THE ARIADNE LABS STORY

YEAR TWO

“Our discoveries are spreading around the world and reaching whole populations of people from the United States to Uganda.”

PHOTO: TIM LLEWELLYN

We are two years into our work to make health care more caring, more effective and more safe everywhere, and we have already come a long way. We started with just eight people and have grown to more than 70. The result has been discovery with impact on a massive scale.

We’ve developed better systems for three major moments in people’s lives: childbirth, surgery and serious life-threatening illness. At each of these moments, health systems routinely have major failures that cause tremendous harm to people. But we’ve identified clear, simple steps for improvement and created tools and approaches to make it possible.

As you will see in the pages that follow, our discoveries are spreading around the world and reaching whole populations of people from the United States to Uganda. Alongside our core programs, our associate faculty have created a pipeline of important new research projects on everything from reversing the harmful rate of cesarean sections in the United States to developing the first measures of global primary care system performance.

Success and recognition have come far more rapidly than we anticipated. Our surgery checklist introduced five years ago is now used in tens of millions of operations globally each year and Scotland alone documented 9,000 lives saved.

This past year, we supported the Centers for Disease Control and Prevention response to the Ebola epidemic, helping it develop its checklist to identify how hospitals should handle suspected cases. The Ebola checklist was rapidly introduced in every hospital in the United States. We are also receiving overwhelming demand for our Serious Illness Care Program, partly due to the unexpected response to *Being Mortal*, my recent book about improving care at the end of life.

We’ve had wonderful opportunities. We’ve been able to run fast and efficiently producing massive change with a tiny number of people. We also know there is yet more we can and will do.

Yours,
Atul Gawande, Executive Director

About Us

PHOTO: NICHOLAS NIXON

Better care at critical moments

A little more than two years ago, we founded Ariadne Labs with a sense of urgency about the state of global health care. As a group of experienced physicians and public health researchers we were witness to widespread systemic failures in health systems worldwide at key moments in people's lives. A few of those moments—childbirth, surgery and serious illness—became our focus.

We set out to develop practical, affordable solutions that could be implemented immediately, in any health care setting. The tools we develop are continuously evaluated and improved to optimize outcomes. The results have been tremendous. We have developed a surgical safety checklist that cuts deaths in half. Our approach to childbirth safety has been shown to increase the number of lifesaving practices followed in low-income settings from just 10 out of 29, to 25 out of 29. Through our Serious Illness Care Program, we have doubled the proportion of patients who have key discussions of goals and priorities at the end of life. We are spreading these innovations around the world. And, we now have faculty and scientists producing a pipeline of such innovations.

Building capacity to reach more patients

Our ambitions have inspired significant growth in the past year. Under the umbrella of childbirth, surgery and serious illness, we launched a number of new projects. For instance, we are creating a customized Serious Illness Conversation Guide for dialysis patients and investigating solutions to reverse the skyrocketing rates of medically unnecessary cesarean sections worldwide.

Our faculty are also launching new lines of work—for instance, helping the World Bank develop ways to measure the quality of primary health care globally. This has allowed us to partner with organizations including the Bill and Melinda Gates Foundation, the American Hospital Association, the World Health Organization, Population Services International and others—to test and spread our discoveries at large scale. From the richest to the poorest countries, our solutions now reach tens of millions of people.

As our programs and collaborations expanded, we recognized the need to strengthen our infrastructure. In 2013, we created three new internal platforms to advance our capacity in informatics and measurement, implementation/improvement science and program management. These teams of experts work hand-in-hand with our scientists, physicians and researchers in the field to gather, analyze and utilize data, identify solutions and optimize program operations.

Headquartered in Boston's Landmark Center, Ariadne Labs is a joint center for health systems innovation at Brigham and Women's Hospital and Harvard T.H. Chan School of Public Health. We are named for Ariadne, the Greek goddess who showed the way out of the Minotaur's labyrinth with a simple thread. We aim to find simple, patient-centered solutions to the maze of health care complexity.

OUR STAFF **THE PEOPLE OF ARIADNE LABS**

The task at hand is enormous. Our work has never been more important. We are agents of change who believe we can do better at every level of the health care system.

We are medical doctors, nurses and public health experts, scientists and clinicians, data experts and project managers. With rigorous science, innovation and compassion we find solutions and deliver real-time results.

