HIV Prevention, COVID/Cholera, and medical AI Development in South Africa

Hareton Song – Clinton Health Access Initiative, Pretoria, South Africa 2023 Summer Placement
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Introduction

- According to the CDC, HIV and AIDS is one of the main challenges facing a post-apartheid South Africa. With 5.7 million citizens infected with HIV, South Africa has one of the highest numbers of infected adults and children in the world. The epidemic is generalized across the country's population and primarily driven by sexual transmission.

- In the summer of 2023, northeastern regions in South Africa experienced a local cholera outbreak.

- This summer, I had the honor of assisting CHAI's <u>HIV Prevention, COVID/Emergency Management/Cholera, and AI Development Teams.</u>

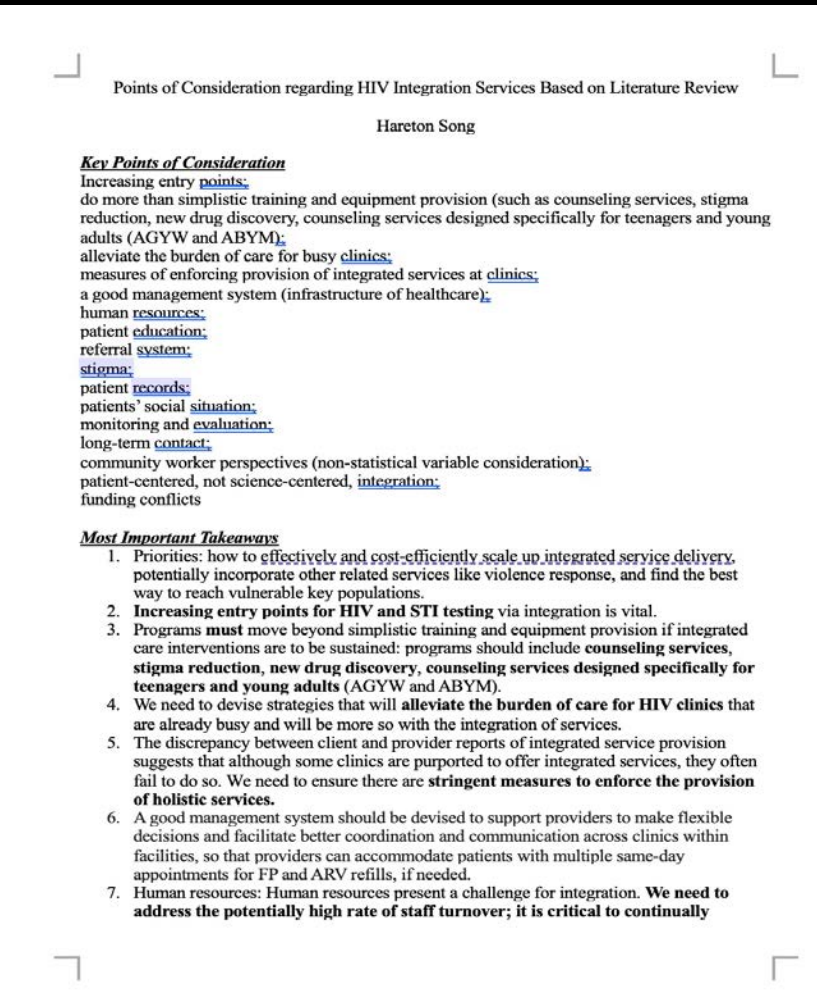Left: the grant proposal for AI development I reviewed

HIV Prevention

- I assisted CHAI's HIV Prevention Team by conducting data analysis, making presentations regarding the spread of STIs in the Eastern Cape, Gauteng, Limpopo, and Western Cape provinces, carried out data collection and field visits in the West Rand and Eastern Cape, and updated the Adolescent Girls Young Women national HIV prevention database.

STI status in the Eastern Cape

Up: Presentation Prepared
Left: Data collection field trip into rural Eastern Cape with Kiara and our colleague,. Zanele

