



A John D. and Catherine T.
MacArthur Foundation Affiliate

7 PROPOSALS TO CHANGE THE WORLD



Lever for Change is excited to present an opportunity to fund the semi-finalists from the MacArthur Foundation's inaugural *100&Change* competition. These organizations and their proposed solutions were selected as the strongest among the more than 1,900 proposals submitted from 55 countries. As part of the US\$100 million competition, applicants were asked to propose a solution to a significant social challenge anywhere in the world. These seven semi-finalists presented a broad range of ideas, from eliminating river blindness in Nigeria to providing libraries with free digital access to millions of books:

- **Catholic Relief Services:** Changing How Society Cares for Children in Orphanages
- **The Carter Center:** Eliminating River Blindness in Nigeria
- **HarvestPlus:** Eliminating Hidden Hunger in Africa by Fortifying Staple Crops
- **Himalayan Cataract Project:** Eliminating Needless Blindness in Nepal, Ethiopia, and Ghana
- **Human Diagnosis Project:** Providing Virtual Access to Specialist Medical Care for Underserved U.S. Patients
- **Internet Archive:** Providing Libraries & Learners Free Digital Access to 4 Million Books
- **Rice 360° Institute for Global Health:** Improving Newborn Survival in Africa

The enclosed summaries have been updated to briefly highlight each group's goals, recent accomplishments, and proposed solutions for a budget of US\$5-10 million. These organizations are ready to solve critical problems now, and need the resources to make it happen. Please contact us to connect with the organizations to learn more about their work, and together, let's help them change the world.

THE INAUGURAL *100&CHANGE*

The MacArthur Foundation's inaugural *100&Change* competition attracted more than 7,000 registrants and 1,900 proposals. Of those, 801 passed an initial administrative review and were evaluated by a panel of external judges using a common rubric. Based on those reviews, eight semi-finalists were chosen. The semi-finalists each received technical support to strengthen their submissions, placing emphasis on each proposal's quality, credibility, and scale so organizations could make an even greater impact. Ultimately, Sesame Workshop and International Rescue Committee received the US\$100 million award from the MacArthur Foundation to educate young children displaced by conflict and persecution in the Syrian response region. The longer-term goal is to compel the global system of humanitarian aid to focus more on building a foundation for future success for millions of young children through education.



To date, other funders and philanthropists have committed an additional US\$419 million to support bold solutions by *100&Change* applicants, including a US\$100 million grant from the LEGO Foundation to Sesame Workshop and US\$9 million in funding from USAID and GHR Foundation to Catholic Relief Services. Lever for Change is continuing to seek funding for the top-ranked solutions from the inaugural *100&Change* competition and is currently managing the second round of *100&Change*.



Changing the Way We CareSM

More than 80 years of research shows that children living in orphanages are at greater risk of negative impacts on their cognitive, physical, emotional, social and life skills development. Despite this evidence, orphanages continue to exist, and in some parts of the world the phenomenon is growing.

To respond to the problem, Catholic Relief Services (CRS), Lumos, and Maestral International joined forces to compete in the MacArthur Foundation's 100&Change competition. The proposal, *Changing the Way we Care*SM (CTWWC), was a successful semi-finalist of the competition, although not ultimately chosen. Positively however, the initiative was able to launch with initial resources from the MacArthur Foundation, USAID and GHR Foundation.

CTWWC's goal is to influence a global movement to prevent children from entering institutions and to instead reintegrate them into safe nurturing families. **Our objectives include:** (1) people worldwide commit to family-based care; (2) governments advocate for family care; and (3) children stay in or return to families. CTWWC's target countries for implementation include: Haiti, Lebanon, India, Guatemala, Kenya, Moldova, Indonesia. With initial resources, CTWWC began implementation in October 2018 in Kenya, Guatemala and Moldova.

Key Project Achievements to date:

CTWWC Guatemala

- supported the establishment of the National Commission for Deinstitutionalization to promote deinstitutionalization and family care.
- signed a Memorandum of Understanding with the Social Welfare Secretariat on care reform strategies.
- identified Catholic and Evangelical Churches as key partners.

CTWWC Kenya

- co-funded a case management workshop with UNICEF, within which Department of Children's Services county-level leadership participated.
- developed an alternative family care training manual.

CTWWC Moldova

- met to establish coordination roles with the Inter-ministerial Coordination Council on Childcare Reform and Inclusive Education.
- prepared a high-level One Voice Advocacy event within National Council for Child Rights Protection to re-launch Moldova care reform.

CTWWC Global Level Advocacy & Influence

- conducted awareness-raising activities with faith-based actors supporting care reform.
- commenced research piece as evidence to track institutional funding flows in Kenya.

Opportunities to Support CTWWC

Launch Implementation in India (\$5 million)

- provide a platform for government capacity building.
- support the roll-out of standard operating procedures for case management.
- increase engagement with orphanages.
- select and analyze orphanages that would make good future partners.

Launch Implementation in Haiti (\$5 million)

- complete a Situational and Community Analysis to map disability resources & services.
- select and analyze orphanages that would make good future partners.
- contract with national organizations to train staff and families to care for children with an intellectual and/or physical disability.
- conduct a workshop with local organizations to promote early stimulation/positive parenting.

Sustain & Adapt Program Interventions in Kenya (\$2.5 million)

- mobilize Government, development partner and private donor resources.
- strengthening Government leadership, organization, coordination, management and administration at all levels.



- expand coverage of interventions by extending reach across geographic area.

