Achievements, Approach and Path Forward

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Executive Summary

Touch Foundation was founded in 2004 by Lowell Bryan, a senior Director at McKinsey & Company (now Director Emeritus). Touch combines the best of private and public sector approaches and expertise to improve the health of the Tanzanian population by increasing access to essential, quality healthcare for those who need it most.

Touch improves access to care by focusing on two main activities:

- Increasing the quantity and quality of the healthcare workforce
- Improving healthcare delivery mechanisms to enable provision of care by the health workers

We conduct these activities through three main programs: i) Treat & Train, a healthcare and education network providing high-quality training for health professionals while delivering quality essential care for the population living in both urban and rural areas in the Lake Zone of Tanzania; ii) Healthcare Management, a program focused on improving the management of existing healthcare institutions through training and capability building for the managerial workforce; and, iii) Knowledge Development and Dissemination, a program focusing on research in health worker training and health delivery in resource-constrained settings and sharing lessons learned with the broader global health community.

To date, our efforts have had a remarkable impact. Since inception, Touch has helped graduate 209 physicians (~10% of the country’s physicians) and over 1,500 allied health care professionals, including assistant medical officers, nurses, lab technicians and radiographers. The vast majority of these graduates have remained in Tanzania, currently working in the Tanzanian healthcare sector. Over their careers, they will care for thousands of people and save many precious lives.

We base our approach on developing extensive collaborations with local Tanzanian partner organizations, enabling them to play a central role in program implementation. We promote local ownership for Tanzanians and help them strengthen their own health system instead of doing it for them. This approach allows us to create cost-effective and sustainable solutions embedded within the existing health system. Through our health systems strengthening work, we aim to establish a model of excellence for healthcare systems in resource-constrained settings that can be replicated in similar contexts elsewhere to improve access to quality healthcare.
1. Health crisis in Tanzania

1.1. Overview

Tanzania has been facing and continues to face a challenging healthcare environment, as demonstrated below in Figure 1.

Figure 1 - Comparison of select healthcare statistics

The reasons behind the poor conditions in the Tanzanian healthcare environment span the entire system – from limited resources and inefficient financing mechanisms to inadequate equipment and services provided in health facilities. Among these, the shortage of health workers in Tanzania is one of the key factors causing the current healthcare crisis. There is only one doctor per 20,000 people across Tanzania, and in some rural areas there is only one doctor for a million people. As a result, many health facilities are short-staffed or lack staff with appropriate clinical qualifications, thereby compromising the quality of and access to healthcare for Tanzanians.
1.2. Significant opportunity for impact

Many countries in Africa face healthcare crises, however a number of factors make Tanzania a particularly attractive setting for Touch’s efforts

1) Tanzania is an evolving democracy that has enjoyed a long lasting social and political stability.

2) The Tanzanian government is committed to improving healthcare and has made it one of its top priorities. Public spending on health has increased from $270 million in 2005/06 to $750 million in 2010/11.\(^1\) Some of the initiatives the government has undertaken over the past two decades to improve the healthcare system include:

   a) Decentralization of the healthcare delivery system – establishment of district health councils to oversee strategic planning, allocation of resources and management of health facilities

   b) Inception of financing programs such as the Community Health Fund for rural residents, the National Health Insurance Fund for civil servants, and user fees for cost sharing

   c) Commitment to providing universal access to healthcare down to the village level by having a dispensary in every village, a health center in every ward and a hospital in every district across the country by 2017.\(^2\) By 2010, the government had already met its target number of hospital facilities yet significant further capital investment is needed to meet the targets for primary health facilities such as health centers and dispensaries\(^3\)

   d) Adoption of the Human Resource for Health Strategic Plan in 2008, which called for additional health workers to fill existing staffing shortages as well as even more health workers to fulfill the Primary Health Services Development Program (PHSDP) goals.\(^4\) In anticipation of these needs, the government has significantly scaled-up enrollment in health service training programs from 4,296 in 2008 to 7,458 in 2011.\(^5\)

3) Multiple international aid organizations are working to improve healthcare in Tanzania, making it a recipient of large amounts of international foreign aid. In FY 2012, Tanzania received $530 million in US foreign aid, ranking it as the 10\(^{th}\) largest recipient of US foreign aid in the world.\(^6\)

The combination of political stability, a committed government and the support of other international organizations ensures that Touch’s investments in Tanzania have high leverage and multiplied impact on improving the healthcare system.

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\(^1\) Assumed 1600 TZS:1USD exchange rate, Healthy Action, (2012), *Health Budgeting in Tanzania*

\(^2\) MoHSW, Human Resource for Health Strategic Plan 2008-2013

\(^3\) MoHSW, Tanzania Human Resource for Health Country Profile 2011/12

\(^4\) MoHSW, Human Resource for Health Strategic Plan 2008-2013

\(^5\) MoHSW, Tanzania Human Resource for Health Country Profile 2011/12

\(^6\) Congressional Research Service 2012
1.3. Encouraging early results

As a result of the concerted efforts of the Tanzanian government, international aid organizations, and private non-profit institutions such as the Touch Foundation, significant progress has been achieved in recent years. Under-5 mortality has decreased from 126 per 1,000 live births in 2000 to 68 per 1,000 live births in 2011. Similarly, life expectancy has improved from 50 in 2000 to 58 in 2011. However, while Tanzania has made great advances to improve the health of its population, a lot of work remains to be done. While the indicators described above have improved in the past decade, they remain much worse compared to global averages. Furthermore, Tanzania’s maternal mortality at 460 per 100,000 live births in 2010 remains high; thus, it is unlikely that the country will achieve its MDG target of 133 deaths per 100,000 live births by 2015.

The Touch Foundation continues to work to deliver innovative, scalable, and sustainable solutions to improve Tanzania’s healthcare system.

2. Our approach

Since its inception in 2004, Touch Foundation has been working to improve the health of the Tanzanian population by enhancing their access to essential, quality healthcare.

We improve access to care by

- Increasing the quantity and quality of the healthcare workforce, and
- Improving the healthcare delivery mechanisms to better enable provision of care by the health workers

We focus on strengthening the overall health system (horizontal approach), rather than on a single disease (vertical approach), and develop innovative solutions that are sustainable in the long run and can be replicated across sub-Saharan Africa. We base our approach on developing extensive collaborations with local partner organizations and enabling them to play a central role in program implementation. This allows us to create cost-effective, sustainable solutions embedded within the existing health system.