PHOTO: KHALEEL SEECHARAN

Safe Surgery

Global leader in safe surgery

One out of 25 individuals worldwide will have surgery each year, despite significant risk, making it one of the most important health interventions people undergo in the course of their lives. Extensive research demonstrates that the lifesaving and transformative potential of surgery significantly improves with attention to communication, teamwork, operating room preparation and safety procedures.

Ariadne Labs has emerged as a global leader in the effort to standardize safety measures in operating rooms. The Safe Surgery Program remains our core program with the most visible global impact. The Safe Surgery Checklist developed by our founder Dr. Atul Gawande and Chief Medical Officer Dr. Bill Berry was adopted in 2008 by the World Health Organization as the global standard of care. In a study of eight hospitals around the world, use of the checklist was shown to reduce surgical complications and mortality by 18 to 47 percent.

We estimate that it is used in at least 50 million of the 300 million operations done worldwide. The country of Scotland has documented more than 9,000 lives saved. Yet more work remains to disseminate the checklist in diverse settings.

Today, we collaborate with the WHO and medical facilities around the world to implement, evaluate and adapt the checklist.

Our effort to bring the Safe Surgery Checklist to every hospital in the United States, Safe Surgery 2015, was launched in South Carolina. We estimate as many as 500 surgery-related deaths each year are being prevented in that state alone. More recently, we expanded to more hospitals and ambulatory surgery centers around the country.

OUR TOOL **THE SURGICAL SAFETY CHECKLIST**

The 19-point checklist is directed to the surgical nurse, anesthesiologist and surgeon at three stages: before anesthesia, before skin incision and before the patient leaves the operating room. The checklist standardizes best practices where dramatic safety improvements can be realized:

- Infection prevention
- Anesthesia and patient monitoring
- Surgical team communication and teamwork

"I use the Safe Surgery Checklist every time I enter the operating room. I have seen firsthand what the research consistently demonstrates—the checklist significantly improves surgical team performance and patient outcomes."

—Dr. Atul Gawande, Surgeon, Brigham and Women's Hospital

"We have an unwavering focus on what we can change, right now, to really improve surgical care. That's the beauty of the Safe Surgery Checklist." —Dr. Bill Berry, Chief Medical Officer

Pioneering new solutions in OR safety

As the Safe Surgery Checklist is adapted and implemented, Ariadne Labs researchers are identifying more ways to improve surgical outcomes in different settings. New initiatives of the Safe Surgery Program include:

- **Ambulatory Surgery:** We are working with the Agency for Healthcare Research and Quality and the American Hospital Association's Health Research and Educational Trust to implement the Surgical Safety Checklist in 500 ambulatory surgery centers across the United States.
- **Operating Room Crisis Checklists:** Our new series of 12 checklists guides surgical teams through the most common operating room emergencies. A randomized simulation trial published in the *New England Journal of Medicine* showed that use of the checklists during crises greatly improved adherence to critical steps in patient care management by 75 percent.
- **Emergency Manuals Implementation Collaborative**: We have been instrumental in organizing a national group to promote use of the new checklists in hospitals around the country.

COLLABORATION **FIGHTING EBOLA WITH THE CDC**

The Ebola epidemic in Africa is the largest in history, affecting multiple countries. In 2014, the medical experts at Ariadne Labs joined the global effort to contain the spread of the disease by collaborating in the development of a standardized Ebola safety checklist for medical personnel. The checklist, implemented by The Centers for Disease Control and Prevention, demonstrated a way to provide hospitals across the country with clear, simple guidelines on how to identify, assess, and safely isolate Ebola patients.

IN THE FIELD

"This disciplined approach to sharing information fills in the gaps."
—Dr. Alex Hannenberg

Physician advocates use of surgical checklists for better patient outcomes

Boston anesthesiologist is promoting change in the OR

Boston anesthesiologist Alex Hannenberg remembers doing surgery before the Ariadne Labs Safe Surgery Checklist became the standard of surgical care around the world. With no systematic process for conferring with the surgeon, surgical teams would occasionally be caught by surprise by complications or blood loss.

With the Safe Surgery Checklist in place, Dr. Hannenberg says, surgical teams take time to communicate and plan based on the surgeon's expectations of an operation's duration, level of trauma and blood loss or instrument needs.

"This disciplined approach to sharing critical information fills in the gaps," said Dr. Hannenberg, who, as the past president of the American Society of Anesthesiologists, has championed use of surgical checklists within the professional anesthesiology community and at his hospital, Newton-Wellesley. "Some information is not available on the printed operating room schedule and may not be evident to every member of the team. The final and best chance for the entire surgical team to be on the same page is that conversation."

