The Exodus of Medical Professionals from Ethiopia: An Examination of Emigration, Continued Stay and Return Intentions

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Abstract

The number of Ethiopian health workers currently living and practicing in other countries around the world has been increasing at alarming rates. This thesis tries to delineate the different factors that influence Ethiopian health workers' decision to migrate to and remain in the US. In addition, this study tries to identify different factors that can predict and encourage intent to return. Data was collected through a survey sent out to members of the Ethio-American Doctors' Group, a consortium of 300+ Ethiopian physicians and 50+ allied health professionals. Data collected was analyzed by computing summary statistics to identify important reasons for emigration and continued stay. Furthermore, I identified factors that can predict intent to return using the best subset method and ran a logistic regression to measure the prediction strength of each factor identified.

The most important reasons for migration were low compensation levels as well as limited educational and professional development opportunities. On the other hand, the most important reason for continued stay in the US was familial obligation including spousal employment and children's education. 54.6% of respondents expressed interest in permanently returning in the next 10 years while 20% expressed interest in participating in volunteer activities in the near future. Regression results showed that those who left Ethiopia in pursuit of professional development opportunities and those who stayed in the US due to familial obligations are more likely to intend to return in the next ten years. Home ownership is also a positive predictor of intent to return. On the other hand, those who left the country because of low compensation levels are less likely to intend to return. These findings suggest that policies that improve the accessibility of professional and educational opportunities in Ethiopia and, for those already in the US, policies that encourage circular migration should be adopted by the Ethiopian government.

Acknowledgement

I would like to take this opportunity to extend my sincerest gratitude and appreciation to all of those who contributed in different ways to make this a reality. In particular, I would like to thank my father, Dr. Sisay Jembere, who is also a physician who chose to emigrate to the US from Ethiopia, for his insightful comments and advice throughout the process. I would also like to thank my preceptor, Anthony Farmer, for his thorough revision and fruitful comments at various stages of the process. Finally, I would also like to thank Professor Sorcha Brophy for taking the time to advice and support me as I started exploring this topic early in my college career.

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Introduction

According to the America AIDS coordinator report cited in Berhan, the number of Ethiopian doctors living in Chicago outnumbers those residing in Addis Ababa, the capital of Ethiopia[1]. There are even more Ethiopian doctors currently living and practicing in other cities in the United States and around the world. This high level of emigration is also not limited to doctors; other health professionals, in particular, nurses, also have high rates of emigration. According to a World Bank report, about 26.4% of physicians trained in Ethiopia, 29.7% of physicians born in Ethiopia, and 16.8% of nurses in Ethiopia were living and practicing abroad in 2010[2]. This level of emigration is particularly alarming because Ethiopia hasn't been able to train sufficient health professionals to provide services for its ever-growing population and has one of the lowest densities of healthcare professionals in the world.

Background

Migration from Ethiopia to the US started when the government of Ethiopia began sending students to American higher education institutions in the 1940s. The US became the preferred destination both because Ethiopia did not have a former colonial power it can send students to and because the US's lack of colonial past in Africa made it an attractive destination. However, most of these migrants returned to Ethiopia immediately after finishing their training. In fact, between 1945 and 1974, only four Ethiopians educated in the US had chosen not to return[3]. However, this

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[1] Berhan, Y. "Medical Doctors' Profile in Ethiopia: Production, Attrition and Retention: In Memory of 100-Years Ethiopian Modern Medicine and the New Ethiopian Millennium." *Ethiopian Medical Journal* 46, no. 1 (n.d.): 1–77.
[2] Ratha, Dilip, Sanket Mohapatra, and Ani Silwal. *Migration and Remittances: Factbook 2011*. Washington, DC: World Bank, 2011.
[3] Getahun, Solomon A. "Brain Drain and Its Impact on Ethiopia's Higher Learning Institutions: Medical Establishments and the Military Academies Between 1970s and 2000." In *African Brain Circulation: Beyond the Drain-Grain Debate*, 170. Brill, 2006.

trend shifted after the 1974 revolution and subsequent political developments such as the "Red Terror" – a violent political repression campaign during which many were persecuted. Since then, the number of Ethiopian immigrants living in the US continues to grow, with 180,000 Ethiopian immigrants living in the US in 2012[4].

American immigration policy has shifted over time to attract more educated, affluent, and connected Ethiopians. Before 1990, the US immigration policy included strong provisions for refugee resettlement, which meant that about 33,000 Ethiopian refugees were admitted into the US by 1990[5]. These refugees ranged from illiterate peasants to high school students and university professors[6]. However, by the 1990s, the number of refugees admitted to the US declined. As a result, many came to the US under different guises (ex: tourist, business, etc.) and applied for asylum once in the US. The high cost associated with this process meant that many of these asylum seekers were among the more educated and affluent Ethiopians. During the same period, the US introduced the Diversity Visa (DV) and shifted its focus to family unions, which gave an advantage to immigrants with networks in the US[7]. To be eligible, applicants must have graduated from high school and have someone already living in the US sponsor them. Both of these requirements advantaged those who were affluent and educated. More recent changes to the immigration policy in the US have made it even more difficult for those who are uneducated and poor to migrate, as even appearing at the US embassy in Addis Ababa for an interview can cost an individual upwards of USD 160. As a result, today, about 58% of Ethiopian migrants in the US have graduated from high school, 20% have bachelor's degrees, and 12% have an advanced degree[8].

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[4] "The Ethiopian Diaspora in the United States." *Migration Policy Institute*, July 2014. www.migrationpolicy.org/sites/default/files/publications/RAD-Ethiopia.pdf.
[5] Getahun. "Brain Drain and Its Impact on Ethiopia's Higher Learning Institutions." 171
[6] Ibid., 172
[7] Ibid., 172
[8] "The Ethiopian Diaspora in the United States." *Migration Policy Institute.*

More specifically, health professionals trained in Ethiopia are migrating to the US at very alarming rates, especially given the shortage of health workers in the country. Between 1987 to 2006, about 73% of medical doctors in Ethiopia left the public sector to migrate oversees or join the private/NGO sector, making them less accessible to the average Ethiopian[9]. In addition, according to research from the Migration Policy Institute, in 2011, there were 531 Ethiopian doctors in the US, of which 78 graduated between 2000 and 2008[10]. This is an alarming number when compared to the 2,152 physicians that were working in Ethiopia at the time[11].

Unsurprisingly, this has had detrimental effects on the Ethiopian healthcare system, exasperating the already existing shortfalls of healthcare professionals in the country. For instance, Ethiopia has one of the lowest density of healthcare personnel in Africa, with 0.3 physicians and two nurses per 10,000 people[12]. The WHO recommends a density of 23 doctors, nurses, and midwives per 10,000 people[13].

Ethiopia is not unique in this regard. Many countries, especially those in Sub-Saharan Africa, have historically not been able to produce enough health workers to serve their ever-growing populations and have been losing a large portion of those trained to emigration. According to the WHO, there has been a 60% increase in the number of migrant doctors working in OECD countries in the last decade[14]. Those who have been researching the topic attribute this to push

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[9] Deressa, Wakgari, and Aklilu Azazh. "Attitudes of Undergraduate Medical Students of Addis Ababa University towards Medical Practice and Migration, Ethiopia." *BMC Medical Education* 12, no. 1 (June 2012). https://doi.org/10.1186/1472-6920-12-68.

[10]"The Ethiopian Diaspora in the United States." *Migration Policy Institute.*.

[11]Derbew, Miliard, Adam D. Laytin, and Rochelle A. Dicker. "The Surgical Workforce Shortage and Successes in Retaining Surgical Trainees in Ethiopia: a Professional Survey." *Human Resources for Health* 14, no. S1 (2016). https://doi.org/10.1186/s12960-016-0126-7.

[12] Alebachew, Abebe, and Catriona Waddington. "Human Resources for Health Reforms." World *Health Organization*, 2015.

[13] "Achieving the Health-Related MDGs. It Takes a Workforce!" World Health Organization, November 6, 2018. www.who.int/hrh/workforce_mdgs/en/.

[14] "Health Workforce – Migration." World Health Organization, September 18, 2018. www.who.int/hrh/migration/en/.

factors like limited career and research opportunities, poor working conditions, and, most importantly, low pay in the countries losing their trained workforce.

While the studies conducted on the emigration of health workers from other developing countries can be informative in building hypotheses to inform our understanding behind why health workers in Ethiopia choose to emigrate, these hypotheses still need to be explicitly tested within the Ethiopian context. This is because the Ethiopian government has a stronghold over the provision of both medical education and healthcare in the country. In addition, there is evidence that suggests that low pay might not be the only important reason health workers in Ethiopia chose to emigrate. In particular, the large number of Ethiopians that are migrating from Ethiopia to other African nations, where pay is not significantly higher, suggests that many other reasons engender high emigration levels[15]. Furthermore, given Ethiopia's stage of development, it would be difficult for the country to pay internationally competitive salaries to health workers. In fact, according to a study done by Serra, Serneels, and Lindelow, stopping 80% of doctors working in the public sector from migrating aboard would require a more than fivefold salary increase[16]. As a result, it is crucial to delineate the other reasons that are motivating Ethiopian trained doctors to emigrate to find policy recommendations that the Ethiopian government can feasibly implement.

Questions

This study tries to answer three important questions discussed below:

Question 1: Why do Ethiopian health workers choose to leave Ethiopia and migrate to the US and what is the reason behind their continued stay?

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[15] Balaker, Berhanu, 2018. "The Need for Public Policy Initiatives to Retain Medical Doctors in Ethiopia." https://search.proquest.com/docview/2017176116?accountid=14657.

[16] Lindelow, Magnus, Pieter Serneels, and Teigist Lemma. "The Performance of Health Workers in Ethiopia - Results From Qualitative Research." *Policy Research Working Papers*, 2005. https://doi.org/10.1596/1813-9450-3558.

The first question focuses on the reasons health workers choose to leave Ethiopia and migrate to the US. In particular, this paper tries to delineate the different considerations health workers reflect upon and prioritize before they make the decision to migrate and the decision to stay in the US. This question is crucial because it will help us better understand and prioritize the different policy dimensions that are important when thinking about health worker migration from Ethiopia. I believe that push factors like low pay, poor working conditions, and decreased control over one's career progression are the main reasons Ethiopian health workers migrate, as that is the case for other countries. However, I believe that the latter two are relatively more important in Ethiopia compared to other countries. This is because the Ethiopian government has tight control over the provision of healthcare and healthcare education, and it invests relatively small amounts in healthcare.

Question 2: What factors predict health worker's intent to return?

Studies have shown that integration and connection to home countries are good predictors of immigrants' intent to return. These studies suggest that integration is negatively correlated with the intent to return because more integrated immigrants will be less likely to choose to leave the life they have created in their country of destination[17]. On the other hand, studies suggest that there is a positive correlation between how connected immigrants are to their home country and their intent to return[18]. This study will test these hypotheses by focusing on Ethiopian healthcare workers currently residing in the US. However, I expect a negative correlation between connection to Ethiopia and intent to return as the recent increase in connection is a result of increasing ethnic tensions and violence in Ethiopia that has rekindled the interest (or apprehension) of many

[17] Carling, Jørgen, and Silje Vatne Pettersen. "Return Migration Intentions in the Integration-Transnationalism Matrix." *International Migration* 52, no. 6 (January 2014): 13–30. https://doi.org/10.1111/imig.12161.
[18] Ibid., 25

Ethiopians living abroad. This study will also examine whether other factors - like emigrant's age – predict intent to return.

Literature Review

Migration Theories

Neoclassical theories of migration argue that migration is a rational decision that always follows a cost-benefit analysis. It assumes that individuals that migrate do so because they posit that migrating will result in a net positive return[19]. Proponents of the neoclassical model argue that, at the macrolevel, migration is a product of wage differentials between migrant-sending and receiving countries, and this is a result of labor abundance in the migrant-sending country and scarcity in the migrant-receiving country[20]. Critics of this approach argue that this is an oversimplification of the migration decision as it ignores other factors including but not limited to age, educational level, and social networks. They point to the fact that older people are less likely to migrate compared to younger ones and that education is positively correlated with the likelihood of migration proving that migration is not merely about wage differentials[21]. The experience of health worker migration from Sub-Saharan Africa also shows that migration does not necessarily happen as a result of labor abundance in the migrant sending country.

On the other hand, the household theory of migration takes the agency away from the individual and places it in the hands of the family. This theory argues that the family is the decision-making unit when it comes to migration. It posits that families in the developing world face various hardships that engender them to send one or more of their family members to different geographic regions to diversify their income sources and minimize risks. Likewise, the push-pull

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[19] Massey, Douglas S., Joaquin Arango, Graeme Hugo, Ali Kouaouci, Adela Pellegrino, and J. Edward Taylor. "An Evaluation of International Migration Theory: The North American Case." *Population and Development Review* 20, no. 4 (1994): 699. https://doi.org/10.2307/2137660.

