

TWO WHEELS FOR LIFE

SAVING LIVES ON TWO WHEELS IN RURAL AFRICA

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It was a woman in labor being hauled in a rusty old wheelbarrow to a hospital in Zimbabwe who unknowingly set the plan in motion.

"Can you imagine? Her arms and legs dangled over the side, and she had been pushed along for hours on these bumpy, rutted roads to give birth," recalls former motorcycle racer Andrea Coleman, speaking from her home just outside of London. "It was unbearably hot and dusty, and my heart just hurt for her. I knew then that we really needed to do something."

Fortuitously, Andrea and her husband, Barry Coleman, already had been pondering the kind of something that could make significant strides in healthcare access in the remotest parts of Africa.

It was 1986, and Barry – a journalist who for several years covered motorcycle racing for *The Guardian* – had just returned from a humanitarian mission to Uganda with Randy Mamola, the charismatic Fédération Internationale de Motocyclisme (FIM) Grand Prix Legend and current TV sportscaster, as part of a visit coordinated by the U.K.-based nonprofit Save the Children. Along the way, they noticed that behind every country's Ministry

of Health sat dozens of seemingly near-new motorbikes in varying stages of disrepair, stacked or leaning against the building. Some were rust-crusted and intertwined with weeds, others were missing whole chunks of anatomy – and all of them were useless.

"It was obvious that no one had been trained to maintain what had been perfectly good motorbikes," Andrea says. "No one understood the supply chain for parts; no one had created any kind of preventative maintenance schedule. So, they were just going to waste."

Shortly after Barry's trip, Andrea saw the woman in the wheelbarrow in Zimbabwe, which in 1989 inspired the two Brits and their American friend Mamola to create Riders for Health, a nonprofit, non-governmental organization (NGO) that focuses on managing fleets of motorcycles to support the delivery of healthcare on a reliable basis to rural communities in five African countries south of the Sahara: Lesotho, The Gambia, Liberia, Malawi, and Nigeria.



Riders for Health worker in Monrovia, Liberia



Female nurse Jogob Gassama providing health care outreach in The Gambia.



Riders for Health delivering outreach health care in Kapatawee village Bong County, Liberia.

Riders began to make a real difference by bringing healthcare directly to the people, especially those who were a half- or full-day's walk from getting the help they desperately needed: tests for tuberculosis and HIV/AIDS; prenatal, maternal, and infant care; medical supplies and medicines; vaccinations for measles, polio, and chickenpox; as well as education around disease transmission and unsafe water.

According to UNICEF, residents of the 46 sub-Saharan countries in Africa – out of the 54 countries on the mainland continent – suffer the highest maternal mortality ratio in the world, at a rate of 533 maternal deaths per 100,000 live births each year. That represents more than two-thirds of all maternal deaths worldwide each year. Even more heartbreaking, many of the primary causes of maternal death – embolism, hemorrhage, sepsis – are mostly preventable through medical intervention. But very few women in remote rural areas, where 63 percent of the population in Africa lives, can make it to a distant health center unless they walk or are carted by a donkey or wheelbarrow.

And that's just one of the many public health issues facing the continent, where more than half the population lives in extreme poverty. According to reports from both the United Nations (UN) and the World Health Organization (WHO), a lack of adequate access to medications and testing has meant that Africans are susceptible to crushing mortality rates from malaria, TB, and HIV/AIDS that far surpass the rest of the world.

Children are especially vulnerable to diarrhea, pneumonia, and malnutrition. The WHO reports that sub-Saharan Africa has the highest child mortality rate of any global region, with one child in 13 dying before age 5, compared to the worldwide average of one in 27 reported by UNICEF in 2019. Often, individual countries also have health concerns specific to their populations. For instance, Lesotho has one of the highest rates of HIV infection in the world; Liberia, Guinea, and Sierra Leone were the hardest hit by Ebola in 2014-15; and The Gambia, the smallest country on the mainland, suffers from widespread malnutrition, TB, leprosy, and malaria, with 70 percent of the country's rural population living in poverty as of 2019.

