Institute of Primate Research

STANDARD OPERATING PROCEDURE (SOP) DOCUMENT

Evaluating disease control programs (epidemiological and cost-effectiveness frameworks)

SOP No.	Issue Number	Issue Date	Revision Status	Revision Date
SOP/KIPRE/RPD/DSAS/3.1.76	Version 01	October 2025	-	-

Approvals

	Name	**Signature**	**Date**
Developed by:	_Patrick Waweru Mwaura_	_____	**_6th October; 2025_**
	_____	_____	_____
	_____	_____	_____
Reviewed by:	_____	_____	_____
Approved by:	_____	_____	_____

Table of Contents

1. PURPOSE

To provide a standardized framework for the **evaluation of disease control programs**, integrating:

- **Epidemiological analyses** to assess program impact on disease incidence, prevalence, and transmission dynamics.
- **Cost-effectiveness assessments** to quantify the economic efficiency of interventions.
- **Evidence-based decision-making** for program optimization, policy guidance, and resource allocation.
- Alignment with **institutional SOPs 1–10**, ethical standards, and national/international guidelines (e.g., WHO, GBD, CHEERS 2022).

2. SCOPE

Applies to all disease control programs supported by DS&AS, including biomedical, ecological, and primatological health interventions. Covers:

- Epidemiological modelling and surveillance data analysis.
- Economic evaluation, including cost-effectiveness, cost-utility, and cost-benefit analyses.
- Integration of outputs into program decision-making, reporting, and publications.

3. PERSONS RESPONSIBLE

- **Principal Investigator (PI):** Provides program objectives, epidemiological data, and context.
- **DS&AS Epidemiologist / Biostatistician:** Conducts epidemiological analyses and cost-effectiveness modelling.
- **Health Economist (if available):** Supports economic evaluation and interpretation.
- **Head of DS&AS:** Reviews methodology, approves final evaluation, ensures alignment with institutional policies.
- **Director of Research & Product Development:** Reviews institutional-level reports and recommendations.

4. FREQUENCY

- **Baseline Evaluation:** Prior to program implementation.

- **Mid-Program Evaluation:** Periodic assessment (annually or as specified in program plan).
- **End-of-Program Evaluation:** Comprehensive analysis at completion.
- **Triggered Evaluation:** When significant program changes, outbreaks, or funding reviews occur.

5. MATERIALS

- **Epidemiological Models:** Tools for survival analysis, transmission dynamics, regression, and disease progression modelling.
- **Cost-Effectiveness Analysis (CEA) Templates:** Standardized forms for calculating incremental costs, outcomes, and ICERs.
- **Health Outcome Measures:** DALYs (Disability-Adjusted Life Years), QALYs (Quality-Adjusted Life Years), incidence and prevalence reduction metrics.
- **Guidelines:** National health program evaluation frameworks, institutional protocols, and international standards (WHO, GBD, CHEERS).
- **Software and Tools:** R, SAS, Python, Excel, and other modelling platforms for epidemiological and economic analyses.

6. PROCEDURE

1. **Planning:**

   • Define clear evaluation objectives, target population, interventions, comparators, and relevant outcomes.

   • Ensure alignment with SOPs 1–5 (Policies, Study Design, SAPs, Reporting, Data Management).

2. **Data Collection:**

   • Gather epidemiological surveillance data, program activity data, and cost/expenditure data.

   • Verify data quality, completeness, and compliance with SOPs 6–9 (Data Access, Storage, Workflow, Sharing).

3. **Epidemiological Analysis:**

   • Apply appropriate statistical and modelling methods (e.g., regression, survival

analysis, transmission models) to assess program impact on disease incidence, prevalence, or survival outcomes.

• Conduct sensitivity analyses where applicable.

4. **Cost-Effectiveness Analysis (CEA):**

   • Compute incremental costs and health outcomes to derive ICERs (e.g., cost per DALY or QALY averted).

   • Perform sensitivity and scenario analyses to test robustness of findings.

5. **Validation:**

   • Internal peer review within DS&AS to ensure methodological soundness, reproducibility, and compliance with SOPs and regulatory guidelines.

6. **Reporting:**

   • Prepare evaluation reports, dashboards, and policy briefs summarizing epidemiological and economic findings.

   • Highlight recommendations for program optimization and policy decision-making.

7. **Dissemination:**

   • Share outputs with institutional leadership, program stakeholders, policymakers, and, where appropriate, the public or scientific community.

   • Archive final reports, datasets, and analysis scripts in DS&AS repositories for reproducibility and future reference.

7. REFERENCES

1. DS&AS SOP 1 – Policies and Strategies.
2. DS&AS SOP 3 – Study Design and Statistical Consultation.
3. DS&AS SOP 4 – Statistical Analysis Plans (SAPs).
4. DS&AS SOP 5 – Reporting Research Results.
5. DS&AS SOP 9 – Data Sharing, Anonymisation, and Compliance.
6. Kenya Data Protection Act (2019).
7. WHO. **Guide to Program Evaluation for Disease Control**. Geneva: WHO; 2017.
8. Drummond MF, et al. **Methods for the Economic Evaluation of Health Care Programs**, 4th Edition, Oxford University Press; 2015.

9. CHEERS 2022 Guidelines – Consolidated Health Economic Evaluation Reporting Standards.
10. Global Burden of Disease (GBD) Study methodological guidelines.

7.1.1 8. APPENDICES

Appendix 11.1 – Evaluation Templates

- Epidemiological analysis plan template
- Cost-effectiveness analysis (CEA) template
- Sensitivity analysis template
- Data validation checklist

Appendix 11.2 – Example KPIs and Metrics

- Reduction in incidence and prevalence rates
- DALYs/QALYs averted
- Incremental cost-effectiveness ratios (ICERs)
- Program coverage and adherence metrics

Appendix 11.3 – Data Sources

- Routine surveillance datasets
- Program monitoring data
- Cost and expenditure records

Appendix 11.4 – Reporting and Dashboard Formats

- Standard report template for internal and external dissemination
- Dashboard layout for visualizing epidemiological and economic outcomes