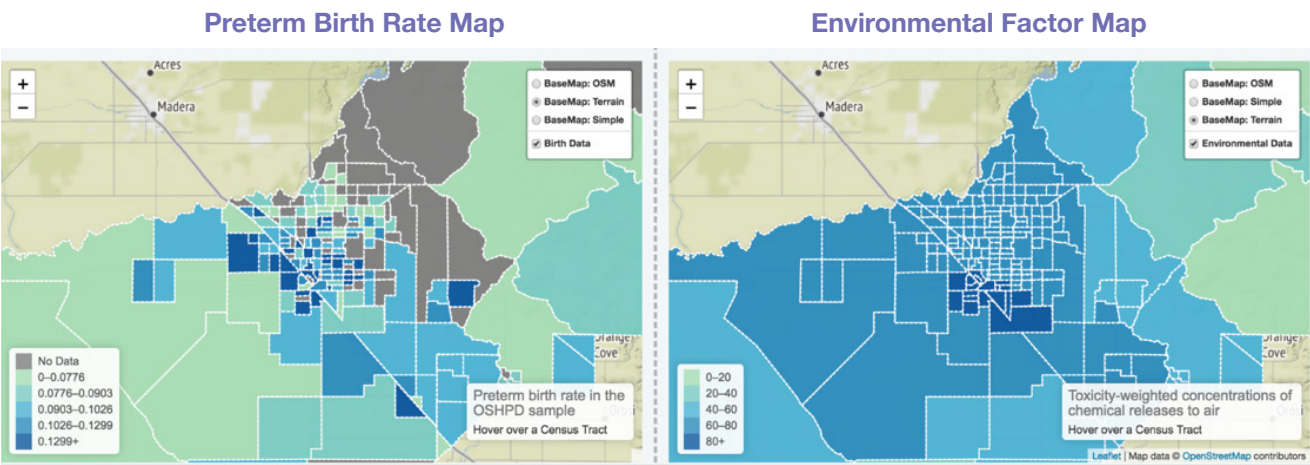
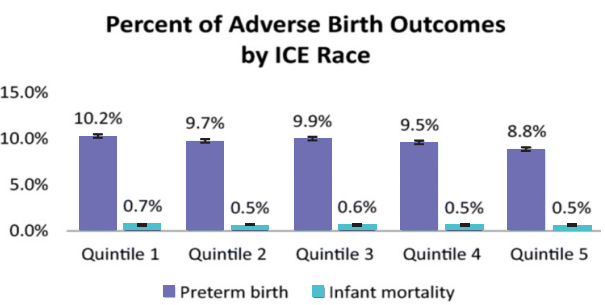


Figure 3. Rates of Preterm Birth and Infant Mortality by Neighborhood Level Segregation*



*Using Index of Concentration at the Extremes (ICE), where quintile 1 = highest percentage of Black compared to White households.

The Role of Stress

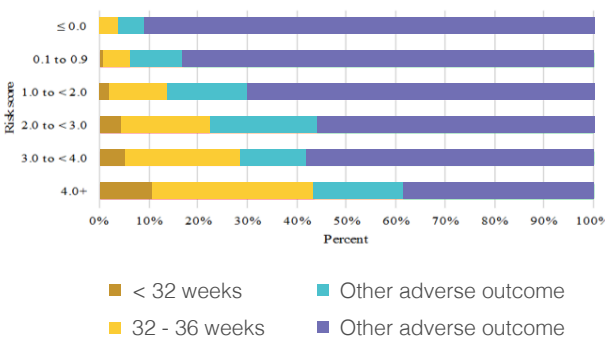
In early 2019, we launched our Supporting Our Ladies And Reducing Stress to Prevent Preterm Birth (SOLARS) study in Oakland. Led by principal investigators Laura Jelliffe-Pawlowski, Brittany Chambers and Anu Gómez, SOLARS is one of the first large-scale studies to examine the impact of stress, anxiety and racism – as well as resilience and coping – on gestational duration and preterm birth in women of color (See page 59).

Translating Findings Into Placed-Based Interventions

In November 2018, we published a first-trimester risk-scoring framework that characterizes a woman’s cumulative risk for preterm birth based on demographic and clinical factors (Baer et al., *Eur J Obstet Gynecol Reprod Biology.*, 2018). Using this framework, we are able to identify women at different levels of risk for preterm birth (See Figure 4). In turn, Aim 1 and Aim 2b investigators and partners have been collaborating on a web application that (1) clinicians can use to help women better understand preterm birth and (2) women and their providers can use to better understand patient-specific risk (this is the PREPARE application; see Aim 2, page 63, for details). We expect that this tool will eventually include routine prenatal molecular screening markers (e.g., alpha-fetoprotein) and possibly novel molecular factors (e.g., those identified as predictive for preterm birth in our serum prediction test [Jelliffe-Pawlowski et al., *J Perinatology.*, 2018]).

Finally, work continued on understanding the role of newborn metabolic profiles in the outcomes for babies with preterm birth. Our group published first-ever reports on newborn metabolic profiles and patterns of survival, jaundice and persistent pulmonary hypertension in newborns with preterm compared to term birth (Oltman et al., *J Pediatrics.*, 2018; McCarthy et al., *Clin Transl Sci.*, 2019; Steurer et al., *Ped Res.*, 2018). What has emerged is a pattern of newborn metabolic vulnerability that appears to place babies with preterm birth at differing levels of risk for death and complications of prematurity. We have submitted an article to *JAMA Pediatrics* that presents our work establishing a newborn metabolic vulnerability profile that can be used to characterize risk for death and multiple complications among babies with preterm birth.

Figure 4. Preterm Birth or Other Adverse Pregnancy Outcomes (e.g., Neonatal Death, Birth Defect) by First Trimester Risk Score Based on Maternal Demographics and Clinical Risks



The Year Ahead

Over the next year, we expect to work on the following goals:

- Continue enrolling SOLARS participants (see page 59) and begin critical investigations of SOLARS-related data and biospecimens.
- Report on molecular findings from the SMART-D and CA1000 studies and leverage those results for SOLARS investigations.
- Examine epidemiologic patterns of preterm birth and outcomes of prematurity using 2012-2017 state data. Securing this data will allow the collaborative to expand on and contextualize many of the big data findings that we reported on in FY1-3.
- Translate what we’ve learned about risk and protection for preterm birth and outcomes of prematurity into new tools for use in pre- and postnatal settings. In particular, we will update the PREPARE tool as new risk and protective factors emerge, and we will begin to determine whether we can leverage the newly established PTBi Newborn Family Research Collaborative (NFRC) to evaluate the use of newborn metabolic vulnerability profiling to identify newborns with preterm birth who are at higher risk for death or complications of prematurity. This could result in better-informed counseling of parents and identification of pathways for intervention (e.g., related to feeding and medication use).





Connecting the Dots Between Stress and Molecular Function in Preterm Birth

In 2018, as PTBi-CA geared up to launch our Supporting Our Ladies And Reducing Stress to Prevent Preterm Birth (SOLARS) study in Oakland, new co-principal investigator (PI) Brittany Chambers joined current PIs Laura Jelliffe-Pawlowski and Anu Gómez on the study. Chambers – a former PTBi fellow and now an assistant professor in the UCSF Department of Epidemiology & Biostatistics – has brought new energy and perspective to the study.

“SOLARS is unique because we are partnering with Black and Latina women to understand how chronic stressors like exposures to racism, perceived stress, intimate partner violence and pregnancy-related anxiety get under the skin to impact gestational duration and preterm birth,” says Chambers. “By improving our understanding of these interrelationships – and in partnership with communities most impacted – we hope to design more effective interventions aimed at

reducing chronic stress and increasing gestational duration.”

Designed by women of color and women who have delivered preterm, SOLARS is one of the first large-scale studies to examine the impact of stress, anxiety and racism – as well as resilience and coping – on gestational duration and preterm birth. It includes psychosocial measures of stress during and after pregnancy, as well as collection of biospecimens that will allow the research team to examine how psychosocial stress, molecular stress signaling and other molecular signaling around immune, metabolic and epigenetic function are related. The goal is to unlock new pathways, discoveries and findings that can lead to effective interventions to increase gestational duration and decrease risk for preterm birth in communities of color. The study expects to recruit 500 women over the next two years.





Aim 2a: Interventions Across the Reproductive Life Course — Women’s Health Equity

“Preconception” Care Becomes “Women’s Health Equity”

Aim 2 focuses on interventions across the life course, including adolescent sexual, reproductive, and more general health; women’s health before, during and after pregnancy; and health for babies and families in the neonatal period.

Aim 2a focuses on what has traditionally been referred to as “preconception” health. One of our major accomplishments this year was to convene reproductive justice scholars and activists, public health leaders, practitioners and patient-centered researchers to redefine and rename the preconception period. At the conclusion of the convening, we tentatively settled on the term “women’s health equity.”

Increasing Access to Contraception

During the past year we also focused on increasing access to perinatal contraception, both by exploring barriers to postdelivery contraception options and by adapting a patient-centered contraceptive choice tool for use in the peripartum period (See page 61). The tool uses a reproductive justice frame to support the autonomy of women and families in decision making and to help them make decisions that reflect their preferences and values.

A Comprehensive Assessment to Begin Developing Policy Interventions

In collaboration with our colleagues at the Central Valley Health Policy Institute at California State University, Fresno, we developed a comprehensive assessment of public policies and dominant private sector practices that potentially influence birth outcomes. This effort included faculty from UCSF and California State University, Fresno; public health departments in San Francisco, Fresno and Oakland; and other thought leaders. We employed broad outreach to and communication with both the PTBi-CA community and people with lived experience to develop a framework that guides our thinking on policy interventions at the federal, state and local levels.

The Year Ahead

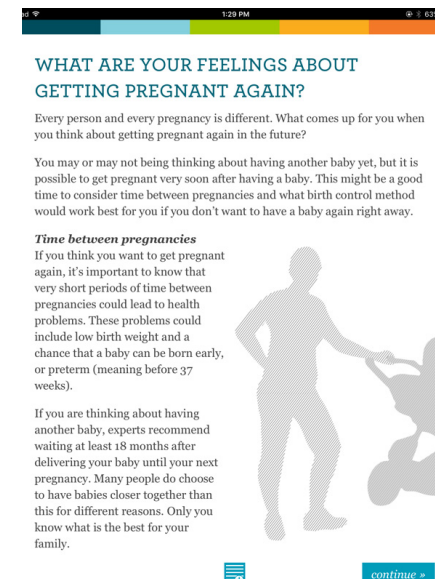
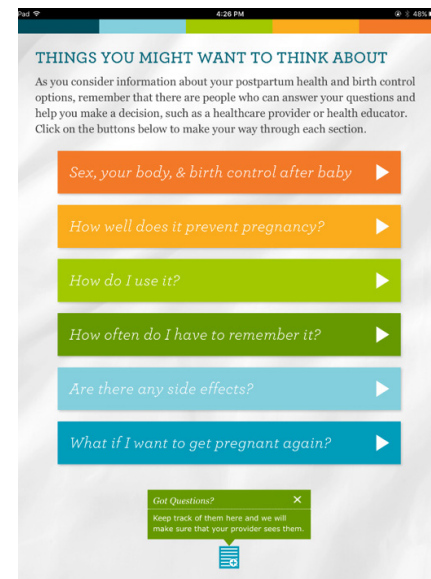
Over the next year, we expect to work on the following goals:

- Begin creating a platform for adolescents that will engage them with the health care system and equip them with knowledge and resources to support their sexual, reproductive and other health care needs.
- Synthesize findings from the Aim 2a convening and circulate them broadly.
- Initiate a policy research portfolio to advance important policy changes that support women’s health equity.

A Contraceptive Decision Support Tool

We have developed a prototype for a contraceptive decision support tool for women to use during and immediately after pregnancy. This tool is an adaptation of My Birth Control, an intervention that has been found to improve decision quality and patient experience in family planning care (Dehlendorf et al., 2019). By including information about sex and birth control after pregnancy and during interpregnancy intervals, this tool will provide women with the information they need to make informed decisions about birth control after pregnancy.

Screenshots from the prototype



Aim 2b: Interventions Across the Reproductive Life Course — Prenatal Care

Glow!

During the past year, we have dedicated substantial resources and effort toward finishing a feasibility study for a new model of care, which our Fresno partners named “Glow!” Introduced in last year’s report, Glow! provides group prenatal care at one central site and offers wraparound services to address the social determinants of preterm birth.



One of this year’s major accomplishments was our development and submission of a large proposal to the Patient-Centered Outcomes Research Institute (PCORI) for a comparative effectiveness study of Glow! We will compare Glow! with traditional one-on-one care and support services offered to pregnant Medi-Cal recipients through the California Department of Public Health’s Comprehensive Perinatal Services Program (CPSP). On April 16, 2019, we were thrilled to receive the news that PCORI awarded \$5.6 million in funding for the project!

New Decision Support Tool

In collaboration with Brownsyne Tucker Edmonds and her team at Indiana University, we completed work on a decision tool, Perivable GOALS (Getting Optimal Alignment around Life Support). This tool helps pregnant women and their partners who are facing threatened perivable delivery to share in informed decision making with their providers about

resuscitation or comfort care. Providers and patients have expressed a lot of enthusiasm for the tool, which we will begin pilot testing with patients in 2019.



Person-Centered Maternity Care

We are currently working on an adaptation of a person-centered maternity care (PCMC) scale for the United States. This scale, which was developed by UCSF Assistant Professor Patience Afulani while she was a PTBi Transdisciplinary Postdoctoral Fellow, focused on the experience of childbirth in hospital facilities in Kenya and other low-resource settings. In collaboration with University of Washington Assistant Professor Molly Altman, another former PTBi Fellow, we are expanding the measure to include prenatal care and to make it relevant for women in the United States.

Evaluating San Francisco’s Pioneering Doula Program

During the past year, the San Francisco Board of Supervisors instituted a policy that made all Black and Pacific Islander pregnant women in San Francisco eligible to receive care from a pregnancy/labor/postpartum doula (See page 72). In partnership with colleagues at UC Berkeley and members of SisterWeb – an organization that is creating a network of peer doulas from within San Francisco’s underserved communities – we are developing a plan to evaluate this program.



The Year Ahead

Over the next year, we expect to work on the following goals:

- Begin our quasi-randomized study of the effect of Glow! on preterm birth rates, maternal mental health and receipt of respectful care among 2,600 Medi-Cal-eligible English- or Spanish-speaking women in Fresno. This will be a four-year study, with the first year dedicated to finalizing agreements with 60 percent of the recruitment sites, establishing study practices and enrolling 650 participants.
- Complete the pilot tests of our perivability decision support tool and the PCMC measurement tool in San Francisco and Indianapolis.
- Begin our evaluation of the San Francisco Doula Program.
- Complete and begin evaluating a preterm birth educational and risk assessment tool, which we are now in the process of creating (see callout box).

The PREPARE Study

A major highlight from the past year was initiation of the PREPARE (Promoting Resilience and Empowerment through Prematurity Awareness and Risk Education) study, a joint Aim 1/Aim 2b project. As part of the study, the Aim 2b team is conducting focus groups with pregnant and newly postpartum women. The goal is two-fold: (a) to learn what these women understand about preterm birth and (b) to determine whether they are interested in receiving tailored risk information about the chances that they will deliver preterm. We are also asking women who are interested in

receiving this information how they would like to receive it and, more generally, what they think should be included on an educational and risk assessment tool. In parallel, the Aim 2b team is conducting one-on-one qualitative interviews with prenatal care providers, to elicit their thoughts on this tool. After completing this formative work, we will develop a tool that incorporates a risk algorithm that the Aim 1 team developed. The tool will offer pregnant women the opportunity to learn about preterm birth and receive tailored information.