The ultimate beneficiaries of our efforts are not only those whose health is improved as a result of better health services, but also the students from poor rural backgrounds who are able to fulfill their otherwise unattainable medical education dreams. Furthermore, existing health workers are more satisfied with their jobs and contribute beneficially to the development and well-being of their communities.

We achieve our objectives through three main programs outlined in Figure 2. Our largest program, Treat & Train, is a comprehensive network of institutions providing healthcare and medical education across the different levels of the healthcare system from tertiary hospitals to health facilities at the village level. Collectively, these institutions provide high-quality training for health professionals while delivering quality, essential care for the population living in both urban and rural areas in the Lake Zone. Our second program, Healthcare

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Management, is focused on improving the management of existing healthcare institutions through training and capability building for the managerial workforce. Finally, our third program focuses on Knowledge Development and Dissemination. We conduct research on health worker training and health delivery in resource-constrained settings and share our lessons learned with the broader global health community.

Figure 2 - Touch programs

Touch Foundation’s approach to improving healthcare in Tanzania was informed by a rigorous root cause analysis of the crisis, as detailed in our 2009 report, Catalyzing Change: Molecular strengthening of the health system in the Lake Zone, developed in collaboration with McKinsey & Company. This report posited that several challenges today impact all facets of the healthcare system, which is a highly interconnected web of patients, health workers, equipment and supplies, infrastructure, and funding. In such a molecular system, strengthening one element influences all the others. For example, investing in new equipment will benefit both health workers, whose job satisfaction grows because of their opportunity to perform a wider range of clinical tasks, and patients, who will have increased access to more sophisticated medical care. By the same token, focusing only on one element of the system, while neglecting all others, does not result in the greatest impact. For instance, investing in the construction of new healthcare facilities without scaling up health worker training will only lead to empty buildings that lie unused or to understaffed health facilities that cannot adequately serve their communities.

The Touch Foundation approach reflects the above considerations. Our investment in health worker training addresses the shortage of human resources for health. Specifically, we have focused largely on developing skilled cadres, such as medical doctors, nurses, pharmacists, radiology and laboratory technologists. At the same time, we have also invested in
infrastructure to create an enabling environment for health workers to be most productive. Examples of these investments include the procurement of durable medical equipment, the construction of on-campus accommodations for students and faculty, laboratory upgrades, and the installation of improved engineering infrastructures, such as water and electrical systems, to ensure continuity of patient care.

We believe that the molecular approach produces not only the greatest impact per dollar invested but is also the most sustainable solution. By training skilled health workers and fostering environments in which they can work most effectively, we have created a self-replenishing ecosystem. Some of our graduates work as educators, training additional cadres of much-needed healthcare workers. Others work as clinicians at Bugando Medical Centre as well as other health facilities in the Lake Zone and beyond, disseminating best practices from the referral hospital down to lower level facilities. Ultimately, we are empowering our Tanzanian partners to be leaders in shaping the future of their healthcare system.

3. Our achievements to date

Since 2004, we have focused on increasing the quantity and quality of the healthcare workforce and improving the healthcare delivery mechanisms to enable provision of care by the health workers. Initially, we focused our efforts at the tertiary hospital level. We have spent the past 9 years working closely with two key institutions - Bugando Medical Centre (BMC), the specialty referral hospital for the Lake Zone, and its affiliated medical university, the Catholic University of Health & Allied Sciences (CUHAS) – providing direct operational financial support to both the university and the teaching hospital. In addition to the direct operational financial support, we have invested in infrastructure upgrades to enhance the learning and healthcare delivery facilities, served as strategic advisors to these institutions, and supported capacity building of key functions such as finance, management, faculty development, and information technology.

Supporting and working hand-in-hand with CUHAS and BMC has been a tremendous success. Today, CUHAS and BMC collectively offer educational programs for 13 health worker cadres, from the certificate to the post-graduate level. Student enrollment at these teaching institutions has grown tremendously since Touch’s involvement in 2004. The inaugural class of 10 MD students in 2004 has grown to more than 600 MD students currently enrolled, with an average first year enrollment of 150 new MD students every year. Total enrollment at BMC and CUHAS across all cadres has also grown more than five times from 277 students in 2004 to nearly 1,600 students today.

The impact of CUHAS graduates on the Tanzanian MD workforce is significant - CUHAS is one of only seven medical universities in Tanzania and its annual intake of 150 MD students comprises ~17% of the nation’s MD training capacity. Figure 3 presents an overview of the programs currently offered at CUHAS and BMC.

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8 Tanzanian Commission for Universities Handbook 2012
Over the past nine years, with Touch’s support, CUHAS and BMC have graduated 209 generalist physicians (MDs), 46 specialist physicians (MMeds), and nearly 1,500 other health workers. CUHAS and BMC have successfully scaled up their health worker education programs and their annual graduation numbers are expected to stabilize at ~500 students per year by 2013/14, including ~150 MDs and 20 MMeds.

### Figure 3 - Programs currently offered at CUHAS and BMC

<table>
<thead>
<tr>
<th>Type of program</th>
<th>Program name</th>
<th>Program duration</th>
<th>Year program launched</th>
<th>Administrative school</th>
<th>2004 intake capacity</th>
<th>2011 intake capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine</td>
<td>Medical Doctor (MD)</td>
<td>5 years</td>
<td>2003</td>
<td>CUHAS</td>
<td>10</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>Master of Medicine (MMed)</td>
<td>3 years</td>
<td>2008</td>
<td>CUHAS</td>
<td>0</td>
<td>20-30</td>
</tr>
<tr>
<td>Post-graduate</td>
<td>Master of Public Health (MPH)</td>
<td>1 year</td>
<td>2010</td>
<td>CUHAS</td>
<td>na</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Doctor of Philosophy (PhD)</td>
<td>3 years</td>
<td>2008</td>
<td>CUHAS</td>
<td>0</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Degree / Under-graduate</td>
<td>Bachelor of Pharmacy (BPharm)</td>
<td>4 years</td>
<td>2010</td>
<td>CUHAS</td>
<td>na</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Science in Nursing Education (BSNED)</td>
<td>2 – 4 years</td>
<td>2010</td>
<td>CUHAS</td>
<td>na</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Bachelor of Medical Laboratory Sciences (BMLS)</td>
<td>3 years</td>
<td>2010</td>
<td>CUHAS</td>
<td>na</td>
<td>25-30</td>
</tr>
<tr>
<td>Diploma</td>
<td>Assistant Medical Officer (AMO)</td>
<td>2 years</td>
<td>1987</td>
<td>BMC</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Diploma in Nursing (DNurs)</td>
<td>1-3 years</td>
<td>1971</td>
<td>BMC</td>
<td>30</td>
<td>75</td>
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<tr>
<td></td>
<td>Diploma in Medical Laboratory Sciences (DMLS)</td>
<td>3 years</td>
<td>2003</td>
<td>CUHAS</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Diploma in Diagnostic Radiography (DDR)</td>
<td>3 years</td>
<td>2003</td>
<td>CUHAS</td>
<td>10-15</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Diploma in Pharmacy (DPS)</td>
<td>3 years</td>
<td>2003</td>
<td>CUHAS</td>
<td>20-30</td>
<td>60</td>
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<tr>
<td>Certificate</td>
<td>Certificate of Anesthesiology</td>
<td>1 year</td>
<td>1985</td>
<td>BMC</td>
<td>25</td>
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### Statistics on CUHAS and BMC graduates