[20] Kurekova, L, 2011. "Theories of migration: Conceptual review and empirical testing in the context of the EU East-West flows." https://cream.conferenceservices.net/resources/ 952/2371/pdf/MECSC2011_0139_paper.pdf

[21] Haas, Hein De. "Migration and Development: A Theoretical Perspective." *International Migration Review* 44, no. 1 (2010): 227–64. https://doi.org/10.1111/j.1747-7379.2009.00804.x.

theory of migration argues that individuals migrate because there are certain push factors they experience in their country of origin including oppressive political systems, poverty, high unemployment, war, and human rights violations[22]. Similarly, migrants choose the countries they move to because they believe that they will see an improvement in the push factors that engendered them to leave their home country i.e., because of pull factors that are antitheses to the aforementioned push factors[23].

Migration Network Theory, on the other hand, emphasizes the importance of social networks in international migration[24]. Proponents of this theory argue that the quantity and nature of migrants' social networks in their country of destination is an essential factor that determines whether or not they choose to migrate. They also argue that once these networks are formed, migration becomes a self-perpetuating and self-sustaining phenomenon[25]. Similarly, the globalization theory of migration argues that migration is a product of the fact that the world is becoming more interdependent and interconnected. This not only decreases the economic, cultural, social and political differences among countries and continents, making the transition easier[26], but it also makes information about other parts of the world readily accessible[27]. This has been achieved through advances in both communication and transportation technologies that enable a constant flow of ideas and people further creating connections that perpetuate migration[28].

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[22] Stanojoska, A, 2012. "Theory of push and pull factors: A new way of explaining the old." https://www.researchgate.net/publication/283121360_THEORY_OF_PUSH_AND_PULL_FACTORS_A_NEW_AY_OF_EXPLAINING_THE_OLD

[23] Shinn, D. H, 2002. "Reversing the brain drain in Ethiopia. Ethiopian North American Health Professionals Association." http://www.academia.edu/3150021/Reversing_the_brain_drain_in_Ethiopia

[24] Kurekova. "Theories of migration." 15

[25] Ibid., 10

[26] Stalker, Peter. *Workers without Frontiers: the Impact of Globalization on International Migration*. Boulder, CO: Lynne Rienner Publishers, 2000.

[27] Li, P, 2011. "International migration in the age of globalization: Implications and challenges." http://ir.lib.uwo.ca/cgi/viewcontent.cgi?article=1022&context=mer.

[28] Stalker. *Workers without frontiers*.

Finally, the historical structural theory of migration takes a Marxist view of the migration process by arguing that migration is a result of an unequal distribution of political and economic power between regions of the world[29]. Proponents of this theory argue that the exploitative relationship created by the capitalist system affects migration on two levels. At the global level, it allows more developed countries to dominate weaker and underdeveloped countries, and at the individual level, it allows employers to enter into exploitative relationships with their employers in their country of destination.

Even though these different theories emphasize different aspects of the migration-decision process, they are more complementary than contradictory. For instance, the globalization theory of migration is bolstered by the arguments made by the migration network theory as globalization can lead to the formation of new networks across countries and continents that can encourage migration. Similarly, the neoclassical theory of migration complements the arguments made by the pull-push theory of migration. This is because when individuals make decisions about migration based on their belief that certain facets of their life are going to improve in their country of destination, they are effectively doing a cost-benefit analysis as suggested by neoliberal theories about migration.

Multiple studies have been done to delineate which one of these theories best explains the motivations behind the migration of health workers. In a study reviewing international migration of healthcare workers, Bach argued that physician's decisions to migrate were dictated by push factors like poor working conditions, lack of opportunities for professional development, the HIV/AIDS pandemic, civil unrest, and limited access to technology[30]. In the Ethiopian context,

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[29] Tomanek, A, 2011. "Understanding migration: International migration theories". http://understandingmigration.blogspot.com/2011/03/international-migration-theories.html

[30] Bach, S. "International Migration of Health Workers: Labor and Social Issues." International Labor Office, 2003. http://www.rctfi.org/resources/ILO.pdf.

Lindelow et al. argued that lack of housing, transportation and quality schools for children, excessive workload, lack of career development opportunities, the prevalence of crime and limited research facilities were sources of frustration for doctors practicing medicine in the country and reasons behind their migration[31]. Most recently, a qualitative study that interviewed 10 physicians that migrated from Ethiopia to the US also showed that medical doctors who leave Ethiopia have multiple reasons for doing so. This includes low pay, lack of professional development options, poor working conditions, low job satisfaction, the threat of political persecution, lack of political stability, heavy workloads and fear of contracting HIV[32]. However, low pay was the most important motivating factor for all the participants. While this study was quite informative, it was limited both because it only included only 10 informants of a specific background and did not adequately assess their intent to return.

Theories on return migration and intent to return

Early researchers on migration theories had generally assumed that migrants who left their homelands never returned. Even after Ravenstein wrote "each main current of migration produces a compensation counter-current" as one of his renowned list of migration laws in 1885, not much had changed[33]. This is primarily a result of the fact that migration studies had been mostly limited to the study of urban-rural movements that viewed geographical movements as occurring in only

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[31] Lindelow, Magnus, Pieter Serneels, and Teigist Lemma. "The Performance of Health Workers in Ethiopia - Results From Qualitative Research." *Policy Research Working Papers*, 2005. https://doi.org/10.1596/1813-9450-3558.

[32] Balaker, Berhanu. "The Need for Public Policy Initiatives to Retain Medical Doctors in Ethiopia." https://search.proquest.com/docview/2017176116?accountid=14657.

[33] Ravenstein, E G. "The Laws of Migration." *Journal of the Statistical Society of London* 48, no. 2 (June 1885): 167–235.

direction[34]. In addition, the fact that return migration was hard to quantify discouraged its academic study[35].

However, more recently, many studies have explored return migration focusing on motives as well as intent to return. While some studies point to unfavorable conditions in the host country – including economic recessions – as reasons that engender return migration, most studies report non-economic factors as the primary reason for the phenomenon[36]. For instance, desire to be amidst individuals from the same country and longtime friends and family is one of the non-economic factors that engender return migration[37]. In addition, studies have found that migrants tend to decide to return permanently while vacationing in their home society[38]. Even though migrants that end up returning had always thought about it, the final decision was made suddenly when in the company of friends and family from the country of origin[39]. Other studies have also pointed out the importance of the feeling of loyalty or allegiance to a home society in encouraging return[40]. However, this is less often the case when the home country cannot provide returnees with adequate employment and a comfortable standard of living[41].

While most of the studies above look at return migration levels, this study focuses on intent to return rather than actual return. This is because data about Ethiopian health workers that have returned to the country is scant. Some dismiss the study of intentions by arguing that it is a poor predictor of actual behavior. However, many studies have been conducted to both understand and predict immigrants' intent to return to their country of origin. This is because, even though intention

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[34] Gmelch, George. "Return Migration." *Annual Review of Anthropology* 9 (1980): 135-59. www.jstor.org/stable/2155732.
[35] Ibid.
[36] Ibid., 138.
[37] Ibid., 139
[38] Ibid.
[39] Ibid.
[40] Ibid.
[41] Ibid.

does not predict actual behavior, it is a necessary criterion for action i.e., one has to intend to migrate before actually doing so.

One of the more informative studies on intent to return comes from Carling and Petterson, who argue that when migrants make decisions about returning to their country of origin or discuss their intent to return, they are influenced by two sets of attachments: their attachment to their country of residence and their ties to the country of origin[42]. According to Carling and Petterson, attachment, in this context, refers to "the totality of place-specific resources, networks, competencies and emotions that affect a person's life."[43] They also argue that attachment to the country of residence can be best delineated by understanding integration.

Carling and Peterson state that their understanding of integration largely overlaps with the notion of "socio-cultural integration" which argues that integration happens along both social and cultural dimensions[44]. On the other hand, they define ties to the country of origin through what they call 'transnationalism.' Transnationalism, in this case, refers to both social and economic transactional practices that happen between immigrants and their country of origin[45]. They argue that return intentions are shaped by the relative strengths of integration and transnationalism. They suggest that the higher likelihood of return intention is found among individuals who are strongly transnational but weakly integrated. They also found that return intentions vary systematically by gender, age, migration history, and education attainment.

This approach defines integration and transnationalism as phenomena that are somewhat mutually exclusive, especially in the way they interact with return intentions. Immigrants that can

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[42] Carling, Jørgen, and Silje Vatne Pettersen. "Return Migration Intentions in the Integration-Transnationalism Matrix." *International Migration* 52, no. 6 (January 2014): 13–30. https://doi.org/10.1111/imig.12161.
[43] Ibid., 13
[44] Ibid., 20
[45] Ibid., 15

maintain economic and social ties to their country of origin won't be able to foster relationships in their country of destination that will result in integration. However, an increasing number of empirical studies now show that integration and transnationalism can be complements[46] [47] [48].

In addition, other studies conducted on return migration and the effects of integration have shown that, contrary the arguments put forth by Carling and Petterson, there is no unidirectional link between integration and migration[49]. However, other studies done on transnationalism have shown that cross-border linkages can increase the likelihood of return migration[50]. In particular, maintaining strong economic connections through investments, remittances and social relationships with relatives and friends allows for the mobilization of support and resources, making an eventual return more likely. Similarly, a study that examined the experiences of health workers from Botswana who had chosen to return showed that the main reasons for return were family ties[51].

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[46] Guarnizo, Luis Eduardo, Alejandro Portes, and William Haller. "Assimilation and Transnationalism: Determinants of Transnational Political Action among Contemporary Migrants." *American Journal of Sociology* 108, no. 6 (2003): 1211–48. https://doi.org/10.1086/375195.

[47] Mazzucato, Valentina. "The Double Engagement: Transnationalism and Integration. Ghanaian Migrants' Lives Between Ghana and The Netherlands." *Journal of Ethnic and Migration Studies* 34, no. 2 (2008): 199–216. https://doi.org/10.1080/13691830701823871.

[48] Morawska, Ewa. "Immigrant Transnationalism and Assimilation: A Variety of Combinations and the Analytic Strategy It Suggests." *Toward Assimilation and Citizenship*, 2014, 133–76. https://doi.org/10.1057/9780230554795_6.

[49] Haug, Sonja. "Migration Networks and Migration Decision-Making." *Journal of Ethnic and Migration Studies* 34, no. 4 (2008): 585–605. https://doi.org/10.1080/13691830801961605.

[50] Fokkema, Tineke. "'Return' Migration Intentions among Second-Generation Turks in Europe: The Effect of Integration and Transnationalism in a Cross-National Perspective." Journal of Mediterranean Studies 20, no. 2 (2011): 365-388. https://www.muse.jhu.edu/article/672930.

[51] Motlhatlhedi, Keneilwe, and Oathokwa Nkomazana. "Home Is Home—Botswana's Return Migrant Health Workers." *Plos One* 13, no. 11 (2018). https://doi.org/10.1371/journal.pone.0206969.

Circular Migration

More recently, the discussion on labor migration has steered away from permanent return toward circular migration. Recent documents produced by international and national agencies show that circular migration is the "preferred and forward-looking" mode of migration management. For instance, the General Commission on International Migration (GCIM) stated in 2005 that "the old paradigm of permanent migrant settlement is progressively giving away to developmental opportunities that [circular migration] provides for countries of origin."[52]

This emphasis on circular migration is a result of the fact that it is believed to provide the proverbial win-win-win situation. It benefits the country of destination because it allows it to plug sectoral labor shortages, ensure that temporary migrants return, and mitigate illegal migration. On the other hand, for migrant-sending countries, such systems encourage the circulation and retention of human capital while ensuring the flow of remittances for development. The migrants themselves are afforded various opportunities as they move from their country of origin to their country of destination and back.

Even though similar programs have been put in place and dropped before, there are many reasons programs and policies that emphasize circular migration are becoming popular now. First, this follows studies that emphasized migrant transnationalism and the collective realization that remittances are a major global economic resource. It also follows an acknowledgment that circular migration patterns have already been put in place by migrants themselves. In addition, policymakers believe that circular and other forms of migration are more amenable to public

[52] "Migration in an Interconnected World: New Directions for Action." Global Commission on International Migration , 2005. https://www.iom.int/jahia/webdav/site/myjahiasite/shared/shared/mainsite/policy_and_research/gcim/GCIM_Report_Complete.pdf.

opinion especially in countries where public opinion is against encouraging migration[53]. There is also a consensus that policymakers now have the technical know-how to successfully implement such a program as a result of modern technological advances and the resulting reduction in cost.

Human Resource for Health (HRH) Shortages in Ethiopia

The development of human resources for health has been a priority of the global health community since the start of the century. In 2006, the WHO published a report outlining the current state of health worker availability and challenges associated with training and retaining health workers across the world[54]. This report showed that demographic and epidemiological transitions, as well as financing policies, technological advances, and consumer expectations, have resulted in a shift in the workforce demand and resulted in skill mix and distributional imbalances.