The strengths of the Ariadne Labs checklist are its clean, simple design and its adaptability, Dr. Hannenberg said. At his hospital, the surgical teams are piloting a project that re-organizes the checklist's 19 steps from three parts to four, so that more preparation and conversation occurs prior to the induction of anesthesia.

Dr. Hannenberg has also pioneered the use of surgical emergency checklists at his hospital. After reviewing emergency checklists from different organizations, his hospital chose the manuals developed at Ariadne Labs and has been using them since 2014.

The emergency checklists guide surgical teams through the management of 12 surgical crises, ranging from anaphylaxis or cardiac arrest to fires and hypoxia. The physicians at Newton-Wellesley have created a 13th emergency checklist to address obstetrical hemorrhage. They utilized the Ariadne Labs checklist design and guidelines from the American College of Obstetrics and Gynecology.

"In the first six months, we had five or six obstetrical hemorrhages and people reached for the checklist," Dr. Hannenberg said. "I used it myself in an obstetrical hemorrhage and it took under 15 seconds for me to look at it and remind myself about warming the patient. I would have gotten to warming the patient, but the longer you don't, the worse it is. Opening the checklist and identifying that missing item and addressing it was a 40-second intervention and that makes a difference."

BetterBirth

Saving the lives of mothers and infants

Childbirth remains the number one cause of death for women and children in low-income countries. We are committed to stemming this suffering and loss of life through our BetterBirth Program. We are approaching the problem at the moment of greatest vulnerability for mother and child, in the delivery room.

In the largest clinical trial we have ever undertaken, Ariadne Labs and the Bill and Melinda Gates Foundation are testing a new safe childbirth protocol with 172,800 live births. The pilot phase of the study was completed in 2014 with nine facilities in Uttar Pradesh, India where a staggering 1 in 20 neonates are stillborn or die within days.

The next phase, now underway, is a randomized control trial with 30 health facilities, and the final phase will add 90 more facilities.

The study is examining the effectiveness of the BetterBirth Checklist and Coaching Program, a protocol inspired by the success of the Safe Surgery Checklist. The BetterBirth Checklist focuses on 31 of the most essential practices during the four stages of birth: admission, just before pushing, soon after birth and before discharge. It's implemented through peer-to-peer coaching of birthing attendants to encourage proper use of the checklist. Coaching takes place for eight months and is phased out as use of the checklist is sustained by the local medical team.

Reducing maternal and neonatal mortality globally are two of the eight United Nations Millennium Development Goals. The BetterBirth study represents a major step toward meeting these goals. With the data and lessons learned from this study, we aim to implement a scientifically validated BetterBirth intervention globally.

STUDY **TRACKING THE RISE OF UNNECESSARY C-SECTIONS**

Around the world, more and more unnecessary and discretionary cesarean section deliveries are being performed. Surgical childbirth introduces greater health risk to both mothers and babies, and places greater burden on health care systems. A new study at Ariadne Labs is investigating the causes of the growing numbers of C-sections by focusing on hospital culture and management. The project aims to identify what systemic factors lead physicians to recommend surgical delivery to mothers who enter the hospital expecting a vaginal birth. In partnership with the National Perinatal Information Center/ Quality Analytic Services, 50 hospitals nationwide have been recruited to participate and inform the creation of a new intervention to reduce unnecessary C-sections.

"We have a long way to go to reduce maternal and neonatal mortality and morbidity around the world, but I'm passionate about finding those solutions. We believe this is an intervention that can really make a difference."

—Dr. Katherine Semrau, BetterBirth Program Director

PHOTO: KATE CLOWRY

PHOTO: KATE CROWLEY

The BetterBirth Study

Research Question: Does the BetterBirth Checklist and Coaching Program improve care in childbirth facilities and decrease rates of maternal and infant mortality and morbidity?