**Number of students graduating each academic year**

<table>
<thead>
<tr>
<th>Year</th>
<th>MD</th>
<th>MMED</th>
<th>MPH</th>
<th>DMLS</th>
<th>DDR</th>
<th>DDS</th>
<th>AMO</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003/04</td>
<td>70</td>
<td>32</td>
<td>11</td>
<td>27</td>
<td>28</td>
<td>19</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>2004/05</td>
<td>65</td>
<td>45</td>
<td>26</td>
<td>24</td>
<td>30</td>
<td>22</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>2005/06</td>
<td>56</td>
<td>40</td>
<td>23</td>
<td>21</td>
<td>29</td>
<td>23</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>2006/07</td>
<td>54</td>
<td>46</td>
<td>25</td>
<td>21</td>
<td>31</td>
<td>23</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>2007/08</td>
<td>54</td>
<td>47</td>
<td>31</td>
<td>23</td>
<td>30</td>
<td>29</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>2008/09</td>
<td>54</td>
<td>49</td>
<td>32</td>
<td>23</td>
<td>31</td>
<td>27</td>
<td>20</td>
<td>9</td>
</tr>
<tr>
<td>2009/10</td>
<td>54</td>
<td>54</td>
<td>33</td>
<td>23</td>
<td>34</td>
<td>32</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>2010/11</td>
<td>54</td>
<td>54</td>
<td>33</td>
<td>23</td>
<td>34</td>
<td>32</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>2011/12</td>
<td>54</td>
<td>54</td>
<td>33</td>
<td>23</td>
<td>34</td>
<td>32</td>
<td>21</td>
<td>9</td>
</tr>
</tbody>
</table>

**Total graduates 2003/04–2011/12**

- MD: 209
- MMED: 46
- MPH: 24
- DMLS: 11
- DDR: 6
- DDS: 338
- AMO: 214
- Other: 386

**Total graduates:** 1,742
A large majority of the CUHAS and BMC graduates supported by Touch remain in Tanzania working in the Tanzanian healthcare system (TzHCS) – a resounding success. This remarkable outcome reflects the high-quality education provided by CUHAS and BMC, whose graduates are able to secure jobs in the increasingly competitive Tanzanian job market, and then maintain high levels of motivation and satisfaction to continue practicing medicine in a challenging work environment.

Figure 5 below shows the geographical distribution of graduates from 9 of the programs offered at CUHAS and BMC. Across all cadres, 96% of these graduates remain in Tanzania and work in the Tanzanian health care sector. 45% of them are employed in Lake Zone facilities, including 10% who were directly hired by CUHAS and BMC.

**Figure 5 - Distribution of CUHAS/BMC graduates from 9 programs**

<table>
<thead>
<tr>
<th>Type of program</th>
<th>Cadre</th>
<th>Number of CUHAS &amp; BMC graduates (graduation years)</th>
<th>% of graduates working in TZ healthcare system</th>
<th>% graduates working in Lake Zone facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MD graduates</strong></td>
<td>Generalist doctor</td>
<td>83 (2006-10)</td>
<td>91%</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>Specialist doctor</td>
<td>46 (2009-12)</td>
<td>70%</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Post-graduate</strong></td>
<td>MPH – Public health professional</td>
<td>8 (2011)</td>
<td>100%</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>PhD – Professor</td>
<td>2 (2011-12)</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Diploma</strong></td>
<td>AMO – Assistant medical officer</td>
<td>386 (2004-12)</td>
<td>91%</td>
<td>51%</td>
</tr>
<tr>
<td></td>
<td>DNurs – Assistant nursing officer</td>
<td>231 (2004-11)</td>
<td>80%</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td>DMLS – Laboratory technician</td>
<td>184 (2000-11)</td>
<td>80%</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>DDR – Radiographer</td>
<td>79 (2006-11)</td>
<td>89%</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td>DPS – Pharmacy technician</td>
<td>169 (2006-11)</td>
<td>79%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>1,188</td>
<td>84%</td>
<td>10%</td>
</tr>
</tbody>
</table>

1 Percentages calculated based on ONLY the 1,075 tracked graduates, or ~90% of the total 1,188 graduates
2 Percentages calculated based on ONLY those graduates tracked AND who work in the Tanzanian healthcare system
3 Only includes MD graduates from 2005-10; excludes 2011 graduates currently doing internships because geographic distribution of internships is skewed, since internship sites are more likely to be found in certain urban areas, especially those with major academic medical centers

MD graduates are particularly widespread throughout Tanzania and work in all but four regions of the country. As demonstrated below in Figure 6, a significant portion of CUHAS graduates are working in some of the most underserved regions, delivering care and truly making a difference in the communities in which they work.
CUHAS and BMC graduates who are employed in the Tanzanian health care sector take on a variety of roles, including clinical work, teaching, research, administration, as well as continuing their education. Figure 7 shows the types of employment pursued by graduates from 9 of the programs offered at CUHAS and BMC. 84% of these graduates do clinical work, which indicates that the overwhelming majority of graduates are directly contributing to patient care and alleviating the health worker shortages that are a major impediment to healthcare delivery today. Moreover, these graduates are having a tremendous impact on the population’s health, over the course of their career, each MD will save at least 300 lives and care for thousands of people.9