The report was updated after the 67th World Health Assembly in May 2014, after member states urged the Director-General of the WHO to develop and submit a new global strategy for human resources for health. The new WHO Global Strategy on Human Resources for Health examines contemporary evidence and provides policy options and recommendations to address health workforce challenges faced by various regions around the world[55]. These recommendations included steps to optimize the existing health workforce, understand and prepare for future needs of the healthcare system, build institutional capacity as well as strengthen data on Human Resources for Health (HRH) monitoring. This report also found that, to meet the Sustainable Development Goals, one of which is universal health coverage, each country needs to reach a threshold of 4.45 doctors, nurses and midwives per 1000 population[56].

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[53] Ibid. 4
[54] "Working Together For Health: The World Health Report 2006." World Health Organization, 2006. https://www.who.int/whr/2006/whr06_en.pdf.
[55] "Global Strategy on Human Resources for Health: Workforce 2030." World Health Organization, 2016. https://apps.who.int/iris/bitstream/handle/10665/250368/9789241511131-eng.pdf?sequence=1.
[56] Ibid., 42

According to the WHO, in 2013, there was a global needs-based shortage of 17.4 million health workers of which almost 2.6 million are doctors, and approximately 9 million are nurses and midwives[57]. In absolute terms, shortage of healthcare workers is highest in South-East Asia due to the large population of countries in the region, but when one takes into account population size, the most severe challenges are in Africa[58]. Based on WHO estimates, there are currently 57 countries, including Ethiopia, with critical shortages equivalent to a global deficit of 2.4 million doctors, nurses, and midwives[59].

The shortage of health care workers in Ethiopia at every level has been a persistent problem since the creation of the country's modern healthcare system. Ethiopia currently has a health workforce (Medical doctors, Health Offices, Nurses and Midwives) density of 0.96/1000 population[60], one-fifth of the 4.45 health workers per 1000 population threshold recommended for achieving universal health coverage[61]. It is also much lower than the average density of health workers for African nations (2.2/1000 population)[62]. This means that with a population of 100 million, Ethiopia is supposed to have 220,000 health workers to match the African health workforce density and 445,000 to meet the WHO threshold[63]. Currently, the available number is less than 100,000[64].

With its ever-increasing population, Ethiopia will have to produce over 30,000 health workers every year between 2018 and 2030 to achieve universal health coverage by 2030. However, even after the current efforts to increase production capacity, Ethiopia is still producing

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[57] Ibid., 44
[58] Ibid., 44
[59] Ibid.
[60] Haileamlak, Abraham. "How Can Ethiopia Mitigate the Health Workforce Gap to Meet Universal Health Coverage?" *Ethiopian Journal of Health Sciences* 28, no. 3 (2018): 249–50. https://doi.org/10.4314/ejhs.v28i3.1.
[61] Ibid., 249
[62] Ibid.
[63] Ibid.
[64] Ibid.

less than 10,000 doctors, health officers, nurses, and midwives every year[65]. More specifically, in recent years, Ethiopia has only been able to produce about 300 medical doctors each year[66]. Even though some studies suggest that at current production rates, Ethiopia will be able to meet some of the current unmet demands in the future – by having a faster growth rate of health workers than inhabitants – the data shows that this rate of health worker increase is much slower than what is needed to meet WHO thresholds in a short amount of time[67].

In addition, the shortage of well-trained physicians in the Ethiopian healthcare system has been exacerbated by the exodus of physicians from the public sector. For instance, from 1987 to 2006, about 73% of medical doctors in Ethiopia left the public sector and migrated overseas or joined local NGOs/private sector[68]. The highest rates of attrition were in the years 1991 – 1992, 1998 and 2002-2006 when there were attrition rates of anywhere between 20% to 54%[69]. These high attrition rates continue to be an issue even today. However, even though migration rates have decreased recently, a significant number of health workers are still leaving the Ethiopian public sector. According to a study that examined physician workforce data from 119 hospitals in 5 regions and two city administrations in Ethiopia, between 2009 and 2015 close to 553 i.e., 24.04%

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[65] Ibid.
[66] Deressa, Wakgari, and Aklilu Azazh. "Attitudes of Undergraduate Medical Students of Addis Ababa University towards Medical Practice and Migration, Ethiopia." *BMC Medical Education* 12, no. 1 (June 2012). https://doi.org/10.1186/1472-6920-12-68.
[67] Kinfu, Yohannes. "The Health Worker Shortage in Africa: Are Enough Physicians and Nurses Being Trained?" *Bulletin of the World Health Organization* 87, no. 3 (January 2009): 225–30. https://doi.org/10.2471/blt.08.051599.
[68] Deressa, Wakgari, and Aklilu Azazh. "Attitudes of Undergraduate Medical Students of Addis Ababa University".
[69] Berhan, Y. "Medical Doctors' Profile in Ethiopia: Production, Attrition and Retention: In Memory of 100-Years Ethiopian Modern Medicine and the New Ethiopian Millennium." *Ethiopian Medical Journal* 46, no. 1 (n.d.): 1–77

of medical doctors left their public sector employment either to migrate abroad or move to the private sector[70].

Human Resources for Health (HRH) Policy in Ethiopia

While the government of Ethiopia and the Ministry of Health have made various proclamations acknowledging the high rates of emigration from the public healthcare system, their response to the problem has focused on replacement rather than retention. More specifically, while there is some effort toward increasing the number of physicians in the country's workforce, the Ethiopian government's health workforce strategy focuses on the training of community-based task-oriented frontline and mid-level community health workers.

Three main documents govern HRH strategy in Ethiopia: the third health sector development plan (HSDP III) which was developed in 2005, the health human resource development plan (HHRDP) which was developed in 2006 and the HR2020 strategy which was developed in 2009[71].

The HSDP III, which followed two documents of its kind, established the overall direction for HRH and subsequent priorities. The whole development plan focused on eight objectives that aimed to improve the health of the population and achieve the health MDGs[72]. The focus on HRH was driven by the fact that universal primary health care coverage was one of the eight stated objectives of this plan.

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70 Assefa, Tsion, Damen Haile Mariam, Wubegzer Mekonnen, Miliard Derbew, and Wendimagegn Enbiale. "Physician Distribution and Attrition in the Public Health Sector of Ethiopia." *Risk Management and Healthcare Policy* Volume 9 (2016): 285–95. https://doi.org/10.2147/rmhp.s117943.

71 Campbell, Jim, and Dykki Settle. "Ethiopia: Taking Forward Action on Human Resources for Health (HRH) with DFID/OGAC and Other Partners." USAID, August 23, 2009. https://www.who.int/workforcealliance/knowledge/publications/partner/tfa_ethiopia.pdf.

72 "Annual Performance Report of HSDP-III." World Health Organization, October 2007. https://www.who.int/healthsystems/strategy/Ethiopia_annual_performance_report.pdf.

HSDP III stated five key themes for human resource development[73]. This included the development of skilled workforce, improvement of the capacity of existing health workforce, continuing education, and review of curricula. In addition, HSDP III paid specific attention to the continuation of initiatives put in place by HSDP II (2002-2005), in particular the scaling up of health extension worker training. The government has invested a lot of time and resources into developing health extension workers who are the first line of contact between many Ethiopians – especially those living in the rural parts – and the healthcare system. Implemented in 2003, the health extension program trains 10th graders in a vocational school for one year so they can provide vital technical services, such as immunization and family planning support[74]. Most of the newly hired health extension workers are young women who are paired with a rural health post in each kebele. Since the realization of HSDP II, the government has been able to recruit and train 32,000 health extension workers[75]. This indirectly helps address the consequences of the exodus of medical doctors; by focusing on preventative care, and by equipping more individuals with the ability to provide basic healthcare services, the government can decrease the demand for medical doctors and specialists.

HSDP III also introduced mandatory public service after graduation for healthcare workers and differentiated pay and benefits based on what is known as the 'ABC scheme.[76]' This scheme aims to promote public sector service in rural and remote locations based on incentives like

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[73] Campbell." Ethiopia: Taking Forward Action."

[74] "Ethiopia's Human Resources for Health Programme." Global Health Workforce Alliance, n.d. https://www.who.int/workforcealliance/knowledge/case_studies/Ethiopia.pdf.
[75] Ibid.

[76] Campbell." Ethiopia: Taking Forward Action."

changing length of compulsory service as well as eligibility for post-graduate training. In particular, in 2008, the ministry of health developed and started implementing a bonding mechanism whereby all health science graduates from public higher education institutions are obliged to serve in the public sector post-graduation[77]. Those who are serving in public hospitals in rural areas are bonded for two years, and those in urban areas are bonded for four years. Medical doctors receive their degree only after completing the required years of service. However, doctors can also "buy out," i.e., pay for their training expenses post-graduation to receive their degree without completing their required compulsory service[78]. However, after those required years of service, most physicians either move abroad or move to the private sector and NGOs where high costs make them less accessible to the average Ethiopian.

The Health Resource Development Plan (HR2020) which was developed alongside HSDP III created a coordination forum for relevant national as well as international stakeholders[79]. This led to the development of an HRH platform and a national HRH observatory in April 2006. The main goal of this forum is to develop evidence and policy for future implementation. Similarly, the HR2020 strategy also focused primarily on the expansion of the health workforce – in particular, medical doctors, emergency obstetricians, midwives, and health information technicians[80].

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[77] "Scaling Up Education and Training of Human Resource For Health in Ethiopia." Global Health Workforce Alliance, 2010. https://www.who.int/workforcealliance/knowledge/case_studies/ethiopia_case_study_2010.pdf

[78] Frehywot, Seble, Fitzhugh Mullan, Perry W Payne, and Heather Ross. "Compulsory Service Programmes for Recruiting Health Workers in Remote and Rural Areas: Do They Work?" *Bulletin of the World Health Organization* 88, no. 5 (January 2010): 364–70. https://doi.org/10.2471/blt.09.071605.

[79] "Scaling Up Education and Training of Human Resource For Health in Ethiopia." GHWA.

[80] Ibid.

However, the government response to the dearth of physicians in the country lacks a focus on remediating the migration of physicians. This is because, HRH policy in Ethiopia has been grounded in the belief that retention and return are more difficult and more expensive. In particular, the Ministry of Health attributes the shortage of physicians to the limited number of medical schools, limited capacity of enrolling students, shortage of medical educators and faculty, and internal displacement, alongside brain drain[81].

Flooding Strategy

The most important policy put in place to counter the effect of the emigration of physicians from Ethiopia is called the 'flooding strategy.' The Ethiopian government adopted this strategy in 2003 to substantially increase the number of trained health professionals[82]. The initial plan was to train 5,000 health officers to ensure universal primary health service coverage by 2020[83]. As such, the number of universities and health sciences colleges grew from 5 in 2003 to 23 in 2009, and the existing medical schools were mandated to increase annual enrollment by at least three times[84]. After a recommendation from the WHO and Global Health Workforce Alliance (GHWA), in 2010, Ethiopia expanded this flooding strategy to the training of medical doctors. This was done by increasing enrollment numbers at existing medical schools, opening many new medical schools and introducing new teaching approaches and enrollment requirements[85]. Since then, the number

[81] "የስው ሃይል አስተዳደር." FMOH. Accessed April 20, 2020. http://www.moh.gov.et/ejcc/am/node/22.
[82]Derbew, Milliard, Netsanet Animut, Zohray M. Talib, Sinit Mehtsun, and Ellen K. Hamburger. "Ethiopian Medical Schools' Rapid Scale-up to Support the Government's Goal of Universal Coverage." *Academic Medicine* 89, no. Supplement (2014). https://doi.org/10.1097/acm.0000000000000326.
[83] Ibid.
[84] Ibid.
[85] Assefa, Tsion, Damen Haile Mariam, Wubegzier Mekonnen, and Miliard Derbew. "Health Systems Response for Physician Workforce Shortages and the Upcoming Crisis in Ethiopia: a Grounded Theory Research." *Human Resources for Health* 15, no. 1 (2017). https://doi.org/10.1186/s12960-017-0257-5.

of medical schools has increased from 14 to 27 an in the academic year 2014/2015, there were 14,000 medical students[86].

To make this possible, in addition to admitting more students through the standard track – i.e., direct entry from high school after national examination – the ministry of education has introduced a new medical school track for candidates who have already graduated with their first STEM degree. Content for this new track, which was initiated in 10 newly established universities and three teaching hospitals, focuses on essential clinical and professional skills, emergency life-saving surgical and obstetrics skills, rural health, and Ethiopia-specific infectious diseases[87].

However, many critics of this policy argue that this rapid increase in the number of medical schools has led to the deterioration of the quality of medical education in the country. This is because the expansion in enrollment numbers was not matched with capacity building in any of the existing medical schools, and the new medical schools were opened so rapidly that quality assurance protocols couldn't be implemented. In addition, there was a mismatch between the number of students, patient flow, size of teaching hospitals, and medical instructors that have led to a plethora of negative consequences. For instance, the government's flooding strategy relied on an inflow of medical graduates from Addis Ababa University (AAU), who would then fill faculty positions in other medical schools around the nation. However, in the years preceding the implementation of this policy there was a 92.8% faculty turnover rate at AAU medical schools making achieving high-quality medical training impossible. In addition, there was a shortage of resources needed for medical training that made computer to student ratio 1:20 and textbook to student ratio 1:15[88]. A study conducted by Assefa et al. showed that many key stakeholders

[86] Ibid.
[87] "New Medical Education Initiative (NMEI)." FMOH. Accessed April 20, 2020. http://www.moh.gov.et/ejcc/en/nmei.
[88] Derbew. "Ethiopian Medical Schools' Rapid Scale-up."

including physicians, hospital and medical school administrators believed that the health system was not ready to absorb and accommodate all of the new graduates. More recently, the ministry of health had announced that it will no longer provide medical school graduates with guaranteed posts in public sector hospitals after graduation[89]. Furthermore, lack of cooperation between medical school administrators and HRH policy makers has also been a barrier to the complete implementation of the policy.