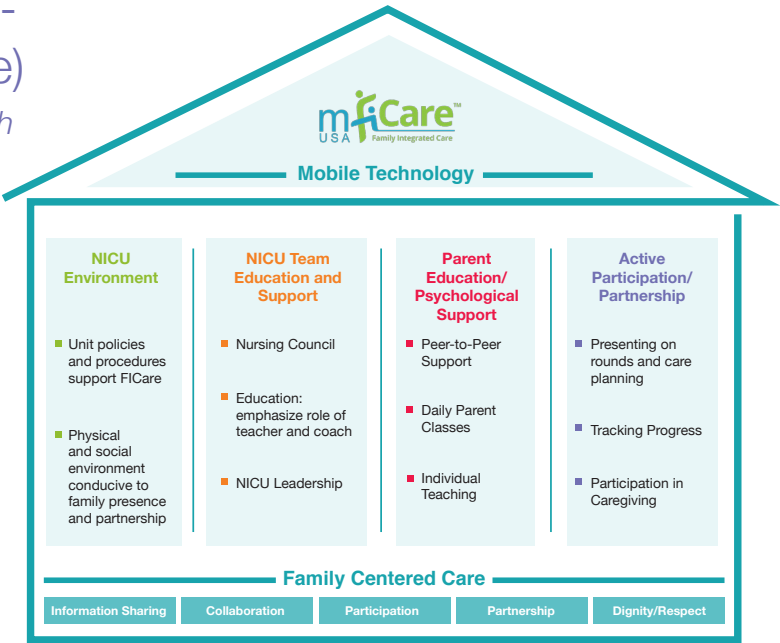
Aim 2c: Interventions Across the Reproductive Life Course – Postnatal Care

PTBi-CA’s goal is to improve health outcomes and quality of life for preterm infants and their families by developing and refining interventions to reduce chronic stress and promote resilience and equity. This year we made significant progress in transforming the culture of hospital care – and the culture of research – for preterm infants and their families.

Mobile-Enhanced Family-Integrated Care (mFICare)

Building Resilience After Preterm Birth

Family Integrated Care (FiCare™) is a model of care that transforms the culture of the NICU by training and supporting parents to be their baby’s primary caregiver and partners in the care team. PTBi-CA is leading the first U.S. evaluation of a mobile-enhanced version of this intervention, mFICare, at six NICUs throughout California. The We3health™ app, developed with NICU parents, allows parents to track their baby’s progress, as well as their own; watch helpful videos; and journal about their experience. It also acts as a study data collection tool.



The mFICare study compares infant outcomes and parent experiences between two study phases: (1) during standard of care (family-centered care) and (2) after mFICare implementation. UCSF Benioff Children’s Hospital, San Francisco (BCH-SF) is the first to complete phase 1 of the study and launch mFICare in the NICU. In spring of 2019, we will launch mFICare at BCH-Oakland and Community Regional Medical Center (CRMC) in Fresno. Our three other sites (UCLA, UCSD and Kaiser Permanente, Santa Clara) will complete their baseline study phase and implement mFICare in the fall of 2019.

We are now conducting preliminary analysis of data from phase 1, examining where disparities in care and structural inequities may exist that could impact parental involvement in the NICU, kangaroo care, parent well-being, experiences with family-centered care and more.

Based on the early success of our We3health™ app, UCSF and Will’s Way Foundation have entered into a licensing agreement with Dapasoft, a Canada-based health technology company. The plan is to build and launch the next generation of the app so it can support parents and enhance family integration in NICUs worldwide.

mFICare in Action: The BCH-SF NICU Experience

The following highlights describe how mFICare is being used at BCH-SF:

All parents can now attend parent classes four or five times a week. A transdisciplinary team of BCH-SF experts facilitates the classes, which cover relevant topics and encourage parents to connect with each other to create a sense of community and peer support.

“In the classes we had a bond. It lifted a burden off my shoulders. It was a big comfort because I wasn’t alone.”

Specially trained parent mentors – six parents who have experienced the NICU – provide individual support and encouragement to new NICU parents. To meet demand, we have recently recruited and trained a second cohort of 13 parent mentors who will begin supporting study parents this spring.

“I’ve been there, I’m there – no one who hasn’t been there actually ‘gets it.’”

Parents enrolled in the mFICare study are actively participating in patient rounds, and those who can’t be at the bedside are able to participate remotely. Efforts are now under way to integrate parents in rounds for all NICU patients.

“I live very far away, so rounds has been able to make me feel closer to her and feel more involved with her.”

The mFICare Nursing Council, made up of 16 BCH-SF mFICare nursing champions, is actively working with NICU colleagues to make mFICare work for families and for staff.

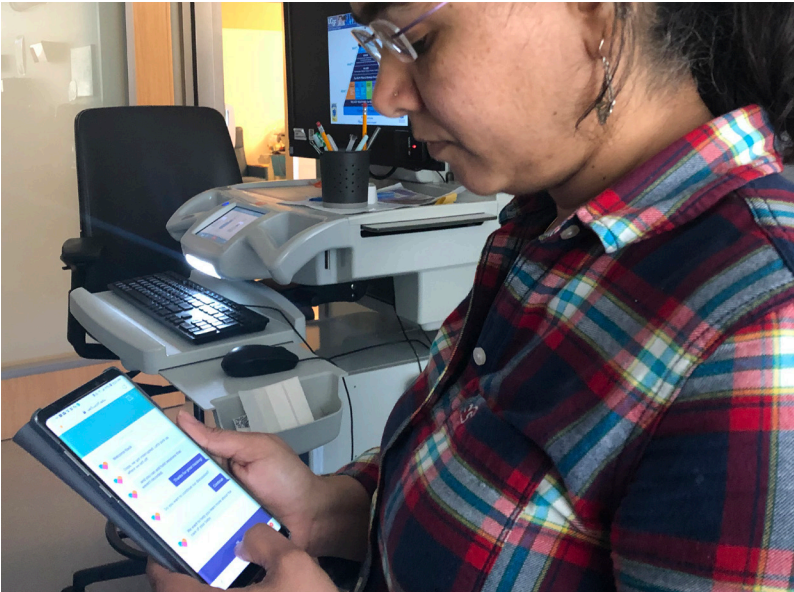
mFICare by the Numbers

Baseline Recruitment	
BCH-O	32
BCH-SF	55
CRMC	57
KP-SC	9
UCLA	19
UCSD	7
Subtotal	179
mFICare Intervention	
BCH-SF	14
Total (Febuary 2019)	193

Abbreviations: BCH-O, Benioff Children’s Hospital, Oakland; BCH-SF, Benioff Children’s Hospital, San Francisco; CRMC, Community Regional Medical Center; KP-SC, Kaiser Permanente, Santa Clara; UCLA, University of California, Los Angeles; UCSD, University of California, San Diego.

Building Capacity for Health Equity-Focused Postnatal Research

The Newborn Family Research Collaborative (NFRC) represents a first-of-its-kind partnership between three NICUs: UCSF Benioff Children’s Hospitals in San Francisco and Oakland and CRMC in Fresno. In the last year, the collaborative has continued to grow its powerful platform to support a new model of family-partnered research. The NFRC is composed of three essential elements: (1) a dedicated research staff, (2) a Parent Clinician Advisory Board (PCAB) at each NICU and (3) a common data platform across the NICUs.



NFRC Supports New Studies

Because the core research staff of the NFRC allows us to support a number of other projects, led by other researchers – and because of our invaluable collaboration with the PCABs – our portfolio of research studies continues to grow. Among the latest studies are these, with the researchers in parentheses following:

- Pilot study of exoskeleton-assisted rehabilitation in children with cerebral palsy (Gano)
- Qualitative investigation of parents’ experiences in mFICare (Bisgaard)
- Biomarkers of ventriculomegaly in preterm infants with intraventricular hemorrhage (Gano and Peterson)
- Clinical accuracy of a new method to wirelessly monitor skin temperature in preterm neonates using adhesive-imbedded sensors (Coleman and Franck)
- Parent employment and nonmedical expenses while in the NICU (Karasek and Goodman)
- Kangaroo care effects on infant stress biomarkers and energy expenditure (Forde)

Infant Medical Record Database

The promise of big data is that by harnessing and analyzing NICU patient health information, researchers will be able to improve outcomes for babies and families while maintaining their privacy. We have created the Infant Medical Record Database (IMRD) to collect premature infant data across our network so researchers with important questions can appropriately use this information for analysis. The data we have collected to date is already helping us look at relationships between parent experiences and infant outcomes, including how factors like distance, race, age and having other children might play into those relationships. As this data leads to insight, we will be better able to support each parent in the NICU.

The Year Ahead

Over the next year, we expect to work on the following goals:

- Complete mFICare baseline data collection, fully launch mFICare at all six study sites, complete the mFICare study at BCH-SF and begin analyzing data.
- Work closely with the Aim 1 team to leverage the NFRC to evaluate the use of a newborn metabolic vulnerability profile.
- Continue to expand the research portfolio within and beyond the NFRC NICUs with emphasis on priorities identified by each PCAB.
- Launch retrospective and prospective studies on all preterm babies in the NICU at all three NFRC sites using the IMRD.
- Partner with families, healthcare professionals and family-led advocacy organizations to share findings from the research and build demand for the transformation of NICU care nationally.

We thank our app technology partners for their support:





Aim 3: Collective Impact

Achieving a vision of birth equity at the population level requires a commitment to combatting interpersonal and structural racism as root causes of health disparities. California PTBi-supported Discovery research has shown that housing and food insecurity and exposure to interpersonal violence are important social determinants of prematurity and more commonly experienced by mothers of color. The health care sector cannot tackle these issues alone. The third aim of PTBi's work in California is testing the hypothesis that cross-sector partnerships and system-level changes can turn the curve on preterm birth and address persistent disparities. Over the past year, Fresno and San Francisco Collective Impact efforts have marked several achievements.

Fresno

Since 2014, PTBi-CA has partnered with over 20 organizational stakeholders in Fresno County to create a common agenda that aims to achieve population-level reductions in preterm birth. The coalition, known as the Fresno PTBi, includes mothers with lived experience and leaders from the education, housing, public health, health care, social service and law enforcement sectors. California State University, Fresno, has served as the backbone organization for the coalition.

Fresno PTBi has spearheaded several interventions across the reproductive life course, and over the past year, it has (1) developed and launched two new modules as part of a state-mandated sexual health curriculum for Fresno Unified School District students that try to demystify for teens how to access health care

services, (2) created a cross-agency marketing plan to increase WIC uptake among eligible pregnant women – with a particular focus on Black and Latina mothers, (3) encouraged enrollment in the Glow! group prenatal care demonstration project and (4) trained navigators that work in centers serving housing unstable clients on available health and social services for pregnant women. The Shared Measures working group is charged with measuring progress on key population-level metrics, such as preterm birth rates. The group has prioritized the collection of more accurate birth record data, and as a quality improvement project, it has created a new video for mothers who have recently delivered. This video provides information about the importance of the birth record data collected from parents – specifically, its role in helping to decide how resources are to be invested in communities.



<http://www.ptbifresno.org/resources/>

At the center of the Fresno PTBi are the parent councils, comprised of mothers and fathers who have experienced preterm birth. These parents participate

actively on all Fresno PTBi committees and working groups – and they continue to shed light on the experience of and risk factors for preterm birth. The councils also help the parents involved grow in their role as community representatives, building the leadership skills needed to guide community transformation that will improve birth outcomes for families. Parent council members have spoken publicly about their work, ably representing Fresno PTBi and highlighting the issue of preterm birth.



- The Parent Council Advisory Committee consists of 15 African American leaders and parents (community residents) living or working in southwest Fresno. The committee has been instrumental in the creation and/or implementation of Keeping It Real (KIR) and African-American Youth Leadership Academy (AAYLA), both of which focus on promoting family resiliency and mobilizing communities to tackle the epidemic of preterm birth.

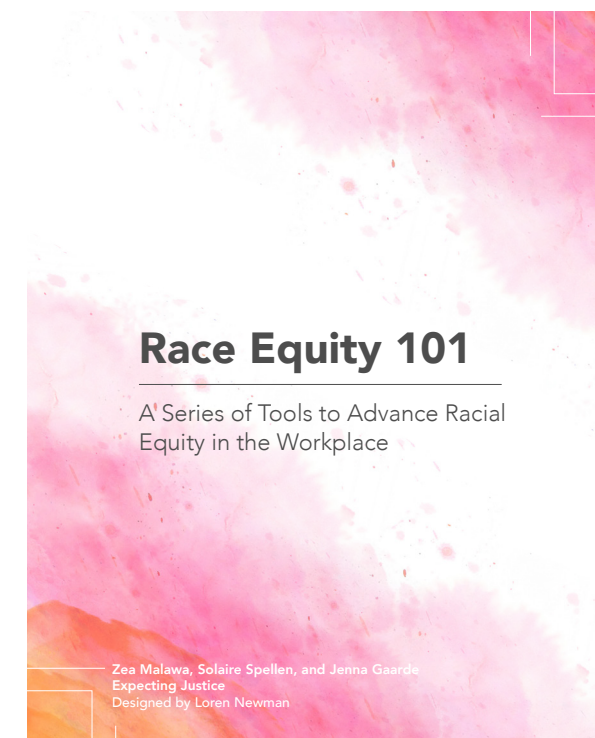
- KIR is a 12-week program for African American fathers and young men in Fresno County. It uses the national Noble Youth curriculum to promote cultural understanding, leadership development and raising children with pride.

- The AAYLA is a 16-week program that aims to provide leadership development opportunities to mothers and young women.

San Francisco

Since 2017, the PTBi-CA cosponsored Expecting Justice, a coalition of over 17 San Francisco governmental, academic, and community partners and mothers with lived experience. The San Francisco Department of Public Health, Maternal Child and Adolescent Health Section, serves as the backbone of the coalition. Expecting Justice has set out to address the enduring legacy of racism that continues to shape the city's interactions with Black and Pacific Islander women, who experience a disproportionate burden of preterm birth. It advocates for transformational approaches that value and include Black and Pacific Islander women throughout their lives in order to improve birth outcomes.

To advance the mutually agreed-upon goal of having every birth among Black and PI families be a healthy birth by 2030, Expecting Justice has advanced four initiatives: (1) a city-wide pilot program to provide culturally congruent doula support to all Black and PI mothers through prenatal, birth and postnatal periods (see page 72), (2) an exploration of strategies to address housing insecurity, including income supplements during pregnancy, (3) an effort to more closely align and coordinate siloed perinatal services across the city and (4) racial equity trainings for service providers.

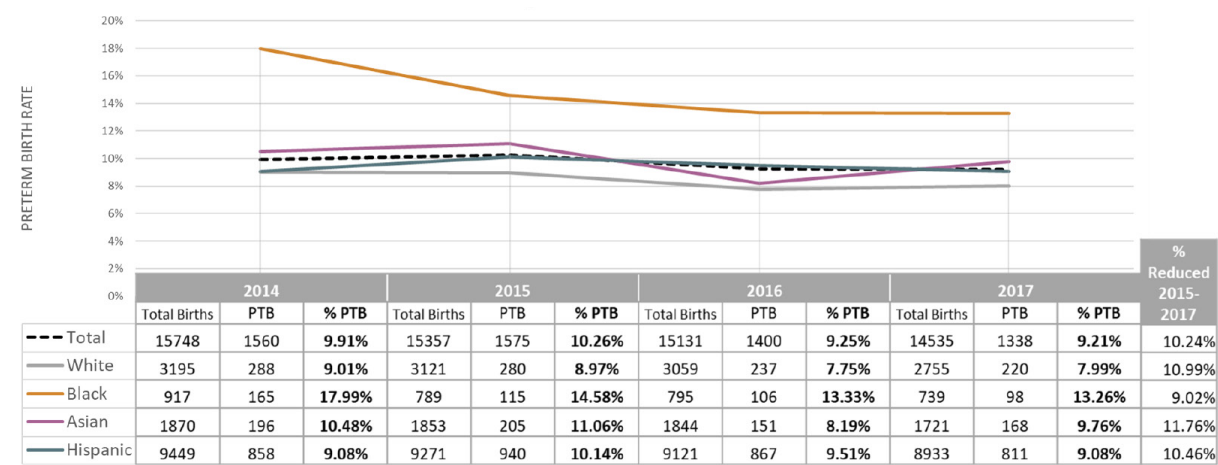


The Year Ahead

Over the next year, we expect to work on the following goals:

- Fresno PTBi will accelerate its efforts to reduce the preterm birth rate by one-third by 2025. While reductions in all racial and ethnic groups are encouraging (see Figure 5), a significant Black/White gap in the rates persists. As of this writing, the Steering Committee is considering several new initiatives, including ways to reliably measure the delivery of respectful care, recommending systems-based accountability measures to ensure that respectful care is happening and expanding access to high-quality family planning education and access in the interconception period for families who wish to extend their interpregnancy intervals. Focused interventions to drive down preterm rates in Fresno’s Black community are closely aligned with state and countywide efforts.