Fulfill Strategic Communications Gap (\$1.5 million)

- support implementation of CTWWC's communications strategy.
- conduct communications behavior-change initiatives and campaigns.
- complete ongoing publication of program materials, updates to the CTWWC website, and other mechanisms that help CTWWC advance its goals to communicate with external stakeholders.

To learn more, visit changingthewaywecare.org or contact info@changingthewaywecare.org.

Changing THE WAY WE careSM



THE CARTER CENTER



Eliminating River Blindness in Nigeria *Lever for Change* Concept Note

June 2019

Background

River blindness, also known as onchocerciasis, is a parasitic infection that can cause intense itching, skin discoloration, rashes, and eye disease that often leads to permanent blindness. The disease is transmitted by black flies that thrive along fast-flowing rivers. Those bitten by the flies are infected with parasitic worms, which then grow to adulthood and cause unsightly nodules under the victim's skin. As the worms reproduce, their microscopic offspring infest the skin, causing excruciating itching that can last for years. If these immature worms travel to the eye and lodge there, the inflammation they cause leads to greatly reduced vision and often to total blindness.

The Carter Center currently assists ministries of health in Brazil, Ethiopia, Nigeria, Sudan, Uganda, and Venezuela to eliminate river blindness. The River Blindness Elimination Program provides technical assistance, training, and financial support to state and local ministries who oversee health education initiatives and the distribution of Mectizan®, donated by Merck, to target populations. Mectizan kills the parasite larvae in the human body, preventing blindness and skin disease in infected persons, and stopping the transmission of the parasite to others.

To date, The Carter Center has distributed more than 383 million Mectizan treatments in Africa and Latin America. The Program has eliminated transmission of the disease in 11 of 13 endemic areas in the Americas, including Colombia, Ecuador, Mexico, and Guatemala. In Africa, where more than 99 percent of the global cases exist, the Center and its partners have successfully broken river blindness transmission in parts of Nigeria, Sudan and Uganda.

Project Status in Nigeria

Nigeria, the most endemic country in the world for river blindness, accounts for about a quarter of the global disease burden; of the 205 million people at risk globally, 50 million call Nigeria home. The Carter Center's River Blindness Elimination Program in Nigeria was launched in 1996, and has provided over 187 million Mectizan treatments, the largest number of any Carter Center effort.

In 2013, the government of Nigeria declared elimination of river blindness a national goal. The Federal Ministry of Health has convened the Nigeria Onchocerciasis Elimination Committee (NOEC) each year since 2015 to make tailored programmatic recommendations to the Minister of Health and help accelerate elimination of river blindness. In 2017, after decades of good treatment coverage, Nigeria's Federal Ministry of Health interrupted transmission in two large states and, as a result, stopped mass drug administration in 2018. About 2 million residents of Plateau and Nasarawa states no longer need Mectizan, making this the largest stop-MDA decision in the history of the international River Blindness Elimination Program.

Success in these two states sets a pattern for similar success throughout the rest of Nigeria, as well as providing an instructive example for other highly endemic countries. The Carter Center continues to monitor the status of the disease in Plateau and Nasarawa, and is actively pursuing elimination in seven other Nigerian states, including Edo, Delta, Anambra, Imo, Abia, Enugu and Ebonyi.

Project Goals and Objectives

The River Blindness Elimination Program plans to reach the “transmission interruption” stage defined by the World Health Organization in seven Nigerian states and stop Mectizan treatment in those areas by the end of 2025, and continue our post-treatment surveillance in Plateau and Nasarawa states. The Program outlines the following objectives to achieve this goal:

Objective 1: *Assist in delivering health education and Mectizan treatment at high coverage.*

- Activity 1:** Distribute and monitor Mectizan treatments and health education to all eligible at-risk populations.
- Activity 2:** Increase treatment frequency from annual to semi-annual where indicated.
- Activity 3:** Use treatment coverage surveys to monitor reported coverage.

Objective 2: *Work with national and state ministries of health to implement NOEC guidelines.*

- Activity 1:** Complete mapping activities to allow interventions to be extended to all transmission zones in Carter Center-assisted programs in southeast Nigeria.
- Activity 2:** Work with the Federal Ministry of Health to support the NOEC’s mandate to advise the national program and empower Nigeria to make informed decisions about their territory.

Objective 3: *Document the interruption and elimination of onchocerciasis transmission.*

- Activity 1:** Determine other Carter Center-assisted states in Nigeria where MDA could be stopped by completing field surveys to measure reductions in disease transmission. Conduct cross-border activities where warranted.
- Activity 2:** Support the application of the latest disease-monitoring techniques with sophisticated laboratory support and technical assistance from the University of South Florida and the Center’s lab in Jos, Nigeria.
- Activity 3:** Conduct post-treatment surveillance in Plateau and Nasarawa states, and publish the results of this success in peer-reviewed medical journals and popular press.
- Activity 4:** Encourage national, state, and local government support, as well as NOEC support, of the required activities. Continue to closely monitor financial data and government investments in Carter Center-assisted programs.

Proposed Budget

The Carter Center seeks \$10 million dollars via The John D. and Catherine T. MacArthur Foundation’s *Lever for Change* program to support the elimination of river blindness from Nigeria’s most endemic regions for the disease over the course of four years. The Center’s River Blindness Elimination Program estimates an annual budget of \$2.5 million for in-country elimination efforts.

HarvestPlus

A Climate-Smart Solution to a Critical Challenge

HarvestPlus fights micronutrient malnutrition - also known as “hidden hunger” – by developing and delivering micronutrient rich staple crops to those most in need of food and nutrition security. By using conventional plant breeding methods, HarvestPlus developed and released more than 200 high yielding, climate smart and nutritious varieties of 11 commonly-consumed staple food crops in about 40 countries. By working through public, private and CSO partnerships, HarvestPlus has enabled almost 40 million people in rural areas of 15 developing countries in Africa, Asia and Latin America to benefit from this technology, known as “biofortification.”