[89] Assefa. "Health Systems Response for Physician Workforce Shortages."

Methods

This study tries to identify the reasons Ethiopian health workers leave Ethiopia and migrate to the US in addition to the factors that predict their intent to return to Ethiopia. This study also tries to describe a set of factors that can encourage Ethiopian physicians in the US to remain in the US for an indefinite period of time.

Assumptions

This study is rooted in a fundamental assumption that there is something different between people who migrate and those that chose to stay. I am assuming that there are two types of people in the world – movers and stayers – and that the difference between those two types of people is measurable. Similarly, I am assuming that there is a difference between immigrants who choose to return and those who don't, and this can also be predicted by a set of factors.

This is a reasonable assumption because migration is not random, and studies in the past have shown that certain experiences engender migration. For instance, an analysis of studies investigating migration intentions among Bulgarians in 2001 and Italian migrants in Germany showed that social capital in the place of destination as well as in the place of residence affect emigration intentions as well as return migration[90]. Similarly, a study that analyzed pre-migration questionnaire data from 1163 potential migrants from Spain to Germany concluded that person-level factors are just as crucial as economic level factors in influencing migration decision making and actual migration. In particular, they found that anticipated job benefits, career aspirations as well as self-efficacy were important predictors of migration[91]. A similar study looking at intention

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[90] Haug, Sonja. "Migration Networks and Migration Decision-Making." *Journal of Ethnic and Migration Studies* 34, no. 4 (2008): 585–605. https://doi.org/10.1080/13691830801961605.

[91] Hoppe, Annekatrin, and Kaori Fujishiro. "Anticipated Job Benefits, Career Aspiration, and Generalized Self-Efficacy as Predictors for Migration Decision-Making." *International Journal of Intercultural Relations* 47 (2015): 13–27. https://doi.org/10.1016/j.ijintrel.2015.03.025.

of both internal and international migration in the Philippines concluded that family pressure to move or stay, family auspices at alternative destination, finances, prior migration experience as well a life cycle stage i.e. marital status and age are important explanatory variables for both intention and behavior[92].

In addition studies have shown that factors like integration and transnationality as well as personal characteristics like age can be used to predict intent to return. For instance, Fokkema analyzed data from the integration of the European Second Generation (TIES) project showing the dominance of transnational integration factors in predicting intent to return[93]. In particular, Turkish second-generation migrants who had strong transnational ties with their parents' country of origin where more inclined to return[94]. Similarly a study drawing on four African immigrant groups in Spain and Italy showed that socio-cultural integration could hurt return migration intentions whereas economic integration and transnational ties can have ambiguous and sometimes positive effects[95].

Data Collection

Data was collected through surveys administered to Ethiopian physicians currently living in the US. This was done because there isn't one centralized source of data about Ethiopian physicians that migrated to the US. This is a preferred method over interviews because it delivers data that can be analyzed quantitatively to build predictive and explanatory models. It was also

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[92] Jong, Gordon F. De, Ricardo G. Abad, Fred Arnold, Benjamin V. Carino, James T. Fawcett, and Robert W. Gardner. "International and Internal Migration Decision Making: A Value-Expectancy Based Analytical Framework of Intentions to Move from a Rural Philippine Province." *International Migration Review* 17, no. 3 (1983): 470. https://doi.org/10.2307/2545798.

[93] Fokkema, Tineke. "'Return' Migration Intentions among Second-Generation Turks in Europe: The Effect of Integration and Transnationalism in a Cross-National Perspective." Journal of Mediterranean Studies 20, no. 2 (2011): 365-388. https://www.muse.jhu.edu/article/672930.

[94] Ibid.

[95] Haas, Hein De, and Tineke Fokkema. "The Effects of Integration and Transnational Ties on International Return Migration Intentions." *Demographic Research* 25 (June 2011): 755–82. https://doi.org/10.4054/demres.2011.25.24.

adopted because it allows for a much larger sample size, something previous studies on the topic have not been able to accomplish. Survey questions were developed based on findings from previously conducted qualitative studies on the same topic.

The survey was administered by the Ethio-American Doctors Group in 2018 and was sent out via their email list host. The Ethio-American Doctors Group is a consortium of over 300 physicians and 50 allied healthcare professionals of Ethiopian origin who have come together to develop and deliver high quality medical care through education and research. Their main goal is to build and operate a comprehensive multispecialty hospital that will eventually become a hub for medical tourism in Ethiopia. Data collected by this group is the best avenue for collecting comprehensive data as they are the only group in the US that have been able to bring a large number of Ethiopian health currently living in the US together.

Survey questions focused on the following:

Demographics

Questions in this section focus on demographic information, educational history, migration history, current practice in the US, number and type of family living in Ethiopia, the nature of the relationship between respondent and family members, as well as the ownership of different assets in Ethiopia. Answers to questions in this section will help me understand who the survey respondents are and delineate other factors that might predict intent to return. In particular, questions about marital status and family were asked because studies predict that those factors can predict immigrants intent to return[96].

[96] Jong, Gordon F. De, Ricardo G. Abad, Fred Arnold, Benjamin V. Carino, James T. Fawcett, and Robert W. Gardner. "International and Internal Migration Decision Making: A Value-Expectancy Based Analytical Framework of Intentions to Move from a Rural Philippine Province." *International Migration Review* 17, no. 3 (1983): 470. https://doi.org/10.2307/2545798.

This section also asks questions about respondents' investments in various types of assets in Ethiopia, the number of family relations still in Ethiopia, and the amount of remittances sent by the respondent. This allows us to see if respondents are well connected to Ethiopia – and in what way they are well connected. This is important because studies have shown that high levels of connection to the place of origin can predict intent to return. However, it is not clear if this is true for all forms of connection, and as a result, it is important to consider if this is affected by the nature of the connection[97].

Experience in Ethiopian healthcare system

The second set of questions ask respondents questions about the length of time spent working in the Ethiopian healthcare system, time of departure and reasons for departure. Questions about reasons for departure ask respondents to rank various reasons based on their importance to their decision making process. These questions allow respondents to signal whether or not multiple factors had played a role in their decision to migrate.

Reasons for continued stay outside of Ethiopia

Questions in this section try to identify obstacles to return that need to be address if one hopes to encourage return or circular migration by asking respondents to rank the different reasons they've continued to stay outside of Ethiopia. In addition, this section also asks questions about current practice and previous instances of temporary return like volunteer work including the frequency and nature of volunteer work in Ethiopia. Questions about previous volunteer work help

[97] Fokkema. "'Return' Migration Intentions among Second-Generation Turks in Europe."

further delineate the extent to which respondents are still connected to Ethiopia, and this can also help predict intent to return. Similarly, questions about current occupation and involvement in the healthcare sector are asked to determine the extent to which physicians who choose to return can work as clinicians within the Ethiopian healthcare system. This is in response to various studies that discuss the "brain waste" phenomena whereby physicians migrating from low and middle income countries have their skills unutilized or underutilized in high income countries due to high barriers to certification[98] [99].

Intent to Return with an EADG Organized Activity

This section asks questions about respondents intent to return. Questions focus on both intent to return and the expected time of return. Questions also attempt to delineate between permanent return and temporary return through volunteer activities. This section also attempt to assess whether or not this commitment would change if different factors presumed important to the decision making process were addressed, including the nature of activity after return as well as the location and nature hosting organization.

Factors/Obstacles to Return to Ethiopia

This section focuses on questions that try to understand what respondents believe are important obstacles to their return. Their answers to these questions will help us understand what kind of incentives the government should prioritize when designing policy to inspire permanent

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[98] Lofters, Aisha, Morgan Slater, Nishit Fumakia, and Naomi Thulien. "&Ldquo;Brain Drain&Rdquo; and &Ldquo;Brain Waste&Rdquo;: Experiences of International Medical Graduates in Ontario." *Risk Management and Healthcare Policy*, 2014, 81. https://doi.org/10.2147/rmhp.s60708.

[99] Alam, Nazmul, Lisa A. Merry, Mohammad Mainul Islam, and Claudia Z. Cortijo. "International Health Professional Migration and Brain Waste: A Situation of Double-Jeopardy." *Open Journal of Preventive Medicine* 05, no. 03 (2015): 128–31. https://doi.org/10.4236/ojpm.2015.53015.

return or circular migration. Some questions directly address possible improvements in the Ethiopian healthcare system and some are about the requirements of day to day life – like educational resources for children as well as medical support for the family.

Sampling

Because of the absence of a database that includes all Ethiopian physicians currently living in the US, probability sampling techniques could not be used to get a representative sample of respondents. Instead the survey was sent out through the Ethio-American Doctors Group listhost that includes over 300 doctors and 50 allied health professionals. This list host not only includes physicians who attended medical school in Ethiopia but also those who completed their medical training in different parts of the world, including the United States. However, all the physicians and health professionals are of Ethiopian origin and are currently living in the United States. Given the fact that the number of Ethiopian health professionals in the US is relatively small, I believe that this method does not introduce significant biases.

Data Analysis

Analysis was done using R to identify the most important reasons for initial migration as well as continued stay outside of Ethiopia. Studies investigating migration patterns as well as factors that predict migration usually take advantage of the mover stayer model and multivariate regression. The mover stayer model tries to find individual characteristics that could predict whether an individual will move or stay. This approach was originally developed to model

recidivism of criminals and labor market transitions[100]. In the migration context, this model helps identify attributes that differentiate those who move to those who do not move[101]. On the other hand, a multivariate regression approach tries to identify the strength of a set of migration covariates to model migration flows[102]. Some studies combine the two methods above to identify the strength of various covariates in differentiating between different movers and stayers[103]. This study uses this combined method.

Identifying important reasons for initial migration

Each factor's importance as a predictor for initial migration was determined by creating an aggregate ranking for each of the reasons that were suggested in the survey. This was done by identifying the total number of people that identified that particular reason as important.

Identifying important reasons for continued stay outside of Ethiopia

Each factor's importance as a motivator for continued migration was determined by creating an aggregate ranking for each of the reasons that were suggested in the survey. This was done the same way important reasons for migration were determined, i.e., by identifying the total number of people that identified that particular reason as important.

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[100] Bijwaard, Govert E. "Immigrant Migration Dynamics Model for The Netherlands." *Journal of Population Economics* 23, no. 4 (October 2008): 1213–47. https://doi.org/10.1007/s00148-008-0228-1.
[101] Chi, Guangqing, and Paul Voss. "Migration Decision-Making: A Hierarchical Regression Approach." *Journal of Regional Analysis and Policy* 35, no. 2 (2005): 11–22. https://doi.org/10.22004/ag.econ.132306.
[102] Ibid., 11
[103] Ibid.

Identifying important predictors of intent to return

I believe that both individual characteristics as well as contextual factors are important when trying to delineate the factors that are important in predicting whether an individual will migrate. However, using multivariate regression without narrowing down the number of variables will make our regression futile. Thus, we first need to decrease the number of variables. To identify the most promising variables, I first started by narrowing down the list of variables I thought were important based on background knowledge. However, this method resulted in over 10 variables. Thus, I used the best subset method to find the best model that fits the data. This was done by maximizing R2, minimizing CP and minimizing BIC. This was followed by a cross validation exercise that minimized on RMSE to find the best model of those suggested by the best subset model. This resulted in the most important variables in predicting intent to return.

Following this, I ran a multivariate logistic regression using the variables identified in the previous step. The dependent variable in this case was intent to return in the next 10 years while the independent variables were the factors identified in the previous step. This analysis resulted in a range of coefficients for each variable. This will enable the prioritization of the different factors based on how important they are in predicting return intentions.

Results

Demographics

197 respondents completed the survey. Of those that responded 80.9 percent identified as male while 19.8 percent identified as female. This segmentation is not surprising as it reflects the gender imbalance in the Ethiopian medical education system[104]. Average age of the respondents was 53; the youngest respondent was 34 while the oldest respondent was 78 at the time of survey distribution (2018). Most of the respondents got their medical training in Ethiopia. Of those who responded 54.3 percent were trained in Ethiopia while 23.4 percent were trained in the USA. The rest are divided between Canada, Western Europe and Eastern Europe (shown on figure 1). Eighty-eight percent of the respondents had gotten specialty training, and most of the respondents got their specialty training in the US. Of those that got specialty training, 80 percent got it in the US, while 14.5 percent got it in Western Europe and 12 percent got it in Ethiopia, with the remaining divided between Canada and Eastern Europe (shown on figure 1).