As outlined above, retention of graduates to date has been highly successful. Yet, while retention for CUHAS and BMC graduates is high today, a number of challenges may jeopardize retention in the future. First, employment opportunities for recent graduates are becoming ever more limited and job competition is fierce. In recent years, there has been a tremendous scale-up of enrollment at health training institutions without a concomitant increase in available government-funded job postings. Thus, today, the number of MD graduates each year exceeds the number of government-funded jobs available. In 2010, only 280 registrar-level government posts were available for 632 MD graduates, meaning that the majority of newly-trained doctors had to find private sector jobs.\(^7\)

In addition, graduates struggle with numerous challenges in the workplace. The three most commonly cited issues are i) perceived insufficient compensation, ii) ill-equipped and unsafe working conditions, and iii) limited availability of sponsorships from employers for continuing education, particularly in post-graduate MD specialty programs. In order to maximize retention and productivity in the Tanzanian healthcare system, development partners like the Touch Foundation are working on addressing non-financial means of compensation, such as providing accommodations for health workers in rural areas, investing in upgrades of health facilities and medical equipment, and finding external sponsorships for committed clinicians with demonstrated leadership potential. Through our Treat & Train program, we are already working to address many of these cited challenges with the goal of ultimately increasing the retention and satisfaction of health workers within the Treat & Train network.

\(^7\) Mkapa Foundation, *Absorption of Health Professional Graduates to the Public Sector Employment: What is the Status?*
4. Donors and Partners

The achievements noted above have been made possible with the incredible collaboration and extraordinary generosity of our donors and partners.

4.1. USAID

The work of Touch Foundation is made possible with the generous support of the American people through the United States Agency for International Development (USAID). USAID was and continues to be a key partner of Touch. Through a public-private partnership, USAID matches 1:1 programmatic donations to Touch Foundation.

4.2. Institutional donors (not exhaustive)

<table>
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<th>Institutional donors (not exhaustive)</th>
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<tr>
<td>Citi Foundation</td>
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<td>McKinsey &amp; Company</td>
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<tr>
<td>Abbott Fund</td>
</tr>
<tr>
<td>Goldman Sachs</td>
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<tr>
<td>African Barrick Gold</td>
</tr>
<tr>
<td>Vitol</td>
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<td>ELMA philanthropies</td>
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<td>Brinkman Smith</td>
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4.3. Implementing Partners (not exhaustive)

<table>
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<td>Stroock &amp; Stroock &amp; Stroock</td>
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<tr>
<td>McKinsey &amp; Company</td>
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<td>Akin Gump</td>
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<td>Cleary Gottlieb</td>
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<tr>
<td>New York Presbyterian</td>
</tr>
</tbody>
</table>
4.4. Individual Donors

We are grateful for the support of more than 7,000 generous individual donors who have made our work in Tanzania possible.

The following donors have given Touch transformational gifts of $250,000 and above:

- Mr. Lowell L. Bryan and Dr. Luisa Bryan
- Mr. Richard and Mrs. Lisa Cashin
- Mr. Robert and Kate Niehaus
- Ms. Sarah Lutz and Mr. John van Rens
- Mr. Sanford I. and Mrs. Joan Weill
- Mrs. Celia Felsher and Mr. John Cecil
- Mr. Louis and Mrs. Kathleen Le Jacq
- Mr. Robert and Mrs. Elizabeth Jeffe
5. Current and future strategy

5.1. Treat & Train

The first phase in building the Treat & Train Healthcare and Education Network focused on establishing CUHAS and BMC as tertiary level centers of excellence for health education and healthcare delivery. The next phase of our work involves expansion of the Network to regional and district hospitals, as well as down to village-level health facilities, while simultaneously strengthening linkages and collaboration systems among all network facilities. Figure 8 summarizes the four main elements of the program: 1) Support for flagship institutions, 2) Network expansion at the hospital level, 3) Network expansion at the village level, and 4) Network performance enhancement.

Figure 8 - Treat & Train programs overview

By operating across the different levels of the healthcare system from the tertiary to the village level, the Treat & Train Healthcare and Education Network focuses on the following activities to improve access to essential quality healthcare:

- Training skilled health workers and ensuring that they receive a quality education
- Enhancing the skills of existing health workers
- Improving deployment and retention of health workers
- Upgrading facilities and improving linkages among healthcare facilities
The combined result of these efforts will be an integrated system of care which will meet the minimum standards of essential quality healthcare for a population of 16 million people in the Lake Zone of Tanzania. Treat & Train will be a scalable and sustainable model for health system strengthening to be replicated in other parts of Tanzania as well as across Sub-Saharan Africa.

5.1.1. Support for flagship institutions - BMC and CUHAS

Since 2004, Touch Foundation has supported BMC and CUHAS strategically, financially and operationally to enhance their educational and clinical capabilities and to develop them into the flagship institutions of the Treat & Train Health and Education Network. Our support has focused on three key areas: direct operational support, capital investments, and strategic advisory and capability building.

Going forward, we will continue to support CUHAS and BMC as the flagship institutions of the Network. Our assistance will continue to be comprised of financial operational support (e.g., funding textbooks, student meals, faculty salaries), capital projects as well as strategic advisory and capability building. As CUHAS continues to become increasingly self-sustainable, we are transitioning larger portions of our funding to capital and special projects instead of operational support. This continuous transition of CUHAS from a dependent grantee to an independent partner is a testament to our success in the way we have shaped and evolved our support over time.

Examples of upcoming capital projects planned by Touch at CUHAS and BMC include a new mortuary, a waste incinerator, and a new, fully-equipped dissection laboratory. We will also continue to build the capabilities of the various departments in both CUHAS and BMC including but not limited to management, finance, administration, and information technology. Over the past few years we have supported faculty development, including sponsoring CUHAS faculty to complete the South African FAIMER fellowships in medical education. Going forward, we expect these faculty members to spearhead efforts, supported by Touch, to continually improve the skills of CUHAS and BMC faculty as well as the faculty at the other Treat & Train institutions.
5.1.2. Network expansion - hospitals

In addition to supporting the Network flagship institutions, Touch is also now focusing on expanding the Treat & Train Health and Education Network to the district and regional hospital level.

