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Personal Draft Problem

In Ethiopia, non-communicable diseases (NCDs) account for 42% of all deaths. To address the growing burden of NCDs and other healthcare challenges, the country introduced a major healthcare financing reform in 1998 to expand access to primary healthcare services. This reform introduced several key measures, such as allowing health facilities to retain and reinvest their revenue in service quality improvements.

Despite these reforms, Ethiopia's healthcare system remains fragmented. High out-of-pocket expenditures limit access to healthcare services, particularly for lower-income populations. To address these persistent challenges, Ethiopia is now implementing another generation healthcare financing reform aimed at improving financial protection and healthcare access.

For this project, the goal is to develop a model that captures treatment uptake among patients with NCDs, focusing on three conditions: 1) cervical cancer, 2) hypertension, and 3) diabetes mellitus. However, this project may initially focus on one of the three NCDs. Create a simple patient flow model to capture treatment state transitions: undiagnosed, diagnosed but untreated, and diagnosed and receiving treatment. Treatment uptake is influenced by a range of factors, including healthcare system capacity, patient satisfaction, and insurance coverage. Incorporate key policy levers to simulate and assess the potential impact of healthcare financing reforms components on improving treatment uptake among NCD patients.

Commented [HR1]: This background is interesting, but not clear how much it informs the more concrete modeling project you are proposing afterwards, so could be shortened as motivation only.

Commented [HL1R2]: Thank you for the feedback. I've shortened the background info.

Commented [HR2]: You could potentially make these endogenous. Simplest would be to have a fixed capacity, and demand vs. capacity informs wait times and actual utilization and impact.

Commented [HR3]: A simple patient flow model with treatment uptake would be a good option here. On the patient flow you have key states of an individual (e.g. healthy, with disease, with complications), and then there is diagnosis, and treatment state transitions (so a person can be undiagnosed, diagnosed not treated, and 'diagnosed and treated'). Building that part is the scope feasible for class exercise. As future steps you will need to add details to the flows between these population stocks based on availability of healthcare capacity, costs, and insurance options.

Commented [HL3R2]: Thanks for the great feedback! I am not planning on incorporating the key states of an individual for now due to lack of data. Rather, I plan to model the treatment state transitions. I will track mortality though, which will be a proxy for the quality of healthcare services in Ethiopia.

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