Where are the deficiencies in care?

***Aim:***

*What is the contribution of each stage of care on overall DALYs / mortality?*

*The interventions we have designed to intervene along HIV care may have an attentuated impact due to upstream / downstream weaknesses in care. For example, we have a powerful ART Outreach intervention that brings back 100% of people lost from care, yet it doesn’t have a huge impact on DALYs averted in the model, this is due to the small proportion of individuals that ever initiate ART due to upstream leaks in the care. I want to understand how important each “stage” of care is, by making care “perfect” and then systematically walking through each stage and “weakening” it (using the baseline values from AMPATH), while keeping all other aspects of care perfect to visualise the impact on DALYs and mortality.*

**Method:**

1. *Create a “perfect care” scenario, in which everyone, upon getting infected, immediately gets tested, linked, retained in pre-ART care and initiates ART as soon as they become eligible, all adhere to ART and there is zero dropout.*
2. *In the absence of interventions, test the contribution of each “stage” of care on DALYs accrued and mortality. For example, for testing pre-ART retention: set pre-ART retention parameters to “baseline” levels, allow care upstream and downstream to be perfect.*
3. *Test the impact of our interventions on each “stage” of care on DALYs accrued and mortality. For example, again for testing pre-ART retention: with pre-ART retention parameters at “baseline” levels (care upstream and downtream perfect), test the impact of the pre-ART outreach intervention on reducing DALYs accrued and mortality.*

# Results

1. ***“Perfect Care”***

Baseline= 1,874,647 DALYs accrued between 2010 and 2030.

*This scenario was created by doing the following:*

* Individuals get an HIV-test the very day they become infected (if time >= 2004, when testing starts)
* The mean time to seeking care through VCT / PICT is 1 day, so people seek care all the time.
* All tested individuals are linked to care.
* Once linked, all individuals receive a CD4 test, none are lost from care
* Receive the CD4 test result the very next day (on average).
* If not eligible, the follow-up test is the next day. (PICT / VCT rates are competing here so everyone is seeking care all the time).
* If eligible, start ART the next day.
* 100% adherence to ART
* 0% dropout from ART.

This scenario was created in an attempt to understand “if HIV care is perfect, no leaks, immediate testing and treatment, whats the cost in terms of DALYs accrued and mortality?”

1. **Contribution of each stage of care to DALYs accrued and mortality**

jjo11:cascade:CareCascadeV2:December:18th:LeaksNew:plots:additionalDalysDueToImperfectCare.pdfjjo11:cascade:CareCascadeV2:December:18th:LeaksNew:plots:mortalityDueToImperfectCare.pdf