And then 2020 happened.

International humanitarian organizations predict that the toll of the coronavirus and its resulting COVID-19 disease will be especially profound for Africa. The continent is home to 17 percent of the world's people but, as of May 2021, it was able to administer only 2 percent of the global vaccine doses. And most of those have gone to healthcare and other frontline workers, according to Our World in Data, a research and data firm tracking pandemic-related issues worldwide.

The roadblocks are numerous and daunting, from the difficulty of obtaining the vaccine in the first place, to storing and transporting the doses at the correct temperatures, to getting them into people's arms – especially those who live hours away from healthcare facilities and have only their feet to get them there.

Enter Riders for Health and the more than 1,400 vehicles they currently manage across five African countries. The fleet includes ambulances, buses, all-terrain vehicles, trucks, and cars. But the majority are motorbikes.

The advantages of two wheels over other types of vehicles – even four-wheel-drive – for the kind of riding required to navigate rural Africa are the same ones that make them such exceptional off-road adventure machines. And this is as off-road as it gets. Steep, undulating mountainsides. Loose gravel. Softball-sized boulders.

But motorbike riders can choose cleaner lines on these exceedingly narrow, rutted paths. Standing up shifts the center of gravity, and shoving the inside peg makes it easier to corner. Pumping eases the wavy-gravy – you could try unweighting and weighting in a Jeep, but that's only going to result in hilarity, at least until the drivetrain bottoms out.

And then there's the cost: Motorcycles can be had for less than \$3,000, use considerably less fuel than a car or truck, and are easier and cheaper to keep running.

There are downsides to the mighty motorbike, though, and its limitations in Africa are tested by Riders, as it quickly became known, every day. Sometimes, the dry desert dust creates 8-foot clouds that obscure visibility beyond more than a few feet. Thunderstorms, mudslides, and the occasional runaway goat or herd of sheep can create instant hazards. And anything with a motor must, by its very nature, be kept in good working order.

For those living in developed countries, it's hard to envision a place where there are no service stations just off the highway to refuel or have the engine looked at, or where ignition systems don't magically appear on the front porch from Amazon. "If we need a part, it's likely to come from Japan or some other far-off place, and that has to be planned for well in advance in Africa," Andrea says.

A rural road leading to a remote village in Buchanan, Liberia.



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From the get-go, the plan has been for Riders' programs in Africa to be led by nationals in each country, "rather than by white people from far away," as Andrea puts it. And while their very first mechanic was from the U.K., they soon trained riders in each country not only to implement maintenance schedules and set up routes, but also to train others at the same high level to do the same. That system has worked so well that they now have staff from one country going to others to conduct the training.

One reason it's so important for operations to be run internally is that locals are far better equipped to accurately assess what's happening on the ground. "They're in tune with the government and the limitations of the country's resources," Andrea explains. "There's not going to be a big culture shock to them to suddenly find out that there's no electricity, or that there's been a coup."

To get to this position as a significant player in a global pandemic, Riders had to start from scratch, going back to the early 1990s. To create a straightforward and workable system they could build on, they first had to jump through considerable hoops to help the Ministries of Health in each country secure new bikes – paid for by the countries themselves – and then turn over control of the bikes' maintenance to Riders.

"We've had some bikes donated, but because we can't risk a rider being stranded, they have to be new, which means we usually have to buy them," Andrea explains. "With a used bike, we don't know what happened to it before we got it, and that can be really problematic."

Agricultural motorbikes originally designed for farm work are ideal for unsurfaced roads, unpredictable weather, and steep gradients, which is why the Yamaha AG100 and AG200 are among the most popular options, but Suzuki motorcycles are also used, and Honda has been one of the company's donation angels.

Once Riders became familiar with each brand's peccadillos, Barry established what is now referred to as "systemic fleet management," ultimately creating a price-per-kilometer fee for each bike based on its needs. It helps the nonprofit to plan budgets for the health ministries, source vehicles and spare parts, and manage fuel consumption. This precision data keeps the fleets at a high level of operation because it reveals things like when each bike needs an oil change, and through the system, that maintenance can be tracked and scheduled.