Figure 5. Fresno County Preterm Birth Rates by Maternal Race/Ethnicity 2014 – 2017



- Expecting Justice will continue its efforts to roll out the San Francisco Doula Program demonstration project while designing a pregnancy income supplement pilot program that would provide a monthly stipend of several hundred dollars to birthing Black and Pacific Islander people in San Francisco. Both of these efforts will be evaluated in collaboration with PTBi-CA to assess their potential for narrowing racial disparities in preterm birth.
- A new policy research core will include several PTBi-CA-affiliated investigators who are committed to generating evidence about the link between income and housing insecurity and birth outcomes. This evidence is critical to support our local and state policy change efforts.
- We are in an active planning process with key stakeholders in Oakland to explore next steps in amplifying existing racial equity and economic security work in a way that could promote better birth outcomes across the city.



San Francisco Doulas Foster Resilience in Women of Color

When President of the Board of Supervisors Malia Cohen announced the launch of San Francisco’s Doula Program in September 2018, she noted that Black and Pacific Islander women are the San Francisco communities most affected by maternal mortality and preterm birth. By creating access for these women to doula care and supporting the doulas with training and a living wage, the Doula Program validated PTBi-CA’s Collective Impact effort in San Francisco – Expecting Justice – and our focus on addressing racism head-on as a root cause of preterm birth.



The city’s program was spurred in part by our research showing that Black women from San Francisco and other areas of the state feel disrespected, stereotyped and coerced throughout their maternity care interactions. This results in low quality care because women feel alienated, don’t trust their providers or the system and are less likely to follow provider recommendations or interventions. Other research has shown doula care to be a safe, cost-effective and promising intervention that is associated not only with reduced rates of preterm birth, low birth weight

and operative deliveries, but also with fewer reports of negative feelings about birth experiences. These benefits of doula care combine to improve the overall prenatal, intrapartum and postnatal experience and outcomes for both mother and child.

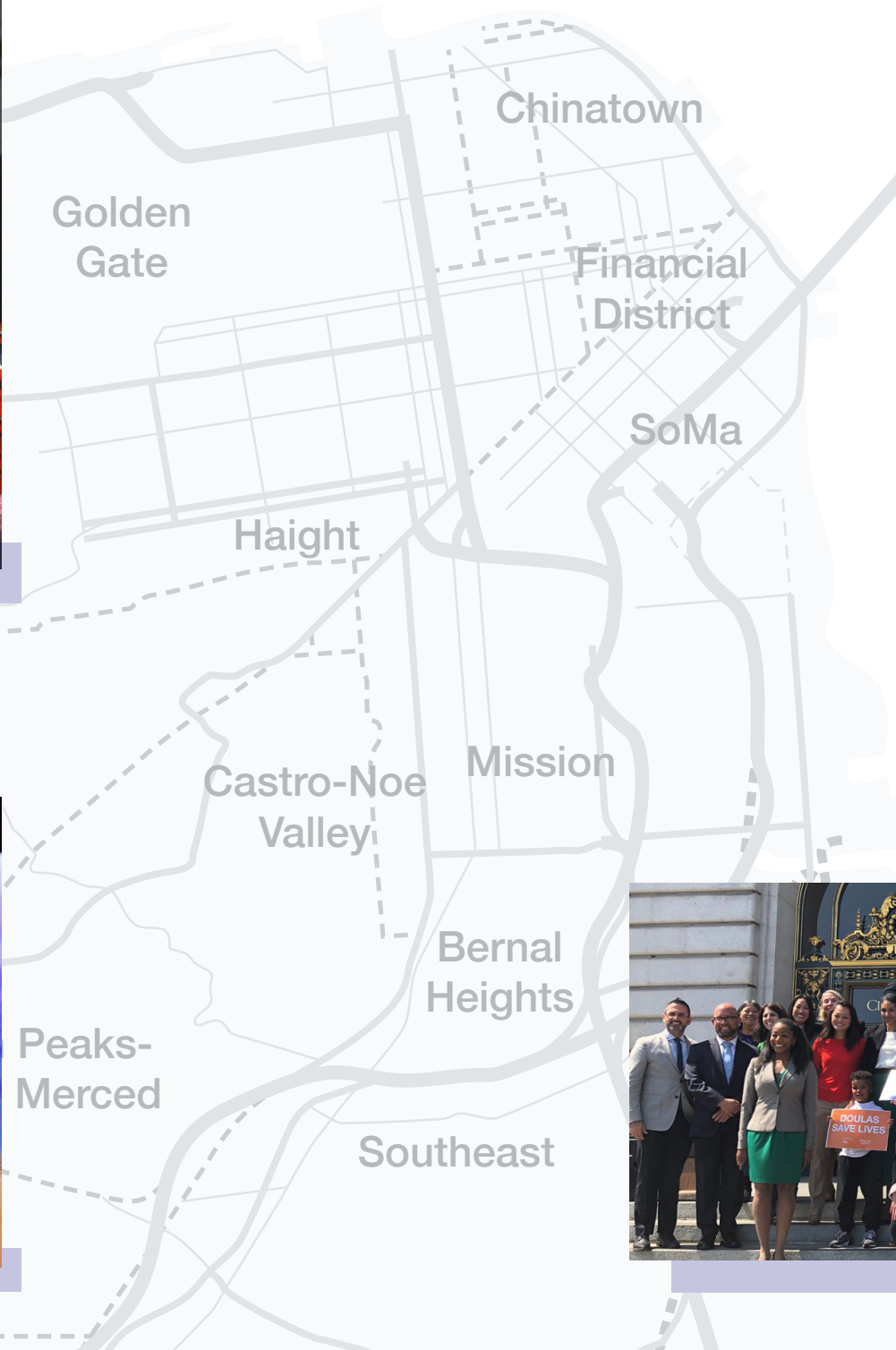


The Doula Program is a partnership between the San Francisco Department of Public Health and SisterWeb, a San Francisco-based community doula network that trains, supports and sustains doulas from marginalized communities. We expect that the doulas will serve as powerful advocates for women within the system and will work with these women to better understand and navigate the challenges of giving birth.



As Supervisor Cohen noted,

“This program is innovative because it does not just train doulas but offers ongoing mentorship, professional development, reflective practice and community-building for its collective of doulas. It is imperative that we show up and support women and their options for healthy births.”







Community-Partnered Research

In PTBi-CA, we continue to expand and deepen our commitment to doing research differently through investments in community partnership, study consultation, capacity building and community-based participatory action research.

Community Advisory Board/Parent Community Advisory Boards

This year we launched the 2018-2020 cohort of our Community Advisory Board (CAB) at a December orientation retreat held at the Eastbay Community Space in Oakland. Our team presented to the incoming board about preterm birth and the initiative's current research portfolio, while continuing board members reflected on the past two years in a "talking circle" format that provided critical feedback about accomplishments, challenges and opportunities.

Given the increased level of need for community consultation, we have expanded our board from 16 to 19 members, who continue to represent the diversity of our stakeholders in Fresno, Oakland and San Francisco. CAB meetings take place monthly, and each member also serves on one of our aim's workgroups.

In addition, each of our three NICU sites – UCSF Benioff Children's Hospitals in San Francisco and Oakland and CRMC in Fresno – now has a Parent Community Advisory Board (PCAB). In the past year,

each PCAB finalized its top 10 research priorities, and through the course of two all-site meetings, the PCABs did the following:

- Chose three topics to be included in PTBi-CA's fall request for proposals.
- Received training on how to review grant proposals.
- Created a review committee with members from each of the three sites, which then worked with the CAB to review, score and recommend proposals for funding.
- Provided input to researchers studying parents' experience with employment while in the NICU to help refine survey tools and protocols.
- Developed an original research proposal and submitted it for funding.

Each PCAB is also working on how best to communicate their values and priorities to broader audiences, including researchers and funders. The value they bring to shaping our work demonstrates why community engagement is so essential to this effort.



Benioff Community Innovators

The Benioff Community Innovators (BCI) program is a community engagement project that educates and develops community scientists with an emphasis on economic workforce development. Drawing on two years' worth of lessons from our work with the BCIs in San Francisco, this year we conceptualized a three-tiered leadership model that moves the current BCI program from research to policy action.

Over the next year, we will launch a BCI Oakland cohort, as well as the BCI SF Policy and Advocacy Fellowship. The fellowship will advance the work of the BCI program by raising public awareness of the impact that homelessness and housing insecurity have on the health and well-being of low-income, Black, Latina and Pacific Islander pregnant women and their babies. The fellows will focus on those communities as they advocate for and cogenerate public policy reform initiatives, including prioritizing women in their first and second trimester for housing opportunities.

Other aspects of the work include the following:

- Co-creation of a public policy campaign with Parent Voices Oakland (see next section) that prioritizes community-based interventions
- Community outreach and engagement
- Liaisons with cross-sector stakeholders
- Research
- Analysis of current policies and effects of proposed legislation
- Reporting findings
- Funding development



Parent Voices of Oakland

In the past year, we formalized a partnership with Parent Voices Oakland (PVO), a grassroots parent-led organization that advocates for affordable quality childcare and other family-friendly policies. PVO has an active, dues-paying membership base of over 300 parents. Its leaders are primarily African American caregivers who live in East Oakland and self-identify as low-wage workers. The organization offers families multidisciplinary political education and advocacy training that helps them engage in the political process and lead grassroots campaigns.

Our role is to help PVO parents broaden their knowledge and understanding of prematurity in their neighborhoods. As part of this partnership, participants will collect information through community engagement, storytelling, research and data analysis to develop a set of policy recommendations aimed at reducing preterm births in Oakland's African American communities. PVO will also produce a final report that will document all of its work during this process, as well as any capacity building it has done as a result of its partnership with PTBi-CA.



Community Partners Leverage Development Opportunities

We are proud that our work together has opened up avenues for professional development and education for both our CAB members and BCIs.

- Two BCIs are now research assistants at UCSF.
- Five BCIs have re-engaged in their education through City College of San Francisco and San Francisco State University.
- We hired Daphina Melbourne as our community engagement associate. She brings years of community engagement experience to our efforts, including service on our inaugural CAB.
- CAB members, BCIs and parent leaders across the initiative provided staffing support and served on the workgroup for our human-centered design “sprint” with IDEO.org to raise awareness of preterm birth across all of our geographies.
- Numerous CAB members have increased their involvement in our research studies, including as co-investigators.



What About the Men?

In November 2017, we conducted two focus groups with 12 men from Fresno who identified as African American, Asian American and Latin American. Our goal was to better understand their experiences and their priorities for research to reduce preterm birth and improve outcomes.

Frustration with the health care system – including lack of information, mistrust and poor communication – was a common theme. Their top research priorities included understanding the causes and risks of preterm birth, preterm baby health, and hospital and institutional practices. We ended by developing preliminary recommendations for health care providers working with men of color through the prenatal and postnatal process.

This work is continuing, with similar focus groups in San Francisco and Oakland, in partnership with community-based organizations. We will use the findings to inform our research priorities because we believe that understanding men’s experiences with preterm birth and respecting their contributions to improving birth outcomes can help mothers, babies and families survive and thrive.

The Year Ahead

Over the next year, we expect to work on the following goals:

- We will continue to facilitate opportunities for shared learning, translation and collaboration between our CAB/PCABs and academic partners.
- The BCI Program will launch in Oakland.
- The BCI Policy and Advocacy Fellowship will launch in San Francisco with a focus on improving housing policies to increase access for pregnant women.
- Through our partnership with Parent Voices Oakland, we will develop parent-generated policy recommendations that address preterm birth in Oakland.
- Guided by their postnatal research priorities, PCAB members will participate in all aspects of the research cycle, including developing their own research studies, providing expertise to researchers in the NICU, reviewing grant proposals and participating in dissemination of findings.



Human-Centered Design to Engage in Communities, Change Delivery Systems

Studying the problem of preterm birth through the lens of health and racial equity requires the active participation of the communities and individuals most affected by the epidemic, as well as the health care systems charged with supporting these communities. Among PTBi's founding principles are an emphasis on local context and the involvement of the end-user in intervention design. This past year, we used a human-centered design approach to develop two important new programs, the Birth Justice Warriors Campaign and the Pregnancy Village.



The Birth Justice Warriors campaign emerged from our Community Advisory Board's concern that preterm birth was normalized in our communities of focus. In fact, very few women in these communities were aware of the epidemic of preterm birth, affecting on average 1 in 10 pregnancies – and higher rates in the most deeply affected communities, as many as 1 in 6 pregnancies among Black women in Fresno, for example.



In response, we explored ways to raise awareness of preterm birth and move people to action. We conducted interviews and focus groups with more than 100 parents, grandparents, teens, providers, birth workers, community advocates, and leaders across Fresno, Oakland and San Francisco. After we developed and tested numerous messages, we came to understand that people were drawn to stories about the champions within their communities already devoted to improving maternal and child health outcomes. So we built a strength-based campaign that highlights and supports the great work of the people who are already at the forefront of this issue, the Birth Justice Warriors.

BIRTH JUSTICE WARRIORS

We unveiled our campaign in November, at a World Prematurity Day event in Oakland, with an Art Walk featuring striking, beautifully designed posters, as well as black-and-white photographs of doulas, activists and providers. We are now scaling this campaign into a full-fledged street-level and digital campaign that will direct people to an online resource for advocates, families and individuals.



Our second human-centered design program is a response to numerous testimonials that clearly describe a prenatal care system rife with discrimination and bias, leaving women of color less likely to engage with or trust in their providers or the system at large. This program aims to reimagine the prenatal care experience as one that women would trust and find comfort in. Working with publicly insured women living in San Francisco, UCSF, the San Francisco Department of Public Health and community-based organizations, we have co-created the Pregnancy Village, a care delivery model for pregnancy-related services within low-income San Francisco neighborhoods that will ensure respectful care that is responsive to women's needs.



The Pregnancy Village model envisions a welcoming and person-centered environment that provides co-located pregnancy-related services, as well as the opportunity for pregnant families to gather and build community. As we roll out the program in 2019, we will work with individuals and organizations in low-income San Francisco neighborhoods to identify the services and opportunities they find most valuable.