[104] Kelly, Caitrin M., Holly Vins, Jennifer O. Spicer, Brittney S. Mengistu, Daphne R. Wilson, Miliard Derbew, Abebe Bekele, et al. "The Rapid Scale up of Medical Education in Ethiopia: Medical Student Experiences and the Role of e-Learning at Addis Ababa University." *Plos One* 14, no. 9 (May 2019). https://doi.org/10.1371/journal.pone.0221989.

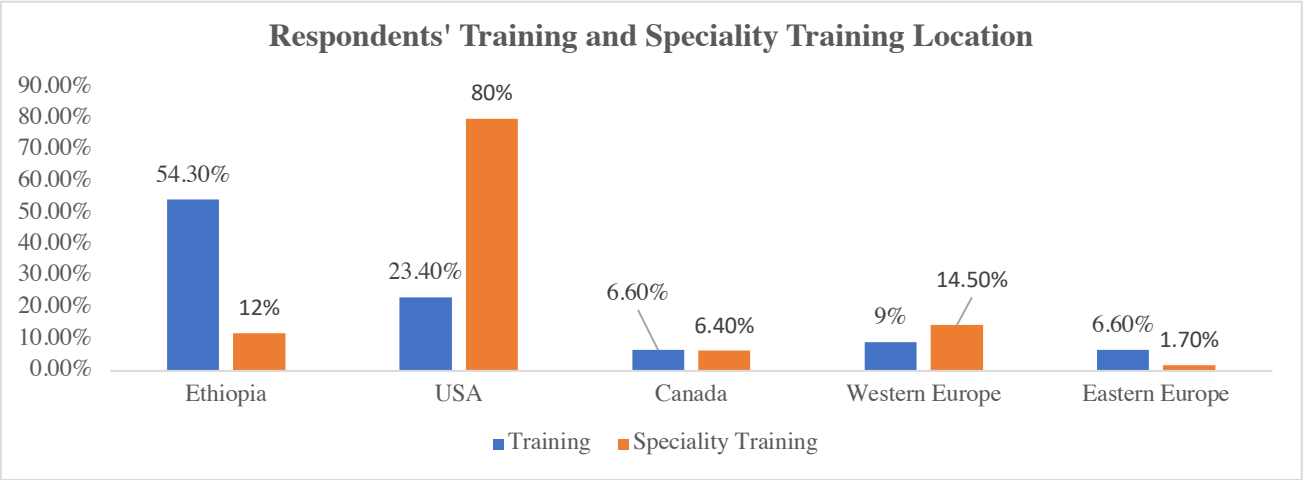

Figure 1: Location of Respondents' Initial Training and Specialty Training: Most respondents received their initial training in Ethiopia, while most respondents received their specialty training in the US.

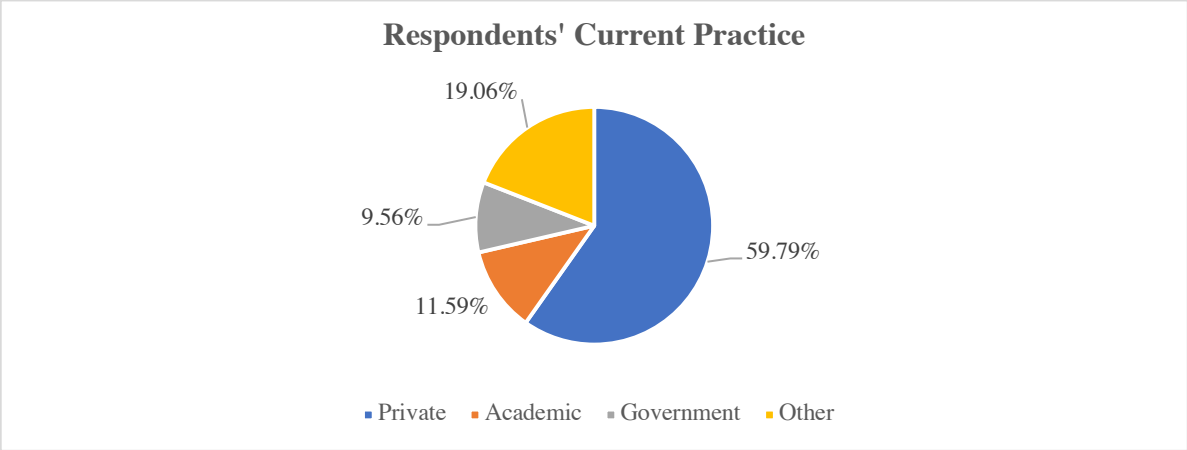

Figure 2: Respondents' Current Practice: A majority of the respondents' currently work as part of a private practice

Reasons for Leaving

Over half of the respondents (52.5 percent) worked in the Ethiopian healthcare system before moving abroad. These respondents identified lack of education prospects, lack of professional development prospects as well as low compensation as the three most important factors that motivated their decision to migrate. While refuge from war and personal safety

concerns were identified as somewhat important, wellness and political concerns where not important to any of the respondents as they made decisions to emigrate. Further breakdown of the reasons chosen by the respondents is presented on figure 3.

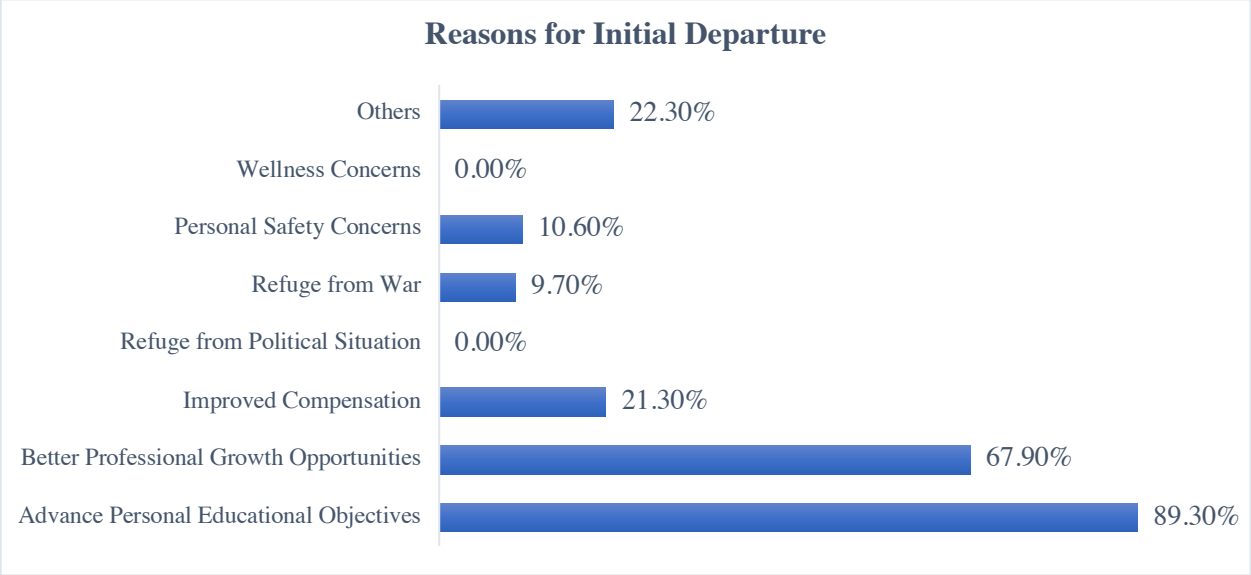

Figure 3: Initial Reasons for Departure: Percentage represents the number of people that identified that factor as important. Personal Educational Objectives and Professional Growth Opportunities are the two most important reasons for initial departure. Low Compensation levels are also important.

Reasons for Continued Stay

Most of the respondents still participate in clinical activities. 91.3 percent of the respondents are currently part of a private practice while 17.7 percent are in academia and 14.6 percent work in government (figure 2). The most important reasons for respondents continued stay outside Ethiopia are current familial arrangements including but not limited to children's school as well as spousal employment. This is not surprising as most respondents have children, and half of the children reported were younger than 18 years old. Respondents have an average of 2 children. Some respondents reported having 5 children. The oldest child reported was 44 years old

while the youngest child was 3. The median age of children reported was 18. High income requirements, personal and professional development opportunities also appear important in motivating continued stay in the US (Figure 4).

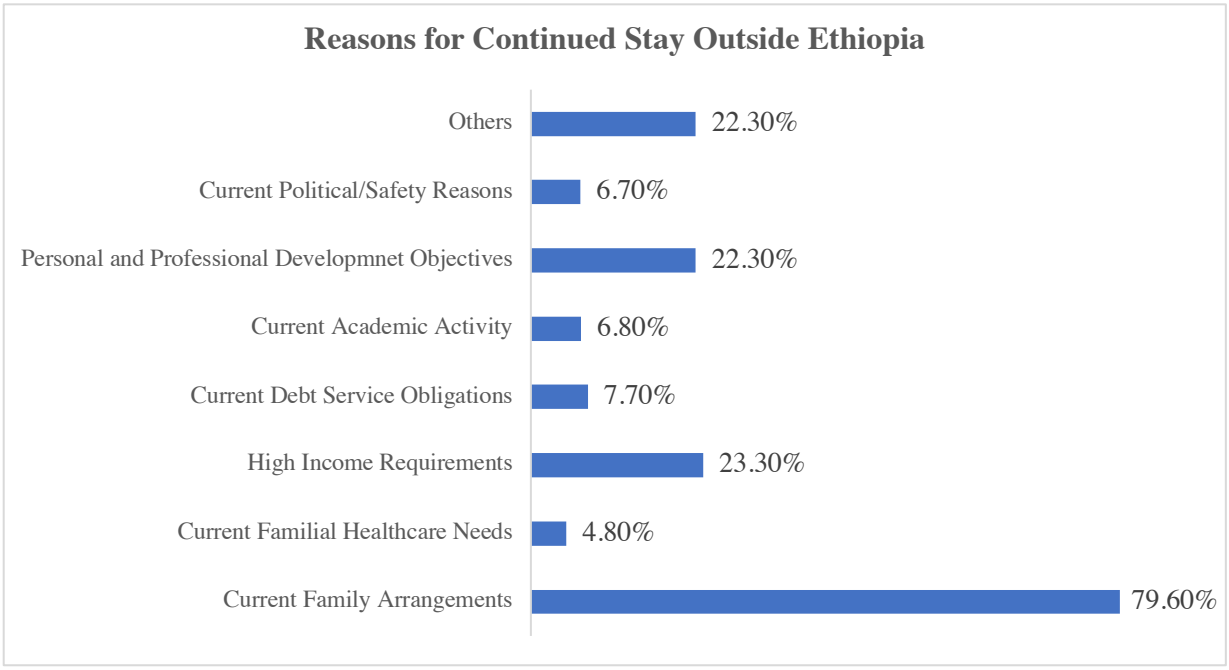

Figure 4: Reasons for Continued Stay Outside Ethiopia: Percentage represents the number of people that identified that factor as important. Current Family Arrangements are the most important reason for continued stay outside Ethiopia. High income requirements and personal and professional development objectives also appear important.

Connection to Ethiopia

Respondents seem connected to Ethiopia through familial relationships and/or investments. In fact, 46.4 percent of respondents own assets in Ethiopia, and of those that have assets, 74.7 percent own homes in Ethiopia. Furthermore, 81.2 percent of respondents reported having at least one family member in Ethiopia. Of those who responded 51.9 percent have at least one parent still living in Ethiopia, 78.1 percent have at least one sibling, 84.3 percent have at least one cousin, 76.9 percent have at least one aunt or an uncle. 79 percent financially support their family at home.

Most provide over USD 5000 annually. In addition, 25.5 percent of the respondents had volunteered in Ethiopia before and of those who volunteered, 54 percent participated in patient care while 25.2 percent volunteered as teachers.