The next step was training healthcare workers – known throughout most of Africa as environmental health technologists – to ride and maintain the machines on an ongoing basis.

"We came up with a two-week training program that puts our riders through a fast-paced course that takes them from never even having ridden a bicycle to riding on the worst terrain imaginable," Andrea says. That means putting newbies through the rigorous paces of a more intensive education than recreational riders would ever bother with – covering things like control manipulation, low-speed maneuvering, risk management, and cornering more effectively in a decreasing radius curve.

"It is something to see this transformation from not knowing even how to balance to navigating the challenges of these rural areas," says Kayode "AJ" Ajayi, who serves as CEO for Riders, as well as the company's Country Director for Nigeria. Ajayi joined Riders in 1999, "when I had no gray hairs," he says with a laugh. He's jumped onto a Zoom call from his home in the capital city of Abuja, where he has been helping this densely populated country

of more than 190 million people come up with a plan for COVID-19 vaccination distribution. "As they are working and riding, as with anything, they get better and better," he says. "And if they have a crash, they have to retrain."

It's a bit of a trial by fire, because the only way to truly know you can tackle extreme terrain is to ride it, and the learning curve can be steep and a tad terrifying. "There was a woman in Zambia, her name was Matilda. She was just learning to ride, and she fell into a ditch where there was a snake," Andrea says. "She never fell off again."

Even seven-time motorcycle trials world champion Dougie Lampkin told Andrea he was impressed when he visited Lesotho in 2020 to offer trainees a skills workshop. "Dougie would ask the riders things like, 'What are some scenarios you might find yourselves in out there?'" she says. After they had described the terrain, Lampkin told Andrea, "These guys are trials riders. They don't know it, but they have definitely been trained at that level, and wow."

Although motorbikes are rare in urban Africa, where they're often used as taxis – and where they're commonly known as the *boda boda*, a term that started in Kenya but has since caught on elsewhere – they are the primary mode of transportation in rural areas, where other types of vehicles are virtually nonexistent. The *boda boda* suffers from a bad reputation, however, because they are involved in half of Africa's road accidents, according to the WHO's Road Safety report. Because there are no helmet laws (or licensing, or motorcycle-specific regulations of any kind), those accidents often result in death or serious injury – a crushing blow for the people who also have no insurance (which is most of them).

"These are some of the difficulties we face with trying to help people understand that your training and what you're wearing make such a difference," says Ajayi. "If a *boda boda* rider and a healthcare worker pull up at the same time, you see the difference. One is wearing jeans and flip-flops, the other is fully kitted."

Riders ensures that its riders wear the right clothing for the conditions: helmets, full-fingered gloves, eye protection, and boots, plus personal protective equipment (PPE). "That was one of the early challenges," Ajayi says. "It's not so bad in the winter, when it's cooler. But Africa's heat is hard. No one wants to be wearing a head-to-toe kit in the hot sun, but it is the only way to be safe."

Another component of Riders' foundation is that the bikes themselves always need to be in working order. "Our goal is zero breakdowns," Andrea says. Each rider gets his or her own assigned bike, which they ride until it is withdrawn from the fleet, to be replaced with a new one.

"Maintenance in New York means taking the bike to the garage and having them work on it," Ajayi says. "Maintenance in Africa is usually some guy under a tree who has trained himself to look after bikes, which is helpful if he knows what he is doing, and not helpful if he doesn't."

To get everyone on the same page, Riders created the acronym PLANS to represent each aspect of a daily bike check: Petrol, Lubricant, Adjustment, Nuts, Stop. This ensures that the bike is kept in tip-top shape, from making sure it has enough fuel for the journey to confirming reliable brakes. "It takes about 5 to 8 minutes to do this routine, and they must do it every day," Ajayi says. "If you do it every day, then you know what needs to be done right away, and you can keep an eye on things that might need work in a few days or weeks. We help the riders understand that if any activity feels different, then it's time to call in a technician."



Riders for Health workshop in Basse Santa Su, Gambia.