Regional and district hospitals provide care for patients under extremely difficult conditions. These hospitals have very large patient loads, while simultaneously being severely under-resourced in staffing, equipment, supplies and infrastructure. For example, Sengerema Designated District Hospital has an enormous patient load with approximately 100,000 outpatients, 25,000 inpatients and 9,000 deliveries per year. Yet the hospital has extremely limited resources to handle this patient volume. Before its inclusion in the Treat & Train Network, it had no specialist physicians and only 2 generalist physicians serving the entire 300 bed hospital. Largely outdated or non-functioning equipment along with chronic stock-outs of basic medicine and supplies contributed to creating an even more critical situation.

The challenging circumstances in the regional and district hospitals affect the quality of patient care and the motivation and satisfaction of the health workers at these facilities. By including these hospitals in the Network, we will help improve their ability to provide better patient care and expand the Network’s capacity for high-quality healthcare worker training.

To prepare the hospitals for entry into the Network, we need to ensure a conducive environment for providing clinical education to students and quality healthcare to patients. According to the needs of each hospital, we renovate and/or build infrastructure, such as patient wards, operating theaters, teaching facilities, student hostel dormitories and visiting faculty accommodations. We also equip the hospitals with critical clinical and teaching equipment and supplies, such as digital x-rays, portable ultrasounds, surgical instruments, and essential consumables.

Teams of specialists from Bugando and international academic institutions are either posted full-time or rotated part-time to the regional and district hospitals in the Network, providing clinical training to CUHAS and BMC students. The rotations are within the specialties of OB/GYN, pediatrics, internal medicine and surgery, and focus on MD and AMO students. In addition to teaching students, the visiting teams of specialists provide patients with access to specialist care rarely available at the district and regional hospital level. They also directly enhance the skills of the existing staff as well as improve established clinical systems and procedures.

In the fall of 2012, we launched Treat & Train at Sekou-Toure Regional Hospital (STRH) and Sengerema District Designated Hospital (SDDH). The Treat & Train rotations offer a superlative learning experience for students, providing the opportunity to rotate in small groups of 5-10 students per specialist faculty. Students have excellent opportunities for hands-on experiences during ward rounds, outpatient visits and surgical procedures and gain early exposure to healthcare delivery in rural settings, which is expected to improve the odds of their future deployment and retention in rural areas.

Maintaining the high quality of our clinical rotation program is a key priority. Touch will continue the implementation of the Network Expansion at the hospital level in a step-wise manner, focusing on one additional partner hospital at a time.
We will continue to implement *Treat & Train* at each new hospital in three phases. Phase I is a preparation phase, lasting approximately one year, during which we undertake facility infrastructure upgrades and procure the necessary clinical and teaching equipment to host student rotations. Phase II involves the roll-out and establishment of the program at the hospital, lasting approximately two years. During this period Touch runs the program at the hospital, builds the capabilities of local stakeholders, and uses the data collected by the monitoring and evaluation system to continually evaluate and improve the program. Phase III is the ramp-down phase during which the program continues to run but Touch transfers program ownership to the Tanzanian stakeholders who run the program with limited support from Touch. Figure 9 illustrates the implementation plan for Network Expansion at the hospital-level, which is expected to include 4 regional and district hospitals by 2016.

**Figure 9 – Network Expansion hospital rollout schedule**

In addition to benefitting CUHAS and BMC students participating in the external clinical rotations, the program activities at regional and district level also benefit health service students from other institutions currently training at the partner hospitals, the CUHAS/BMC clinical educators participating in the program, existing health workers at the partner hospitals, and, ultimately, the patients who are treated at the district and regional hospitals. Figure 10 illustrates the impact of this program after full implementation.
5.1.3. Network expansion – village level facilities

Network Expansion at the village level will extend the Treat & Train Network beyond the regional & district hospitals, improving access to healthcare services for the rural population, the most underserved.

As a result of the 2007-2017 Primary Health Services Development Programme launched by the Ministry of Health, Tanzania today has an extensive network of primary healthcare facilities comprised of 5,394 dispensaries and 687 health centers distributed throughout the country.\(^{11}\) In 2006, the Ministry reported that 72% of the population lived within 5 km of a health facility, and that 90% lived within 10 km. Given the recent expansions of health facilities, patient access to healthcare is even better today.\(^{12}\)

Although most of the rural population lives in physical proximity to a health facility, the facilities are often ill-equipped and unable to serve the health needs of the population. Today, given their limited resources, health centers and dispensaries are highly restricted in what they are able to do. The shortage of equipment, drugs and supplies, and trained clinical staff at the primary healthcare level severely limits access to healthcare for rural Tanzanians, even if a health facility is nearby. With small inpatient wards, no physicians and a few clinical officers or assistant medical officers on staff, health centers are able to support normal deliveries and minor surgeries. Dispensaries, particularly in more rural areas, are often staffed

\(^{11}\) MoHSW, Tanzania Human Resource for Health Country Profile 2011/12
\(^{12}\) MoHSW, Tanzania Service Availability Mapping Report 2005-6
with only non-clinical health workers and do little more than dispense basic drugs such as antibiotics, if these are even in stock. Patients with even minor medical conditions are usually referred to the nearest district or regional hospital, which may be much farther away. Figure 11 summarizes the resources and services typically available at these primary health facilities. 13

Figure 11 - Overview of key statistics at Health Centres and Dispensaries

<table>
<thead>
<tr>
<th>Health Centres</th>
<th>Dispensaries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient load:</strong></td>
<td></td>
</tr>
<tr>
<td>Annual patient load</td>
<td>16,242</td>
</tr>
<tr>
<td># of patients seen daily</td>
<td>45 outpatients/day</td>
</tr>
<tr>
<td>Avg catchment area</td>
<td>50,000</td>
</tr>
<tr>
<td><strong>Human resources:</strong></td>
<td></td>
</tr>
<tr>
<td>Recommended # of clinicians on staff</td>
<td>4 clinicians, 9 nurses</td>
</tr>
<tr>
<td>Actual average staffing</td>
<td>1 clinical officer, several nurses</td>
</tr>
<tr>
<td><strong>Services provided:</strong></td>
<td></td>
</tr>
<tr>
<td>Inpatient bed capacity</td>
<td>10-20 beds</td>
</tr>
<tr>
<td>% with pre-referral medicines for children</td>
<td>74%</td>
</tr>
<tr>
<td>% with insecticide treated nets (ITN)</td>
<td>23%</td>
</tr>
<tr>
<td><strong>Finances:</strong></td>
<td></td>
</tr>
<tr>
<td>Annual budget</td>
<td>$82,000</td>
</tr>
<tr>
<td><strong>Access:</strong></td>
<td></td>
</tr>
<tr>
<td>Total # in Tanzania</td>
<td>687</td>
</tr>
<tr>
<td>Recommended density</td>
<td>1 per ward</td>
</tr>
</tbody>
</table>