PTBi-CA RFP Grants Awarded

San Francisco

- San Francisco PTB Review (Jackson)
- Hyper-localized air pollution measures and PTB (Glymour and Casey)
- Telomere length and PTB and growth in Latino neonates (Wojcicki)
- Biomarkers of ventriculomegaly in preterm infants with IVH (Gano)
- Postpartum contraceptive decision support tool (Dehlendorf)
- Preventing PTB through empowering adolescents (Dehlendorf)
- Person-centered maternity care scale for women of color (Afulani and Altman)
- Perivable decision support tool (Kuppermann)
- D-APPS: Marijuana use during pregnancy (Roberts)
- Fruit and vegetable voucher during pregnancy (Seligman)
- Post-delivery provision of contraception (Thiel de Bocanegra)
- Community health workers and PTB prevention (Thomas)
- Robotics-assisted rehabilitation in children with CP (Gano)
- Milk, growth and microbiota study (Flaherman)

California-wide Projects

- Air pollution from oil and gas power plants and PTB (Casey)
- Immigration enforcement exposure and PTB (Torres)
- OMX for resuscitation in preterm delivery (Fineman)
- CMV infection in PTB and IUGR (Tabata)
- Severe maternal mortality and PTB (Lyndon)
- Biological drivers of PTB among women with insomnia (Prather)
- Drug use and pregnancy policy (Roberts)

Fresno

- Stress, resiliency and birth outcomes in Hispanic women (McLemore)
- Data visualization of PTB risk factors (Jankowska and Block)
- Pesticides and PTB (Robinson)
- Preventing PTB through empowering adolescents (Dehlendorf)
- Understanding barriers to 17P utilization (Ladella)
- Glow! Group prenatal care implementation (Lessard and Capitman)
- Post-delivery provision of contraception (Thiel de Bocanegra)

Oakland

- Stress, resiliency and birth outcomes in Black women (McLemore)
- Hyper-localized air pollution measures and PTB (Glymour and Casey)
- Preventing PTB through empowering adolescents (Dehlendorf)
- Person-centered maternity care scale for women of color (Afulani and Altman)
- Social determinants of health, adversity and resilience (Hessler and Long)
- D-APPS: Marijuana use during pregnancy (Roberts)
- Post-delivery provision of contraception (Thiel de Bocanegra)
- Pilot study of Special Start program (Frame)

Grants Portfolio

California Spring 2016 - Fall 2018

RFP Grants | Discovery

Stress, resilience, coping and birth outcomes in Black and Hispanic women: The SOLARS pilot study
Monica McLemore, UCSF
Anu Manchikanti Gómez, UC Berkeley
Laura Jelliffe-Pawłowski, UCSF

Adaptation of an existing data integration/visualization platform for the purpose of visualizing and performing exploratory analysis of a multivariate dataset of risk factors of preterm birth in Fresno County, and validation of its usability with diverse and cross-sector PTBi stakeholders
Marta Jankowska, UCSD
Jessica Block, UCSD

Persistent human cytomegalovirus infection of the amnion in preterm birth and intrauterine growth restriction
Takako Tabata, UCSF

Exploring the dual burden of severe maternal morbidity and preterm birth in California
Audrey Lyndon, UCSF

San Francisco Preterm Birth Review (SF PTBR)
Rebecca Jackson, UCSF

Identifying biological drivers of preterm birth among women with insomnia
Aric Prather, UCSF

Hyper-localized air pollution measures and preterm birth in the Bay Area
Maria Glymour, UCSF
Joan Casey, UC Berkeley

Telomere length as a predictor of preterm birth and growth in Latino neonates
Janet Wojcicki, UCSF

Coagulation and neurodegeneration biomarkers of ventriculomegaly in preterm infants with intraventricular hemorrhage
Dawn Gano, UCSF
Mark Petersen, UCSF

Utilizing systematic screening approaches to identify pesticides that contribute to preterm birth
Joshua Robinson, UCSF

Is preterm birth associated with air pollution from oil and gas power plants in California? A natural experiment
Joan Casey, UC Berkeley

Testing exposure to local immigration enforcement as a structural determinant of preterm birth disparities in California counties
Jacqueline Torres, UCSF

OMX, a novel oxygen carrying protein, for resuscitation in preterm delivery
Jeffrey Fineman, UCSF

Qualifying Risk: Exploring how life course stress experiences influence the risk of preterm birth among black women
[Leslie Dubbin, UCSF](#)

RFP Grants | Preconception Interventions

Postpartum contraceptive decision support tool
[Christine Dehlendorf, UCSF](#)

Preventing extremely short interpregnancy intervals and preterm birth through post-delivery provision of highly effective contraception
[Heike Thiel de Bocanegra, UCSF](#)

Laying the foundation for healthy reproduction: a lifecourse approach to prevention of preterm birth through engaging and empowering adolescents
[Christine Dehlendorf, UCSF](#)

RFP Grants | Prenatal Interventions

Adaptation of the person-centered maternity care scale for women of color in the U.S.
[Patience Afulani, UCSF](#)
[Molly Altman, University of Washington](#)

Perivable GOALS: Formative research to create a decision support tool for perivable decision-making
[Miriam Kuppermann, UCSF](#)

Understanding and reducing barriers to utilization of Progesterone (17P) and other evidence-based interventions to prevent preterm birth in Fresno County
[Subhashini Ladella, UCSF Fresno](#)

Disrupting current models of prenatal care: Glow!
[Lauren Lessard, CSU Fresno](#)
[John Capitman, CSU Fresno](#)

Exploring women’s experiences to inform Drug and Alcohol Pregnancy Policies study (D-APPS: Women’s Experiences)
[Sarah Roberts, UCSF](#)

Social Determinants of Health, Adversity and Resilience (SOAR) Factors
[Danielle Hessler, UCSF](#)
[Dayna Long, UCSF](#)

Drug use and pregnancy policy study (D-APPS)
[Sarah Roberts, UCSF](#)

EatSF: fruit and vegetable vouchers to support pregnant mothers in San Francisco with food security and healthy dietary intake
[Hilary Seligman, UCSF](#)

Using community health workers for preterm birth prevention
[Melanie Thomas, UCSF](#)

RFP Grants | Postnatal Interventions

Robotics-Assisted Rehabilitation in children with cerebral palsy: The RoAR Study
[Dawn Gano, UCSF](#)

Evaluating the effect of San Francisco’s Paid Parental Leave Ordinance on preterm birth and associated maternal and newborn outcomes*
[Deborah Karasek, UCSF](#)
[*Jointly funded by Postnatal Interventions and Collective Impact](#)

Informing model articulation by eliciting the family experience: a pilot study of the special start neonatal follow up
[Laura Frame, UCSF](#)

Milk, growth and microbiota: An RCT of donor milk vs. formula to supplement breastfeeding late preterm newborns
[Valerie Flaherman, UCSF](#)



California Publications and Presentations

We’re committed to broadly disseminating research, influencing the fields of public health, maternal-fetal-neonatal medicine and health service delivery as well as policy and community health practice. We’re proud to have published 34 manuscripts in the past year.

Publications to Date May 2018 – May 2019

Beckert RH, Baer RJ, Anderson JG, Jelliffe-Pawlowski LL, Rogers EE. Maternal anemia and pregnancy outcomes: a population-based study. *J Perinatol*. 2019 Apr 9. doi: 10.1038/s41372-019-0375-0 [Epub ahead of print]. [PubMed](#) PMID: 30967656.

Baer RJ, Chambers CD, Ryckman KK, Oltman SP, Rand L, Jelliffe-Pawlowski LL. An evaluation of sexually transmitted infection and odds of preterm or early term birth using propensity score matching. *Sex Transm Dis*. 2019 Feb 11. doi: 10.1097/OLQ.0000000000000985 [Epub ahead of print]. [PubMed](#) PMID: 30762719.

Altman MR, Baer RJ, Jelliffe-Pawlowski LL. Patterns of preterm birth among women of Native Hawaiian and Pacific Islander descent. *Am J Perinatol*. 2018 Dec 21. doi: 10.1055/s-0038-1676487 [Epub ahead of print]. [PubMed](#) PMID: 30577054.

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Conference Presentations

May 2018 – May 2019

Pediatric Academic Societies (PAS) Annual Meeting; May 5-8, 2018; Toronto, Canada.

A new, health equity-focused approach to neonatal research networks. Kriz R, Gano D, Joe P, Cormier D, Franck L. *Poster*.

Identification of independent metabolic risk profiles for 7-day readmission of late preterm infants using machine learning. Oltman SP, Amsalu R, Rogers EE, Baer RJ, Anderson JG, Pantell M, Steurer M, Partridge JC, Dagle JM, Rand L, Ryckman KK, Jelliffe-Pawlowski LL. *Poster*.

Mid-pregnancy levels of tumor necrosis factor-related apoptosis-inducing ligand (TRAIL) and epithelial-neutrophil-activating peptide (ENA-78) are associated with respiratory distress syndrome in infants with preterm birth. Jelliffe-Pawlowski LL, Rogers E, Oltman S, Steurer MA, Anderson J, Partridge C, Pantell M, Baer RJ, Ryckman K. *Poster*.

Newborn metabolic profile as a predictor of mortality and major morbidity in preterm neonates. Jelliffe-Pawlowski LL, Rogers E, Oltman S, Steurer MA, Anderson J, Partridge C, Pantell M, Baer RJ, Ryckman K. *Poster*.

Parents’ experience with and contribution to NICU care for their preterm infants. Franck L, Bisgaard R, Tsado N, Gay C, Coleman-Phox K, Lothe B, Bolick S, Sun Y. *Poster*.

American Society for Neuroradiology (ASNR) Annual Meeting; June 2-7, 2018; Vancouver, Canada.

Clinical value of fetal and neonatal neuroimaging. Gano D. *Poster*.

Institute of Patient- and Family-Centered Care (IFPCC) 8th International Conference; June 11-13, 2018; Baltimore, Maryland.

Parents and healthcare professionals co-designing mobile technology and care-delivery models to improve family integrated care in neonatal intensive care units. Franck L, Bisgaard R, Lothe B. *Oral*.

Society for Epidemiologic Research (SER) Annual Meeting; June 19-22, 2018; Baltimore, Maryland.

Local immigration enforcement and preterm birth in California counties. Torres JM, Casey JA, De Trinidad Young ME, Goin DE, Isquick S, Catalano RA, Morello-Frosch R. *Oral*.

Annual European Congress of Rheumatology (EULAR); June 13-16, 2018; Amsterdam, Netherlands.

The impact of autoimmune rheumatic diseases on birth outcomes: A population-based study. Strouse J, Donovan B, Fatima M, Fernandez-Ruiz R, Baer RJ, Smith C, Bandoli G, Paynter R, Parikh N, Chambers C, Jelliffe-Pawlowski L, Ryckman K, Singh N. *Poster*.

Interdisciplinary Association for Population Health Sciences (IAPHS) Annual Meeting; October 3-5, 2018; Washington, District of Columbia.

Local immigration enforcement and birthweight outcomes in California counties. Torres JM, Casey JA, Morello-Frosch R. *Oral*.

International Federation of Gynecology and Obstetrics (FIGO) World Congress of Gynecology and Obstetrics; October 14-19, 2018; Rio de Janeiro, Brazil.

Application of a U.S. based metabolic gestational age dating algorithm to newborns in Busia, Uganda. Oltman S, Jasper E, Kanya M, Kakuru A, Kajubi R, Ochieng T, Adrama H, Okitwi M, Olwoch P, Bedell B, Dagle J, Jagannathan P, Clark T, Dorsey G, Rand L, Ruel T, Rogers E, Ryckman K, Jelliffe-Pawlowski L. *Poster*.

Newborn metabolic profile as a predictor of mortality and major morbidity in preterm neonates. Jelliffe-Pawlowski L, Rogers E, Oltman S, Steurer M, Anderson J, Partridge C, Pantell M, Ryckman K. *Oral*.

7th Congress of the European Academy of Paediatric Societies (EAPS); October 30-November 3, 2018; Paris, France.

The effect of family integrated care (FICare) on maternal stress and anxiety. Cheng C, Franck L, O’Brien K. *Poster*.

March of Dimes Annual Conference; November 5-6, 2018; Irvine, California.

Co-designing mobile technology and care delivery to improve family integrated care in NICUs. Franck L, Sossaman S, Lothe B. *Oral*.

American Public Health Association (APHA) Annual Meeting and Expo; November 10-14, 2018; San Diego, California.

A novel hub-and-spoke model of group prenatal care with community services integration. Lessard L, Newell G. *Oral*.

Building a better group prenatal care model for communities of color. Lessard L, Capitman J. *Oral*.

Changing neighborhoods: Examining the relationship of gentrification and preterm birth in the Bay Area. Karasek D, Baer R, Izenberg J, Yen I, Mujahid M, Chambers B, Casey J, Jelliffe-Pawlowski L. *Oral*.

Collaborative research priority setting by parents of preterm infants and NICU professionals. Kriz R, Gano D, Cormier D, Joe P, Hansen N, Christensen H, Tsado N, Bekal P, Ngo S, Franck L. *Oral*.

Evaluating fruit and vegetable vouchers to reduce food insecurity, improve dietary intake, and reduce preterm birth among low-income pregnant mothers in San Francisco. Rosenmoss S, Marpadga S, Akers M, Bonini C, Flores D, Seligman H. *Poster.*

Experiences with contraceptive counseling and method provision among women with a preterm birth. Thiel de Bocanegra H, Saylor K, Kenny J. *Poster.*

Patterns of preterm birth for women of Native Hawaiian and Pacific Islander descent. Altman M, Baer R, Jelliffe-Pawlowski L. *Oral.*

Using community based participatory research to improve group prenatal care for communities of color. Lessard L, Oberholtzer C. *Poster.*

7th International Conference on Kangaroo Mother Care; November 14-17, 2018; Bogotá, Colombia.

Relationship between kangaroo care activity during neonatal intensive care unit hospitalization and early parent-infant contact. Franck L, Gay C, Kriz R, Bisgaard R, Millar K, Tsado N, Joe P, Christensen H, Ngo S, Cormier D, Hansen N, Bekal P, Sun Y. *Poster.*

Using a mobile application for parents to track kangaroo care metrics during neonatal intensive care unit hospitalization. Franck L, Gay C, Kriz R, Bisgaard R, Millar K, Tsado N, Joe P, Christensen H, Ngo S, Cormier D, Hansen N, Bekal P, Sun Y. *Poster.*

Precision Medicine World Conference; January 20-23, 2019; Santa Clara, California.

From big data to prediction and precision health: Preterm birth and outcomes of prematurity. Jelliffe-Pawlowski, L. *Oral.*

Annual Meeting of the Society for Maternal Fetal Medicine (SMFM); February 11-16, 2019; Las Vegas, Nevada.

One-year mortality risk of death by complication for Black compared to White premature infants. Oltman S, Chambers BD, Baer RJ, McLemore MR, Scott K, Karasek D, Kuppermann M, Steurer MA, Anderson JG, Pantell M, Rogers EE, Ryckman KK, Rand L, Jelliffe-Pawlowski L. *Poster.*

Prescription opioid use among women with perinatal depression. Nidey N, Jelliffe-Pawlowski L, Ryckman K. *Poster.*

Racial disparities in preterm birth risk by risk factor grouping. Chambers B, Baer RJ, Oltman SP, McLemore M, Scott K, Karasek D, Kuppermann M, Pantell M, Rogers EE, Ryckman KK, Rand L, Jelliffe-Pawlowski L. *Poster.*

Recurrence of preterm and early term birth by race/ethnicity and SES. Karasek D, Chambers B, Fuchs J, Gomez A, Pacheco-Werner T, Berkowitz R, Andersen J, Arcara J, Flowers E, Pantell M, Hamad R, Baer R, Oltman S, Ryckman K, Rand L, Feuer S, Jelliffe-Pawlowski L. *Poster.*

Risk of preterm birth among women with a urinary tract infection by trimester of pregnancy. Baer R, Bandoli G, Chambers BD, Chambers CD, Oltman SP, Rand L, Ryckman K, Jelliffe-Pawlowski L. *Poster.*

Smart Diaphragm study: Multi-omics profiling and cervical device measurements during pregnancy. Liang L, Dunn J, Han T, Newmann S, Qureshi S, Holman R, Snyder M, Jelliffe-Pawlowski L, Rand L. *Poster.*

The impact of multiple sclerosis on birth outcomes. Jasper L, Oltman S, Rand L, Jelliffe-Pawlowski L, Baer R, Feuer S, Chambers T, Ryckman K. *Poster.*

Unstable housing is linked to preterm birth and other adverse obstetric outcomes. Pantell M, Baer RJ, Torres J, Felder J, Gomez A, Chambers BD, Dunn J, Parikh N, Pacheco T, Rogers EE, Feuer S, Ryckman K, Novak N, Dina KT, Rand L, Jelliffe-Pawlowski L. *Poster.*

6th Annual Clinical InQuERI Nursing Research Conference; January 30-31, 2019; San Francisco, California.

Relationship between kangaroo care activity during neonatal intensive care unit hospitalization and early parent-infant contact. Franck L, Gay C, Kriz R, Bisgaard R, Millar K, Tsado N, Joe P, Christensen H, Ngo S, Cormier D, Hansen N, Bekal P, Sun Y. *Poster.*

Using a mobile application for parents to track kangaroo care metrics during neonatal intensive care unit hospitalization. Franck L, Gay C, Kriz R, Bisgaard R, Millar K, Tsado N, Joe P, Christensen H, Ngo S, Cormier D, Hansen N, Bekal P, Sun Y. *Poster.*

American Psychosomatic Society (APS) Annual Meeting; March 6-9, 2019; Vancouver, British Columbia.