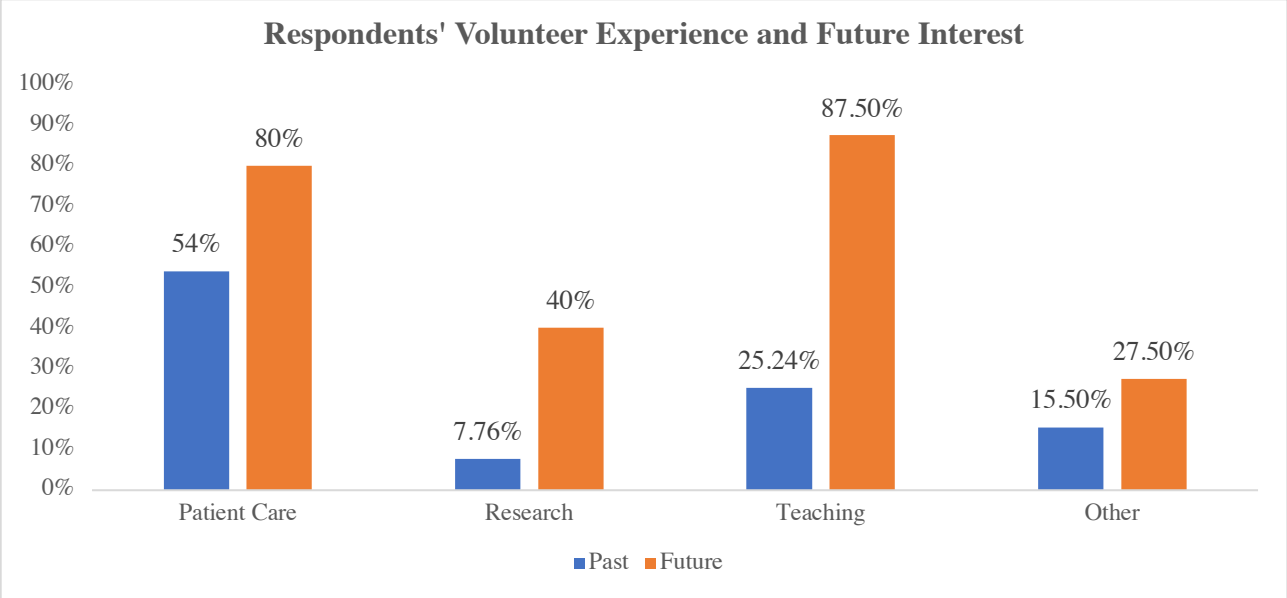

Figure 5: Respondents' Volunteer Experience and Interest in Future Volunteer Programs: Percentage represents the number of people that identified experience or interest in each form of volunteer activity as a percentage of those who expressed experience or interest in volunteering. While patient care dominates past volunteer experience, there seems to also be a large interest in participating in teaching activities.

Intent to return

Forty respondents said that they were interested in volunteering in Ethiopia in different capacities ranging from donations to patient care to teaching. While 89.5 percent of those who stated interest in volunteer programs stated that they would be interested in teaching, 80 percent stated that they would also be interested in patient care. In addition, 54.6 percent of the respondents said that they would relocate in the next ten years. The earliest relocation date chosen by

respondents was 2022 whereas the mean relocation date chosen was 2026. This suggests that the time frame in which health workers plan to return differs across individuals.

The best-subset model identified five factors as the best predictors of intent to return in the next 10 years. According to the logistic regression I ran using the factors suggested by this model, individuals who left Ethiopia because of poor professional development opportunities (*prof*) are more likely to indicate an intention to return. At the same time, those who left Ethiopia due to unsatisfactory compensation levels *(comp)* are less likely to return. On the other hand, individuals who identified current familial responsibilities *(famq)* and current academic involvements *(acadq)* as reasons for continued stay in the US are more likely to state intent to return in the next 10 years. Finally, individuals who own homes (*ownhomeq*) in Ethiopia are also more likely to state their intent to return.

Based on this, the final regression was:

$$relocate10 = \alpha + \beta prof + \gamma comp + \delta acadq + \mu\sigma amq + \varphi ownhomeq + \varepsilon$$

Table 1: Intent to Return Regression Analysis Results

	Coefficient estimate	Standard Error	p-value	R-squared
Intercept	0.36629	0.05544	3.82e-10	0.1169
Prof	0.17900	0.08028	0.0269	
Comp	-0.30209	0.11843	0.0115	
Acadq	0.03958	0.01807	0.0298	
Famq	0.04390	0.02648	0.0990	
Ownhomeq	0.13633	0.07178	0.0590	

Discussion

Reasons for Leaving

The three most important reasons reported for initial migration from Ethiopia were the lack of educational opportunities, lack of professional development prospects as well as low compensation levels. This finding is corroborated by findings from other studies that analyzed the reasons behind the migration of physicians from Ethiopia as well as the rest of the world.

Low compensation levels

The findings of the study show that low compensation levels, a reason that many previous studies have identified as the most important reason for the migration of health workers, are also important in this context. Many studies have shown that wage differentials between the country of origin and country of destination engender high rates of migration. For instance, a study by Chapell and Glennie, who analyzed several surveys on skilled workforce migration shows that the desire to earn higher wages was one of the most common reasons for the emigration of skilled workers[105]. Similarly, a survey of medical professionals conducted by Astor, et al. showed that over 90% of the respondents stated that higher income was their main reason for emigration[106]. Some studies have also explored the importance of relative compensation levels in health workers' decision to emigrate from Ethiopia. For instance, a study that interviewed 10 different physicians that had moved from Ethiopia to the US show that while medical doctors that leave their country of origin

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[105] Glennie, Alex, and Laura Chappell. "Show Me the Money (and Opportunity): Why Skilled People Leave Home - and Why They Sometimes Return." migrationpolicy.org, July 17, 2019. https://www.migrationpolicy.org/article/show-me-money-and-opportunity-why-skilled-people-leave-home—-and-why-they-sometimes-return.

[106] Astor, Avraham, Tasleem Akhtar, María Alexandra Matallana, Vasantha Muthuswamy, Folarin A. Olowu, Veronica Tallo, and Reidar K. Lie. "Physician Migration: Views from Professionals in Colombia, Nigeria, India, Pakistan and the Philippines." *Social Science & Medicine* 61, no. 12 (2005): 2492–2500. https://doi.org/10.1016/j.socscimed.2005.05.003.

are not motivated by a singular factor, the most important factors for all the individuals interviewed was an expected increase in salaries[107].

This somewhat aligns with the neoclassical understanding of migration that argues that wage differentials engender migration. However, the findings of this study show that while an expected increase in wages is an important factor in migration decisions, it is neither the singular nor the most important factor. Lack of educational opportunities and scant professional development opportunities are found to be more important factors that influence health workers' decision to migrate. As such, the findings show that neoclassical understanding of migration cannot fully explain the migration decisions of health workers in Ethiopia.

Lack of educational opportunities and limited professional development prospects

This findings of this study show that the lack of educational opportunities as well as limited professional development prospects are more important factors that influence health workers' decisions to migrate from Ethiopia. This finding is also corroborated by other studies on the topic. For instance, Lindelow et al. have also identified the lack of career development opportunities and limited research facilities as a source of frustration for physicians practicing in Ethiopia[108]. Similarly, many of the Ethiopian physicians interviewed by Balaker stated that the lack of continuous educational opportunities beyond government sponsored seminars had played a role in their decision to migrate to the US[109].

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[107] Balaker, Berhanu. "The Need for Public Policy Initiatives to Retain Medical Doctors in Ethiopia." https://search.proquest.com/docview/2017176116?accountid=14657.
[108] Lindelow, Magnus, Pieter Serneels, and Teigist Lemma. "The Performance of Health Workers in Ethiopia - Results From Qualitative Research." *Policy Research Working Papers*, 2005. https://doi.org/10.1596/1813-9450-3558.
[109] Balaker. "The Need for Public Policy Initiatives to Retain Medical Doctors in Ethiopia."

The role limited educational opportunities play in engendering high migration levels can also be seen in the educational backgrounds of the respondents. In particular, while a majority of the respondents got their initial training in Ethiopia, many of the same respondents got their specialty training in the US. This suggests that professional development opportunities are either unavailable or inaccessible in Ethiopia. This is corroborated by other studies that show that health workers in other parts of the world emigrate because they lack access to professional and educational development opportunities. For instance, a 2017 study looking at the migration of health workers from India showed that the lack of opportunities for specialty training as well as subsequent professional development opportunities had inspired many health workers to emigrate[110]. Similarly, studies investigating the reasons behind the global migration of nurses have shown that many nurses migrate in pursuit of better opportunities for career mobility as well as professional development[111].

It is worth pointing out that this is contrary to findings of studies that show that a majority of immigrant physicians in the US had attended medical school in the US[112]. The contrary evidence coming from Ethiopia might be a result of the stringer educational system that makes it harder to attend medical school abroad or the expense associated with migrating abroad (which means that many cannot afford to migrate until after they get a job and save for a while). This might also be because many start considering migration as an option post-graduation while in medical school. A study looking at the attitudes of medical students at Addis Ababa University, the largest medical

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[110] Walton-Roberts, Margaret, Vivien Runnels, S. Irudaya Rajan, Atul Sood, Sreelekha Nair, Philomina Thomas, Corinne Packer, et al. "Causes, Consequences, and Policy Responses to the Migration of Health Workers: Key Findings from India." *Human Resources for Health* 15, no. 1 (May 2017). https://doi.org/10.1186/s12960-017-0199-y.

[111] Kingma, Mireille. "Nurses on the Move." *Health Services Research* 42, no. 3 (2019): 1281–98. https://doi.org/10.7591/9781501726590.

[112] Hallock, James A., Danette W. Mckinley, and John R. Boulet. "Migration of Doctors for Undergraduate Medical Education." *Medical Teacher* 29, no. 2-3 (2007): 98–105. https://doi.org/10.1080/01421590701268723.

university in Ethiopia showed that 53% of students surveyed had intents to migrate after graduation[113]. In addition, the prevalence of an aspiration toward migration is higher in students in the latter years of study compared to those in their initial years of study. This suggests low quality of medical training and experiences while in school might contribute to student's intent to migrate and as such should be considered when thinking of ways to mitigate the migration of health workers[114].

Continued Stay

The most important reasons for respondents continued stay outside Ethiopia are current familial responsibilities including but not limited to children's school as well as spousal employment. High income requirements, and personal and professional development opportunities also appear important. The latter reasons are not surprising because, as discussed above, these are also the reasons these physicians decide to emigrate in the first place.

The fact that most health workers have large families, and some families are comprised of younger children explain why familial considerations are the most important reason respondents' continue to stay in the US. This goes hand in hand with the household theory of migration which emphasizes the role of the family in the migration decision-making process. Other studies have shown that young professionals who do not return after a short time overseas tend to start families and are "stuck" in their country of destination at least until their children complete their education[115].

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[113] Deressa, Wakgari, and Aklilu Azazh. "Attitudes of Undergraduate Medical Students of Addis Ababa University towards Medical Practice and Migration, Ethiopia." *BMC Medical Education* 12, no. 1 (June 2012). https://doi.org/10.1186/1472-6920-12-68.

[114] Ibid., 4

[115] Martineau, Tim, Karola Decker, and Peter Bundred. "Briefing Note on International Migration of Health Professionals: Leveling the Playing Field for Developing Country Health Symptoms." The Aspen Institute, 2002. https://assets.aspeninstitute.org/content/uploads/files/content/images/martineau_0.pdf.

However, by that point in their career, they tend to find it difficult to return to their home country and find employment at an appropriate level[116].

Here, it is important to note that, while there are some overlaps, the initial reason for migration is different for the most important reason for staying abroad. In addition, the fact that familial arrangements are the most important consideration suggests that permanent return might not be feasible for many physicians currently in the US in the short run. This suggests that short term volunteer opportunities that encourage circular migration could be more feasible goals.

Intent to Return

54.6 percent of respondents said that they would like to return to Ethiopia in the next 10 years. While this does not necessarily predict actual rates of return, it does show that policies and programs that target Ethiopian physicians in the US to encourage both permanent and temporary return might have a high likelihood of success. In addition, the fact that a large percentage of the respondents still work in a private practice means that a large percentage of the respondents have the technical capability ability to return to Ethiopia and practice as physicians, thereby bolstering the Ethiopian healthcare system.

In addition, my findings suggest that respondents to this survey continue to stay connected to Ethiopia. This connection is manifested through connection to family members in Ethiopia and transnational investments into various assets. Most respondents have at least one family member in Ethiopia, and they support this family member through remittances. This suggests a high level of social connectedness with those living in Ethiopia, and research on the role of transnationalism in return migration decision-making might suggest that this might lead to higher willingness to

[116] Ibid., 11

return. However, it is worth considering the fact that remittances might be considered essential and this sort of connection might have the opposite effect of what is expected of high levels of connectedness. In fact, De Hass and Fokkema have shown that remittances can hurt intent to return because, in most cases, such high levels of financial support can only be kept up if the migrant stays abroad[117].

In addition, a considerable percentage of respondents own homes in Ethiopia could suggesting transnationality as well as some level of intent to return. A study conducted by De Hass and Fokkema looking at four migrant communities (Egyptian, Ghanaian, Moroccan and Senegalese) has shown that economic ties to the country of origin, including in the form of investments, are positively related to intent to return[118]. However, various studies have shown that home ownership in the country of origin cannot be necessarily associated with permanent return intentions. This is because home ownership can serve either a practical or symbolic purpose. On the practical side, many migrants build homes in their countries of ownership as accommodation for their family members or themselves on their occasional trips back home. Home ownership can also support their "sense of home and ethos of return" without actually leading to any action[119]. The findings from this study show that home ownership was in fact a positive predictor of intent to return, further showing that those who own homes in Ethiopia share this "ethos of return."

The results from the regression showed that individuals that left the country in pursuit of professional development opportunities were more likely to return. This might be a result of the fact that these individuals have already achieved their professional development goals or they

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[117] Haas, Hein De, and Tineke Fokkema. "The Effects of Integration and Transnational Ties on International Return Migration Intentions." *Demographic Research* 25 (June 2011): 755–82. https://doi.org/10.4054/demres.2011.25.24.
[118] Ibid., 773
[119] Bonifazi, Corrado, and Angela Paparusso. "Remain or Return Home: The Migration Intentions of First-Generation Migrants in Italy." *Population, Space and Place* 25, no. 2 (2018). https://doi.org/10.1002/psp.2174.

believe their status as part of the diaspora might give them access to more professional opportunities in Ethiopia. Similarly, individuals who have continued to stay in the US because of their current academic involvement as well as their family obligation are more likely to state their return intentions for the next ten years. This might also be because these academic and familial responsibilities, while important at the time this survey was conducted, will cease to be important in the next ten years either because the respondents have fulfilled their academic requirements or are empty nesters. In addition, home ownership is also a positive predictor of intent to return, as discussed above.