One in three people worldwide – that is almost 2.5 billion people are at risk of hidden hunger. Hidden hunger leads to blindness, stunting, cognitive impairment, disease and death – and resulting losses in productivity and associated income, not just for the current generation but for generations to come. Micronutrient deficiencies are especially acute in developing countries among poor farming families, who lack access to interventions like supplements and rely on inexpensive staple crops to meet most of their calorie needs. Biofortification of these staple crops could provide rural families with a sustainable, climate-smart, and farmer-controlled tool to fight hidden hunger. Biofortified crops are bred in consultation with farmers to meet their production and consumption needs, while providing about 50% of the daily requirement for vitamin A, iron or zinc.

Recent studies show climate change will also exacerbate micronutrient malnutrition. First, under rising CO₂ levels, [plants will likely lose nutritional value](#) - potentially causing an additional 175 million people to be zinc deficient, and 1.4 billion women of childbearing age and children under 5 to lose >4% of dietary iron. Second, climate change will result in higher food prices, making it even harder for the poor to afford already expensive micronutrient rich foods such as animal sourced foods, fruits and vegetables. Smallholder farmers and their families are particularly vulnerable to the effects of climate change, including rising temperatures, unpredictable rainfall and extreme weather events. Accessible climate-smart interventions like biofortified crop varieties, which are bred to be heat and/or drought and flood tolerant, are key to safeguarding families from hunger. Biofortified crops would work not just to offset declines in the nutrient density of staples, but also to ensure that farming families have sufficient harvest. Iron, zinc, and vitamin A added to staple foods through biofortification provides significant amounts of these critical nutrients **at no extra cost** to poor consumers – substituting like for like the biofortified variety for the non-biofortified variety in their food baskets. If global targets such as the approaching Sustainable Development Goals (SDG-Agenda 2030) deadline are to be reached, it is critical to scale up access to such climate-smart and nutrition-smart solutions now. Biofortification is proven to cost-effectively, measurably improve micronutrient status, health, and cognitive and physical abilities. For example, studies show that [female college students in Rwanda](#) eating iron beans and [adolescent students in India eating pearl millet had improved iron status and](#) enhanced memory and focus. That improved [cognitive and physical performance functioning means](#) better success at school and beyond, working to end intergenerational cycles of malnutrition and poverty.

The 100&Change Project: Biofortification in Africa

HarvestPlus is honored and deeply grateful to have received a \$15 million grant from the MacArthur Foundation as a finalist in the *100&Change* competition. HarvestPlus revised its original \$100 million proposal to ensure the largest impact for the \$15 million awarded grant. This required HarvestPlus to roll out its *100&Change* project in phases, starting with 6 of the 17 countries that were originally proposed. This funding supported the release of new varieties of vitamin A maize (VAM) and high iron beans in Africa. We have provided training for seed producers, farmers, traders, processors, and retailers across the value chains of five biofortified crops. Leveraging this and existing capacity across the value chains, we and our partners exceeded 5 of 10 certified/quality declared seed production targets and reached 1.7 million households (8.5 million people) with biofortified seeds in DRC, Nigeria, Rwanda, Zambia, and Zimbabwe. Biofortified crops are quickly changing lives for the better – for example, despite a dry spell experienced in the 2018-19 farming season in Zimbabwe, farmers growing drought resistant vitamin A maize had good harvests with enough for family consumption and sale. Iron beans account for 20% of bean production in Rwanda, and yields/profits of bean producers have been raised significantly.

We have also used the *100&Change* funding to build an enabling environment for the successful scale up of biofortification: we led the nutrition agenda at the 2018 African Green Revolution Forum and will do so again in 2019. With technical input from HarvestPlus, the African Development Bank included biofortification in its [Multi-Sectoral Nutrition Action Plan](#) and welcomed our founder, Dr. Bouis, as a Nutrition Champion to the prestigious African Leaders for Nutrition group. To date, biofortification has been endorsed by the African Union's agricultural body and Executive Committee, as well as by the African Task Force on Food and Nutrition Development. Securing endorsement by AU member states' health ministers is our next step towards a continental declaration on biofortification by AU heads of state. This will embed and mainstream biofortification into the food system, making it a sustainable solution to micronutrient deficiency.

In addition to catalyzing groundbreaking policy, *100&Change* funding provided an excellent starting point for donors to co-invest in our efforts in Africa. In 2018, we formed a partnership with the Global Alliance for Improved Nutrition (GAIN) to commercialize biofortified crops and foods in 6 countries, three of which are in Africa, bringing additional resources to impactful delivery of biofortification to farmers and people most affected by micronutrient deficiency. Additional funding from UK Aid has been committed for our work in Africa and Asia and discussions with the Gates Foundation are underway. We are leveraging the *100&Change* momentum in fruitful discussions with other partners and donors and are poised to make the lasting impact expected of the original \$100 million project once gaps are filled.

Strategic Opportunity for Investment

Eighteen of the thirty priority countries where biofortification could have the biggest impact at the least cost are in Africa (based on production and consumption of each biofortifiable crop and related micronutrient deficiency rates – see the [Biofortification Priority Index](#) tool for key opportunities in Asia Latin America). For example, iron pearl millet, which [improves cognitive functioning](#) and [grows well in dry climates](#), could have the biggest impact in Niger, where a variety was released last year. Key to scale up in such countries will be increased work along the value chain, with partners throughout the food system, increasing smallholder farmers access to markets and low-income consumer demand.