STUDY DETAILS

LOCATION: Northern state of Uttar Pradesh, India

POPULATION: 200 million

POVERTY RATE: 30 percent below poverty line

EXPENDITURES ON HEALTHCARE: Lowest in India

FEMALE LITERACY RATE: 60%

MATERNAL DEATH RATE: 300 per 100,000

NEONATAL DEATH RATE: 5,000 per 100,000

MAJOR CAUSES OF MATERNAL DEATH (Global)

- Hemorrhage
- Infection
- Obstructed labor
- Hypertensive disorders

MAJOR CAUSES OF NEONATAL DEATH (Global)

- Birth asphyxia
- Infection
- Complications related to prematurity
- Pneumonia

STUDY TIMELINE

2014 STUDY PILOT PHASE: 5 health care facilities

2015 PHASE II: 30 health facilities

2016-17 PHASE III: 120 total health facilities

STUDY PARTNERS

- Bill and Melinda Gates Foundation
- World Health Organization
- Population Services International
- Governments of India and Uttar Pradesh

Sources: United Nations Development Program, Government of India Press Note on Poverty Estimates 2011-12, Uttar Pradesh Annual Health Survey Bulletin 2011-12

IN THE FIELD

"I have actually changed for the better in my practice. I realize what mistakes I was making and what changes I needed to make. Mothers are leaving here happy with their babies."

—Drivdi Katial

More holistic care for mothers and babies

Senior nurse Drivdi Katial credits BetterBirth with happier mothers and fewer infant deaths

At the Ganj Muradabad community health center, it has been standard practice to give every mother a labor-inducing drug at the start of labor in the belief that it was beneficial. However, the drug was being administered long before it was clear whether the women needed it.

Today, that is no longer the practice, one of the many changes implemented in the past two months as part of the BetterBirth Program in Uttar Pradesh, India. Ganj Muradabad is one of 120 facilities participating in a large-scale study of whether Ariadne Labs' BetterBirth Checklist and Coaching Program can reduce maternal and neonatal deaths. Ganj Muradabad averages just over 100 births per month and 1,300 births annually.

The program is making a significant impact, said senior auxiliary nurse midwife Drivdi Katial.

"Since we started using the checklist we haven't had any early newborn deaths," she said. Katial is in the midst of the eight-month BetterBirth Coaching Program. A local nurse, Amrita Singh, who was trained by Ariadne Labs partner Population Services International, is coaching her and the center's three other birth attendants. Singh guides them on how to use the checklist, flags areas where improvement is needed and ensures they have resources and support to implement the changes.

The program has been welcomed at Ganj Muradabad. "In our heads, we have nothing else but the checklist," Katial said. Even with 20 years of experience delivering babies, Katial said she has learned from the BetterBirth study. She feels she is providing more holistic care for her patients through the new medical and educational procedures.