1 Clinicians may be Assistant Medical Officers (AMOs) or Clinical Officers (COs), but rarely medical doctors

Treat & Train Network Expansion at the village level seeks to improve the quality of healthcare delivery in the most rural settings, while also providing health students with on-the-ground village level experience during their academic years. Existing rural health workers will also benefit from the program by enhancing their clinical skills through new in-service training programs. To achieve these objectives, Touch will support a number of initiatives to strengthen healthcare delivery and student education:

- **Train-the-Trainer:** We will make Sengerema DDH a hub for rural health worker training. There, we will conduct Train-the-Trainer workshops for select trainers, who will then be deployed into the community to train additional rural healthcare workers. Today, rural health workers often lack formal clinical training and frequently feel isolated because they don’t have colleagues from whom to seek advice and lack continuing professional development opportunities. Ultimately, this training will enhance the skill level of rural health workers and improve retention and job

satisfaction by strengthening their connection to other health workers and the district hospital.

- **Proof-of-concept of rural facility**: To set an example of high quality of care at the village level, Touch will invest in a refurbishment of a village-level health center and/or dispensary. We will renew the basic infrastructure, ensure continuous supplies of clean water and electricity, install durable medical equipment, revamp procurement and inventory management systems to minimize supply stock-outs, and deploy appropriately trained clinical officers to staff the facility. Ultimately, this will improve productivity and patient outcomes at this health facility.

- **Public health field projects**: In collaboration with the CUHAS School of Public Health, we will support MPH students during their field projects in rural areas of Sengerema district. We will identify disease-specific public health priorities through assessment of patient trends at the district hospital, consultation with the District Medical Officer’s office and the District Health Council Plan, and feedback from community-based organizations already working at the village level. Students will then research and design implementable community solutions for the selected villages. Touch will support planning and organization of the field projects, ensure coordination with collaborating local partners, and fund travel and living expenses for the MPH students on the ground. Examples of previous CUHAS field projects include cervical cancer screening, screening for arsenic and mercury contamination at gold mines, and preventive treatment for malaria during pregnancy.

During the past decade, Touch has developed significant experience at the tertiary, regional and district hospital level, but has rarely engaged in activities at the village level. To enhance our knowledge of village healthcare delivery systems and to help us with local implementation of the program, we have begun collaborating with a number of selected Community Based Organizations (CBOs).

In preparation for the public health field projects, these CBOs will help us engage the communities and identify their public health priorities, as well as design and implement solutions at the village level. CBOs’ experience and relationships with local stakeholders will also promote local ownership and ensure the sustainability of this initiative. We have so far identified several CBOs with disease-specific areas of expertise with whom we are exploring the possibility of a partnership. Figure 12 summarizes proposed initial disease priority areas, the community interventions to address them, and a potential CBO implementing partner.
Monitoring and evaluating the success of programs at the village level in a systematic way is rarely done today, making it difficult to arrive at data-driven decisions about management of district health services. However, Touch is committed to tracking and quantifying the impact of our initiatives around network expansion at the village-level to allow us to evaluate the overall impact of our efforts on healthcare delivery and health worker training.

5.1.4. Network Performance Enhancement

The strength and effectiveness of the Network depends not only on the institutional capacity of its members but also on the connecting elements, which allow it to function in a coordinated fashion that optimizes the available resources. The primary objective of the Network Performance Enhancement is to strengthen linkages between participating health facilities and improve operations across the entire network. By improving the flow of patients, medicines and information, we will achieve better health outcomes at each level of the healthcare delivery system. The linkages that we seek to strengthen through Network Performance Enhancement are:

i. **Patient referrals**: Transferring patients to a specialized health facility, usually a tertiary or regional hospital, when the patient’s current facility or staff lack the clinical expertise, equipment or supplies to appropriately care for the patient

ii. **Patient transportation**: Ambulances and informal transportation systems used to bring patients in a timely and safe manner to the health facility; most commonly used during emergency referrals

iii. **Supplies & procurement**: Procurement processes and distribution logistics for medical equipment, supplies, and medicines that are ordered for each health facility
iv. **Telemedicine and distance learning:** Use of technology to remotely link patients with healthcare providers and students with faculty, using a variety of media such as cell phones, videoconferencing, and more specialized telemedicine technologies for remote clinical care and education

i. **Patient referrals:**

Referrals are quite common in the Lake Zone and benefit patients in a number of ways. If referred to a regional hospital like Sekou-Toure or a tertiary hospital like BMC, patients will likely be managed by a physician, gain access to a variety of laboratory and diagnostic services, and have additional treatment options available, such as blood transfusions or complex surgical procedures.

On the receiving end, BMC receives an average of ~15-20 referred patients a day who account for ~30% of emergency room visits at this tertiary referral facility. 24% of these cases are referred from neighboring Sekou-Toure Regional Hospital and the majority of referrals come from other facilities in the Lake Zone. The mix of patient cases is diverse, but patients requiring surgical care are most common. On the referring end, Sengerema Designated District Hospital today refers approximately 5 patients per month (though this varies significantly month to month), with 83% of them going to BMC. The mix of patient cases by specialty is largely consistent with what is seen at BMC. Summary data for referral volume is shown in Figure 13.

**Figure 13 - Referral volume for BMC and Sengerema DDH**

While many referrals are taking place today and are greatly benefitting patients, many challenges persist in existing referral processes. Based on interviews conducted at Sengerema Designated District Hospital and BMC, we identified three key challenges and propose...
potential solutions, as described in Figure 14. Key to the success of these process solutions is local ownership. We will carefully select existing administrators and clinicians who can spearhead these initiatives at their respective health facilities.