An additional investment of \$5 – 10 million will go a long way in our quest to achieving further impact to our *100&Change* program, by empowering millions more people living in poverty around the world to sustainably improve their health and incomes with a nutrition-smart technology. Additional investment would be used in at least two of the three options below:

1. Deepen our work in the 7 countries funded by MacArthur Foundation. The \$15 million was stretched thin across the countries and while the impact has been great, additional funding will deepen our work in those countries. We will crowd-in additional partners, train farmers in seed production techniques, and foster linkages between smallholder seed growers and seed companies.
2. Expand the project to at least one country where newly released, climate-smart crops are ready to scale up. For example, the newly released iron pearl millet variety could be scaled up in a country in the Sahel region where it is the main staple food and iron deficiency causes a major health challenge for women and young children. Other crops around the world present great impact potential and can be explored based on donor priorities.
3. HarvestPlus and GAIN have formed a partnership to commercialize biofortification in 6 countries. The primary goal is to improve access to inputs and markets for biofortified seeds and food by identifying and overcoming barriers to acquisition of seeds and accelerating business development along the supply chains. The Dutch and German governments have already invested \$12.5 million towards this initiative, but an additional \$5 million would be needed for planned impact.

By acting now, we can catalyze widespread access to a climate-smart nutrition solution, resulting in healthier families, communities, and economies. With the right investment and with strong partners, HarvestPlus can do something that few innovators get the chance to do – we can show that it *is* possible to put a life-saving tool into the hands of the world's poorest farmers and empower them to sustainably deliver nutrition and health outcomes for their families and communities.



Changing the Arc of Global Blindness

Background: Globally, thirty-six million people are blind – half due to cataracts - preventing them from performing the tasks of daily living. Eighty percent of global blindness is treatable or could have been prevented through a ten-minute surgery with a material costs of \$25 dollars. Ninety percent of the afflicted live in low- and middle-income countries and 60 percent are women. The life expectancy once a person goes blind in resource-limited environments is one-third that of health-matched peers. For blind children the fate is even worse. The devastation of blindness extends to entire families and communities, as a sighted person must leave the workforce or children must leave school to care for a blind parent. Treatable blindness persists due to lack of funds, insufficient personnel, barriers to access, and low-quality care. In low- to middle-income countries, lost productivity from blindness causes \$49 billion in annual loss. This does not include the loss of lifetime earnings of children who cannot attend school.

Mission and Impact: HCP | CureBlindness¹ is a US-based INGO founded in 1995 to provide critical eye care services, training for ophthalmic professionals, and enhanced eye care infrastructure where they are needed most. With an annual budget of \$12.5 million, HCP | CureBlindness works with local implementing partners to serve more than 1.6 million people annually through examinations and basic treatment, including the provision of over 120,000 sight-restoring surgeries and hundreds of training opportunities for eye care personnel. By enhancing the equipment, infrastructure and clinical expertise within local eyecare systems, we also indirectly support 1.5-1.8 million annual hospital-based ophthalmic procedures conducted by our partners.

Alongside our sister institution, The Tilganga Institute of Ophthalmology, we helped Nepal - one of the poorest countries in Asia - reverse its rate of blindness. Over 10 years, the prevalence of blindness fell by 58% with a 1,900% increase in cataract surgeries. These efforts have yielded a sustainable and replicable solution for eradicating cataract blindness: today, innovations in surgical technique, supply chains, and delivery systems have helped HCP | CureBlindness refine a high-volume, high-quality cataract surgical and clinical training model that provides a 10- minute, \$25 sight-restoring surgery.

We have made enormous strides in replicating this proven model in South Asia and Sub-Saharan Africa, with a thriving network of well-positioned and capable local implementing clinical partners. Together over the past 25 years, we have screened and provided basic eyecare services to over 10.8 million people and directly performed over 890,000 sight-restoring surgeries.

Scaling the Solution: During the inaugural round of the 100&Change Competition, HCP | CureBlindness proposed to scale its proven eyecare model in order to eliminate the backlog of cataract blindness and to mature national systems of eyecare where they are still in their infancy around the world, through high-volume surgical events that provide simultaneous clinical skills training to local ophthalmic teams. We also focused on training ophthalmic nurses and technicians, while developing national ophthalmology residency training programs and subspecialty ophthalmology fellowships. We proposed to scale and replicate our organizational model - the DNA of what we do, in order to proliferate this impact across the globe.

We built a 5-year scaling plan² directed towards Ghana and Ethiopia while increasing training capacity in South Asia. We continue to make great strides at achieving our goals³, with excellent results⁴ and national media recognition. We continue to bring government actors, corporations (Johnson & Johnson Vision, Zeiss, Alcon, Halma), INGO's (Orbis, Fred Hollows Foundation, SightSavers, CBM, Light for the World) and regional, national and international implementers together to address blindness as a public health epidemic and to prioritize the development of accessible national systems of eyecare. Our momentum has been tremendous, with organizational growth averaging 16% each year for the last 3 years.