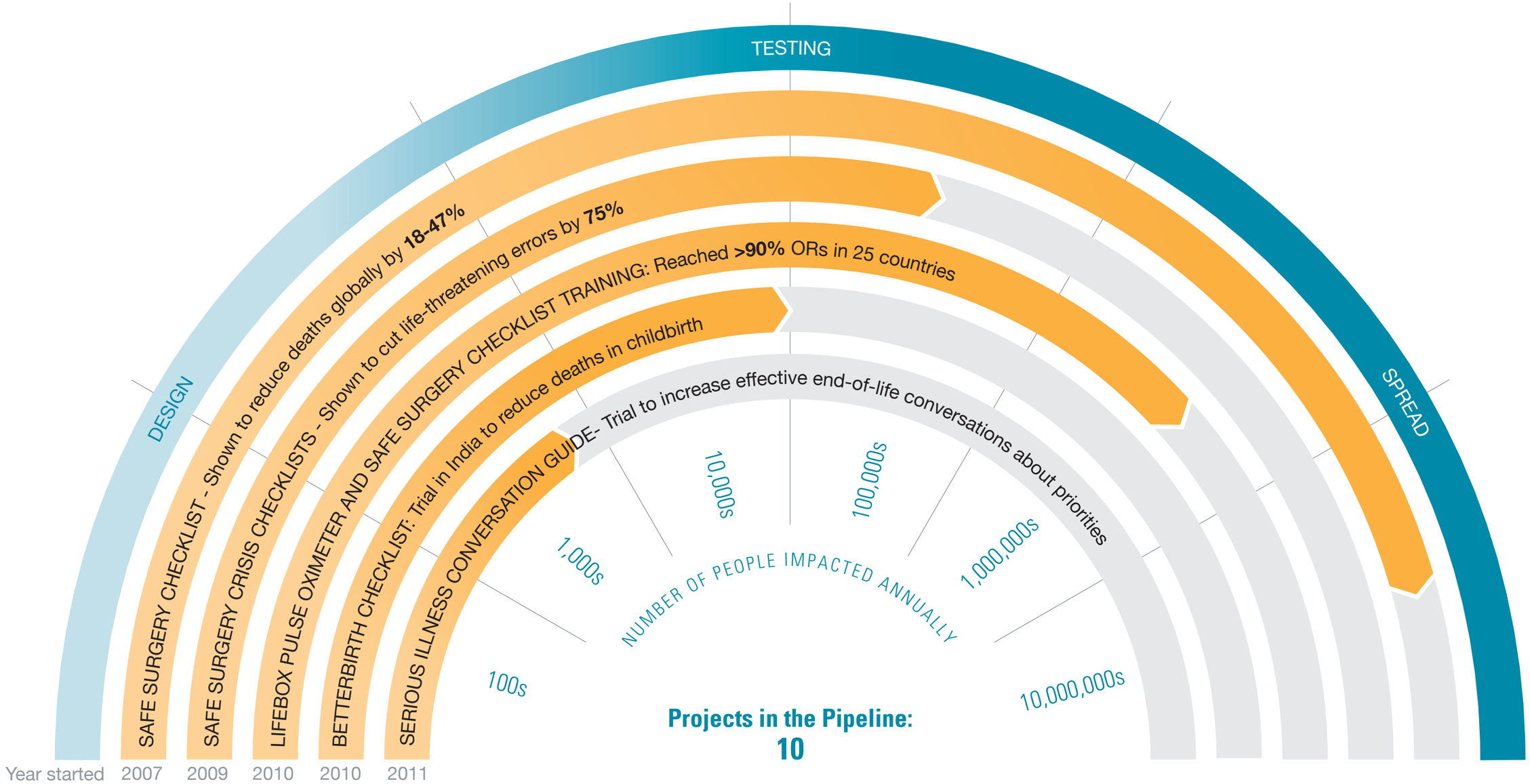
One reason mothers are happier, Katial said, is the introduction of BetterBirth's post-delivery practices. Now, birth attendants take time to educate mothers on trouble signs to watch for in their newborns and themselves when they go home. The first week after birth is a high-risk period for infants, and the first 28 days post-partum sees the highest death rates for mothers. The trouble signs are outlined in the BetterBirth Checklist.

In addition, the birth staff also provides new mothers with family planning options before they go home. Family planning was never part of the discharge process in the past, Katial said, but the BetterBirth Checklist has reminded them of its importance to maternal health.

"We sit with them and we explain all of this to them," Katial said. "They really listen to us and appreciate what we tell them."

Ariadne Labs: Portfolio of Impact

The innovation pathway below represents how we design scalable solutions that are spread around the globe. During the design phase, the idea for a project is developed, background research is conducted, and a white paper is published. Prior to testing, a variety of experts convene to plan and develop the design of the tool. The tool is then tested at length and when it is ready, findings are published and the tool is spread to appropriate populations through our coaching and implementation techniques.



Serious Illness Care

Facing the end of life with peace

Every person deserves to die with a sense of peace. We believe the medical community can do much more to help our seriously ill patients come to the end of life with dignity, empowerment and control. Drawing from the best practices of palliative care, our Serious Illness Care Program provides a multi-step intervention that facilitates appropriate, compassionate conversation between physicians, patients and families. Through this intervention, patients can make informed choices that reflect their values, reduce suffering, improve quality of life and enhance family wellbeing. The program includes:

1. A system to identify patients at high risk of death in the next year
2. Training and coaching for clinicians
3. A reminder system for clinicians of the right time to conduct serious illness conversations
4. A Serious Illness Conversation Guide for clinicians and patients
5. Suggestions to help patients discuss end-of-life preferences with their families
6. A system for documenting personalized patient goals and priorities in the electronic health record

Refining and scaling the Conversation Guide

We are testing the effectiveness and results of the Serious Illness Care Program in a series of clinical and implementation trials in oncology, primary care, nephrology, chronic critical illness, and surgical emergency settings. We are also adapting the program for diverse populations around the country. In partnership with the South Carolina Hospital Association, Ariadne Labs is researching the acceptability of the conversation guide in rural and African-American communities so it can be appropriately modified and adapted for future use.

Our largest study is an ongoing randomized control trial of our six-step intervention at the Dana-Farber Cancer Institute in Boston with 90 doctors and 450 adult patients and their families. We survey study participants to assess their quality of life, peacefulness, survival, satisfaction with care and the type of care they receive.