On the other hand, individuals who left Ethiopia because of low compensation levels are less likely to return. This is not surprising as even though there has been a rise in the compensation levels received by health workers in Ethiopia, these compensation levels are still nowhere near the compensation levels received by those in the US. However, it is also worth pointing out that the model had very low explanatory power as can be seen from the R-squared value. This means that the predictive power of the model built by these findings is limited.

Policy Recommendation

It is easy to suggest that the solution to the problem of healthcare worker migration is to inhibit such migration through stringer migration policies. Some have even suggested entirely prohibiting the migration of health workers from developing countries. However, this not only violates the human rights of these health workers, but stricter migration policies have also proven ineffective at decreasing migration rates. Below, I will discuss different policy recommendations based on the findings of the study. The policy recommendations are segmented based on what can be done to discourage emigration and what can be done to encourage return. In addition, I have put forth policy recommendations for both the country of origin and country of destination as well as the international community.

Policies to discourage Emigration

Recommendation 1: Increase overall compensation without relying on salary top-ups

The results of this study show that low compensation levels are one of the most important reasons for the emigration of health workers from Ethiopia. In addition, my findings also show that those who emigrated from Ethiopia because of low compensation levels are less likely to return. Thus, it is clear that adjustments in overall compensation levels can result in a significant decrease in the number of health workers emigrating from Ethiopia and an increase in those returning.

Experience from other countries shows that policies addressing compensation concerns are usually the most successful policies at achieving lower levels of health worker emigration. For instance, in 2005, the government of Malawi put in place the Emergency Human Resource Programme (EHRP) after noticing the high levels of attrition and migration from the public health

care system. The most important part of this emergency response was the 52% salary top-ups for the 11 priority cadres within the public healthcare system[120]. As a result of this policy and an increased investment in training, there were 40% more doctors, 50% more clinical officers and 30% more nurses in post in 2007 compared to 2003, an achievement that cannot be fully explained by the new trainees entering the workplace[121].

Similarly, in 1998 the government of Ghana instituted a scheme known as additional duty hours allowance (ADHA). It was introduced as a settlement to doctors who were striking over long hours and low pay. As a result of this scheme, doctors incomes increased anywhere between 75% and 150%[122]. A study looking at level of emigration from the Ghanaian public healthcare system in the 6 years that followed the implementation of this policy showed that there was a decrease in physician migration flows from Ghana starting around the time this scheme was implemented[123]. The study also showed that there was 10% decline in physician emigration relative to an estimated counterfactual[124].

Even though increased compensation is proven to be one of the most effective ways of curbing health worker migration, it is usually not feasible for cash-strapped countries like Ethiopia. This is partly a result of the fact that most donors have traditionally been reluctant to fund long term salaries in light of concerns about donor dependency. At the same time, the Ethiopian government cannot invest large resources to make a significant difference in the compensation

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120 Palmer, Debbie. "Tackling Malawis Human Resources Crisis." *Reproductive Health Matters* 14, no. 27 (2006): 27–39. https://doi.org/10.1016/s0968-8080(06)27244-6.
121 Gardiner, Amy. "Malawi's Emergency Human Resources Programme." World Health Organization, 2008. www.who.int/workforcealliance/knowledge/case_studies/CS_Malawi_web_En.pdf?ua=1.
122 "Assessment of the Additional Duties Hours Allowance (ADHA) Scheme." The Capacity Project, December 2007. https://www.intrahealth.org/sites/ihweb/files/files/media/assessment-of-the-additional-duties-hours-allowance-adha-scheme-final-report/assessment_adha_scheme.pdf.
123 Okeke, E. N. "Do Higher Salaries Lower Physician Migration?" *Health Policy and Planning* 29, no. 5 (2013): 603–14. https://doi.org/10.1093/heapol/czt046.
124 Ibid., 608

received by healthcare workers. This is important because studies show that very small increases in compensation are not enough to incentivize health workers to stay in their posts. An analysis by Vujicic et al. showed that wage differentials between source and destination countries is so large that a small increase in the compensation provided by source countries is unlikely to affect migratory flows[125].

However, it is also important to note that an increase in financial incentives does not necessarily have to be in the form of salary top-ups. The government can instead focus on improving overall compensation levels. For instance, the Malawian government has tried to retain midwives by giving them retirement packages that include a 25% contribution from the government after 20 years of service in the public sector[126]. Similarly, in Ghana, health professionals can apply for a loan and tax waiver for the purchase of a car with repayments being deducted from their salary for the next 5-7 years[127]. Such policies have yet to be implemented in Ethiopia and the Ethiopian government should explore such forms of compensation to incentivize more physicians to remain in the public healthcare system.

Recommendation 2: Improve continued educational opportunities and create transparent professional growth opportunities

The findings of this study show that while low compensation within the Ethiopian healthcare system is one of the concerns of the respondents, it isn't the only one. The lack of

[125] Vujicic, Marko, Pascal Zurn, Khassoum Diallo, Orvill Adams, and Mario R Dal Poz. "The Role of Wages in the Migration of Health Care Professionals from Developing Countries." *Human Resources for Health* 2, no. 1 (2004). https://doi.org/10.1186/1478-4491-2-3.
[126] Ibid.
[127] Okeke. "Do Higher Salaries Lower Physician Migration?"

professional development as well as educational opportunities are also important to many of the respondents. Thus, non-financial incentives should be also be a priority, both because they are important to the respondents and also because they are less expensive than the aforementioned financial incentives. Findings from previous studies on motivation also show that relatively low cost measures can have a positive impact on healthcare worker retention[128].

Primarily, the government should focus its efforts on:

1. Improving continued educational opportunities for health workers focusing on specialty training opportunities
2. Creating clear professional growth opportunities within each hospital as well as the larger Ethiopian healthcare system

The fact that a majority of the survey respondents got their specialty training in the US suggests that improvement in specialty training within Ethiopia can decrease emigration rates or at the very least delay them. Making such educational opportunities available after a certain number of years in the public healthcare system will also allow the government to keep individuals interested in specialty training in the system for longer. In addition, instituting a bonding mechanism for individuals that get their specialty training in public education institutions can also increase the length of time health workers stay within the public healthcare system.

I do not deny that developing specialty training opportunities requires large investment of financial as well as human capital. Given the dearth of faculty in medical schools, this can be particularly challenging in Ethiopia. However, experience from other countries points toward other ways in which continuous educational opportunities can be instituted at low cost. For instance, the Ethiopian government can take advantage of the large number of Ethiopian health workers in the

[128] Vujicic. "The Role of Wages in the Migration of Health Care Professionals from Developing Countries."

US and their interest in volunteering in Ethiopia and create systems to allow them to provide specialty training to health workers still in Ethiopia at low cost.

Similarly, clear and transparent professional growth opportunities including clear promotion tracks within hospital systems would incentivize longer stay. These professional growth opportunities should be based on merit as well as time spent in the public healthcare system. They should also be accompanied by increased compensation levels as well as ability to participate in other professional development activities like research. Thus, the government of Ethiopia should investigate ways in which an investment in a robust research infrastructure that clinicians can participate in can encourage physicians to stay within the public health care system.

However, it is important to note that these changes only make sense within a broader effort to improve health service facilities and management systems. In particular, improving working conditions can be relatively inexpensive and improve health worker retention. For instance, studies have shown that small improvements in working conditions like providing transportation, accommodation, offering scholarships and educating members of local communities to support health workers can result in improvements satisfaction, which can in turn decrease emigration levels[129].

Policies that encourage Return

Our findings suggest that long term return might not be feasible for many respondents because of familial responsibilities in the US. However, respondents have shown a wider interest in returning either after familial duties are no longer important or for shorter volunteer

[129] Witt, Julia. "Addressing the Migration of Health Professionals: the Role of Working Conditions and Educational Placements." *BMC Public Health* 9, no. S1 (2009). https://doi.org/10.1186/1471-2458-9-s1-s7.

opportunities. This suggests two policy responses. First, the Ethiopian government could target younger physicians in the US i.e., those who have not started a family yet. On the other hand, the Ethiopian government could shift its focus on policies that encourage circular migration i.e. multiple short term returns. The latter policy, recommended by many institutions who believe that it will result in a win-win-win situation, also increases the probability that health workers will decide to return permanently. This is because many immigrants make the decision for permanent return while surrounded by friends and family at home. As such, the Ethiopian government should implement policies that encourage circular migration. This includes

1. Making travel between the two countries easier
2. Making the transition into the Ethiopian healthcare system easier
3. Making transition into life in Ethiopia easier

Recommendation 3: Institute Policies that make travel between Ethiopia and the US easier

Traveling between Ethiopia to the US is very difficult for someone who is an Ethiopian citizen. It can take years to get the right visa that allows an individual to work in the US and return to Ethiopia without fearing loss of their status. As such, the Ethiopian government should put in place provisions to allow for dual citizenship so that individuals who give up their Ethiopian passport to become American citizens no longer have to make that choice and can be involved in Ethiopian society and easily travel between the two countries. On the part of the country of destination i.e. the US, IOM recommends for more flexible visa regimens to encourage a more productive and free exchange between countries[130]. The US can also adopt EU commission's policy

[130] Vertovec, Steven. "Circular Migration." *The Encyclopedia of Global Human Migration*, April 2013. https://doi.org/10.1002/9781444351071.wbeghm135.

plan on managing legal migration. This plan suggests provision of long-term multi-entry visas for returning migrants, giving former migrants priority for obtaining new resident permits and creating a database of third country nationals who left the region after the expiration of their temporary residence or work permit[131]. This is perhaps politically palatable in the US because circular migration tends to be favored by countries in which public opinion is against high levels of immigration[132]. In addition, the 2020 COVID-19 pandemic can result in more favorable outlooks toward doctors trained in other parts of the world as the pandemic has shown the country's reliance on foreign health workers.

Recommendation 4: Institute training programs to make transition into the Ethiopian healthcare system easier

Other studies that analyzed the return of migrants back to their home countries have shown that many migrants are ill-prepared for their return. Many have not realized how much their communities have changed during their absence and have unrealistic expectations of their economic prospects[133]. Although most migrants do not return home in hopes of getting rich, economic conditions are sometimes worse than anticipated[134]. In addition, given the dearth of up-to-date medical equipment and certain prescription drugs, it will be difficult for physicians that are used to practicing in the US to practice or teach in Ethiopia. As such, the government should institute training programs to make such transitions easier and manage expectations. This not only allows returning physicians to be effective, but it also ensures that physicians do not have a bad

[131] Ibid., 4
[132] Ibid.
[133] Gmelch, George. "Return Migration." *Annual Review of Anthropology* 9 (1980): 135-59. www.jstor.org/stable/2155732.
[134] Ibid., 144

experience during their first return and are compelled to come back. This is particularly important because studies have shown that the process of adjustment for returning migrants is not a function of actual conditions of the area but a function of expectations held by migrants[135].

Recommendation 5: Provide accommodation to returnees to make transition into Ethiopian life easier

Transition into Ethiopian life, even temporarily, requires accommodations. Findings from this study have shown that individuals who have made investments in their own home are more likely to intend to return. This shows that accommodations of a certain standard are important for individuals that are intending to return to Ethiopia. Thus, the Ethiopian government should make provisions to make buying a home easier for those living in the US and create spaces for individuals who would like to return but don't want to invest in their own home due to the temporary nature of their return.

The role of the international community

Recommendation 6: Support the development of health workforce

A quick overview of various donor funded health interventions in developing countries shows that health workforce reform has received relatively little attention. Bilateral, multilateral nor international disease specific aid programs like PEPFAR and The Global Fund have not adequately addressed workforce concerns[136]. As such, countries have been forced to prioritize

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[135] Gmelch, George. "Return Migration." *Annual Review of Anthropology* 9 (1980): 135-59. www.jstor.org/stable/2155732.

[136] Kentikelenis, Alexander E., Thomas H. Stubbs, and Lawrence P. King. "Structural Adjustment and Public Spending on Health: Evidence from IMF Programs in Low-Income Countries." *Social Science & Medicine* 126 (2015): 169–76. https://doi.org/10.1016/j.socscimed.2014.12.027.

disease specific investments over broader investments aiming to increase the healthcare system's capacity. This has led to deteriorating working conditions in public hospitals as well as fewer educational and professional opportunities for health workers in cash-strapped countries. In addition, structural adjustment programs that impose austerity measures on developing countries have resulted in deteriorating healthcare systems[137]. As such, disease specific aid programs should ensure that workforce development is prioritized alongside other disease specific interventions. In addition, the World Bank and IMF should reevaluate how debt repayment programs are affecting investment in the public sector in countries with high debt levels.