Socioeconomic status and gestational length in Indigenous and White women: Evidence for “widening health disparities”. Ross K, Baer R, Altman M, Jelliffe-Pawlowski L. *Oral.*

Annual Meeting of the Society for Reproductive Investigation (SRI); March 12-16, 2019; Paris, France.

Adaptation of a preterm birth +/- preeclampsia (PTB +/- PE) risk prediction test for use in women with abnormal routine prenatal screening results. Jelliffe-Pawlowski L, Rand L, Baer RJ, Oltman SP, Bedell B, Ryckman K. *Poster.*

Multi-omics profiling, microscopic cervical remodeling, and parturition: Insights from the Smart Diaphragm study. Liang L, Dunn JP, Chen S, Avina M, Leng Y, Holman R, Lee TH, Qureshi S, Montelongo E, Zhao B, Jelliffe-Pawlowski L, Snyder M, Rand L. *Poster.*

Risk of preterm birth and adverse pregnancy outcomes in women experiencing interpersonal violence: Patterns by current or previous abuse. Jelliffe-Pawlowski L, Baer RJ, Chambers B, Oltman SP, Ryckman K, Pantell M, Fuchs J, Franck L, Rand L. *Poster.*

International Meeting on Indigenous Child Health; March 22-24, 2019; Calgary, Alberta.

Socioeconomic status and gestational length in Indigenous and White women: Evidence for “diminishing returns.” Ross KM, Baer R, Altman M, Jelliffe-Pawlowski L. *Poster.*

Pediatric Academic Societies (PAS) Annual Meeting; April 24-May 1, 2019; Baltimore, Maryland.

A propensity matching study of short interpregnancy interval and adverse perinatal outcomes. Congdon J, Baer RJ, Arcara J, Feuer S, Karasek D, Gómez AM, Oltman S, Ryckman K, Jelliffe-Pawlowski L. *Oral.*

Burden of mortality and morbidity in persistent pulmonary hypertension of the newborn during first year of life. Steurer M, Baer RJ, Oltman S, Ryckman K, Feuer S, Rogers E, Keller R, Jelliffe-Pawlowski L. *Poster.*

Preterm birth and complications of prematurity significantly increase the risk for maltreatment in the first year of life. Rogers E, Baer R, Anderson J, Chambers B, Oltman S, Pantell M, Steurer M, Jelliffe-Pawlowski L, Franck L. *Poster.*

Racial/ethnic disparities in outcomes among infants with diseases of prematurity at 1 year of life. Karvonen K, Baer R, Rogers E, Oltman S, Gano D, Steurer M, Ryckman K, Anderson J, Franck L, Jelliffe-Pawlawski L, Pantell M. *Poster.*

Socioeconomic status and health care utilization among preterm infants over the first year of life. Pantell M, Karvonen K, Baer R, Oltman S, Rogers E, Jelliffe-Pawlawski L. *Poster.*

Unstable housing is linked to adverse neonatal outcomes. Pantell M, Baer R, Rogers E, Dunn J, Parikh N, Tabb K, Chambers B, Feuer S, Ryckman K, Jelliffe-Pawlawski L. *Oral.*

Other Select Presentations

May 2018 – May 2019

Advancing multi-sector approaches to achieve collective impact. Fuchs J. Optimal Pregnancy Environment Risk Assessment (OPERA) Consortium Meeting. Pforzheim, Germany. December 2018. *Invited presentation.*

Algorithms for predicting risk for preterm birth. Jelliffe-Pawlawski L. Optimal Pregnancy Environment Risk Assessment (OPERA) Program. Pforzheim, Germany. December 2018. *Invited presentation.*

Data collection and improved patient outcomes: Examples from research on preterm birth. Jelliffe-Pawlawski L. Precision Medicine World Conference. Santa Clara, CA. January 2019. *Invited presentation.*

New frontiers for African neonatal care. Franck L. Council of International Neonatal Nurses (COINN) Conference. Kigali, Rwanda. October 2018. *Keynote lecture.*

Parents: Essential medicine in children’s healthcare. Franck L. Children’s Healthcare Leaders. Kyiv, Ukraine. December 2018. *Keynote lecture.*



Joint Aim:
Communications,
Collaboration and
Capacity Building (C³)

The Annual Symposium:
Preterm Birth Through the
Lens of Quality, Equity
and Dignity

Our Annual Symposium on Preterm Birth harnesses the collective energy of our initiative’s California and East Africa arms to strengthen our common mission – reducing the burden of preterm birth by decreasing its incidence and improving outcomes for babies born too soon. This year the research symposium took place in Kigali, Rwanda, October 2-4, 2018. Titled Preterm Birth Through the Lens of Quality, Equity and Dignity, the 2018 meeting built on the 2017 launch of the WHO program on the same topic, which aims to halve maternal and newborn deaths and stillbirths within five years in health facilities across 10 countries within five years.

Our symposium brought together our global research team and a community of stakeholders that included representatives from the Ministries of Health of Uganda, Kenya and Rwanda, as well as Community Advisory Board members from California. Approximately 160 attendees explored what quality, equity and dignity mean in the context of preterm birth and continued our efforts to find solutions to address these issues. Theatrical vignettes brought the voices of women into the room and inspired sharing by leaders of their own lived experiences. We discussed everything from respectful maternity care through how to effectively collaborate so we may advance quality improvements through translational research. We ended with a call to action for scientific activism to raise awareness and hold the global community accountable for making advances against the epidemic of preterm birth. The full program booklet can be found [here](#).



Symposium at a Glance

- 160 total attendees across all geographies
- Six breakout sessions organized by cross-geography teams
- Six selected talks from among our global research team
- 28 posters presented by research teams
- Local and global leadership from Ministries of Health, WHO and key stakeholders
- Organized learning visits for California colleagues



The PTBi Transdisciplinary
Postdoctoral Research
Fellowship Program

Building future capacity and leadership in the field of preterm birth research has been at the heart of PTBi’s mission since the beginning. To attract new minds and new ideas to the field – and, in doing so, to decrease the global burden of preterm birth – PTBi launched a two-year, transdisciplinary postdoctoral fellowship.

The primary goal of this first-of-its-kind training program is to develop the next generation of researchers by equipping promising young scientists with the skills and perspectives needed to launch independent research careers. Driven by fundamental commitments to transdisciplinarity, collaboration and community engagement, we expose our fellows to a wide range of basic and translational science, implementation research and policy-focused work.

To date, ten promising scholars at the top of their fields have participated in the fellowship program – six in the inaugural 2015-2017, three in the 2017-2019 cohort and one new fellow welcomed in 2018. They include three MDs, three PhDs, two RN/PhDs and two MD/PhDs and represent a wide range of clinical and scientific disciplines. These innovative and highly productive fellows have collectively published 48 first-author papers and 37 co-authored papers (see Fellows publication list, page 110). The seven fellows who have completed the fellowship now have faculty positions at UCSF or another university. We’re thrilled to report that, based on this success, we have just been awarded a prestigious T32 training grant from the National Institutes of Health to both expand and sustain the fellowship for years to come.

In July 2019, we will welcome three additional fellows to the program. Their research interests include the association of neighborhood composition with preterm birth, societal and structural biases that impact adolescent reproductive health, and mobile health tools to improve neonatal care.

Another highlight of our postdoctoral fellowship is the diversity of the participants. Four of the fellows are from Africa and half of the North Americans are Black, reflecting both our target geographies and the California focus on Black-White disparities in preterm birth and other adverse maternal and birth outcomes.



2015 Fellowship Class

Name	Current Role	Research Focus	Fellowship Highlights
Patience Afulani MBChB, MPH, PhD	Assistant Professor, Department of Epidemiology & Biostatistics, UCSF	Quality of maternal health care: person-centered maternity care in Kenya, Ghana and India	<ul style="list-style-type: none">12 first-author and three co-author publicationsNICHD K99/R00 (PI) 2018USAID systems for health grant (PI) 2016
Molly Altman CNM, MPH, PhD	Assistant Professor (tenure-track), School of Nursing, Department of Family Child Nursing, University of Washington	Respectful maternity care: influence of racism, bias and discrimination in provider interactions for women at risk for preterm birth	<ul style="list-style-type: none">Five first-author and five co-author publicationsPTBi-CA RAP grant (co-PI) 2018
Jennifer Felder MA, PhD	Assistant Professor, Department of Psychiatry and Osher Center for Integrative Medicine, UCSF	Digital cognitive behavior therapy for antenatal insomnia, depression and birth outcomes relative to usual care	<ul style="list-style-type: none">Nine first-author and three co-author publicationsNCCIH K23 (PI) 2018
Dawn Gano MD, MAS	Assistant Professor, Departments of Neurology and Pediatrics, UCSF	Cerebellar hemorrhage in premature newborns	<ul style="list-style-type: none">Five first-author and eight co-author publications, five first-author book chaptersTwo foundation grants (PI); NIH-NINDS P01 (co-PI)Benioff Children's Hospital, San Francisco, Newborn Family Research Collaborative (site-PI)
Melissa Medvedev (Morgan) MS, MD, PhD candidate	Assistant Professor, Department of Pediatrics, Division of Neonatology, UCSF	Feasibility and acceptability of kangaroo care for clinically unstable neonates in Jinja, Uganda	<ul style="list-style-type: none">Nine first-author and eight co-author publicationsNICHD K23 (PI) 2018MRC/Wellcome Trust/DFID/NIHR Global Health Trials (co-PI) 2019
Joseph Musana MBChB, MMed	Assistant Professor, Department of Obstetrics & Gynecology, Aga Khan University Hospital, Kenya	Stress perceptions, stress hormones and preterm birth among pregnant women in a semi-urban hospital in Kenya	<ul style="list-style-type: none">Awarded Completion Certificate in Advanced Training in Clinical Research, Department of Epidemiology & Biostatistics, UCSF, 2016

2017 Fellowship Class

Name	Current Role	Research Focus	Fellowship Highlights
Brittany Chambers MPH, PhD	Assistant Professor, Department of Epidemiology & Biostatistics, UCSF	Developing novel measures of structural racism from the perspective of Black women	<ul style="list-style-type: none">Four first-author publicationsUCSF-Kaiser Building Interdisciplinary Careers in Women's Health (BIRCWH) Program/NIH K12 (PI) 2018UCSF School of Medicine Population Health and Health Equity Scholar
Deborah Karasek MPH, PhD	Current PTBi Fellow	Economic insecurity, neighborhood housing conditions, and social policy: impact on health and well-being of pregnant women and their infants	<ul style="list-style-type: none">Seven co-authored publicationsPTBi-CA RAP grant (co-PI) 2017Initiated pregnancy income supplement research working group
Moses Madadi Obimbo MBChB, MMed, PhD	Current PTBi Fellow; Lecturer, University of Nairobi	Impact of HIV and antiretroviral treatment on the structure of placenta, cytokine milieu and the mechanistic pathway of preterm birth	<ul style="list-style-type: none">Four first-author and three co-author publicationsInvited guest speaker at the NIH Human Placenta ProjectInitiated a Translational Research Lab at the University of Nairobi with seven students (five MS and two PhD)
Dorothy E. Forde PhD, RNC-NIC, CNS	Current PTBi Fellow (joined October 2018)	Buffering effects of kangaroo care on preterm infant stress and energy expenditure biomarkers and behavior	<ul style="list-style-type: none">Primary sponsorship from UCSF School of Nursing T32 Biobehavioral Research Program in in Symptom ScienceBest poster and student presentation awards at several scientific meetings for her doctoral research





Communications in East Africa

Tiny Hats for Tiny Babies

The Tiny Hats for Tiny Babies initiative provides handmade hats to the infants around the world who need them most: preterm and low birthweight babies. Since 2017, the initiative has received more than 37,000 tiny hats from more than 1,000 volunteers. In its first year, the initiative received more than 17,000 hats, all of which were distributed to hospitals and clinics in nine LMICs. In 2018, the initiative received more than 20,000 hats, exceeding our stated goal of 17,000 by more than 15 percent. This year we also added the American Academy of Pediatrics (AAP) as a partner. Together with the AAP and our first partner, Warm Up America!, we can expand our reach to more clinics and hospitals in need and continue to build global awareness of the burden of preterm birth. We plan to raise the bar for our upcoming 2019 campaign and keep our community of knitters and crocheters engaged through our website at <https://tinyhatsfortinybabies.org/>.

Global Communications and Collaboration

Building a research community around preterm birth goes beyond working with partners in our current geographies. We actively work with others in the field to build our knowledge and share our perspective. In 2018, PTBi-EA hosted a joint learning session in San Francisco with Born on Time and the Global

Alliance for Prevention of Prematurity and Stillbirth (GAPPS). One of the outcomes of that session was our jointly sponsored prematurity session at the 2018 International Federation of Gynecology and Obstetrics (FIGO) World Congress in Rio de Janeiro. At the 2019 Women Deliver conference in Vancouver, the three organizations will come together to share booth space to promote awareness of prematurity and the work of all three groups.

Communications in California

Celebrating the Making of Birth Justice Warriors in Honor of World Prematurity Day

On November 30, 2018, we honored World Prematurity Day by sharing the development of a new public awareness campaign, Birth Justice Warriors, which celebrates the lives of people working to better the birth experiences of Black and Brown families in our communities. Located at Impact Hub Oakland, the Birth Justice Warriors Art Walk featured large, beautifully designed posters depicting artwork from the campaign. Oakland, San Francisco and Fresno doulas, activists, and providers were among the

subjects of stunning black-and-white photography that lined the walls. One poster stated,

I'm here to empower you to advocate for the things you need, no matter what anyone has said you don't deserve.

As attendees strolled down the row of posters, they also had the opportunity to learn more about the 12-week human-centered design process used to create the campaign (See page 80). Brittany Chambers, co-principal investigator of our SOLARS trial, said,

It is moving to see positive images of Black and Latino women, families, doulas and breastfeeding consultants advocating for community-based approaches aimed at centering on women and their families. This is what we need to move the curve in the inequities we see in preterm birth.

Legislative Briefing in Sacramento

On December 10, 2018, the California PTBi joined UCSF's Bixby Center for Global Reproductive Health to present a legislative briefing in Sacramento to more than 20 California Assembly and Senate staff members. The goal was to build relationships and establish our expertise on reproductive issues in the hopes of providing valuable evidence-based data to inform future policies.

Linda Tenerowicz, legislative aide to Assemblyman Freddie Rodriguez, told us,

I really appreciated the inclusion of systematic racism in the medical setting, because I think that's something we don't hear a lot about in legislative briefings.



Presenters

- **Brittany Chambers** | Assistant Professor, UCSF Department of Epidemiology & Biostatistics
- **Brianne Taylor** | Research Assistant, Project Coordinator, Osher Center for Integrative Medicine

Topic: Structural racism and maternal and infant health

- **Zea Malawa** | Program Manager, Collective Impact to Prevent Preterm Birth in SF

Topic: Public insurance coverage for doula care

- **Ushma Upadhyay** | Assistant Professor, UCSF Department of Obstetrics, Gynecology & Reproductive Sciences, Advancing New Standards in Reproductive Health (ANSIRH)

Topic: Safety of telemedicine abortion

- **Sarah Roberts** | Associate Professor, UCSF Department of Obstetrics, Gynecology & Reproductive Sciences, Public Health Social Scientist, ANSIRH

Topic: Substance use and pregnancy



Raising Awareness of Barriers to Medicaid Coverage for Doula Care

Racism and racial bias in health care have helped contribute to what is coming to be understood as a national crisis of maternal deaths for women of color - in particular, Black women. Black women are three to four times as likely as White women to die during labor and the maternal period. Notably, these racial disparities in maternal mortality rates exist across all levels of income, age and education.



Numerous studies have demonstrated that doulas can help reduce the impacts of racism on pregnant women of color by helping to provide culturally appropriate patient-centered care. Doula care would seem to be a natural fit for underserved populations such as women of color, immigrant women, and low-income women, who experience among the worst maternal health and birth outcomes. Yet these women can ill afford to pay out of pocket for doula care, and today, doula care is covered for Medicaid enrollees in only two states, Minnesota and Oregon.