Direct Impact: Based on funding priorities and interests, HCP | CureBlindness can implement broad scaling plans across our main country programs in Ghana, Ethiopia and Nepal; or focus our scaling initiatives by specific country or program area (direct care, training, provision of equipment). An investment of \$5-10 million over five years would contribute to the following global impact:

- 9 million preventative eye health screenings (identifying conditions such as cataract, trachoma, glaucoma, refractive error);
- 325,000 direct sight-restoring cataract surgeries;
- 15,000,000 all partner in-hospital ophthalmic procedures scaled and supported over five years;
- 2,250 training opportunities for physicians, nurses, ophthalmology residents, technicians, and bioengineers (i.e., workshops, observerships, short courses, subspecialty fellowships);
- \$5,750,000 in specialized ophthalmic equipment procured to support scaled volumes of service and expertise.
- Creation of the world's finest ophthalmic training program for resource-limited environments, enabling African clinicians of all levels to train in Nepal and India, while building a rotating force of Nepali and Indian master trainers to mentor and follow-up with trainees throughout Ghana and Ethiopia.

Return on investment: The cost effectiveness and impact of treating blindness is known to be among the greatest in medicine - comparable to immunizations. Further analysis also finds that concurrent investment in training results in a 2.5X yield in the number of people restored to vision. As we are teaching, providing surgery and expanding, it is important to keep in mind that although the statistics say the number of blind people on our planet is still overwhelming, as we work we are curing people. Each person is not a statistic. They are individual people, grandparents, parents and children who have their sight and life restored. The economic multiplier of this work is immense. Avoidable blindness is one public health problem we can solve.

End Notes ~ Achievements and Organizational Scaling Since Round One of 100&Change:

1. The Himalayan Cataract Project has undergone a name and brand update to HCP | CureBlindness to reflect our organization's global aspirations and growing presence beyond the Himalayas to sub-Saharan Africa.
2. Since 2017, HCP | CureBlindness has pursued organizational strategic planning and scaling in the following ways:
 - Actively following our scaling plan developed during 100&Change
 - Adopting an organizational Strategic Plan 2018-2020
 - Conducting organizational systems analyses with KANAVA International, using its Impact Strengthening Development (ISD) assessment tool to measure and benchmark HCP | CureBlindness' internal management systems. This work will further refine and enhance HCP | CureBlindness' financial, grants management, and M&E capacity for scaled programming.
3. HCP | CureBlindness has advanced its work in several meaningful ways since the inaugural 100&Change competition:
 - HCP | CureBlindness has dramatically strengthened its relationships with national health ministries, including Ghana Health Services, the Ethiopian Federal Ministry of Health and the Amhara Regional Health Bureau (of Ethiopia) to prioritize eyecare and build the quality of each country's ophthalmic residency programs at all of the main academic medical institutions.
 - In 2018, HCP | CureBlindness signed an agreement with Ghana Health Services to collaborate on the National Cataract Outreach Program (NCOP), a ground-breaking national blindness alleviation program to increase universal access to basic eye care and cataract surgical services across the country.
 - We are in the planning stages of the construction of an Eyecare Center of Excellence in Bahir Dar, Ethiopia (the Amhara region of Ethiopia) with full support and the donation of land for the Center by the Amhara Regional Health Bureau.
 - We continue to build our compassionate capitalism model of refractive surgery in Ethiopia, which is a key component of building our overall sustainability model. HCP | CureBlindness has secured USAID ASHA funds and in-kind donations by Johnson & Johnson Vision for refractive equipment for this initiative.
 - Our Nepalese flagship partner, the Tilganga Institute of Ophthalmology has initiated construction for two of the envisioned community eye hospitals from our original proposal; and conducted a renovation of the main Tilganga operating theater to continue going the 'last mile' in developing Nepal's national eyecare infrastructure.
 - In 2018, HCP | CureBlindness became a [Signature Initiative](#) of Johnson & Johnson Vision, who has supported our work through in-kind equipment donations and grants.
 - We also look forward to expanding our work with Johnson & Johnson through its [Global Essential Surgeries](#) initiative.
4. Our 2017 100&Change proposal was a direct scaling of our organization's core work. As such, we have followed our plan and have scaled proportionally to our funding over the last two years. HCP | CureBlindness has kept incredible pace with its original scaling plan as proposed in the first 100&Change competition. Some notable highlights:
 - From 2017 to date, HCP | CureBlindness' implementing partner network has grown by more than 70%
 - As a result of our partner growth, we have kept (or even outpaced) the target surgical numbers we projected in our 100&Change proposal in relation to our existing budget, illustrated as follows:
 - In 2018, we came within an average of 60% of our 100&Change surgical targets in Ethiopia, Ghana and Nepal.
 - In 2019, we plan to come within an average of 58% of our 100&Change surgical targets in these countries.
 - Additionally, as a result of our partner growth, we have outpaced the target number of training opportunities we projected in our 100&Change proposal, illustrated as follows:
 - In 2018, we achieved an average of 173% of our 100&Change training target in Ethiopia, Ghana and Nepal.
 - In 2019, we plan to reach an average of 138% of our training target across these countries.



THE HUMAN DIAGNOSIS PROJECT

Overview

The Human Diagnosis Project (Human Dx) was honored to be a semi-finalist in the MacArthur Foundation 100&Change Program where we proposed a solution to reduce poverty-inducing medical errors for underserved patients. In the United States, over 65 million people (and billions worldwide [\(1\)](#)) lack access to medical expertise and 11 million nationally (100 million globally [\(1\)](#)) are pushed into poverty each year as a result of medical costs [\(2\)](#), much of which may be unnecessary [\(3\)](#).

For patients making difficult choices between their financial and medical wellbeing, it is imperative that decisions regarding their health are the right ones. Astoundingly, a third of healthcare spending is wasteful [\(3\)](#), leading to unnecessary care and cost.

The Human Diagnosis Project supports the healthcare decisions of patients and physicians by combining the collective medical insight of physicians with artificial intelligence (AI). Multiple medical professionals provide clinical input on a challenging clinical case which Human Dx synthesizes using natural language processing, text prediction, and medical ontologies.