Water crossing on a rural road in Buchanan, Liberia.



It quickly became obvious that putting the healthcare workers on motorcycles was going to be a game-changer.

Female nurse Jogob Gassama providing health care outreach in The Gambia.



Riders for Health outreach in Basse Santa Su, Gambia.



Riders for Health sample courier at the Monrovia, Liberia clinic.

Riders employs mobile technicians who rotate monthly around each country, and they operate service stations in central locations. In addition, the mobile techs run workshops that offer training and repair updates, and refreshers.

It quickly became obvious that putting the healthcare workers on motorcycles was going to be a game-changer. It allows doctors and nurses to visit people where they live. It also allows them to check the drinking water and that hygienically prepared and nutrient-dense food is available. When a case of TB is reported in a village, healthcare workers can get there fast to screen others, which means faster treatment and education on how to avoid spreading the disease.

Once the motorcycles, healthcare workers, and maintenance PLANS were firmly in place, it was time to ask what the countries' other needs were and see what could be done about them. The answer: sample transport, a way to get things like urine and blood specimens or skin excisions safely transferred to a lab from an isolated village – and the results sent back in a timely manner.

Soon, Riders had developed the unique idea of creating "sample couriers," people they train to collect, safely store, and efficiently deliver biohazardous samples via motorbike. They drop them at centralized labs and then return to obtain the results, which they deliver straight to the patient.

"Here's how it had been going up until then," says Ajayi. "You'd have a man who needed an HIV test living in a remote area. He must walk for hours to get to the health center, where he gets his blood drawn, and then he walks for hours back to his home. Meanwhile, the healthcare worker who took his blood must walk for several hours to get to the lab, which is closer to a bigger town. Then a lab worker sends the results to the healthcare center, and it sits there for months, because that man has no way of knowing when the results are in. If it's negative, they would just wait for him to show up. If those results are positive, then the

healthcare worker would have to walk all of those hours back and forth to find the man and tell him."

Now, in the five countries where Riders operates, a sample courier regularly visits a village or a centralized healthcare center, collects all the samples needed (dropping off medications, recent test results, and other information, as well), and then tucks them into a cooler strapped to his motorbike before heading to the lab. As soon as the results are ready, he takes them back to the healthcare center, or takes critical results directly back to the patient.

Riders had begun the sample courier transport program in 1991 in Lesotho, the airy, high-altitude center of the misshapen Long John that is South Africa, which completely surrounds this landlocked, independent country. Two-thirds of Lesotho is corrugated by mountain ranges with peaks that summit between 9,000 and 11,200 feet. Crisscrossing these immovable objects are far more rivers than roads, and of the 2 million inhabitants of tiny Lesotho, one-third live in mountain areas that are nearly unreachable except by foot or perhaps horse or donkey.

Now, 30 years later, nearly all medical test results across Lesotho are turned around within three days.

Once Lesotho was well established, the NGO began to approach – and sometimes was even approached by – other sub-Saharan countries, often partnering with other NGOs and nonprofits, as well as the country's health ministries, to set up similar training and transport programs. In 1999, they took on Nigeria, where more than half the population lives in rural areas, but only 15 percent of the roads are paved. Since then Riders has managed to consistently rack up 3 million kilometers per year in transport. And although they are able to work with only 23 of the country's 36 states, that's still 20 million people. In 2011, Malawi and its 18.6 million inhabitants came on board, and since then Riders has logged 2 million kilometers of riding to transport more than 400,000 biological samples – with zero breakdowns.

Over the years, regime changes and political or economic collapses have severed ties with some countries – including Zimbabwe, where they managed a fleet for years; Kenya, where they worked with faith-based organizations to connect HIV-positive women trained as riders with other HIV-positive women throughout the country, to help destigmatize their status; and Ghana, which brought them in temporarily to train riders.

In Zambia, though, their short stint resulted in a welcome affirmation of the good work they were doing when the Bill and Melinda Gates Foundation decided to put up \$2.3 million to fund a 2.5-year randomized study. Run by the Stanford Graduate School of Business from 2011 to 2014 in the eight districts of Zambia's Southern Province, its goal was to determine whether Riders' systematic management of motorcycles actually improved health ministry system performance.