To help change this, we partnered with the [National Health Law Program](#) in 2018 to co-author an issue brief that lays out barriers to Medicaid coverage for doula care. The brief also proposes potential recommendations for successful implementation (See page 72 for the doula implementation we helped pioneer in San Francisco).

Monthly Collaboratory Events

Every month PTBi offers a free, open-to-the-public discussion series titled Collaboratory. It has been one of the most exciting and quickly growing areas of our research dissemination efforts, advancing the field through true thought leadership. The goals of each Collaboratory are to bring together a wide range of investigators and community members to hear about a specific topic in preterm birth from several perspectives and to engage in a lively discussion on developing innovative approaches to preventing preterm delivery and improving outcomes for babies born too soon.

Clinicians who attend these sessions can earn CME and CNE credit, and each session begins with 30 minutes for refreshments and mingling to help encourage engagement during the session. In-person attendance is, on average, 60-70 people, with an additional 20-30 attendees joining by livestream video. Our most widely attended Collaboratories drew more than 200 attendees.



Past Collaboratories & Topics July 2018 – May 2019

July 2018

Black Women’s Perspectives of Structural Racism Across the Reproductive Lifespan: Opportunities for Novel Measure Development

Brianne Taylor
Black Infant Health, San Francisco
Benioff Community Innovator
PTBi-CA, UCSF

Panelists

Helen Arega, MA
PTBi-CA, UCSF

Loretta Scruggs-Leach, RN
Central Valley Black Nurses Association
Community Advisory Board Member, Fresno
PTBi-CA, UCSF

Silvia Arabia, MPH
PTBi-CA, UCSF

August 2018

Breastfeeding Policies: Global Trends, Conflicts of Interest and Consequences for Marginalized Communities

Brandi Gates, IBCLC
BreastFriends & Breastfeeding
WIC West Oakland Health Center
Community Advisory Board Member, Oakland
PTBi-CA, UCSF

August (cont.)

Panelists
Ifeyinwa Asiodu, RN, PhD
Department of Family Health Care Nursing, UCSF

Aunchalee Palmquist, PhD, IBCLC
Department of Maternal and Child Health, UNC

Chyverne Washington
Black Infant Health Program, San Mateo County Health

Kimberly Seals Allers
Journalist and Author

Robbie Gonzalez-Dow, MPH, RD, CLE
California Breastfeeding Coalition

September 2018
Beyond the Neonatal Intensive Care Unit: Comprehensive Postnatal Support for Preterm Infants and Their Families

Panelists
Linda Franck, RN, PhD, FAAN
Department of Family Health Care Nursing, UCSF

Dawn Gano, MD, MAS
Department of Neurology, UCSF

Laura Frame, LCSW, PhD
Early Intervention Services, UCSF BCHO

Eren Berkenkotter, PhD
Special Start Neonatal Follow-up Intervention Services, UCSF BCHO

Monica Parran
Preterm Birth Mother

October 2018
Annual Symposium on Preterm Birth in Kigali, Rwanda

December 2018
What Comes Next: How the Midterm Election Results Impact Reproductive Rights and Health

Panelists
Claire Brindis, DrPH, MPH
Philip R. Lee Institute for Health Policy Studies, UCSF

Jennifer Dunn, JD
UC, Hastings College of the Law

Usha Ranji, MS
Women’s Health Policy, Kaiser Family Foundation

January 2019
The Healing Power of Doulas

Panelists
Marna Armstead
SisterWeb

Stephanie Dixon
Bare With Me Duo

Linda Jones
Black Women Birthing Justice

Etecia Brown
Letthemflourish

Deundra Hundon
Bare With Me Duo

Se’Lah Wehner
Community Doula

February 2019
How Can We Close the Racial Gap in Preterm Birth Rates? Opportunities for Intervention

Panelists
Arnold L. Chandler
Forward Change

Paula Braveman, MD, MPH
Center for Health Equity, UCSF

March 2019
Understanding Abuse and Preterm Birth: What Can Be Done?

Panelists
Alexis Cobbins, MSW
Human Services Agency, San Francisco

Rebecca Baer, MPH
Department of Pediatrics, UCSD

Elizabeth Rogers, MD
Department of Pediatrics, UCSF

Artanesha Jackson, MSW
Department of Community Health and Engagement, UCSF BCHO

Hector Santamaria
Human Services Agency, SF City and County

April 2019
Placental Infection and Prematurity: Community Engagement Across the Globe

Panelists
Moses Madadi Obimbo, MD, PhD
Postdoctoral Fellow, PTBi

Jessica Amezcua
Division of Maternal-Fetal Medicine, UCSF

David Arnoff, MD, FIDSA, FAAM
Division of Infectious Diseases, Vanderbilt University

Sachi Patel
Department of Obstetrics, Gynecology & Reproductive Sciences, UCSF

May 2019
Disrupting the Racial Wealth Gap in Pregnancy: Evidence from Cash Transfer Programs and Opportunities for Policy Action

Panelists
Deb Karasek, PhD
Postdoctoral Fellow, PTBi





Media Coverage

East Africa

June 2018 — May 2019

Many of our communications have focused on raising awareness locally and globally about preterm birth. Our Tiny Hats campaign remains the cornerstone of our efforts, but our local teams also have worked to raise awareness in their respective geographies.

Print/Online

Daily Nation (Kenya): [Kangaroo Care: Giving Premature Babies a Fighting Chance](#), January 8, 2019, by Stanley Kimuge.

Daily Nation (Kenya): [Scientists Try to Crack Puzzle of Preterm Births in Migori](#) (scroll down page), January 8, 2019, by Elizabeth Ojina.

Daily Nation (Kenya): [All About Touch: Kangaroo Care Can Save Your Pre-term Baby's Life](#), December 17, 2018, by Elizabeth Ojina.

Makerere University Centre for Excellence in Maternal Newborn Health (MNH) News: [Transforming Care for Every Newborn Key to Health for All Global Targets – New Report \(Survive and Thrive\)](#), December 12, 2018.

Makerere University Centre of Excellence for Maternal Newborn and Child Health (MCH) News: [Hospital Networking and Integration of Maternal With Newborn Care Boost Survival of Preterm Babies](#), November 27, 2018, by Kakaire Ayub Kirunda.

Makerere University Centre for Excellence in Maternal Newborn Health (MNH) News: [Uganda Marks Prematurity Day With Opening of Neonatal Care Unit at Arua Regional Hospital](#), November 23, 2018, by Phillip Kyesimira.

Makerere University Centre for Excellence in Maternal Newborn Health (MNH) News: [Midwives Undergo Training in Basic Obstetric Ultrasound Skills](#), November 27, 2018.

Makerere University Centre for Excellence in Maternal Newborn Health (MNH) News: [Maternal Newborn Care: Calls for Task Shifting, Doctors Urged to Embrace Teamwork](#), July 12, 2018, by Kakaire Ayub Kirunda.

Radio

Radio talk show hosted by Migori County Department of Health where listeners were able to call in with questions on preterm birth.

KTFM 96.7: Prematurity Awareness With Increased Attention On and Urgency About Global Initiatives to Address Preterm Birth, November 2018, in Kigali, Rwanda.

KCBS: Dilys Walker reported on PTBi-EA and the Tiny Hats Campaign.

Videos

Kenya Medical Research Institute (KEMRI), 2018: Overview video including highlight footage of PTBi and an interview with PTBi-EA PI, Dilys Walker.

KEMRI, 2019 Documentary on the Preterm Birth Initiative Study, edited from a larger KEMRI documentary.

Events

Knit and Commit: This side session at the triennial FIGO conference in Brazil in October 2018 provided participants with an overview of PTBi's activities and introduced our Tiny Hats campaign to them, while providing basic knitting lessons to new knitters so they can join the campaign.

World Prematurity Day Celebrations showcased the work of PTBi-Kenya, both at the national and county levels.

Maternal and Child Health Week in April 2019 in Rwanda supported 500 mothers with Tiny Hats to teach mothers about the importance of keeping their babies warm.

California

May 2018 — May 2019

We believe it is our task to continually call out racism as the root cause of the inequities that lead to the large racial disparities in preterm birth rates in our geographies. Our communications highlight the power of research when it is driven by the voices of the communities most impacted by this epidemic.

Print/Online

Washington Post: [“Every 30 Seconds Another Alarm Is Going Off”: Neonatal ICUs Can Take Their Toll On Parents](#), February 23, 2019.

New York Times: [Depression During and After Pregnancy Can Be Prevented, National Panel Says. Here's How](#), February 12, 2019.

California Health Report: [Doctors Often Fail to Listen to Black Mothers, Complicating Births, Survey Finds](#), September 20, 2018, by Fran Kritz.

The Atlantic: [A Mother's Zip Code Could Signal Whether Her Baby Will Be Born Too Early](#), August 23, 2018, by Margaret Katcher.

NPR: [Scientists Search for Causes of Preterm Birth and Better Ways to Test for Risk](#), July 22, 2018, by Sara Kiley Watson.

UC Global Health: [In Health Research, Local Efforts Have Global Benefit](#), July 10, 2018, by Andy Evangelista.

The Guardian: [Why Are So Many of San Francisco's Black Mothers and Babies Dying?](#) June 26, 2018, by Leslie Casimir.

CNN: [Blood Tests to Predict Preterm Birth Risk Raise Excitement – and Questions](#), June 7, 2018, by Jacqueline Howard.

UCSF: [Risk of Preterm Birth Reliably Predicted by New Test](#), May 24, 2018, by Laura Kurtzman.

UC Berkeley News: [Closing Coal, Oil Power Plants Leads to Healthier Babies](#), May 22, 2018, by Robert Sanders.

Radio

Valley Public Radio: [To Prevent Preterm Births, New Program Helps Black Women Be Their Own Advocates](#), December 11, 2018.

KQED Forum: [Disparity Between Black and White Infant Mortality Rates Remains High](#), July 18, 2018, host Mina Kim.

Events

Precision Medicine World Conference 2019: [Interview with Laura Jelliffe-Pawłowski of UCSF](#), November 20, 2018.

Fellows Publications

Patience Afulani

Afulani PA, Aborigo RA, Walker D, Moyer CA, Cohen S, Williams J. Can an integrated obstetric emergency simulation training improve respectful maternity care? Results from a pilot study in Ghana. *Birth*. 2019 Jan 24. doi: 10.1111/birt.12418 [Epub ahead of print]. [Pubmed](#) PMID: 30680785.

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Afulani PA. Determinants of stillbirths in Ghana: Does quality of antenatal care matter? *BMC Pregnancy Childbirth*. 2016 Jun 2;16(1):132. doi: 10.1186/s12884-016-0925-9. [Pubmed](#) PMID: 27255155.

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Molly Altman

Altman MR, Baer RJ, Jelliffe-Pawłowski LL. Patterns of preterm birth among women of Native Hawaiian and Pacific Islander descent. *Am J Perinatol*. 2018 Dec 21. doi: 10.1055/s-0038-1676487 [Epub ahead of print]. [Pubmed](#) PMID: 30577054.

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Dawn Gano

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Joseph Musana

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Appendix A: Preterm Birth Initiative Board Member Profiles



Sam Hawgood, MBBS, PTBi Strategic Advisory Board Chair

Dr. Hawgood, a renowned researcher, professor, academic leader, and pediatrician, has been chancellor of UCSF since 2014. Previously, he was dean of the UCSF School of Medicine and vice chancellor for medical affairs from 2009 to 2014. Hawgood joined UCSF as a research fellow in 1982. His focus on the proteins associated with pulmonary surfactant led to funding from the National Heart, Lung, and Blood Institute, which supported his work continuously through 2015. That work gained him an international reputation in neonatology research. Today, as chancellor and Arthur and Toni Rembe Rock Distinguished Professor, Hawgood oversees the multi-billion-dollar UCSF enterprise, which includes the top public recipient of research funds from the National Institutes of Health, a nationally ranked medical center, and San Francisco's second-largest employer. UCSF includes highly ranked graduate schools of dentistry, medicine, nursing, and pharmacy, a graduate-level biomedical research division, the UCSF Health system, and affiliated hospitals. Hawgood is a member of the American Academy of Pediatrics and the American Association of Physicians. In 2010, he was elected to the National Academy of Medicine.

California Subcommittee



Nancy Adler, PhD

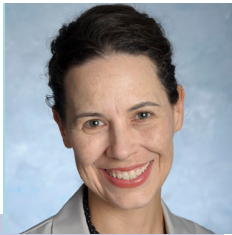
Dr. Adler is the Lisa and John Pritzker Professor of Medical Psychology at UCSF, vice-chair of the Department of Psychiatry, and directs the Center for Health and Community. Her research examines the impact of risk perception on reproductive and sexual health decision making and identification of mechanisms

by which socioeconomic status and other social determinants influence health. She directed the MacArthur Foundation's Research Network on Socioeconomic Status and Health and developed a widely used measure of subjective social status. She heads the national program office of the Robert Wood Johnson Foundation "Evidence for Action" grants program. A fellow of the American Psychological Society and the American Psychological Association, she was elected to the American Academy of Arts and Sciences and the National Academy of Medicine (NAM), which awarded her the David Rall Medal. She served on the Advisory Committee to the Director of National Institutes of Health, the Report Review Committee of the NRC/NAS and the NAM Council and Executive Committee. In 2017, she received the Medal for Distinguished Contributions in Biomedical Sciences from the New York Academy of Medicine.



Lynne Benioff

Lynne Benioff is a philanthropist active on the boards of several organizations. She is a Distinguished Director of the Board of Overseers of the University of California, San Francisco Foundation, and serves on the boards of directors of the Rise Fund, UCSF Benioff Children's Hospitals, Common Sense Media, the Benioff Ocean Initiative and Forward. Ms. Benioff was appointed to the Presidio Trust board by President Barack Obama in 2015 and currently chairs its Governance Committee and co-chairs the Tunnel Tops Campaign Committee. In 2011, she co-founded Star Community Home, a short-term residential community for homeless families in San Francisco. Previously, Ms. Benioff was the director of Public Relations Campaigns at OutCast Communications. In 2014, Ms. Benioff was honored by Mayor Ed Lee as one of San Francisco's "Women of the Year." She received a BS from the University of Washington.



Ann E.B. Borders, MD, MSc, MPH

Dr. Borders is a maternal-fetal medicine specialist in the Department of Obstetrics and Gynecology at NorthShore University HealthSystem, and a clinical associate professor at the University of Chicago Pritzker School of Medicine. Borders' research examines psychosocial and socioeconomic determinants of adverse pregnancy outcomes in vulnerable populations of women. Her work includes an NIMHD R01 study in Chicago exploring epigenetic mechanisms that drive disparities in adverse birth outcomes, and an NICHD R01 study examining the impact of group prenatal care on maternal and placental inflammation in Greenville, South Carolina. Borders also serves as the executive director and obstetric lead for the Illinois Perinatal Quality Collaborative, a collaborative focused on improving health outcomes for women and newborns through quality improvement with over 100 birthing hospitals in Illinois. Borders is a member of the ACOG Committee on Obstetrics Practice and ex-officio member of the Committee on Patient Safety and Quality Improvement.



Joia Adele Crear-Perry, MD, FACOG

Dr. Joia Adele Crear-Perry is the founder and president of the National Birth Equity Collaborative. Previously, she served as the executive director of the Birthing Project, director of Women's and Children's Services at Jefferson Community Healthcare Center and director of Clinical Services for the City of New Orleans Health Department, where she was responsible for four facilities that provided health care for the homeless, and pediatric, WIC and gynecologic services within the New Orleans clinical service area. Crear-Perry has been celebrated for her work to improve the availability and utilization of affordable health care for New Orleans' citizens after the Hurricane Katrina disaster of 2005. Currently, her focus has expanded nationally and internationally as it relates to maternal and child health. Recently, she addressed the United Nations Office of the High Commissioner for Human Rights to urge a human rights framework to improve maternal mortality.



