**Figure S1. Schematic representation of disease progression on ART in the mathematical model.** Solid arrows represent natural disease progression, dashed arrows switching with viral load monitoring and dotted arrows switching with CD4 monitoring. Immunologic failure can be caused either by virologic failure (\*) or other causes (\*\*). The patient can also proceed to death or LTFU from any of the shown stages**.**

1st-line ART with virologic and immunologic\*\* failure

Successful 2nd-line ART

2nd-line ART with virologic failure

2nd-line ART with immunologic\*\* failure

2nd-line ART with virologic and immunologic\* failure

2nd-line ART with virologic and immunologic\*\* failure

1st-line ART with virologic and immunologic\* failure

Successful 1st-line ART

1st-line ART with virologic failure

1st-line ART with immunologic\*\* failure