Harvard research supports that Human Dx collective opinions outperform at least 90% of individual physicians in identifying the right diagnosis. As a result, underserved patients can receive much higher-quality care with less waste – and thus less financial and personal health risk. Additionally, Johns Hopkins and the University of California, San Francisco (UCSF) research [\(4\)](#) supports that Human Dx can both measure and improve physician clinical decision-making -- strengthening health systems and creating recurring, long-term benefit.

Status and progress since 100&Change

Since our initial application, we substantiated Human Dx's technologies with two studies published in the Journal of the American Medical Association and an ongoing clinical trial with UCSF. We also deployed Human Dx at scale across the U.S. safety net and at Kaiser Permanente (KP), one of the world's leading enterprise health systems. Lastly, we expanded the physician community and built technologies to support hundreds of thousands of patient encounters per year.

Developed effective technology

Improve accuracy: Harvard researchers found that the collective medical insight of 5 physicians synthesized by Human Dx's technologies **increased accuracy by 18%** compared to individual physicians. The study, published in JAMA Open [\(5\)](#), found that the accuracy was even greater for larger groups. Additionally, the collective insight of multiple generalists outperformed individual specialists even in his/her specialty area.

www.humandx.org

Created positive impact on patients, physicians, and systems

Enhance clinical decisions for patients during clinical encounters: In an ongoing clinical trial with UCSF, clinicians in the ambulatory setting reviewed the collective insight from 5 physicians in less than 24 hours from the initial patient encounter. As a result, **clinicians went on to change their diagnostic workup and/or treatment plan in ~40% of cases.**

Successfully impact patients in the safety net: The National Association for Community Health Centers implemented Human Dx in ten safety net clinics across the country to develop effective approaches to improve quality of care. Clinicians used Human Dx to request input on 1,118 patient encounters and 82% found the platform useful for their clinical care.

Improve physician competency by measuring and developing clinical reasoning: Research with Johns Hopkins validated Human Dx as the first quantitative, longitudinal, and scalable measure of clinical reasoning (4). This measure enables systems to understand baseline competency, evaluate the efficacy of training and quality improvement initiatives, and identify differential strengths and deficiencies to tailor training programs and improve their system.

Strengthen systems: In partnership with Kaiser Permanente in Southern California we have implemented Human Dx to measure and improve clinical reasoning in a large integrated health system. Over 1,000 KP physicians have registered to measure and enhance their individual clinical reasoning and that of their entire health system.

Expanded capacity for broader deployment

Magnify community capacity: The Human Dx community has now scaled to over 22,000 medical professionals and trainees from over 40 specialties, 500 institutions, and 80 countries. This large and diverse community gives Human Dx the capacity to support hundreds of thousands of collective opinions per year.

Proposal

With a \$5-10 million donation, we can reach 300,000 to 500,000 patients in underserved communities – ensuring they no longer make the tradeoff between bankruptcy and health.

We will directly support 100,000-200,000 clinical cases for physicians and their patients in US safety net clinics. Each collective opinion will then also eliminate waste and allow cost savings to be reinvested to expand access to those who need it most. Impacted medical professionals will simultaneously improve their clinical reasoning - enhancing diagnostic and treatment accuracy. This will conservatively allow 2-3 times (and up to 10x) as many patients (beyond those directly receiving collective opinions) to avoid major medical errors and financial ruin.

www.humandx.org

Open Libraries: Bringing Millions of Books to Billions of People

A proposal from the non-profit library, Internet Archive

June 2019

About the Internet Archive

At the Internet Archive, we believe passionately that access to knowledge is a fundamental human right. Founded by Brewster Kahle with the mission to provide “Universal Access to All Knowledge,” the Internet Archive serves as a conduit for trusted information, connecting learners with the published works of humankind. Like the internet itself, we are a critical part of the infrastructure delivering the power of ideas to knowledge seekers and providers. For 23 years, the Internet Archive has preserved now more than 45 petabytes of data, including 330 billion web pages, 3.5 million digital books, and millions of audio, video and software items, making them openly accessible to all while respecting our patrons’ privacy. Each day, more than one million visitors use or contribute to the Archive, making it one of the world’s top 300 sites. As a digital library, we seek to transform learning and research by making the world’s scholarly data and information linked, accessible and preserved forever online.

Open Libraries Project

Looking for a trusted source of information? For millions of citizens there’s only one place to head: their local library—society’s great equalizer, where Wi-Fi, computers, and knowledge are offered for free, to anyone entering the door. Yet, due to distance, time, cost or disability, people in marginalized populations are too often denied access to physical books. Today for many learners, if a book isn’t digital, it’s as if it doesn’t exist. Yet there’s almost a century of knowledge still living only on the printed page, missing from our digital shelves.

The Internet Archive’s *Open Libraries* offers a solution by bringing four million books online, through purchase or digitization, while honoring the rights of creators through [controlled digital lending](#), a process by which in-copyright books can be lent to patrons electronically. Added to our existing 3.5 million digital books, we can build the online equivalent of a great, modern public library, available to all on their desktops and mobile devices.

For the blind, ebooks are a lifeline, yet less than one in ten exists in accessible formats. Digital content becomes instantly available to people in rural areas, with widely ranging physical abilities. By digitizing millions of books, we unlock them for communities with limited or no access, bringing millions of free digital books to billions of people.

In this era of disinformation, ready access to trustworthy sources is more important than ever. Library books and journals are trusted sources for lifelong learning, curated by librarians. By bringing them online, we empower journalists, educators and Wikipedia editors to cite the best sources directly in their work, grounding readers in the vetted, published record.

