Statistical Analysis Plan

Study Title	MaxART: The Effect of Early Access to ART for All in Swaziland on Economic Outcomes
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Analysis Plan

We will estimate the intent-to-treat (ITT) effect based on the exposure status of the health facility at the point in time at which the patient was interviewed (see *Figure 1*). The transition period will be considered to be part of the intervention phase. For continuous outcomes (healthcare/other expenditures, productivity, standard of living), we will employ a mixed-effects generalized linear regression model. For the binary outcome of employment, we will use a log-linear Poisson regression with a robust error structure (see Zou, 2004), with the resulting risk ratios representing the treatment effect. Following Hussey and Hughes (2007), we will include a fixed effect for secular trends and a clinic-level random effect. In a subsequent step, the assumption of an underlying secular trend that is identical across all clusters and treatment time points will be relaxed. Accordingly, we will run model extensions in which we allow for random variation in the secular trend across clusters as well as for treatment effect heterogeneity across clusters and time (see Hemming et al., 2017). For all outcomes, we will show results from both models that do and that do not adjust for participants' characteristics, with the rationale for adjusting for such characteristics being that it can reduce small sample biases and improve precision.

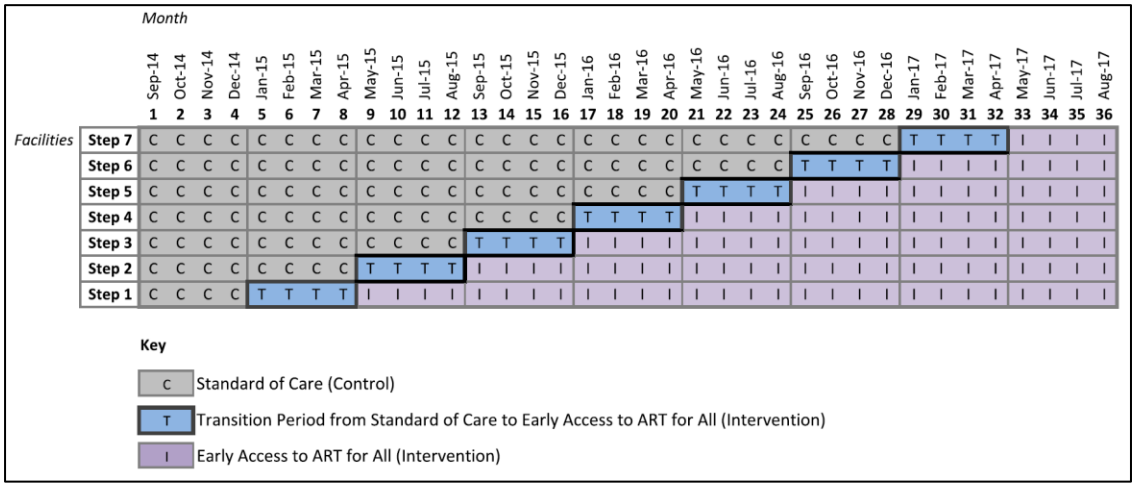

Figure 1. Stepped-wedge study design

References

Hemming, K., Taljaard, M., & Forbes, A. (2017). Analysis of cluster randomised stepped wedge trials with repeated cross-sectional samples. Trials, 18(1), 101. https://doi.org/10.1186/s13063-017-1833-7

Hussey, M. A., & Hughes, J. P. (2007). Design and analysis of stepped wedge cluster randomized trials. Contemporary Clinical Trials, 28(2), 182–191. https://doi.org/10.1016/j.cct.2006.05.007

Zou, G. A (2004). Modified poisson regression approach to prospective studies with binary data. American Journal of Epidemiology, 159(7), 702-706.