In June 2015, we will lead a continuing medical education program with the Harvard Medical School Center for Palliative Care and the Dana-Farber Cancer Institute to train doctors and other clinicians how to use and implement the program. We will provide ongoing web-based support as participants seek to implement the program in their own settings. In Fall 2015, we will launch a national consortium with health care systems around the country to test the Serious Illness Care Program in different populations.

"We are trying to help patients with serious illness and their families to achieve a sense of peace as they approach the end of life. Peace comes when individuals and families can prepare for what's happening and retain a sense of meaningfulness, wholeness and comfort while they are alive." —Dr. Susan Block, Serious Illness Care Program Director

PHOTO: NICHOLAS NIXON

IN THE FIELD

Improving how doctors have difficult conversations about goals of care

Dana-Farber oncologist sees the benefit of using the Serious Illness Conversation Guide with her patients

Boston oncologist Dr. Beth Overmoyer has been talking to people about serious illness for 25 years.

While there was no palliative care training in medical school, she was fortunate to have a thoughtful mentor who modeled how to talk with people at the end of life. So, Dr. Overmoyer developed her own way of initiating critical conversations about medical decisions, expectations, goals and choices. She is comfortable having such conversations. For decades, her patients and colleagues have given her positive feedback about her approach.

What she now realizes, as she participates in the Ariadne Labs Serious Illness Care clinical trial, is that she can do better. By integrating the Serious Illness Conversation Guide into her way of talking with people, she says she has benefited from a more systematic approach to asking deeply personal but critical questions that can guide patients in making medical decisions about serious illness care options.

"Now I can use this guide to discuss certain issues I haven't necessarily talked about," said Dr. Overmoyer, who specializes in breast cancer. "What's most beneficial for my patients is a question I never anticipated getting an answer to: What would you be willing to give up and not give up for a longer length of life? That's a part of the checklist I have never embarked on. That's been very helpful. It allows them to think about what quality of life means to them."

She also appreciates the guide's patient-directed approach to providing information, particularly about how long a patient can expect to live with the disease. "It's the elephant in the room," she said. "The guide asks patients, 'Do you want this information about time?' and allows me to frame the answer in a way that I feel comfortable and in a way that I don't feel I'm doing my patient harm."

In general, she said most oncologists aren't having end-of-life conversations early enough. The Serious Illness Care Program "increases awareness that you had better start talking to patients early in their disease course, and you have to be open to how you can improve. It has helped me as a physician."

What she has discovered over the years is that most patients want to have these conversations. Patients who have these conversations make different decisions. Patients reconnect with family members they had not talked to in years. They travel and see the world. They create special gifts for loved ones. They write letters to their children. She recalls one mother writing to her daughter, "Make sure you really like the guy you kiss for the first time."

"The guide provides a structure to make decisions about the big issues like hospice, ongoing treatment, risk-benefit ratios, life support, intensive care. It makes sure you do the right thing as a doctor. It allows you to address the really hard medical conversations."

—Dr. Beth Overmoyer

Collaboration: Primary Care

Tracking primary health-care system performance around the globe

An effective and high-functioning primary health care system—accessible to all—serves as the foundation for achieving and maintaining health. Despite tremendous improvements in the health of populations worldwide, too many women still die in childbirth, too many children under five die from largely preventable causes, and too many adults die from treatable infectious and non-communicable diseases. Few efforts have clearly identified the gaps in primary care which separate the aspiration and achievement of population health goals, and even fewer identify the cause of the gaps and the best ways to close them.

Launched in 2014, the Primary Health Care Performance Initiative (PHCPI) is a partnership between Ariadne Labs and several global partners including the World Bank, WHO, and the Bill and Melinda Gates Foundation. We are working to develop robust primary health care performance metrics that will drive improvement in primary health care delivery for lower- and middle-income countries.

This past year, in consultation with global health experts, Ariadne Labs helped lay the groundwork for this initiative at two international conferences in Cape Town, South Africa and Washington D.C, USA. Among the key questions we posed: What are the experiences of patients in different primary health care systems? What are determinants of primary health care performance variation? How can we identify gaps in primary health care performance? What is the cause of these gaps? How can we identify positive outliers in primary health care performance? How do we spread best practices from positive outliers to others? In the coming year, PHCPI will build a global primary health care web-based tracker, synthesize knowledge of primary care best practices, and partner with a small set of interested countries to catalyze local primary care improvement.