James M. Greenberg, MD

Dr. James M. Greenberg is the director of the Division of Neonatology at Cincinnati Children's Hospital Medical Center. At Cincinnati Children's, he serves as one of three co-directors of the Perinatal Institute. In 2009, he co-created Cradle Cincinnati, a collective impact collaborative devoted to the elimination of infant mortality in Hamilton County (Cincinnati), Ohio. Cradle Cincinnati now incorporates novel intervention programming, including Cincinnati's Healthy Start program. In 2018, Dr. Greenberg was appointed co-chair of the Ohio Collaborative for the Prevention of Infant Mortality, sponsored by the Ohio Department of Health. He is author of more than 90 peer-reviewed articles, book chapters and editorials, his research interests include the epidemiology of preterm birth, community health, neonatal chronic lung disease and patient safety in the NICU. Greenberg earned his MD from the University of Illinois College of Medicine and completed fellowships in immunology and neonatology at the University of Minnesota Hospital and Clinic.



Michael Lu, MD, MS, MPH

Dr. Michael Lu is a professor and senior associate dean for Academic, Student, and Faculty Affairs at the Milken Institute School of Public Health at George Washington University (GW). He provides leadership and vision for the school's educational mission, and coordinates services and support to help all students and faculty succeed. Prior to joining GW, Lu was the director of the Maternal and Child Health Bureau for the U.S. Department of Health and Human Services. During his tenure, Lu transformed key federal programs in maternal and child health, launched major initiatives to reduce maternal, infant, and child mortality, and was awarded the prestigious Hubert H. Humphrey Award for Service to America. Lu joined the federal government from UCLA Schools of Medicine and Public Health, where he held a joint faculty appointment in obstetrics-gynecology and community health sciences. He was best known for his research on racial-ethnic disparities in birth outcomes, and his leadership in developing, testing, and translating a unified theory on the origins of

maternal and child health disparities based on the life course perspective.



Michael McAfee, MPA, EdD

Michael McAfee is president and CEO of PolicyLink, a national research and action institute focused on advancing racial and economic equity: just and fair inclusion for everyone living in America. He brings over 20 years of experience as a leader who has partnered with organizations across the public, philanthropic, and private sectors to realize this vision. Michael came to PolicyLink in 2011 as the inaugural director of the Promise Neighborhoods Institute at PolicyLink. Under his leadership, PolicyLink emerged as a national leader in building cradle-to-career systems that ensure children and youth in our nation's most distressed communities have a pathway into the middle class. Michael earned his doctorate of education in human and organizational learning from George Washington University and completed Harvard University's Executive Program in Public Management.



Hope Williams

Ms. Williams has worked for over 20 years educating, advocating and strengthening family and community voices in San Francisco. Motivated by her own experiences growing up in the city, being a young professional and new mother overcoming homelessness, to later in life giving birth to a preterm infant, she is driven to serve and impact change. As a member of the PTBi-CA Community Advisory Board (CAB), she serves as a mentor to new community leaders as well as researchers, and strives to educate and support mothers facing similar challenges. In addition to her service on the CAB, Ms. Williams currently serves on district and city forums that address housing, education, resources, policies, and programs in San Francisco.

East Africa Subcommittee



Zulfiqar Bhutta, PhD, MBBS, FRCPC, FAAP

Dr. Zulfiqar A. Bhutta is the Robert Harding Inaugural Chair in Global Child Health at the Hospital for Sick Children (SickKids), Toronto, co-director of the Sick Kids Centre for Global Child Health and the founding director of the Centre of Excellence in Women and Child Health at the Aga Khan University. He also holds adjunct professorships at several leading universities globally, including the Schools of Public Health at Johns Hopkins University, Tufts University, Boston University, University of Alberta and the London School of Hygiene & Tropical Medicine. Bhutta's research interests include newborn and child survival, maternal and child undernutrition and micronutrient deficiencies, as well as reproductive, maternal, neonatal, child and adolescent health and nutrition in conflict settings. He leads large research groups based in Toronto, Karachi and Nairobi with a special interest in research synthesis, scaling up evidence-based interventions in community settings and implementation research in health systems research.



Alex Coutinho, MD, MPH

Dr. Alex Coutinho, a global health leader, has practiced medicine and public health in Africa for 34 years. He is the executive director for Partners in Health in Rwanda and previous board chair for the International AIDS Vaccine Initiative in New York and International Partnership for Microbicides in Washington, DC. Coutinho began his work with HIV/AIDS in 1982. He was the executive director of The AIDS Support Organization (TASO) from 2001 to 2007. From 2007 to 2014 he served as executive director of the Infectious Diseases Institute at Makerere University, Kampala. In 2015, he helped to respond to the Ebola epidemic in West Africa. Since September 2015, Coutinho has been working with the Rwanda Ministry of Health to build innovative health systems in the areas of oncology, neonatology, mental health and noncommunicable diseases. In 2013 he

was awarded the prestigious Hideyo Noguchi Africa Prize. Currently Coutinho serves on the International Partnership for Microbicides board, the WHO strategic advisory board for the elimination of malaria, and the Kenjin-Tatsujin International Advisory Council for the Ashinaga Africa Initiative. He is a senior lecturer at the University of Global Health Equity in Rwanda.



Geeta Rao Gupta, PhD

Dr. Geeta Rao Gupta is the executive director of the 3D Program for Girls and Women and Senior Fellow at the United Nations Foundation. She is also a member of the WHO Independent Oversight and Advisory Committee for health emergencies. In 2017 she was a visiting scholar at Stanford University and served as co-chair of the Gender-Based Violence Task Force of the World Bank. From 2011 to 2016, Rao Gupta served as deputy executive director at UNICEF and from 2010 to 2011 was a senior fellow at the Bill & Melinda Gates Foundation. Prior to that, for over a decade, Rao Gupta was the president of the International Centre for Research on Women (ICRW), a non-profit based in Washington, DC. Dr. Rao Gupta earned a PhD in social psychology from Bangalore University and an MPhil and MA from the University of Delhi in India.



Anneka Knutsson, PhD

A midwife by training, Dr. Anneka Knutsson holds a PhD in health care pedagogy from the University of Göteborg. She currently serves as the chief of the Sexual and Reproductive Health Branch for the United Nations Population Fund (UNFPA). Previously, Knutsson served as the head of development cooperation for the Embassy of Sweden/Sida.



Ruth Levine, PhD

Dr. Ruth Levine is the program director of the Global Development and Population Program at the William and Flora Hewlett Foundation. Levine is an internationally recognized development economist and expert in global health,

education and evaluation. Since 2011, she has led the foundation's team responsible for grantmaking to improve living conditions in low- and middle-income countries and to advance reproductive health and rights in developing countries and in the United States. Previously, Levine was a deputy assistant administrator in the Bureau of Policy, Planning and Learning at the U.S. Agency for International Development. She holds an undergraduate degree in biochemistry from Cornell University and a doctorate degree in economic demography from Johns Hopkins University.



Amy Pollack, MD, FACOG, FACPM

Dr. Amy Pollack serves as the director of the Maternal, Newborn & Child Health team at the Bill & Melinda Gates Foundation. Prior to joining the foundation, Pollack served as chief safety officer at Medtronic, where she set the strategy and policy for medical safety across the company's global business groups. Pollack has over 25 years of experience in domestic and international health care, including work in clinical practice, as the CEO of an international women's health non-profit, and as an executive in early-stage medical device businesses, social venture capital and industry. She has led global health multilateral negotiations for disruptive technologies and national working groups to drive policy change around the HPV vaccine, cervical cytology and prostate cancer. Pollack received her undergraduate degree in neuroscience and her medical degree from the University of Florida. She completed her obstetrics and gynecology and preventive medicine residencies at the University of Washington.



Jaime Sepulveda, MD, DrSc, MPH

Dr. Jaime Sepulveda is the executive director of Global Health Sciences, professor of Epidemiology, and the Haile T. Debas Distinguished Professor in Global Health at UCSF. His areas of research expertise include HIV/AIDS, vaccines, health surveillance and metrics, neglected infectious diseases, maternal & neonatal health, health policy and global health initiatives. Previously, Dr. Sepulveda was the principal investigator for the FIRST (Fighting Infections through Research, Science & Technology) program, which

tackles neglected infectious diseases in Mesoamerica, and a member of the Foundation Leadership Team at the Bill & Melinda Gates Foundation. For more than 20 years, Sepulveda worked in a variety of senior health posts in the Mexican government.



Jeffrey Smith, MD MPH

Jeffrey Smith is the deputy director of Implementation Research and Demonstration for Scale on the Maternal, Newborn and Child Health Team. He is an obstetrician/gynecologist and global health strategist with 25 years of clinical and public health experience in developing countries across Asia, Africa and Latin America. He received his undergraduate and medical degrees from Georgetown University and his public

health degree from Johns Hopkins University. He spent 10 years in Asia, where he provided program management support and technical guidance to a variety of public health programs in Nepal, Afghanistan and Thailand. He guided the maternal health team for Jhpiego on USAID’s Maternal and Child Survival Program. His most recent role was as the vice president for Technical Leadership at Jhpiego, where he led clinical interventions and implementation approaches in reproductive, maternal, neonatal, child and adolescent health and infectious diseases. He has authored numerous publications related to improving the quality of clinical services, expanding the health workforce and scaling up proven clinical interventions for women and girls, mothers and newborns. He holds faculty positions in Gynecology and Obstetrics at the Johns Hopkins University School of Medicine and in International Health in the Johns Hopkins University Bloomberg School of Public Health.



Appendix B: Preterm Birth Initiative Leadership

East Africa

UCSF Team



Dilys Walker
Principal Investigator, PTBi East Africa



Hana Azman Firdaus
Monitoring, Learning, and Evaluation Technical Advisor



Alejandra Benitez
Biostatistician



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East Africa Training Specialist



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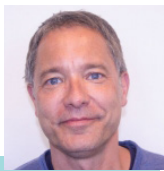
Rikita Merai
Research Analyst



Lara Miller
Program Manager



David Mugume
PTBi Information Lead System Developer



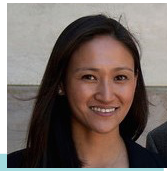
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Director of Monitoring and Evaluation



Hannah Park
Deputy Director, Maternal
Newborn Health Research
Cooperative



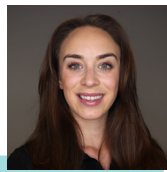
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Researcher



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Murindahabi**
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David Nzeyimana
Project Manager

Uganda



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Principal Investigator



Lawrence Kazibwe
Co-Investigator, OBGYN



Harriet Nambuya
Co-Investigator, Paediatrics



Darius Kajjo
Data Collector



Angella Namala
Co-Investigator, Resident
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Gertrude Namazzi
Study Manager



Phillip Wanduru
Data Clerk/Video Analyst



Paul Mubiri
Data Manager

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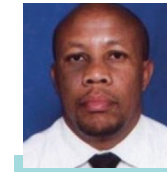
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Leah Kirumbi
Co-Investigator



Grace Nalwa
Co-Investigator



Anthony Wanyoro
Co-Investigator



Kevin Achola
Program Manager



Beatrice Olack
Technical Coordinator

In addition to the project leadership listed here, the East Africa team gratefully acknowledges the work and support of our field teams, consultants, local and national advisory boards, and Ministry of Health partners

California

Principal Investigators



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Principal Investigator, PTBi
California and PTBi C3
(Communication, Collaboration,
and Capacity Building, Aim 4)



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Co-Principal Investigator, PTBi
California; Director, Postnatal
Interventions (Aim 2c)



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Sky Feuer
Academic Coordinator



Jonathan Fuchs
Director, Collective Impact (Aim 3)



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Faculty, Postnatal
Interventions



Caryl Gay
Research Specialist, Postnatal
Interventions (Aim 2c)



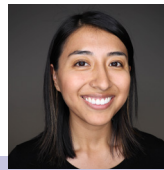
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Interventions



Brittany Chambers
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& Discovery



Kimberly Coleman-Phox
Academic Coordinator



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Postnatal Interventions



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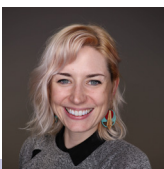
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Research Program



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2b), Director, Transdisciplinary
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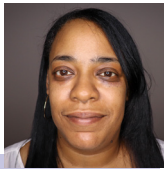
Selina Lao
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Emily Letts
Communications Associate



Fred McCord
Executive Assistant to Dr. Rand



Daphina Melbourne
Community Engagement Associate



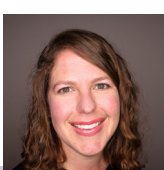
Nannette Nemenzo
Program Analyst



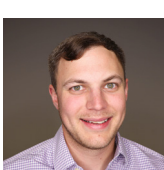
Loren Newman
Designer



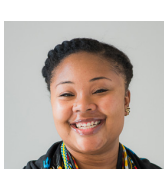
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Director, Joint Perinatal
Health Equity Project



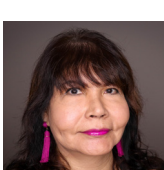
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Precision Health and
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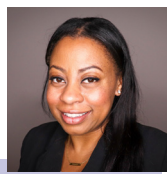
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Research Analyst,
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Brianne Taylor
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Rita Wasley
Program Analyst



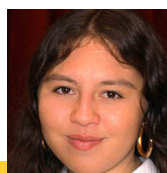
Shanell Williams
Director, Community
Engagement

Community Advisory Board

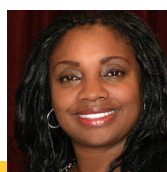
San Francisco



Julie Harris
Independent Contractor consulting
on the efficacy of reproductive
health and preterm birth research
and interventions



Andrea C. Nieto
Clínica Martín-Baró



Hope Williams
San Francisco Unified School
District

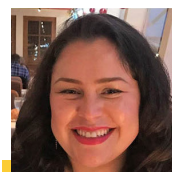


Schyneida Williams
Case Manager, Homeless Prenatal
Program

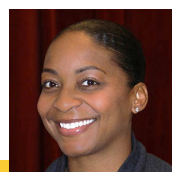


Alexis Cobbins
Project 500, San Francisco Human
Services Agency

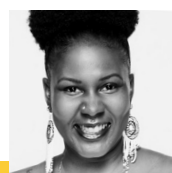
Oakland



Nayeli Bernal
Community Member



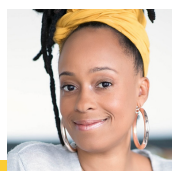
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Certified Nurse Midwife,
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Health System



Zoe Carrasco
Prenatal Healthcare Educator,
La Clinica De La Raza



Starr Britt
Roots of Labor Collective



Brandi Gates-Burgess
Lactation Consultant and
Breastfeeding Coordinator, Breast
Friends Mommy Group, Alameda
County WIC Program, West
Oakland Health Center



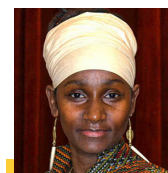
Linda Jones
East Bay Community Doula,
Black Women Birthing Justice
Co-Founder, Roots of Labor Birth
Collective Advisor



Michele Poole
Community Member

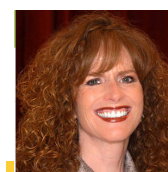


Sonia Waters
Resource Counselor, Family
Resource Navigators



Jessela Wehner
Native, Natural and Beyond
Birthing Supportive Services

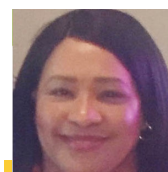
Fresno



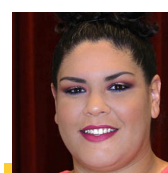
Amiee Mallet
Program Coordinator,
Clinica Sierra Vista



Loretta Scruggs-Leach
Community member



Carla Stanley
Clinical Nurse



Claudia Taylor
Community member

Parent Clinician Advisory Board

Benioff Children's Hospital Oakland



Holly Christensen
NFRC Site Research Nurse



Priscilla Joe
NFRC Site Principal Investigator



Samantha Ngo
NFRC Site Clinical
Research Coordinator

Meshay Adams | Member, Oakland
Ruth Crowe | Member, Oakland
Bette Flushman | Member, Oakland
Audra Kay | Member, Oakland
Joanne Kuller | Member, Oakland
Jianina Lloyd | Member, Oakland
Leslie Lusk | Member, Oakland
Evelyn Mascarenas | Member, Oakland
Dishon Moore | Member, Oakland
Kathryn Ponder | Member, Oakland
Michelle Poole | Member, Oakland
Teresa Proctor | Member, Oakland
Analucia Silva | Member, Oakland
Meskerem Zawde | Member, Oakland

