

Reconfiguring Patient Care with Partner Liberia



Mike Davis and Scott Dwyer fell in love with Liberia a decade ago, when they first helped create a clinic at an all-girls' school. They subsequently created Partner Liberia to develop sustainable healthcare models in rural Liberia and have since navigated the challenges of the Ebola and Corona viruses. As a clinician in respiratory medicine, Davis co-created the first college with Dwyer to train respiratory therapists on the continent. More recently, these two social entrepreneurs opened a rural hospital on Bushrod Island to meet the needs of 450,000 residents. Blood work, a time-consuming process given limited human resources and Liberia's fragile, unpredictable supply chain and power grid, has been a persistent challenge. Adopting OLO as their Complete Blood Count (CBC) analyzer has allowed Partner Liberia to significantly reconfigure their patient care pathways. By diagnosing patients with quantitative data from a CBC test in minutes, Davis and Dwyer are raising the quality of care in Liberia, while giving patients more knowledge and resources to support their recovery, and improving healthcare outcomes for the community.

Mike Davis and Scott Dwyer Q&A with Co-founders of Partner Liberia



Changing Respiratory Care in Liberia

What is the mission of Partner Liberia and how do you aim to achieve it?

MIKE DAVIS

Scott Dwyer and I first went to Liberia in 2011 with a mentor of ours to open a clinic at what was then the only girls' school in the country. We fell in love with Liberia and wanted to make a greater impact there. Respiratory disease and respiratory failure are the leading causes of death in Liberia, and respiratory medicine is our expertise, so we started working with different facilities such as the Ministry of Health and other health institutions. We then founded Partner Liberia, a nonprofit with a mission to create sustainable healthcare solutions, particularly in respiratory healthcare.

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Our approach is to pair clinical expertise and capacity building with supplies and resources that are optimized for the Liberian environment. Back in 2011, no country in Africa had respiratory care practitioners. We opened the first respiratory therapy college on the continent to train respiratory therapists and develop a trained workforce. We also created a licensure process with the government, so the profession is now recognized and credentialed. Throughout the Ebola crisis, we persisted with our work in Liberia, and more recently, we opened a respiratory specialty center on Bushrod Island in Monrovia.



SCOTT DWYER

For context, there are supposed to be 3.6 physicians for every 10,000 people in Liberia. However, we are the only respiratory center on Bushrod Island, with two physicians on staff for a geographical catchment area that includes 450,000 people. Redemption Hospital, another local healthcare center, is scheduled to close and relocate in 2021, leaving our hospital as the closest provider of care for their pediatric and OB/GYN patients, among other specialties.

Many people who haven't visited Liberia may not understand some of the healthcare challenges you face on a daily basis. Can you describe the current landscape and the implications for patients seeking care?

MIKE DAVIS

On a daily basis, we battle severe constraints in providing care to our patients. Resources are limited, from funding to supplies, in about every way you can think of. On more than one occasion, we have had to receive patients after the power grid for the entire country had been down for a few days and our generators had run out of fuel. Many of our concentrators that provide oxygen as well as our medical equipment require electricity. While solar power helps, we could not do more at night.

We also have patients who are anemic, and we're having to do manual blood typing through family because there is no national blood bank for distribution. And we're trying to do this while having 15 other patients in the clinic with extremely limited physician expertise and time. We try to overcome this with mid-level providers—respiratory therapists, physician assistants—but human resource constraints are constant.

SCOTT DWYER

Another logistical challenge is inconsistency in supplies that may be available one month and absent the next. It's incredibly hard to have anything to rely on that will be there the next time you need them. Staff and education don't go away, so that's good.

One area of excellence we focus on is maintaining a quality laboratory. But if you don't have reliable electricity, then temperature- and light-sensitive reagents won't function. And if you don't have a consistent supply chain, which is incredibly difficult in Liberia, then even if you can overcome the first two, you may run out of reagents altogether. This is why we were thrilled to find a "dry" system like OLO to do complete blood count.

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How OLO Changes the Testing Paradigm

Who are your typical patients? What do you look for in a complete blood count when you diagnose these patients?

MIKE DAVIS

We have a reputation for being a respiratory specialty center, but most of our patients see us for standard primary care and general surgery. We see a little bit of everything across the full age spectrum, with a specialty focus on respiratory.

SCOTT DWYER

Statistically, certain realities persist: if you picked any one of our patients out, they would have malaria and they would have worms.