Up: Literature review I conducted on integrated HIV services

COVID/Cholera outbreak emergency management

- I assisted CHAI's COVID team, which was conscripted by the Department of Health to manage the local cholera outbreak, in the drafting of daily reports to the Minister on the cholera situation.
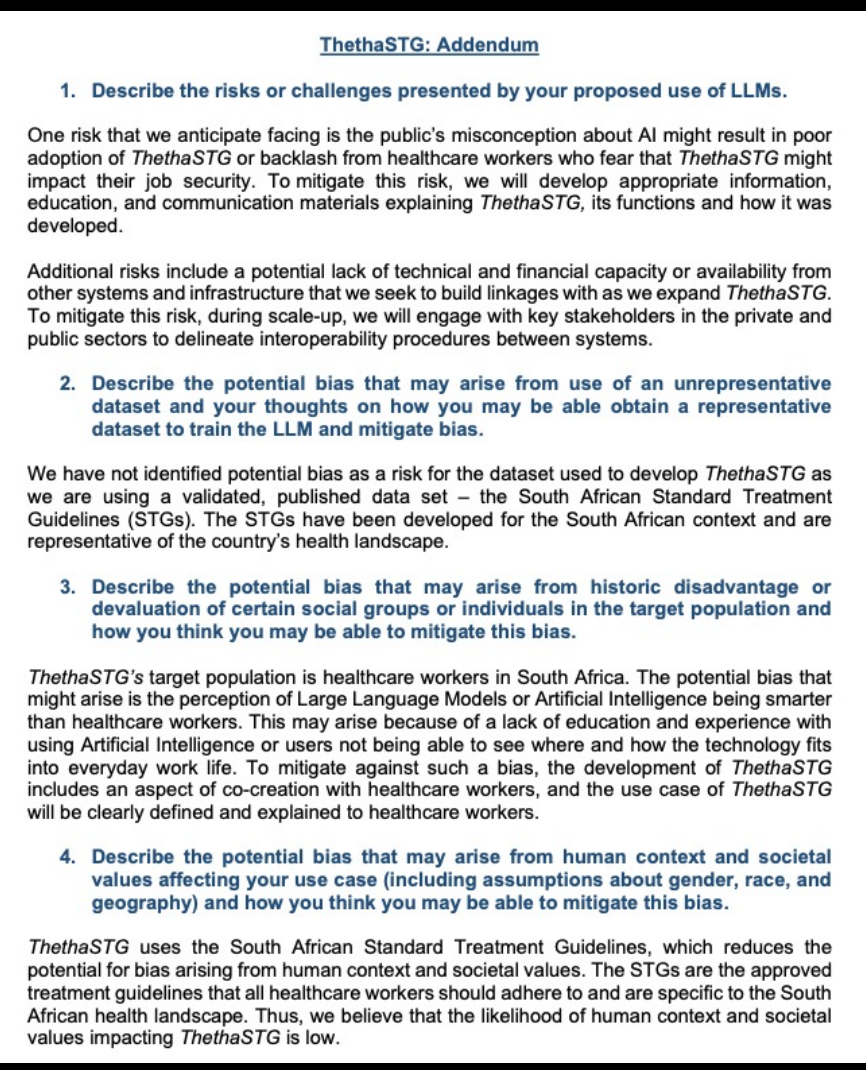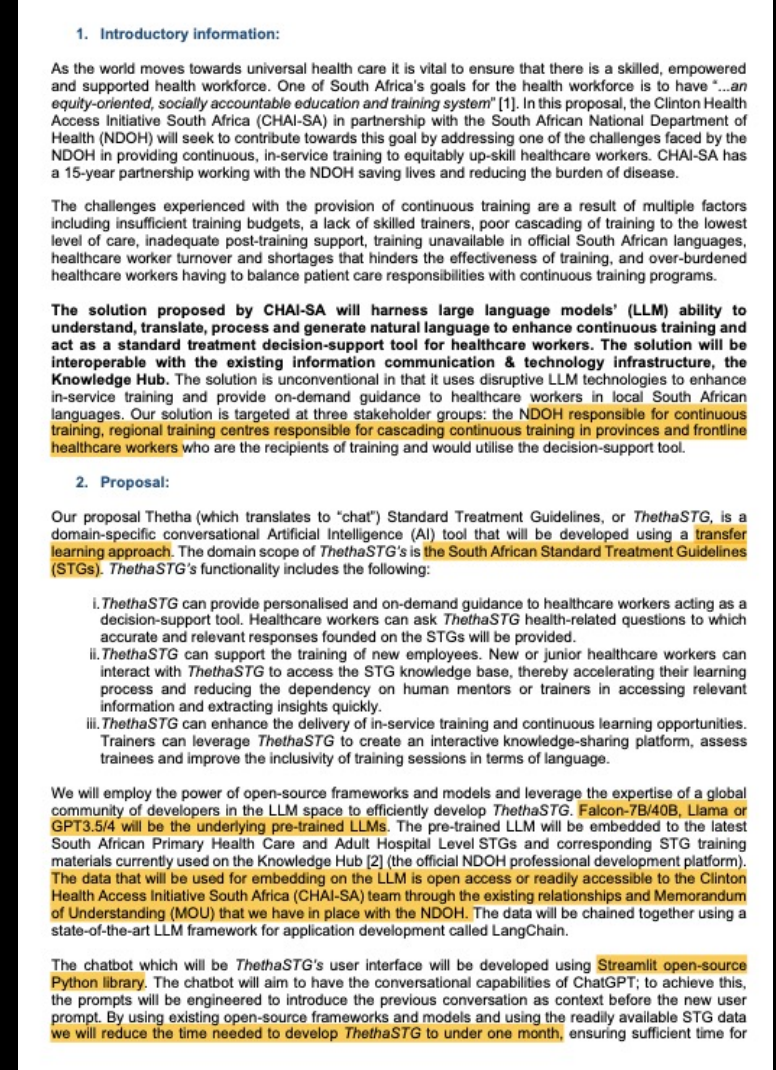
Left: the CHAI team at the Youth Day event;
Right: the three Princeton CHAI interns at a community outreach event.

AI Development

- To catalyze equitable AI use in healthcare in South Africa, CHAI plans to develop an AI tool—ThethaSTG—to help train healthcare professionals in the 11 spoken national languages.

– As an Electrical and Computer Engineering major, I helped review their grant proposal and broached interesting perspectives to consider, such as the moral and legal implications of the introduction of AI to healthcare when technology has not been perfected.

- The proposal is called Thetha (which translates to "chat") Standard Treatment Guideline (ThethaSTG). It is a domain-specific conversational Artificial Intelligence tool that will be developed using a transfer learning approach. The domain scope of ThethaSTG is the South African Standard Treatment Guidelines (STGs).

Community Outreach

- CHAI, on public holidays regarding health and/or the youth population, conducts community outreach efforts. I was honored to be able to participate in two—the Youth Day event at a rural school and another distributing HIV self-screening kits, condoms, sanitary pads, and other useful resources in the West Rand.

References: Center for Disease Control and Prevention. (n.d.). CDC's HIV Prevention Programs in South Africa. Retrieved August 23, 2023, from https://www.cdc.gov/globalhealth/countries/southafrica/what/hiv_prevention.htm