Benioff Children's Hospital San Francisco



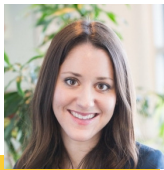
Dawn Gano
NFRC Site Principal Investigator



Riya Jacob
Program Coordinator, Postnatal Interventions



Rebecca Kriz
Program Coordinator, Postnatal Interventions



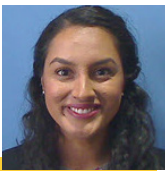
Katie Millar
NFRC Site Research Nurse



Nadia Tsado
NFRC Site Clinical Research Coordinator

- Gemma Baril** | Member, San Francisco
- Robin Bisgaard** | Member, San Francisco
- Bryn Boslett** | Member, San Francisco
- Whitney Brown** | Member, San Francisco
- Kristina Chester** | Member, San Francisco
- Zach Chester** | Member, San Francisco
- Courtney Gregory** | Member, San Francisco
- Kristin Hoppe** | Member, San Francisco
- Jen Hutchison** | Member, San Francisco
- Jaclyn Lerch** | Member, San Francisco
- Keidonna McDowell** | Member, San Francisco
- Kacy Minot** | Member, San Francisco
- Alina Mon** | Member, San Francisco
- Doris Obermeier** | Member, San Francisco
- Quyhn-an Phan** | Member, San Francisco
- Janet Shimotake** | Member, San Francisco
- Myrna Vega Demare** | Member, San Francisco

CRMC Fresno



Pallavi Bekal
NFRC Site Clinical Research Coordinator



Diana Cormier
NFRC Site Principal Investigator



Nicole Hansen
NFRC Site Research Nurse

- Dawn Aguirre** | Member, CRMC
- Ashlee Alvarez** | Member, CRMC
- Jennifer Contreras** | Member, CRMC
- Yuri Corona** | Member, CRMC
- Kristi Hernandez** | Member, CRMC
- Abby Jacobs** | Member, CRMC
- Jennifer King** | Member, CRMC
- Michael King** | Member, CRMC
- Karina Lopez** | Member, CRMC
- Roselyn Nunez** | Member, CRMC
- Yesica Perez** | Member, CRMC
- Robin Ryan** | Member, CRMC
- Pamela Salcedo** | Member, CRMC
- Priscilla Valle** | Member, CRMC
- Anne Williams** | Member, CRMC
- Donna Wyman** | Member, CRMC

Benioff Community Innovators

- Sabra Bell** | Black Infant Health
- Elonda Mccall** | Urban Services YMCA
- Karent Novelo** | Homeless Prenatal Program
- Haydee Orellana** | Women's Community Clinic
- Cecilia Shepard** | Women's Community Clinic
- Randi Tanksley** | Homeless Prenatal Program
- Brianne Taylor** | Black Infant Health

SOLARS



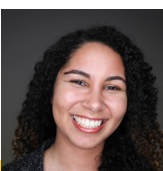
Laura Jelliffe-Pawlowski
Principal Investigator



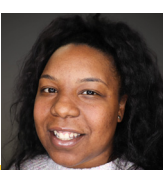
Brittany Chambers
Co-Principal Investigator



Anu Manchikanti Gómez
Co-Principal Investigator



Carly Ritter
Project Manager



Kiya Clary
Clinical Research Coordinator/Phlebotomist



Gabriela Negrete
Clinical Research Coordinator

Discovery Collaborative

Co-Investigators

- James Anderson** | UCSF
- Rebecca Baer** | UCSD
- Gretchen Bandoli** | UCSD
- Jessica Block** | UCSD
- Brittany Chambers** | UCSF

- Christina Chambers** | UCSD
- Joe DeRisi** | UCSF
- Elissa Epel** | UCSF
- Jennifer Felder** | UCSF
- Elena Flowers** | UCSF
- Dawn Gano** | UCSF
- Anu Manchikanti Gómez** | UC Berkeley
- Rita Hamad** | UCSF
- Marta Jankowska** | UCSD
- Kord Korber** | UCSF
- Jue Lin** | UCSF
- Chuck McCulloch** | UCSF
- Monica McLemore** | UCSF
- Lou Muglia** | Cincinnati Children's Hospital
- Tania Pacheco-Werner** | CSU Fresno
- Matt Pantell** | UCSF
- Nisha Parikh** | UCSF
- Mark Petersen** | UCSF
- Brian Piening** | Providence Cancer Center
- Aric Prather** | UCSF
- Elizabeth Rogers** | UCSF
- Kelli Ryckman** | University of Iowa
- Karen Scott** | UCSF
- Michael Snyder** | Stanford
- Martina Steurer-Muller** | UCSF
- Jacqueline Torres** | UCSF

Scholars, Fellows, and Emerging Researchers


- Jennet Arcara** | UC Berkeley
- Jean Costello** | UCSF
- Jessilyn Dunn** | Stanford
- Johanna Huusko** | Cincinnati Children's Hospital
- Elizabeth Jasper** | University of Iowa
- Katrina Kalantar** | UCSF/UC Berkeley
- Deborah Karasek** | UCSF
- Liang Liang** | Stanford
- Molly McCarthy** | UCSF
- Nichole Nidey** | University of Iowa
- Kharah Ross** | Alberta Children's Hospital and University of Calgary
- Jiue-An Yang** | UCSF


Collective Impact - Fresno


Steering Committee

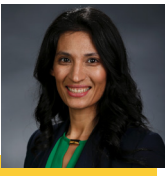
- Brian Angus** | Fresno Economic Opportunities Commission
- Lynne Ashbeck** | Valley Children's Hospital
- Joseph Castro** | California State University, Fresno
- Kathryn Catania** | Fresno County Superintendent of Schools
- Jennifer Chou** | ACLU of Northern California
- Jonathan Fuchs** | UCSF California Preterm Birth Initiative
- Sara Goldgraben** | Fresno County Dept. of Public Health
- Kristi Hernandez** | Mother with Living Experience
- Quin Hussey** | UCSF California Preterm Birth Initiative
- Nicole Hutchings** | Mother with Living Experience
- Subhashini Ladella** | UCSF Fresno
- Carla Stanley** | Central Valley Black Nurses Association
- Kudzi Muchaka** | Community Regional Medical Center
- Gail Newel** | OB/GYN Consultant
- Artie Padilla** | Every Neighborhood Partnership
- Janet Paine** | Anthem Blue Cross
- Larry Rand** | UCSF California Preterm Birth Initiative
- Emilia Reyes** | First 5 Fresno County
- Mark Salazar** | Fresno County Police Department
- Courtney Shapiro** | CalViva Health
- Preston Prince** | Fresno Housing Authority
- Dawan Utecht** | Fresno County Dept. of Behavioral Health
- Reyna Villalobos** | Clinica Sierra Vista
- Davena Witcher** | AMOR Foundation
- Anthony Yang** | IMAGO


Backbone, CSU Fresno

- 

Amber Costantino
Monitoring, Learning, Evaluating (MLE) Specialist
- 

Sandra Flores
Program Director
- 

Kendalyn Mack
Community Engagement Specialist
- 

Olga Nunez
Community Engagement Coordinator
- 

Shelbie Yang
Administrative Support Coordinator


Expecting Justice, San Francisco Collective Impact for Healthy Births

Steering Committee

- Sabra Bell** | Parent Advocate
- Ayanna Bennett** | SF Department of Public Health
- Alice Chen** | SF Department of Public Health
- Kim Coates** | SF Unified School District
- Davina Counte** | Parent Advocate
- Farah Faramand** | SF Department of Children, Youth and their Families
- Anastasia Gordon** | Bayview Y
- David Erikson** | SF Federal Reserve

- Hector Sanchez Flores** | National Compadres Network
- Jonathan Fuchs** | UCSF California Preterm Birth Initiative
- Milika Funaki** | Regional Pacific Islander Task Force
- Jessica Wiley** | San Francisco Health Plan
- Lyn-Tise Jones** | Parent Advocate
- Dan Kelly** | Human Services Agency
- Sara Kennedy** | Planned Parenthood of Northern California
- Ingrid Mezquita** | First 5 San Francisco
- Martha Ryan** | Homeless Prenatal Program
- Kim Scurr** | UCSF
- Maria Su** | SF Department of Children, Youth and their Families

Backbone, SF Department of Public Health

- 

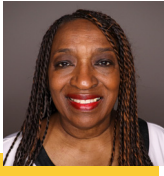
Jenna Gaarde
MCAH Senior Health Program Planner
- 

Zea Malawa
Program Manager



Solaire Spellen
Program Associate

Transdisciplinary Fellowship Cohort '18-'19



Dorothy E. Forde
Postdoctoral Fellow



Deborah Karasek
Postdoctoral Fellow

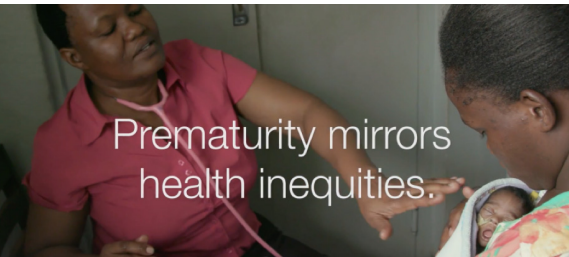


Moses Obimbo Madadi
Postdoctoral Fellow



Appendix C: Videos and Digital Stories

Shared Stories



About the Preterm Birth Initiative
bit.ly/2jkAXrr



Transdisciplinary Postdoctoral Research Fellowship
<http://bit.ly/2W7wRo4>

California Stories



Using Community Health Workers in San Francisco for Preterm Birth Prevention
<http://bit.ly/2Th9XbU>



Social Determinants of Health Adversity and Resilience (SOAR) Factors
<http://bit.ly/2Oej6RF>



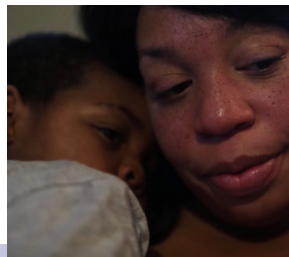
Family Integrated Care with Mobile Technology (mFICare)
<http://bit.ly/2Fkj2Nn>



San Francisco Preterm Infant Mortality Review (SF PFIMR)
<http://bit.ly/2UHsuQj>



A Trial of Donor Milk Vs. Formula to Supplement Late Preterm Infants
<http://bit.ly/2W6fJPB>



Qualifying Risk: Exploring How Stress Influences the Risk of Preterm Birth Among Black Women
<http://bit.ly/2udT6g4>



Newborn and Family Research Collaborative
<http://bit.ly/2W6ewrx>



Persistent Human Cytomegalovirus Infection of the Amnion in Preterm Birth
<http://bit.ly/2TMBKX0>



Exploring the Dual Burden of Severe Maternal Morbidity and Preterm Birth in California
<http://bit.ly/2TSHJbY>



Informing Model Articulation by Eliciting the Family Experience
<http://bit.ly/2TWtnYa>



Preventing Short Interpregnancy Intervals and Preterm Birth Through Post-Delivery Contraception
<http://bit.ly/2Y3Zfcm>



Testing Exposure to Immigration Enforcement as a Determinant of Preterm Birth in California
<http://bit.ly/2JmDMZ8>



EatSF: Fruit and Vegetable Vouchers to Support Pregnant Mothers in San Francisco
<http://bit.ly/2Y6mTVO>



Postpartum Contraceptive Decision Support Tool
<http://bit.ly/2W9DPZO>



Perivable GOALS: A Decision Support Tool for Perivable Decision-Making
<http://bit.ly/2TSV1oY>



Stress, Resilience and Coping in Hispanic Women in Fresno: The SOLARS Study Expansion
<http://bit.ly/2Fn4DQN>



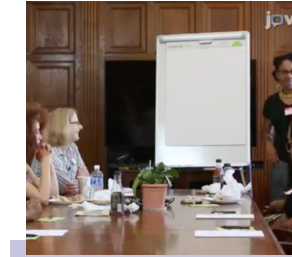
Disrupting Models of Prenatal Care in Fresno: GLOW!
<http://bit.ly/2FbwamJ>



Air Pollution and Preterm Birth: A Natural Experiment
<http://bit.ly/2TJUI09>



World Prematurity Day: City and County of San Francisco Press Conference
bit.ly/2Ks53G3



Jove Protocol: Involving Women of Color at High Risk for Preterm Birth in Research Priority Setting
bit.ly/2KtOGc7



Collaboratory: Housing and Preterm Birth: Community-Academic Partnership for Research and Action
bit.ly/2jkCspN



Black Women's Perspectives on Structural Racism: Opportunities for Measure Development
<http://bit.ly/2CqDiey>



Racism and Preterm Birth: Preterm Birth Initiative 2017 Annual Symposium
<http://bit.ly/2FbgfF5>



San Francisco Supervisor Malia Cohen, Sister Web and SF DPH Announce New Doula Program
<http://bit.ly/2TPo5xy>



The Benefits of Kangaroo Care
bit.ly/2jiSa4u



PTBi California Partnering with Patients to Co-create Research Agendas (Premiered at the White House Precision Public Health Summit in June 2017) bit.ly/2KsTX3m



Laura Jelliffe-Pawlowski on KVTU: New Blood Test to Predict Preterm Birth
bit.ly/2jnzm4i



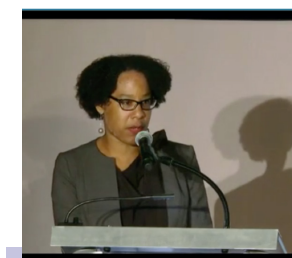
Collaboratories: Transdisciplinary Monthly Discussion Series on Preterm Birth
<http://bit.ly/2TZGsjc>



The Making of Birth Justice Warriors
<http://bit.ly/2HyWZFI>



Benioff Community Innovators
bit.ly/2jIT6Fe



Monica McLemore at the White House Frontiers Conference
bit.ly/2KuN8hN



Roman's Story
bit.ly/2KvrsIQ



Collaboratory: Got Breast Milk?
bit.ly/2jkAYM1



Collaboratory: Living in a Time of Uncertainty: Advancing Women's Health in 2017 and Beyond bit.ly/2rMBt6t



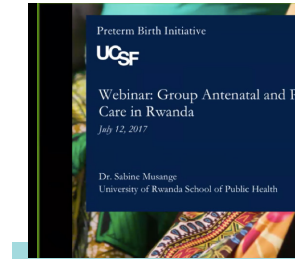
Anne Wojcicki at World Prematurity Day 2016: Empowering People to Take Charge of Their Health bit.ly/2Krguxy



Case Studies of Kangaroo Mother Care in Vietnam bit.ly/2jjGtKU



The Power of Group Antenatal Care bit.ly/2G15FyR



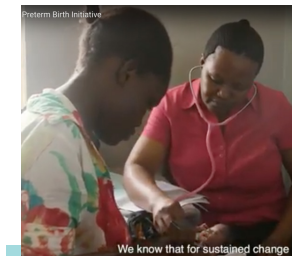
Group Pregnancy Care Webinar, 11 July 2017 bit.ly/2rc8ubB



2016: A Year in Review | East Africa Preterm Birth Initiative <https://adobe.ly/2jilzdK>



California Residents Talk About How Prematurity has Affected Their Lives (World Prematurity Day 2015) bit.ly/2jmJRVo

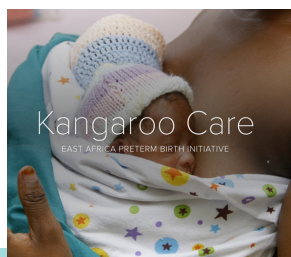


What is the East Africa Preterm Birth Initiative? bit.ly/2ji3XPZ



A Day in the Life of Data bit.ly/2JGttua

East Africa



Kangaroo Care <https://adobe.ly/2ln3go7>



Tiny Hats for Tiny Babies Photo Story <https://adobe.ly/2KtP4r5>



Tiny Hats for Tiny Babies Video bit.ly/2JH8N58

