

A conversation with Dr. Ari Johnson and Julia Berman, May 23, 2018

Participants

- Dr. Ari Johnson – Chief Executive Officer, Muso
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Note: These notes were compiled by GiveWell and give an overview of the major points made by Dr. Johnson and Ms. Berman.

Summary

GiveWell spoke with Dr. Johnson and Ms. Berman of Muso as part of its investigation into Muso's work and its current randomized controlled trial. Conversation topics included Muso's background, model, current study, and budget.

Muso's history

Problem and background

Muso is a Mali-based organization that was founded in 2005 after its founders moved to Mali to conduct research. There, they met community members who were having difficulty accessing healthcare. At the request of these community members, Muso began to assist a growing number of people in accessing healthcare. There was a high mortality rate in the area, even for those who received healthcare.

Muso observed that the key variable that affected patient outcomes was the time at which they accessed healthcare. Patients who accessed care late in the course of illness were often those who died, while patients who accessed care early could be treated successfully at low cost.

Research history and development of model

In response to this observation, Muso shifted its research to focus on how to change the healthcare system to treat patients as early as possible in the course of illness. First, it conducted extensive qualitative research, collecting life histories of patients and their mothers in order to identify the main barriers that hinder access to healthcare and the interactions between those barriers. Muso published those results.

From this work, Muso designed its Proactive Community Case Management (ProCCM) model in collaboration with the Malian government and academic partners. It tested this model in an area outside of Bamako, Mali's capital, in an interrupted time series study. In 2013, Muso published results from the study's first three years. In 2018, it published results from the study's full seven years. These results included:

- **Access to care** – The study used patient visits as a proxy for access to care and found a tenfold increase in the total number of visits.

- **Speed of care** – The rate of ultra-rapid access—defined as access to effective antimalarial treatment within the first 24 hours of symptom onset—more than doubled.
- **Under-5 mortality rate** – The mortality rate of children under 5 years old participating in the study dropped from 154 per 1,000 at baseline to 7 per 1,000 in 2013 and was sustained at or below 28 per 1,000 for the study’s final five years. During that same period, Mali’s national under-5 mortality rate dropped from 148 per 1,000 to 114 per 1,000—a reduction that likely caused a portion of the decline observed by the study.

Now, Muso runs its ProCCM model in nine locations in Mali, where it works in government clinics and community health centers. Through this model, community health workers (CHWs) provide care to 317,000 patients. *(November 2018 update: This has now increased to 330,000 patients.)* Muso also supports infrastructure and capacity building at the local, district, and national government level and provides these government partners with evidence that can inform policies and practices.

Muso’s current study

Since the beginning of 2017, Muso has been conducting a significantly larger study. It is a randomized controlled trial (RCT). Data collection for this RCT is expected to conclude at the beginning of 2020, and analysis is expected to conclude at the end of 2020. This study aims to identify the optimal CHW case detection workflow. Muso’s research team is following 127,000 participants for three years and collecting detailed data on the healthcare they receive. Participants are sorted into either a passive or a proactive case detection group:

- **Passive** – In typical CHW programs, patients are only identified by CHWs when they visit health facilities.
- **Proactive** – In Muso’s ProCCM model, CHWs travel door-to-door for a minimum of two hours a day in their catchment areas in order to proactively identify sick community members.

Outside of this variable, the intervention is identical between groups. CHWs provide the same suite of care and receive the same supervision and payment. Muso provides identical support to its health facilities and government partners and has removed fees for both groups. The study’s primary outcome will be child mortality rates in the proactive group versus the passive group.

Study goals and potential impact

Key components of Muso’s ProCCM model include:

- Proactive case detection
- User fee removal
- Supervision and payment of CHWs
- Infrastructure and capacity building

Several of these components are supported by strong evidence. For example, significant research has found that removing user fees can save lives. In contrast, no rigorous RCT has been performed to determine the optimal CHW workflow. The current study was designed to fill this evidence gap and measure the impact of ProCCM's proactive case detection component. Muso will use this evidence to optimize its own practices.

At the same time, Muso hopes to generate rigorous and potentially generalizable evidence that can be used by other institutions working to reduce child mortality. This is important because over 40 countries, along with many non-governmental organizations and funders, are aiming to implement CHW-led healthcare systems. Over the next ten years, approximately 2 million CHWs will provide care to approximately 1 billion people. Muso hopes that the results of this study will enable these other institutions, many of which are implementing such systems for the first time, to use the optimal workflow to save lives, and particularly to reduce child mortality.

This goal represents how Muso plans to create impact at scale. While Muso aims to triple its budget and the number of patients it serves over the next five years, its leadership knows that they cannot eliminate child mortality simply by growing larger. Instead, they believe that they can have the most impact by testing strategies that other institutions can use. For this reason, they decided against conducting an RCT of the ProCCM model because its results would not be as broadly useful. Thus, Muso hopes to influence policies and practices both in Mali and across the globe.

Muso's budget

Muso's 2018 budget is approximately \$6 million. Typically, Muso enters its fiscal year with approximately 25% of its budget raised and then raises the remainder during the year. The percentage of its budget comprised of unrestricted funding has varied year-to-year but has always been relatively high, over 50%. Muso has projected that between 50-70% of its 2018 budget will be comprised of unrestricted funding. 10% of its budget is dedicated to research. It receives a small amount of restricted funding for research, approximately \$250,000 per year.

Cost per patient

With its total budget divided across all of the patients it serves, Muso spends approximately \$16-\$17 per patient per year. This can be roughly divided as follows (note that the total number of patients has changed somewhat and the following breakdown is approximate):

- \$4 to community-level care
- \$6 to clinic-level care
- \$3 to government capacity building
- \$1.70 to research and development
- \$1.70 to management, finance, administration, and development

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