A century ago, Andrew Carnegie funded a vast network of public libraries because he recognized democracy can only exist when citizens have equal access to diverse information. Libraries continue to play that vital role, welcoming the whole of society to use their free resources for individual learning, while respecting readers’ privacy and dignity. Through your support, you can help us build an enduring asset with libraries across this nation, ensuring that all citizens—including our most vulnerable—have equal and unfettered access to knowledge.

Project Scope

To fulfill the vision of Open Libraries, the Internet Archive will acquire, digitize, deliver, and preserve more than four million books. While the entire project budget is \$100 million, including staff, outreach, and other activities, an investment now of \$5-10 million would bring between 250,000 and 500,000 books online in Y1-2.

Internet Archive’s *Open Libraries* project will:

- **CURATE** diverse & inclusive collections
- **INCREASE ACCESSIBLE CONTENT** for all people with print disabilities
- **SCAN & PROVIDE DIGITAL ACCESS** to books through libraries that own the hard copy
- **ENSURE READER PRIVACY & LONG TERM PUBLIC ACCESS**
- **PRESERVE** millions of books now missing from our digital shelves

Timeline

Y1: acquire & digitize 250,000 books / year
Y2: ramp up to acquire & digitize 500,000 books / year
Y3: ramp up to acquiring & digitizing 1,000,000 books / year
Y4: acquire & digitize 1,000,000 books / year
Y5: acquire & digitize 1,250,000 books / year

Budget

Based on our experience digitizing books at scale, we have developed a blended rate of \$20 to make one book available online; \$5 to acquire, \$5 to digitize, \$5 to store and serve the digital files, and \$5 to preserve the physical book. Thus, we can make 250,000 books available for \$5 million. An investment of \$10 million would bring 500,000 books online.

Recent Progress

When the 100&Change competition ended in December 2017, the Internet Archive did not stop. We continued to build Open Libraries. Some key milestones:

- Hired [Chris Freeland](#) as the first Director of Open Libraries & [David Fox](#) as Director of Development.
- Established a high volume Scanning Center to lower our digitization costs by 66%. This center can scale up to scan 1 million books per year.
- Developed [a wishlist of the 1.5 million books](#) deemed the most useful to Wikipedians, teachers, students, and libraries.
- Worked with scholars from Harvard, Georgetown and Duke Universities to delineate the legal concept of [Controlled Digital Lending](#). Almost 90 library federations, universities, and legal or library leaders have become [signatories](#).
- [Expanded access](#) to millions of books for people with disabilities.
- Secured [\\$3 million in funding](#) from [Arcadia Fund](#) to digitize university press and other books from the scholarly record.
- Received a major one-time [donation of 250,000 books](#) from Trent University and secured a steady stream of 16,000 books per year from San Francisco Public Library, strengthening our book acquisition program, which also includes established relationships with Better World Books and other major booksellers.
- For the readers of Wikipedia who view [18 billion pages](#) per month, Open Libraries is providing a global online reference library, linking readers directly into the references cited in each article.

Thus, in the last 18 months, the Internet Archive has successfully hired well qualified project leads, ramped up digitization while reducing the cost by 66%, prioritized a list of the most desirable 1.5 million books, leveraged an increasingly well-accepted legal framework called Controlled Digital Lending, and secured \$3 million in foundation funding. Through this ongoing work, we continue to demonstrate our commitment to the success of Open Libraries and to pursue its grand vision.

Contact

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Newborn Essential Solutions & Technologies



1 million newborns die in Africa each year.
75 percent of these deaths are preventable.

FOUR CHALLENGES TO SOLVE

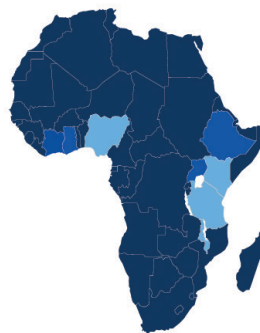
At current rates of progress it will be nearly 100 years before a baby born in Africa has the same chances of survival as one born in North America. Reducing newborn death rates requires adoption of comprehensive newborn care, a standard of care available in the US and UK for 50+ years.

While most women in Africa now deliver their babies in health facilities, NEST360° has identified 4 gaps that impede the widespread adoption of comprehensive care for newborns in Africa:

- Access to the right technology that can withstand the harsh environments of African hospitals
- Shortage of trained clinicians and maintenance technicians
- Lack of data and finances to introduce, scale, sustain, and measure quality programs
- Uncertain market size and high costs of distribution in Africa

OUR GOAL: REDUCE NEONATAL MORTALITY

NEST360° will implement comprehensive newborn care by innovating lifesaving technologies; educating healthcare providers and the next generation of inventors; demonstrating efficacy and cost-effectiveness; and building a sustainable distribution network. Within eight years, more than 16 million babies will be born in NEST-equipped facilities in Africa, reducing neonatal mortality by 50% at a cost of \$1.48 per birth and catalyzing scale in sub-Saharan Africa.