MIKE DAVIS

Context is everything. When I look at the CBC results, I'm thinking about several things: what is the anemia status of our patient, and what is the diagnostic picture; does the patient have an infection, a high worm burden, or something really unpleasant on the hematology spectrum like cancer. Depending on the disease and its presentation in a particular patient, OLO can quickly provide standard hematology values, like hemoglobin and hematocrit, to help evaluate whether the patient is anemic. Then you add in the differential. To me, that's one of the reasons why OLO has been so helpful. Identifying those conditions is a lot easier with an instant CBC.

What were some of the challenges of running CBC previously? Why did you decide to install OLO?

SCOTT DWYER

We have a very good laboratory technician, and it takes him about an hour to do each complete blood count test manually, if that's the only thing he's doing. The nice part about OLO is that it takes 15 minutes, but 10 of those minutes you can be doing other things, like talking to the patient.

OLO's consistency is also a key advantage. On top of providing results much more quickly, OLO also limits the risk of human interpretation errors when we have less experienced lab technicians doing the CBC manually.

Another powerful impact relates to time and follow up. A lot of times, we draw blood and then the patient leaves, so they either have to come back or you have to call them. These are all barriers to accessing care; if they go home, how are they going to get back for another follow-on visit? Can they afford to come back to be seen? Where are they going to get medications? Can they afford to get medications? If we can do it all on site, while they're here, we improve outcomes phenomenally.



“OLO has helped improve the quality of care we provide to patients here. When they leave, they have a diagnosis, they have medications, and they have a care plan.”

- MIKE DAVIS



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MIKE DAVIS

The fact that OLO is at least on some level a visual-based technology gives me hope that OLO image files will one day be used to diagnose sickle cell and malaria, because we're still having to do that manually. We hope that the OLO technology will really reduce the amount of manual testing we have to do.

Has OLO changed the way you evaluate patients and make treatment decisions? Have you seen benefits with OLO over manual blood work?

SCOTT DWYER

One of the primary differences is that we reverse the paradigm on context versus quantitative data. Because CBCs were so hard to run, we needed overwhelming contextual evidence to make it worth the time. Now, we are trying to run as many CBCs as we possibly feel is necessary, because this test helps us make informed decisions on our patients.

MIKE DAVIS

Our aim is to utilize CBCs as you would in the United States or other countries, where blood work is integral to making a diagnosis. I think this has been a great gain. It saves effort in terms of follow-up care and gives us the ability to process samples while the patient is still here. And we can see more patients because physicians aren't having to use their time to call patients to follow up and discuss diagnosis and treatment plans.



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- SCOTT DWYER



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If You Can Make it Work in Liberia, You Can Make it Work Anywhere

What was it like to install OLO in Liberia? How did that process work out?

SCOTT DWYER

I would say that I was pleasantly surprised. You know, in Liberia, nothing ever goes as planned. But everything went surprisingly well in my mind. The few hiccups that we did have are things that we talked about from the beginning. For example, electrical power is different in Liberia than in the US. And the internet is different, too. Nothing was either insurmountable or unexpected. I thought the training went very well. I was a little worried about how our staff would receive it via Zoom, but I was happy with it.

MIKE DAVIS

One of the humorous notes of the installation was when we had a minor issue, to get a dongle working. I had to wonder, in the gentlest way possible, what made us think that an out-of-country dongle would work in Liberia? Everybody had a laugh, and we got it working.

I had very, very little faith this thing was going to work at all, given my experiences in Liberia, but I echo everything Scott said; installing it was awesome. If you can make it work in Liberia, you can really make it work anywhere. I had very, very little faith this thing was going to work at all, given my experiences in Liberia, but I echo everything Scott said; installing it was awesome. If you can make it work in Liberia, you can really make it work anywhere.

How has OLO helped you improve outcomes for your patients?

SCOTT DWYER

In Liberia, medicine is really difficult from a clinician standpoint, but it's super difficult from a patient standpoint. So if OLO takes some of the unknown out of the patient's experience, I think that's where there's a lot of value.

MIKE DAVIS

Exactly. Our facility was an Ebola treatment unit, and convincing people that hospitals aren't just where you go to die is our major hurdle. Getting people to seek care before they urgently need it is a small step forward. OLO has helped improve the quality of care we provide to patients here. When they leave, they have a diagnosis, they have medications, and they have a care plan. Any time we can provide that, that should be the goal.



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- SCOTT DWYER





If you're interested in learning more about how OLO can benefit your practice operations, **email us**

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