**Figure 14 - Referral system issues and potential solutions**

<table>
<thead>
<tr>
<th>Problem addressed</th>
<th>Proposed solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weak communication between referring and receiving clinicians today, leads to errors in patient care</td>
<td>Improve pre and post-referral communication systems</td>
</tr>
<tr>
<td>Limited learning opportunities for referring clinicians, as they rarely receive feedback on patients whom they referred</td>
<td>— Establish use of standard referral forms</td>
</tr>
<tr>
<td>— Encourage telephone communication between healthcare providers to clarify patient information</td>
<td>— Strengthen feedback system, encourage feedback to referring clinician to teach patient management skills</td>
</tr>
<tr>
<td>Delays in referral today due to specialists not being available or present when referred patients arrive</td>
<td>— Ensure fastest care at referral hospital</td>
</tr>
<tr>
<td>— Set up dedicated referral telephone hotline so that specialists can be paged before referred patient arrival</td>
<td>— Improve referral system data capture, and develop capabilities to analyze referral data</td>
</tr>
<tr>
<td>Lack of data tracking on referred patients from both sending and receiving hospitals - difficult to budget and plan capacity for patient transport</td>
<td></td>
</tr>
</tbody>
</table>

**ii. Patient transport:**

Given the limited infrastructure in rural Tanzania, patient transport to health facilities is slow and often prohibitively costly for patients. The most advanced option for patient transportation is an ambulance, which is a medically-equipped patient vehicle in which the patient is often accompanied by a health worker. In more rural areas, informal transportation systems such as hospital-owned vehicles (lacking medical equipment), taxis, and motorbikes are more commonly called upon to transport patients. Figure 15 summarizes the current patient transport systems available within the Treat & Train network.

While transportation options exist today for patients, they are often less than adequate. As an example, Berruti (2012) found that transport costs for rural patients receiving HIV treatment in Tanzania ranged from $30-35, far more than most rural Tanzanians can afford.\(^\text{14}\) Referring hospitals typically only cover transportation costs for emergency referral patients, burdening non-emergency referral patients with these costs. Often, these patients cannot afford to pay for transport and refuse the referral, which leaves them with no other medical treatment options.

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To address these patient transport challenges, Touch will implement two initiatives. The first involves partnering with Riders for Health to conduct a transportation assessment of the Lake Zone region. Riders for Health is a social enterprise that manages a fleet of over 1,400 motorcycles, ambulances, and other four-wheeled vehicles used in healthcare delivery in seven countries across Africa. Touch will partner with Riders for Health to conduct an exploratory assessment of replicating their model in the Lake Zone and potentially support the implementation of this program in the near future.

Our second initiative to address patient transportation involves a partnership with Pathfinder to implement an outreach program for maternal and child care. Text to Treatment involves deploying community health workers to villages to monitor at-risk pregnant women. Should emergency obstetric complications arise, the community health workers will use a dedicated cell phone to alert a transportation center, located at the district hospital, to send a vehicle for the patient. Importantly, funds for transport are transferred directly to approved drivers via mobile phone, so all women in need have access to this service, regardless of financial circumstance. Touch will invest in a transport dispatch center and optimize the logistics, while Pathfinder will share its expertise on maternal and child health and train the community health workers. A schematic for how this program works is shown in Figure 16. A similar initiative in Tanzania called transportMYpatient found that when funds for transport were transferred via mobile phone technology, eliminating out-of-pocket transportation costs for the patient, the number of fistula repairs increased by 65% and the number of cleft lip surgeries tripled. Using mobile phone technology to pay for patient transport significantly improves patient access to care, particularly for the rural population.

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iii. Supplies & procurement:

Government health facilities in Tanzania have the option of procuring medical supplies and drugs from two sources: the Medical Stores Department (MSD), the government-owned supplies distributor, or from local private pharmacies. However, each option has its own challenges, which result in frequent stock-outs and disruptions to patient care.

MSD procures its items annually through a government tender, so it is able to offer the lowest prices to health facilities. However, its operational inefficiencies result in significant delays in service. A Sikika study found that 70% of MSD orders are delivered only after 2 or more months of waiting time. Moreover, MSD’s inventory list is often inaccurate or out-of-date, and hospital pharmacists who visit MSD zonal stores directly to purchase and pick up items must wait up to 2-3 days at the zonal store before an item is restocked. This is a significant drain on human resources and increases procurement costs for the hospital.

Private pharmacies often operate far more efficiently than MSD, and health facilities procure from these pharmacies when MSD is out of stock. Health facilities generally only procure from pharmacies that have been approved by the Tanzanian Food & Drug Administration, which ensures that they meet a standard of quality and safety. Moreover, these local pharmacies generally deliver orders to the health facilities on the same day that the order is received. Due to limited funding, health facilities rarely purchase in bulk and stock up on supplies. Instead they make frequent orders every week or two of essential items that are already lacking, or nearing stock-out. Given the health facilities’ limited inventory of supplies, timely delivery and fulfillment of orders can have a significant impact on quality of patient care. However, such efficiencies come with a cost - prices at private pharmacies are 3-20 times higher than MSD prices. Thus, these suppliers are only used as a last resort. Since

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17 Sikika. (2011). Medicines and Medical Supplies Availability Report, Tanzania
18 Interview, Sengerema pharmacist Mr. Charles Selewa, March 6, 2013
19 Ibid
its funds are limited, the more a health facility purchases from a private pharmacy, the fewer supplies and medicines it can purchase overall, which only exacerbates stock-outs. To address these problems in supplies and procurement, Touch will undertake initiatives to strengthen procurement & supply processes within the Treat & Train Network, as detailed in Figure 17.

**Figure 17 - Initiatives for strengthening procurement and supply processes**

<table>
<thead>
<tr>
<th>Problem addressed</th>
<th>Proposed solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inefficient processes in place today for supply and procurement, lack of analyses to identify solutions</td>
<td>Touch and Vodafone to jointly conduct <strong>detailed assessment of supply &amp; procurement logistics</strong></td>
</tr>
<tr>
<td>Fulfillment and delivery of orders from MSD is often delayed, impacting quality of patients care</td>
<td>Touch to partner with private organizations to provide <strong>alternative distribution systems for Treat &amp; Train health facilities</strong></td>
</tr>
<tr>
<td>Prices at private pharmacies are 3-20x higher than MSD</td>
<td>Touch to facilitate the formation of a <strong>group purchasing organization</strong> for health facilities in a district to increase negotiating power with private pharmacies</td>
</tr>
</tbody>
</table>
| Full inventory is rarely taken today, leading pharmacists to often order emergency supplies, sometimes only after the item is already out of stock | Touch to purchase and support implementation of IT **systems for inventory management**  
  — Inventory management module in AfyaPro to be implemented at Sengerema hospital |

iv. Telemedicine and distance learning:

For patients in the most rural areas, lack of access to physician care is one of the greatest barriers to quality healthcare. Most rural dispensaries may only have a medical attendant on staff with no professional clinical training. Telemedicine presents an opportunity to connect rural patients with skilled healthcare providers, as it enables the exchange of patient information remotely via telecom networks, such as mobile phones and the internet.