It was no surprise to the African nationals working for Riders that the study confirmed that healthcare workers were indeed able to travel farther, visit more locations, and make more outreach visits on Riders' motorcycles than had been previously possible, resulting in more preventive healthcare services being offered, more tests being administered, and more efficient healthcare services being provided.

So, when the Ebola crisis hit in 2014, Liberia came knocking. The Ministry of Health invited Riders to assess the potential for a nationwide disease surveillance program to help stem the alarming wave of cases threatening its 4.8 million residents, ensuring that outbreaks could be quickly identified and dealt with.

By 2016, however, it became obvious that Riders for Health needed help securing more funding. And that's how its other venture, Two Wheels for Life, came into being. Founded by Andrea and her pal Mamola, this fundraising arm operates separately, providing support for services, local and national communications, design and web development, and the Colemans' daughter, Zoë

Herron Coleman, serves as their communications director. That same year, they shut the U.K. offices permanently, making the transport management part of the organization entirely African-owned and led. Its programs and services are now run solely by nationals of the countries – which is rare for a non-African NGO.

Of course, as anyone who's ever been to a poker run knows, moto riders are among the most charitable folks out there – and Riders found that the community was eager to get involved, starting with the now-famous Day of Champions fundraiser that takes place during the British Grand Prix weekend. Soon, MotoGP would announce Riders for Health as its official charity, and FIM did the same, followed by the support of multiple foundations, including Skoll and Ford Global Giving.

The timing could not have been better, because in 2018, The Gambia and its entire population of 2.1 million joined the Riders fold. Since then, not one pregnant woman has died because she couldn't get to a healthcare facility in time – a remarkable statistic, considering that The Gambia's maternal and child health prognosis previously had been among the lowest in the world.

All told, Riders has directly impacted more than 47 million people in Africa over more than 30 years, through the work of 697 staff members and nearly a thousand trained riders using 1,400 vehicles – a thousand of which are motorcycles.

And they're nowhere near being done yet.

Because of their successes in helping to combat Ebola, Riders has found itself on the frontlines of the COVID-19 outbreak in the countries they serve in Africa. One of Riders' stars, Mahali Hlasa, who joined the nonprofit full-time in 2008 and serves as country director for Lesotho, has been selected by its Ministry of Health to join a small team that will assess the successes and failures of the first wave of addressing COVID-19 across the nation, followed by recommendations for how to respond to the second wave, and how to prepare for the arrival of the vaccine when it comes.



Riders for Health outreach in Basse Santa Su, Gambia.



Riders for Health outreach in Basse Santa Su, Gambia.



Local community in Kapatawee village Bong County, Liberia.



“If we don’t do something to push things forward, we’ll always just be going in circles.”

Riders for Health outreach in Basse Santa Su, Gambia.



Female nurse Jogob Gassama



As of May 2021, only healthcare workers in Lesotho had been vaccinated, according to the WHO, and there was no official indication as to when more doses would arrive. Like any other healthcare-related issue across much of Africa, politics, funding, and unforgiving terrain will be key players in the rollout.

Hlasa knows that terrain all too well – the Lesotho native has ridden thousands of kilometers on a motorbike, and she was the first woman to be designated by Riders as a trainer. She began working with them in 1991, while she was still working for the Ministry of Health as an environmental health practitioner, after obtaining her master’s degree in environmental health from the Central University of Technology in South Africa.

“I would ride my bike to a village, and a lot of times a resident would allow us to use their house for the day to see patients,” she says, still cheerful on an online chat from Lesotho’s capital, Maseru, where she heads back to each night to catch a few hours of sleep after long days of working in the outlying districts. “There’s a certain sense of being part of a family, even with the people we only see once a month, because they love their children just like you do, and they want to see them healthy and happy.”