PHOTO © 2013 KAREN DIAS FOR THE CENTER FOR HEALTH MARKET INNOVATIONS

PHCPI PARTNERS

- Bill and Melinda Gates Foundation
- The World Bank Group
- World Health Organization
- Ariadne Labs
- Results for Development Institute

Scaling our projects around the world

This past year, a number of Ariadne Labs projects matured from prototype to pilot and even wide-scale dissemination. As we embarked on this exciting phase of expansion, we simultaneously put in place three teams of experts to enable us to scale our tools and solutions with the highest standards of data collection, monitoring and evaluation and operational excellence.

These experts work together and hand-in-hand with our program scientists and researchers to ensure success at every stage of project development. This approach to health care solutions—utilizing implementation science, project management and informatics—distinguishes the Ariadne Labs Way of making global change.

Our Platforms Support Our Projects...

Informatics & Measurement

"Making data the most valuable resource for improving human health"

- Data collection
- Data management
- Statistical analysis
- Information technology systems
- Software development
- Database development

Implementation & Improvement Science

"Bridging the gap between research solutions and real-world implementation"

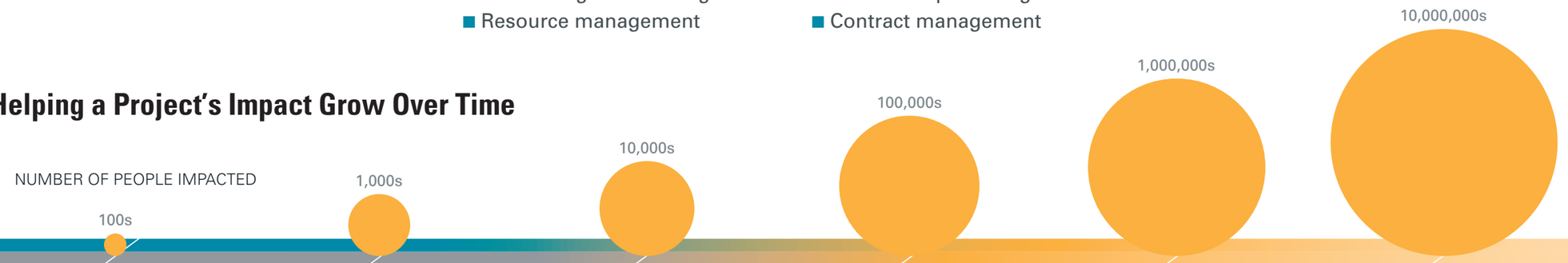
- Study design
- Monitoring and evaluation
- Planning for spread
- Program quality improvement
- Adaptation and replication
- Dissemination support

Program Management

"Delivering projects on time, on scope and on budget"

- Program scoping
- Scheduling and tracking
- Resource management
- Budgeting
- Relationship building
- Contract management

... Helping a Project's Impact Grow Over Time



DESIGN

In the initial phase of a project, research is conducted on a systemic health care issue, an intervention is designed and a white paper is published.

TESTING

The intervention is tested at pilot sites or through trials in various medical settings. Data and results are carefully tracked so the intervention can be adapted and modified.

SPREAD

Through a collaborative, the intervention is further refined making it ready for global scaling across populations.