**16,000,000 babies born
in facilities with NEST**
newborn mortality reduced by 50%

NEST360° TEAM: A multi-institutional and international team of engineers, doctors, and global health experts from 3rd Stone Design • Center for Public Health and Development • Dar es Salaam Institute of Technology • Ifakara Health Institute • London School of Hygiene & Tropical Medicine • Malawi University of Science & Technology • Northwestern University • Oxford KEMRI-Wellcome Trust • Rice 360° Institute for Public Health • University of Lagos • University of Ibadan • University of Malawi, College of Medicine • University of Malawi, The Malawi Polytechnic

CONFIDENTIAL PROJECT UPDATE: A finalist for 100&Change, NEST360° received a \$15 million grant from the MacArthur Foundation in 2018. We have raised an additional \$38 million from the Bill and Melinda Gates Foundation, ELMA Philanthropies, the Lemelson Foundation, the Ting Tsung and Wei Fong Chao Foundation, and individual donors to implement Phase 1 (2019-2022) in Malawi, Tanzania, Nigeria, and Kenya. Phase 2 (2023-2026) will expand to Uganda, Ethiopia, Ghana, and Cote d'Ivoire after which NEST360° will be positioned for continent-wide scale.

INNOVATION

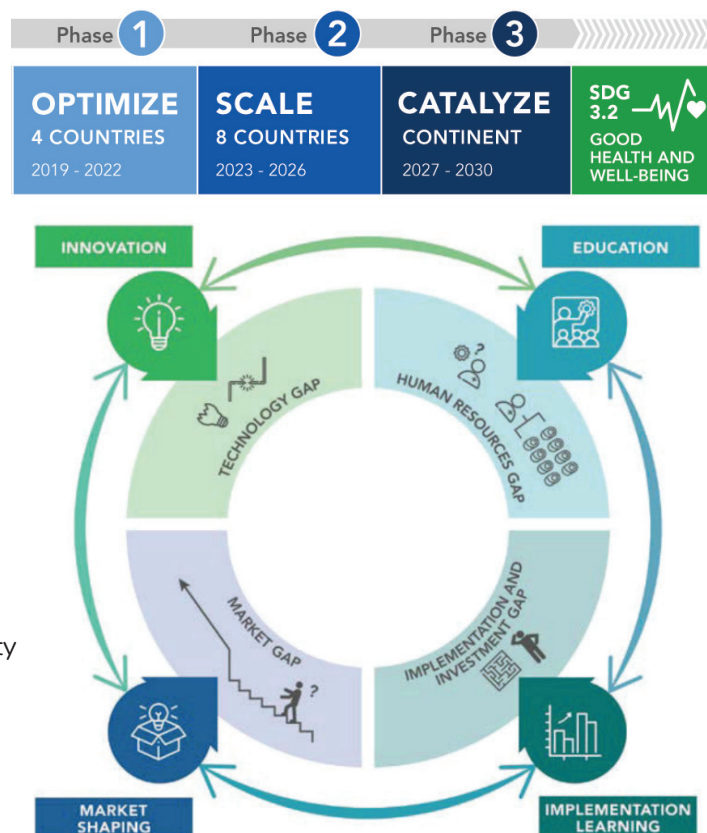
The NEST package includes a bundle of technologies that address the leading causes of newborn death in Africa: preterm birth, injury during delivery, and infection. The package will include the most effective, affordable and sustainable options available in the marketplace to ensure comprehensive newborn care. The NEST360° team is developing technologies where there are no existing devices that meet the NEST criteria.

EDUCATION

NEST360° will create a pipeline of clinical and technical innovators ready to use and sustain the NEST bundle to improve newborn outcomes. Education will focus on capacity building for clinicians, biomedical technicians, engineering, and invention. This investment in education will provide the foundation for an innovation ecosystem and for future inventions needed for long-term health systems change.

IMPLEMENTATION LEARNING

Global scaling requires collecting evidence of the impact of the NEST package. We will demonstrate the efficacy and cost-effectiveness of NEST in both private and publicly financed health systems in sub-Saharan Africa. Within eight years, the experience and evidence from the first two phases will drive public sector investment and buy-in from local and international stakeholders like Ministries of Health, UNICEF and the World Health Organization.



MARKET SHAPING

Even where rugged technologies exist for newborns, most are not available for purchase in sub-Saharan Africa. Prohibitive distribution costs have impeded the introduction of medical technologies into the African market. NEST360° will distribute and maintain medical devices in African markets, beginning with Kenya, Tanzania, and Nigeria, and will mitigate these costs by bundling the costs of sales, importation, installation and training for NEST products.

HOW YOU CAN HELP: An additional investment of \$5-\$10 million in NEST360° will provide valuable resources to expand and develop core programming. Funding opportunities include:

- Build capacity for and deploy additional NEST packages in newborn care units in Nigeria, the country with the largest population in sub-Saharan Africa and where mortality rates for children under age 5 have increased in the past 5 years
- Launch a manufacturing enterprise for NEST technologies in sub-Saharan Africa, reducing production costs, building local capacity, and providing a career pathway for engineering students
- Develop a post-baccalaureate fellowship program for African engineers to strengthen medical device invention skills, further building the ecosystem of innovation in Africa

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A John D. and Catherine T.
MacArthur Foundation Affiliate



ABOUT LEVER FOR CHANGE

Lever for Change is a John D. and Catherine T. MacArthur Foundation affiliate, whose mission is to unlock philanthropic capital and accelerate social change around the world's biggest social challenges. Building off the success of *100&Change*, the MacArthur Foundation's breakthrough US\$100 million competition, Lever for Change helps philanthropists source vetted, high-impact philanthropic opportunities either through the design and management of customized competitions or by identifying opportunities

from the Lever for Change Solutions Bank, which contains the top vetted proposals from all competitions. For nonprofits and problem solvers, Lever for Change offers access to potentially transformational gifts of US\$10 million or more, along with technical assistance to strengthen their appeal to donors and to deepen impact. For the field, Lever for Change will use the data collected through competitions to generate sharable insights.

For more information, please visit www.leverforchange.org.

Lever for Change

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