While motorcyclists in most countries around the globe are overwhelmingly men, Riders boasts that most of their riders are not. That’s primarily driven by the fact that most healthcare workers in Africa are women. Hlasa says she has always preferred riding a motorbike to driving a car anyway. While she rarely has time to ride anymore, she looks forward to out-of-towners visiting once again post-pandemic, because that’s when she takes the time to tool around the countryside, showing it off from the open-air vantage point of a bike.

“Some parts of the country are impossible to reach even by motorbike, which is our ongoing challenge, and so we use horses from the villages,” she says. “A horseback rider comes from three hours away, brings the samples and gives them to the motorbike rider, who then travels to the health facility. And then when the results are in, they reverse the process. As you can imagine, it takes extremely complicated schedules to manage this.

“Some people might ask, in terms of economy of scale, ‘Is it worth it just to get to 25 people?’” she says. “But every life is precious, and so, yes. Yes, it is.”

Hlasa says that the top priority for Riders since the pandemic began has been upgrading the sample transport system for the specific needs of addressing COVID-19, training riders to use PPE, and safe sample handling. “For this we have needed more equipment, which allows for uninterrupted refrigeration, covering the storage and transport of samples,” she explains.

As of May 3, 2021, the country had officially recorded 10,733 COVID-19 infections and 318 deaths, while only 0.4 percent of the population has been fully vaccinated.

“The spread of COVID-19 is alarming for a country like ours,” Hlasa says. “Our people have so many pre-existing conditions that make it hard to survive this kind of disease. They already suffer from a high prevalence of TB and HIV, and that can be a death sentence combined with the virus.”

And because Lesotho is encased inside South Africa, the virus is especially insidious there. “The borders are very porous, and it is impossible to tell if you are from here or there,” Hlasa says. “Most of the people who first tested positive in Lesotho came from South Africa. There is no fence or wall. People go back and forth all day from both countries because they work in the other country or have family there. In some parts, it’s easier and closer to do your shopping across the border, rather than try to navigate the impossible mountains in the other direction.

“So, contract tracing in this region has been very, very hard.”

Once the South African variant was discovered, the situation became even more difficult, and the fact that few people have a radio, much less a television, made it that much more of a challenge when healthcare centers began to shut down, “which has had a dramatic effect,” Hlasa says. For example, fewer women have been able to come to the clinics for HIV testing and treatment, which is even more troubling for HIV-positive expectant mothers, who require consistently administered medication with no interruptions to keep from passing HIV to their babies in utero.

Not to mention the effects of isolation, which inaccessible villages understood long before the pandemic. “So many times, when a sample courier or healthcare worker’s engine can be heard from miles away, people come outside and start singing to welcome them,” Ajayi says. “The rider is greeted like an old friend, and there is real happiness to see them.”

Meanwhile, in Nigeria, Ajayi and the rest of the Riders team have been facilitating the movement of COVID-19 samples for multiple health agencies. They have transported more than 2,000 samples for testing across 12 of the country’s 36 states since December 2020, and are mobilizing to take the transport operation nationwide within the next few months. Ajayi says Riders will be involved in the storage and distribution of the vaccines, and that cold storage facilities are expected to be in use by June. “We just contracted with a company to build this cold storage,” Ajayi says, “but it can’t be the usual refrigerator for storing beef and pork and fish. It has to be one that can consistently hold the temperature perfectly. There can be no mistakes with this.”

Next up on Riders’ radar: upgrading each country’s data-collection technology, which they had begun implementing before the pandemic ground everything to a halt. Transitioning the healthcare systems from paper – which Andrea says has been “stacked literally floor to ceiling across entire rooms” in some facilities – to data-management systems that can provide real-time test results and ongoing care plans that can be tracked on riders’ phones and synced with healthcare facilities’ computers, is their highest post-pandemic priority.

It’s going to be another game-changer, and further proof that Riders and its riders are committed to the concept of “delivering health to the last mile.”

“One of the things that always struck me in moto racing was that the motorcycles literally go around in circles,” Coleman says. “That didn’t fit with my sense of the world or what a human being needs to do to contribute to the well-being of the world. If we don’t do something to push things forward, we’ll always just be going in circles.”