GLOBAL IMPACT

Collaboration: Lifebox

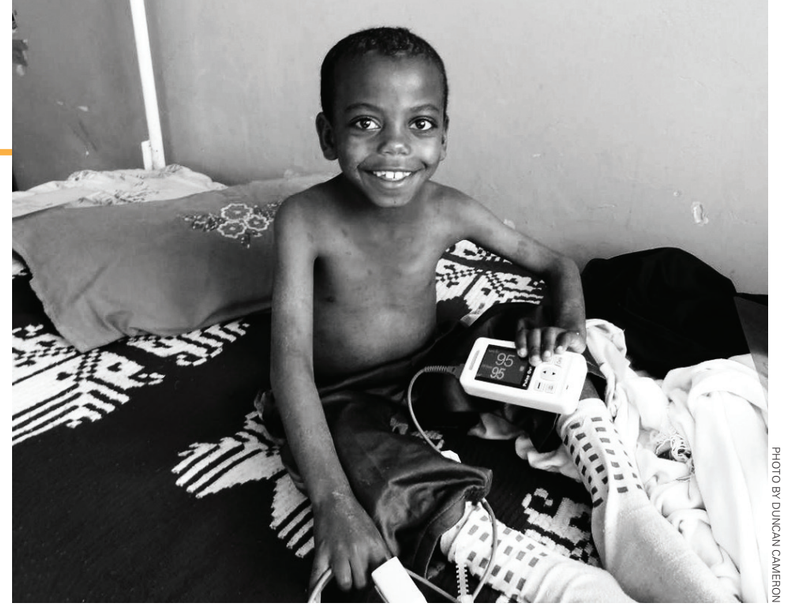


PHOTO BY DUNCAN CAMERON

Providing training and technology for safer surgery

Co-founded and led by Ariadne Labs Director Dr. Atul Gawande in 2011, Lifebox Foundation is the leading global NGO committed to making surgery safer using our discoveries. With charitable status in the United States and the United Kingdom, Lifebox provides pulse oximeters, an essential piece of safe surgery technology, to hospitals worldwide, along with training and ongoing support.

A non-invasive device that attaches to a patient's fingertip, a pulse oximeter monitors oxygen levels under anesthesia during surgery and in recovery. The surgical team is alerted if a patient's saturation level drops, enabling rapid intervention. To date, more than 8,000 pulse oximeters have been distributed in 90 countries. In the last four years, our programs have made more than 10 million lives safer. Still, there is more work to be done. In Latin America, 41 percent of operating rooms lack pulse oximetry and in Sub-Saharan Africa, nearly three-quarters.

During 2014, Lifebox marked several important milestones. In the spring, the inaugural Lifebox Day in London brought together 60 global supporters for panel discussions about safe surgery worldwide. Lifebox was also the winner of a Nominet Trust award, recognizing innovations in digital technology that make the world better. In November, Lifebox convened an international meeting of surgeons, anesthesiologists and other global health leaders to expand strategies for making surgery safer in countries where needs are most acute. The result will be an ambitious Clean Surgery Campaign to be launched in 2015 aimed at reducing infection rates in the countries where Lifebox is active.

The coming year will see large-scale safe surgery initiatives in Cote d'Ivoire and Niger and further investments in Bolivia, Mozambique, Myanmar, Paraguay, Uzbekistan and Zimbabwe. To learn more, visit *www.lifebox.org*.

Advisory Board

These individuals are world-class leaders in science, education and business. They support Ariadne Labs by contributing expertise on research priorities, scientific plans, implementation approaches and collaborations.

DON BERWICK, MD, MPP
President Emeritus and Senior Fellow
Institute for Health care Improvement

TROY BRENNAN, MD, MPH
Executive Vice President and Chief Medical Officer
CVS Health

ANDREW DREYFUS
President and CEO
Blue Cross Blue Shield of Massachusetts

DAVID EBERSMAN
Former Chief Financial Officer
Facebook

JULIO FRENK, MD, MPH, PHD
Dean of the Faculty
Harvard T.H. Chan School of Public Health

MALA GAONKAR, MBA
Managing Director
Lone Pine Capital LLC

ERIC LANDER, PHD
Founding Director
Broad Institute

ELIZABETH NABEL, MD
President
Brigham and Women's Health Care

JASON YEUNG
Managing Director and Portfolio Manager
Morgan Stanley

GWILL E. YORK, MBA
Co-Founder
Lighthouse Capital Partners

Our Supporters

We are grateful to the following foundations and individual supporters whose generous support helps us create better care around the world:

BLUE CROSS BLUE SHIELD OF MASSACHUSETTS

THE BRANTA FOUNDATION

DAVID EBERSMAN

EMC CORPORATION

BILL AND MELINDA GATES FOUNDATION

MALA GAONKAR HAARMAN, AB '91, MBA '96
AND OLIVER HAARMAN, MBA '96

PETER HECHT

BILL HELMAN

MICHELLE AND HOWARD KESSLER

THE KLARMAN FAMILY FOUNDATION

YEN AND EELING LIOW

RONAY AND RICHARD MENSCHEL, MBA '59
AND THE CHARINA ENDOWMENT FUND

EMMANUEL ROMAN

RX FOUNDATION

SURGO FOUNDATION

WRITING & EDITING Deborah O'Neil DESIGN & INFOGRAPHICS Complex Stories

BRIGHAM AND
WOMEN'S HOSPITAL

HARVARD T.H. CHAN
SCHOOL OF PUBLIC HEALTH

Please visit our website for more information at **www.ariadnelabs.org**
We also welcome your comments and questions. To contact our team, please forward your inquiry to **info@ariadnelabs.org**