Today, only basic telemedicine capabilities exist in the Treat & Train network. Sengerema Designated District Hospital is a member of iPath, an online telemedicine portal that allows clinicians practicing in rural health facilities to post descriptions of a patient case online and receive written feedback from an expert medical consultant, often a doctor overseas. Today iPath is rarely used, with only a couple of cases a month posted on average from Sengerema clinical staff. Sengerema clinicians are not personally familiar with the expertise of the iPath medical consultants and often hesitate to seek out their advice. In addition, iPath lacks capabilities for the dynamic dialogue exchange that is needed to discuss issues as complex as patient care management. Further telemedicine capabilities are needed to fully serve the needs of rural clinicians and patients.

Touch will fill this gap in telemedicine capabilities by building a telemedicine and distance learning network reaching across the Treat & Train health facilities. This network will provide efficient and accurate healthcare support for remote diagnoses and specialist
consultations for rural patients to prevent unnecessary referrals. The telecommunication capabilities will also enhance distance-learning capabilities, benefitting all cadres of health workers. We will implement telemedicine and distance learning technology in three phases, beginning with developing basic telecommunications infrastructure, and eventually evolving into specialized telemedicine modules to conduct remote patient examinations (Figure 18).

**Figure 18 - Expected evolution of the Telemedicine solution**

- **1. General Telecommunication Upgrades**
  - Improve ICT infrastructure, including installing fiber optic cables for internet, and building IT capabilities
- **2. Basic Telemedicine Installation**
  - Install in-hospital medicine command centers (~$30,000) and use basic telemedicine capabilities (e.g., video consultation with BMC specialist)
- **3. Advanced Telemedicine Implementation**
  - Complete Telemedicine network to fully enable distance learning, remote diagnoses, and specialist consultation, using more specialized remote patient monitoring technologies

- To date, Touch has enhanced telecommunication capabilities such as a fiber-optic internet network at CUHAS. These upgrades will benefit both CUHAS and BMC as we roll out future Telemedicine phases.

### 5.2. Healthcare Management

Tanzania has increased significantly its health workforce in recent years, from 47,628 in 2006 to 56,600 in 2011.\(^{20}\) As more graduates enter the healthcare system, it will be increasingly important to manage them effectively to maximize productivity, optimize deployment, and ensure high retention. Health management today is not an established profession in Tanzania, and health institutions are largely managed by senior physicians and specialists. These clinicians are not professionally trained in management and lack the requisite skills. In addition, their administrative work often prevents them from providing care to patients.

Recognizing a gap in healthcare managerial skills in Tanzania, Touch Foundation has launched a Healthcare Management program (HCM) that supports management training both in universities and continuing professional development settings. Touch is implementing HCM in partnership with Rush University, a US academic institution with a program in health systems management. Figure 19 provides an overview of the HCM program.

\(^{20}\) MoHSW, Tanzania Human Resource for Health Country Profile 2011/12
Implementation of the HCM program is underway. Rush University faculty has evaluated the HCM curriculum at Mzumbe University and has already begun collaborating with Mzumbe to revise their curriculum. The first class of 6 HCM fellows is comprised of individuals holding clinical and administrative roles at BMC including a specialist surgeon, a nursing officer, a pharmacist, a radiologist, a quality improvement officer, and the head of HR and administration. We will continue to seek diversity among our HCM fellows and anticipate adding a few fellows from each of the four regional and district Treat & Train hospitals in the upcoming years. Evolving a management culture takes time, but we are confident that by selecting leaders with the highest potential and providing them with hands-on training opportunities, we are catalyzing this change at our Treat & Train hospitals.

5.3. Knowledge Development and Dissemination

Having designed, implemented and evaluated health systems strengthening programs in Tanzania for the past 9 years, Touch Foundation has learned many valuable lessons. In 2009, we published two reports, “Action Now on the Tanzanian Health Workforce: The Twiga Initiative” and “Catalyzing Change: Molecular strengthening of the health system in the Tanzanian Lake Zone.” Together, these reports outlined a way to scale-up health worker training and strengthen a healthcare delivery network that delivers quality care to patients.

Moving forward, we aspire to further disseminate our insights and research and to become a leading voice for health systems strengthening in resource-constrained settings.
6. Strengthening the healthcare system in a sustainable manner

Enabling the Tanzanians to strengthen their own healthcare system, rather than doing it for them, allows us to create a locally sustainable healthcare delivery system. Through Treat & Train, we are establishing a vertically integrated healthcare delivery network, from the tertiary down to the village primary care level. A Train-the-Trainer multiplier approach creates the peer-to-peer knowledge transfer capacity required for long term sustainability. By upgrading facilities, telecommunications, and the skill levels of clinical staff, we are strengthening both the quality of and access to healthcare delivery in this region. In addition, through Healthcare Management, we are developing local capabilities so that the Treat & Train Network can be locally managed and financially sustained. We believe that building a locally sustainable network is a critical measure of success for our programs and an indication that we have developed a model that can be replicated elsewhere.

7. Conclusion

Since 2004, the Touch Foundation has led health systems strengthening efforts in the Lake Zone of Tanzania. Through our programs, we enhance the access to essential quality care for the Tanzanian population by improving the quality and quantity of the healthcare workforce and improving healthcare delivery mechanisms.

To date, our efforts have been remarkably successful. Since 2004, we have helped graduate 209 physicians (~10% of the country’s physicians, which includes generalists and specialists) and over 1,500 allied health care professionals, including nurses, assistant medical officers, laboratory and radiology technicians. The overwhelming majority of these graduates remain in Tanzania, practicing medicine and improving the lives of their fellow Tanzanians.

We are focused on developing cost-effective and locally sustainable solutions that can be replicated in a similar context elsewhere to improve access to quality care.