

Allocating resources at an overcrowded hospital in Dar es Salaam

To prioritize budgets and patient needs, a pediatrician helps health workers analyze an “overwhelming” amount of data from a new electronic system.



Amana Hospital serves more patients than any other major referral hospital in Dar es Salaam.

BACKGROUND

Dr. Omari Mahiza is a pediatrician at Amana Regional Referral Hospital. Situated in the Ilala District at the heart of Dar Es Salaam, Amana primarily serves young children, pregnant woman, and the elderly.

While there are two other regional referral hospitals in Dar Es Salaam, Amana receives the largest number of patients daily. This is mainly because of its unique location right in the middle of the city; Amana serves not only patients in its district, but also those living in neighboring districts—including Temeke, a DREAMS priority district with high rates of HIV/AIDS prevalence. Due to this fact, quality of care has become a challenge, with low resources and high demand.

Dr. Omari met the Data Zetu team during a big transition at the hospital, when a new electronic health management information system (eHMIS) was already being rolled out to streamline and digitize data collection.

PROBLEM

Dr. Omari shared several challenges with the DZ team, including lack of resources (since funds allocation is determined by the population of the hospital’s district, without considering the huge number of patients that flow into Amana from other districts) and low visibility into priority diseases to control (since diseases of Amana patients aren’t a true reflection of the diseases that are predominant in the districts the hospital is meant to serve).

The new eHMIS could in theory help address some of those challenges, such as by providing more consistent data collection and data digitization. But Dr. Omari and Data Zetu identified an even more pressing issue: Even if the eHMIS rolls out successfully, **health workers still lack skills to critically analyze and engage with that data.** In his words:



A data clerk entering patient data into a new data management system.

“We now face a new challenge at the hospital. What should we do with the overwhelming amount of electronic data that the hospital is currently collecting?”

SOLUTION

In 2017 Dr. Omari attended a “summer camp” organized by the School of Data, a global network committed to advancing data literacy in civil society.¹ The summer camp connected Tanzanian Mandela Washington Fellows—a distinguished group of young leaders—with global data literacy experts, conducting practical trainings on the skills necessary to make effective use of data.

The hope of this summer camp was to provide a foundation of basic trainings that these leaders could share with their own organizations, to amplify better use of data. In Dr. Omari’s case, the solution to his challenge at Amana hospital was to share these skills with his health workers and technicians who operate the new eHMIS system.



Dr. Omari at the School of Data summer camp, hosted at the dLab.

PROCESS

The weeklong summer camp at the Tanzania Data Lab (dLab) consisted of trainings on practical data skills, such as working with spreadsheets to analyze information and producing visuals to share key insights with decision makers. These curricula are open-source, so people like Dr. Omari can return to their institutions to reuse and share them.

More crucially, it provided networking opportunities with other young leaders and data ambassadors. This is important because data champions like Dr. Omari can feel isolated when working in complex institutions like Amana Hospital, where it can be intimidating to navigate political and technical challenges to encouraging use of data. This is partially why Data Zetu convened a meeting of young data ambassadors, as a follow-up to the summer camp, at the dLab in December 2017, which Dr. Omari attended as well.

OUTCOMES AND IMPACT

Dr. Omari reports several significant changes that were sparked or supported by the summer camp and subsequent Data Zetu engagements. Through improved data literacy skills from these efforts, he has been able to examine the EHMIS data to surface valuable insights:

- **Quantifying the scale of spillover from other districts:** Dr. Omari and his colleagues knew from experience that Amana Hospital was serving patients from other districts, but they didn’t know how significant a burden that was adding to their resources. For instance, after examining and analyzing the data, they found that 40% of OBGYN patients were actually originating from two neighboring districts. This has helped them quantify the scope of the problem as they advocate for bigger budgets, since they are funded based on the expected needs of the single district where the hospital is based, using outdated population data from a 2012 census.

¹ <https://medium.com/data-zetu/fostering-a-global-community-of-youth-data-ambassadors-e6a7edcd76a0>

- **Training data clerks:** With just the short summer camp activity, Dr. Omari was equipped to share his skills with 5 other data clerks at Amana Hospital. In his words, “*the knowledge acquired from the School of Data has made it possible to breakdown the large volume of data, analyze it and come out with actionable parameters.*” The Hospital has already budgeted next year to cascade these trainings to other staff.
- **Painting a more accurate picture of service delivery:** Armed with stronger skills to engage with the eHMIS data, Dr. Omari found that the OBGYN department had actually been incorrectly counting the number of patients it served every day. They had thought it was between 800-1200, but after analyzing the data they saw it was more like 500 – 700. Having more accurate numbers is vital to informing resource allocation.
- **More efficient resource allocation:** Having this more accurate picture has led to more efficient resource allocation. In his words: “*The hospital now uses data as the main determinant of the allocation of very limited resources such as nurses and doctors, hospital funds and medical equipment. This has made the distribution of these resources very efficient.*” For example, after analyzing the data they found that over one-fifth (22%) of the nearly 20,000 patients served monthly were treated in just one department: OBGYN. To meet this heavy load, the hospital allocated 35% of its nurses and 30% of its doctors to the OBGYN department—a 42% and 54% increase in workforce, respectively.

KEY COLLABORATORS

Amana Regional
Referral Hospital