Recommendation 7: Encourage the adaptation of ethical codes into country-specific legislation

In May 2010, the WHO adopted the WHO Global Code of Practice on the International recruitment of health personnel. This code encourages the development of bilateral and multilateral agreements to maximize the benefits and minimize the negative impacts of health worker migration while protecting the rights of migrants themselves[138]. It also provides recommendations for increasing health worker production and expanding the development of aid in retention and training.

Unfortunately, this code lacks binding and enforcement mechanisms and does not have a funding apparatus that can make it effective. Preliminary empirical studies report the majority of immigrant receiving countries including Australia, Canada, United Kingdom, and the USA have not made meaningful changes to their immigration policies as result of the Code[139]. While some

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[137] Ibid.

[138] "WHO Global Code of Practice on the International Recruitment of Health Personnel." World Health Organization, 2014. www.who.int/hrh/migration/code/full_text/en/.

[139] Mackey, Timothy Ken, and Bryan Albert Liang. "Rebalancing Brain Drain: Exploring Resource Reallocation to Address Health Worker Migration and Promote Global Health." *Health Policy* 107, no. 1 (2012): 66–73. https://doi.org/10.1016/j.healthpol.2012.04.006.

developing countries have incorporated parts of the code into their legislation, the only high-income country that has been able to implement the provisions of the code is Norway[140].

This is not only true for this ethical code but for many similar guidelines developed to curb the negative effects of health worker migration. For instance, evidence from the UK shows that ethical guidance was ineffective in preventing the immigration of doctors due to competing priorities of the NHS[141]. Similarly, studies from South Africa show that the Commonwealth code, an agreement between commonwealth countries on ethical recruitment, has been ineffective[142]. These agreements are also ineffective both because they are voluntary and are therefore trumped by competing priorities. As such, the international community should explore different ways such codes can be binding and enforceable either at an international level or at bilateral and national levels. The adoption of these policies into country-specific legislation can make them more effective.

[140] Ibid., 70
[141] Ibid.,
[142] Labonté, Ronald, David Sanders, Thubelihle Mathole, Jonathan Crush, Abel Chikanda, Yoswa Dambisya, Vivien Runnels, et al. "Health Worker Migration from South Africa: Causes, Consequences and Policy Responses." *Human Resources for Health*13, no. 1 (2015). https://doi.org/10.1186/s12960-015-0093-4.

Conclusion

Since the institution of a modern healthcare system in Ethiopia, ensuring the existence of an adequate number of health workers to provide quality care has been a challenge. In addition to low training levels and an ever-growing population, the Ethiopian healthcare system has been losing a lot of its healthcare workers to migration. This study tries to identify the reasons behind these high rates of immigration while trying to identify factors that encourage continued stay outside of Ethiopia and factors that predict intent to return.

My findings show that the most important reasons for Ethiopian health worker emigration include low compensation levels as well as poor professional development opportunities and limited educational opportunities. While many other studies on the topic have found low compensation levels to be the most important reason for migration, this study shows that limited professional and education opportunities take precedence. More individuals identified the lack of professional development and education opportunities as one of their reasons for migrating than low compensation.

On the other hand, the most important reason for continued stay outside of Ethiopia are family arrangements. Other studies on the topic have also predicted this as many health workers are less reluctant to move if it means interrupting their children's education or spouse's employment. In addition, some theories about migration predict that decisions about migration are not made at an individual level but rather at the level of the family. These theories can explain the findings of this study.

Finally, this study tried to identify different factors that can predict intent to return. Those who own a home in Ethiopia and those who have stayed in the US because of academic work and/or familial obligations are more likely to state their intention to return in the next ten years.

On the other hand, those who left Ethiopia due to unsatisfactory compensation levels are less likely to intend to return.

It is worth noting that this study had some limitations. First, the survey was sent out to a list host put together by a consortium that is planning on building a fully-functional hospital in Ethiopia. As such, those in the list host might have joined the organization because of their initial interest in temporary and/or permanent forms of return. This might have biased my results. In addition, the survey was conducted in 2018, when Ethiopia was experiencing high levels of political unrest and uncertainty. This might have affected the survey results both by increasing the levels of transnationalism as more members of the diaspora are now thinking about and talking about Ethiopian politics and by discouraging return because of the nature of the unrest.

These findings suggest that policies implemented to address the high rates of emigration should focus on both retaining the health workers that are in Ethiopia and encouraging circular migration for those already in the US. This is because findings have shown that encouraging return migration is difficult as many Ethiopian health workers in the US have obligations that keep them from returning to Ethiopia permanently. However, they are also interested in volunteer opportunities, and that suggests that circular migration could be the solution in the short run.

Policies that intend to decrease emigration levels can focus on increasing compensation levels without depending on salary top-ups – something the Ethiopian government cannot afford – as well as investments to expand educational and professional opportunities. On the other hand, to encourage circular migration, the Ethiopian government should implement policies that make travel between Ethiopia and the US, make the transition into the Ethiopian healthcare system, and transition into Ethiopian life easier. This includes exploring dual citizenship and certification opportunities, as well as instituting training programs for those who want to participate in patient

care in Ethiopia and managing expectations. The international community should also do its part by supporting workforce capacity building programs and adopting ethical codes developed by the WHO into national legislation. However, the adoption of the policies mentioned above should be preceded by an in depth-analysis of each policy and a discussion that involves all stakeholders. Nevertheless, the findings have shown that there is an untapped and skilled workforce with an interest in working in Ethiopia in the US, and the Ethiopian government should find a way to take advantage of it.

Appendix

Appendix I: Survey Questions

1. What year were you born?
2. What is your gender?
    a. Male
    b. Female
3. In which country or region did you attend medical, nursing, or allied health school?
    a. Ethiopia
    b. Eastern Europe
    c. Western Europe
    d. USA
    e. Other (please specify)
4. What year did you graduate medical, nursing, or allied health school?
5. Did you complete specialty training after graduating from medical, nursing, or allied health school?
6. In which country/countries or region/regions did you attend specialty training?
    a. Ethiopia
    b. Eastern Europe
    c. Western Europe
    d. USA
    e. Other (please specify)
7. Do you currently own a home in Ethiopia?

8. Do you currently own other assets or do you have investments in Ethiopia?
9. How many children do you have?
10. In what year(s) were your children born? Please type the year in the field(s) below for all that apply.
    a. First child
    b. Second child
    c. Third child
    d. Fourth child
    e. Fifth or most recent child

11. Do you have family living in Ethiopia?
12. What relations apply to your family living in Ethiopia?
    a. Parent(s)
    b. Sibling(s)
    c. Cousin(s)
    d. Aunt(s) and Uncle(s)

13. Do you financially support family members or others in Ethiopia?
14. How much estimated annual remittance do you provide to family living in Ethiopia?
15. Did you work in Ethiopia as a healthcare professional (physician, nurse, or allied health professional) before your initial departure from Ethiopia? (This question is specific to work in which you received compensation; follow-up questions will cover volunteering positions.)

16. How long did you work in Ethiopia as a healthcare professional? – Ethiopia only data
17. In what year did you work most recently in Ethiopia as a healthcare professional?
18. What are the reasons for your initial departure from Ethiopia? Select all that apply.
    a. To advance personal educational objectives.
    b. To achieve better professional growth opportunities.
    c. To garner improved compensation for work rendered.
    d. To seek refuge from a political situation.
    e. To seek refuge from war or other conflict-related reasons.
    f. To address personal (non-political) safety concerns.
    g. To address wellness concerns (healthcare, etc.)
    h. Other (please specify)

19. What are the reasons for your continued stay outside Ethiopia? Please rank all that apply, beginning with 1 as the most important reason. You may also select "N/A" for reasons that do not apply to you.
    a. Current family arrangements (children's school, spousal employment) preclude relocation.
    b. Current familial healthcare needs require advanced medical care.
    c. Higher personal/professional income requirements entail continued stay outside Ethiopia.
    d. Current debt service obligations require continued stay outside Ethiopia.
    e. Current academic activity requires continued stay outside Ethiopia.

f. Personal and professional development objectives require continued stay outside Ethiopia.

g. Current political/safety reasons.

20. How would you describe your current practice?

a. Private

b. Academic

c. Government

d. Other (please specify)

21. Do you currently perform volunteer work in Ethiopia?

22. How would you best describe your volunteer work in Ethiopia? Select all that apply.

a. Patient Care

b. Research

c. Teaching

d. Other (please specify)

23. What is the average duration of your volunteering in Ethiopia per year?

24. While the hospital is under construction, would you be willing to volunteer at a local institution in Ethiopia under the organization of EADG?

25. Assuming some level of collaboration with EADG, what type of volunteer services are you interested in performing? Select all that apply.

a. Teaching

b. Patient care

c. Program support

d. Research

e. Donation of supplies/equipment

26. How much time would you be willing to volunteer to an EADG-organized activity during a trip to Ethiopia?
27. Would you be willing to engage in an EADG-organized volunteer activity outside of Addis Ababa?
28. What region(s) and cities outside of Addis would you be most interested to volunteer?
29. Assume the hospital is built and operational in 2021; and (as planned) is a world-class hospital comparable to US/EU hospitals. Do you have a desire to relocate to Ethiopia at any time from the year 2021 to 2031?
30. Assume the hospital is built and operational in 2021 (as planned), would you commit to work at the hospital as a full-time employee when the hospital opens?
31. Assume the hospital is built and operational in 2021 (as planned), what is the earliest year you would commit to work at the hospital as a full-time employee?
32. When you consider your desire to relocate to Ethiopia, how do you rate the following factors/obstacles?
    a. Absence of compensation scheme consistent with my current standards
        i. Major obstacle
        ii. Considerable obstacle
        iii. Moderate obstacle
        iv. Noticeable obstacle

v. Not an obstacle

b. Absence of housing and accommodation plans consistent with my current standards
    i. Major obstacle
    ii. Considerable obstacle
    iii. Moderate obstacle
    iv. Noticeable obstacle
    v. Not an obstacle
c. Absence of adequate provisions for personal/family transportation consistent with my current standards
    i. Major obstacle
    ii. Considerable obstacle
    iii. Moderate obstacle
    iv. Noticeable obstacle
    v. Not an obstacle
d. Absence of the requisite personal wellness and healthcare provisions for my family
    i. Major obstacle
    ii. Considerable obstacle
    iii. Moderate obstacle
    iv. Noticeable obstacle
    v. Not an obstacle

e. Absence of requisite educational institutions and related infrastructure for my children
    i. Major obstacle
    ii. Considerable obstacle
    iii. Moderate obstacle
    iv. Noticeable obstacle
    v. Not an obstacle
f. Absence of advanced/specialized medical or emergency care needed for the treatment of family
    i. Major obstacle
    ii. Considerable obstacle
    iii. Moderate obstacle
    iv. Noticeable obstacle
    v. Not an obstacle
g. Absence of a mechanism/pathway to retire accumulated personal/professional debts given downward-adjusted income
    i. Major obstacle
    ii. Considerable obstacle
    iii. Moderate obstacle
    iv. Noticeable obstacle
    v. Not an obstacle
h. Absence of the requisite personal security measures currently in place in Ethiopia
    i. Major obstacle

ii. Considerable obstacle

iii. Moderate obstacle

iv. Noticeable obstacle

v. Not an obstacle

i. Absence of comfort with the current and prospective political climate in Ethiopia

i. Major obstacle

ii. Considerable obstacle

iii. Moderate obstacle

iv. Noticeable obstacle

v. Not an obstacle

j. Risk of severing my personal ties and professional connections with communities I would be leaving behind

i. Major obstacle

ii. Considerable obstacle

iii. Moderate obstacle

iv. Noticeable obstacle

v. Not an obstacle

33. What is the single most difficult obstacle that, if removed, would compel you to relocate to Ethiopia in the next 5 years?
34. Approximately how much do you expect to earn in wages this year?
35. Would you make a commitment to relocate to Ethiopia TODAY and serve in your chosen capacity at the hospital starting in 2021 if your income would allow you to maintain a standard of living you are accustomed to now?

36. Accepting the premise that the cost of living in Ethiopia is generally less than the cost of living in the US and Europe, what is the annual salary in US Dollars that you would expect to earn in order to allow you to make a commitment TODAY to move to Ethiopia in 2021?
37. For your medical specialty, what is an average (mid-point) estimate for compensating a moderately experienced, certified and trained abroad professional to practice in a modern hospital in Ethiopia? (Please take into account the difference in the standard of living between your current country of residence and Ethiopia, as well as the fact that for US Citizens or US Residents who work overseas for more than 330 days a year, the first $97,600 is not subject to federal taxes.)
38. What is the minimum compensation you would accept to commit to relocate and staff the hospital assuming the hospital is built and operational in 2021; and (as planned) is a world-class hospital that is comparable to first-rate US/EU hospitals? (Please take into account the difference in the standard of living between your current country of residence and Ethiopia, as well as the fact that for US Citizens or US Residents who work overseas for more than 330 days a year, the first $97,600 is not subject to federal taxes.)