

# A framework to implement SOPs in a FSL

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## **Standard Operating Procedure**

*Laboratory evidential material reception*

# Expectations

- Detailed description of an SOP (background information)
- Describe the steps in drafting an SOP,
- Briefly explain the SOP Implementation, and
- Describe the SOP management circle

# Background

- **Definition:**
  - SOPs are a step by step description of methods and procedures performed in a Laboratory/facility.
- **Goal**
  - To provide a consistent repeatable process, relevant to all forensic Laboratory procedures.

# Background...

- **Importance**

- SOPs are an integral component of the forensic quality management system.
- Describe what, why, how, when, and who
- Brings about operational efficiency
- Enables uniformity in performing specific Laboratory tasks
- Guarantees reproducibility and repeatability of results
- Enhances conformity/compliance to technical and quality system requirements
- Promotes training of new staff

# Background...

- **Typical SOP**
  - Contains all information necessary to performing a task
  - Is equipment and procedure specific
  - Is detailed, concise, and legible
  - Provides Quality Control information
  - Is referenced

# Background...

- **SOP elements**
  - Title page,
  - Table of Contents (SOPs longer than 10 pages)
  - Purpose,
  - Procedure(s),
  - Quality Assurance/Quality Control, and
  - References.

# Background...

- **Scope of SOPs:**
  - SOPs. for making SOPs of respective tasks .
  - SOPs for receiving and registration of evidential material/samples.
  - SOPs for safety precautions.
  - SOPs for operating forensic laboratory equipment.
  - SOPs for forensic analytical methods.
  - SOPs for reagent preparations.
  - SOPs for Quality Assurance.
  - SOPs for forensic databases management.
  - SOPs for waste disposal'
  - SOPs for complaint handling, etc

# SOPs writing

- **When writing SOPs, think about:**
  - Layout:
    - maximum of two levels of headings
    - bulleted or numbered lists or table
  - Legibility and readability:
    - clear font and font size,
    - simple words,
    - simple sentences,
    - add drawings or charts
  - Comprehensibility:
    - Use job aids
  - Accessibility:
    - Placed close to the bench for easy access

It should be written by a person who knows the procedure



# SOPs writing

- **Title page**

- a title, an identifier number, date of issue and/or revision, the applicable entity, Signatures and Dates

The National Forensic Science and Biometrics Department

Republic of Zambia

REF: NFSBD-SOP-001.1

## **Standard Operating Procedure**

### *Laboratory evidential material reception*

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Approved by: Innocent

Date: September, 2022

Date: September, 2022

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# SOPs writing

- **Table of Contents (SOPs longer than 10 pages)**
  - Only applicable to SOPs longer than 10 pages (as the rule of thumb)
  - Table of contents makes it easier to use and find content of the SOP relevant to the user.
  - Helps in summarizing the document

## Table of Contents

1. Overview .....	3
2. Facilities.....	4
3. Equipment Quality Control and Maintenance .....	7
4. Quality Assurance .....	13
5. Evidence Evaluation and Handling.....	22
6. Alternate Light Source .....	26
7. Blood Detection .....	34
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10. Contact DNA Collection.....	47
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# SOPs writing

- **Purpose**

- Describes the goals/objectives of the document.

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## Purpose

To outline the steps required for the Laboratory receipt/rejection of the evidential material/samples for forensic analysis. The document will also outline steps required for pre and post analysis storage and distribution of material/samples to other forensic facilities/laboratories for testing or archiving.

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# SOPs writing

- **Scope**

- Describes the category of staff to which the document applies.
- Answers the “Who performs what”

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## Scope

This SOP applies to all forensic Laboratory personnel who receive and distribute evidential material/samples for forensic analyses.

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# SOPs writing

- **Procedure**

- This forms the main and largest part of the document and may have subheadings depending on the number of tasks covered.
- It contains the step-by-step explanations of how to perform a particular task or a number of tasks,
- It may contain additional information pertinent to undertaking the tasks.

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Procedures

**1. Precaution**

Wear gloves and mask when handling forensic material/samples for safety and maintenance of material/sample integrity.

**2. Specimen receipt procedures**

- I. Check laboratory request form for the following information:
  - a. Date
  - b. Case file #
  - c. Names for the requesting police Officer/Station/Division/Formation
  - d. Seal #
  - e. Date and time of specimen collection

# SOPs writing

- **Quality Assurance/Quality Control**

- Describes matters related to calibration and standardization of equipment ,
- Contains information of how to perform quality control measures.
- It describes the types of quality controls measures to be undertaken

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Quality Control measures

Ensure that the Laboratory case file number is correctly and clearly recorded on all the associated documents, and evidential material/samples.

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# SOPs writing

## ● References

- Lists all the sources of the material used in the writing of the SOP
  - Source(s) of the SOP outline.
  - Source(s) of the Procedure(s).
  - Source(s) of the Background information. e.t.c
- These sources may include;
  - Manuals
  - the manufacturer's information sheet
  - Textbooks
  - Journal articles, or
  - Publications

The National Forensic Science and Biometrics Department

Republic of Zambia

### References |

1. Barbé, B., Verdonck, K., Mukendi, D., Lejon, V., Lilo Kalo, J. R., Alirol, E., Gillet, P., Horié, N., Ravinetto, R., Bottieau, E., Yansouni, C., Winkler, A. S., van Loen, H., Boelaert, M., Lutumba, P., & Jacobs, J. (2016). The Art of Writing and Implementing Standard Operating Procedures (SOPs) for Laboratories in Low-Resource Settings: Review of Guidelines and Best Practices. *PLoS Neglected Tropical Diseases*, *10*(11), 1–12.

# SOPs Implementation

- **When implementing the SOPs:**
  - Test for its readability
  - Must be approved by the Lab management
  - Distribute timeously
  - Ensure it is accessible to the target staff
  - Train the target staff on SOPs
  - Plan for periodic revisions and updating
  - Provide for continuous support
  - Enforce the SOPs by conducting regular site visits



# SOPs Implementation...

- **SOPs acknowledgement;**
  - All the target staff **MUST** acknowledge in the SOP to have read and understood the contents of the SOP

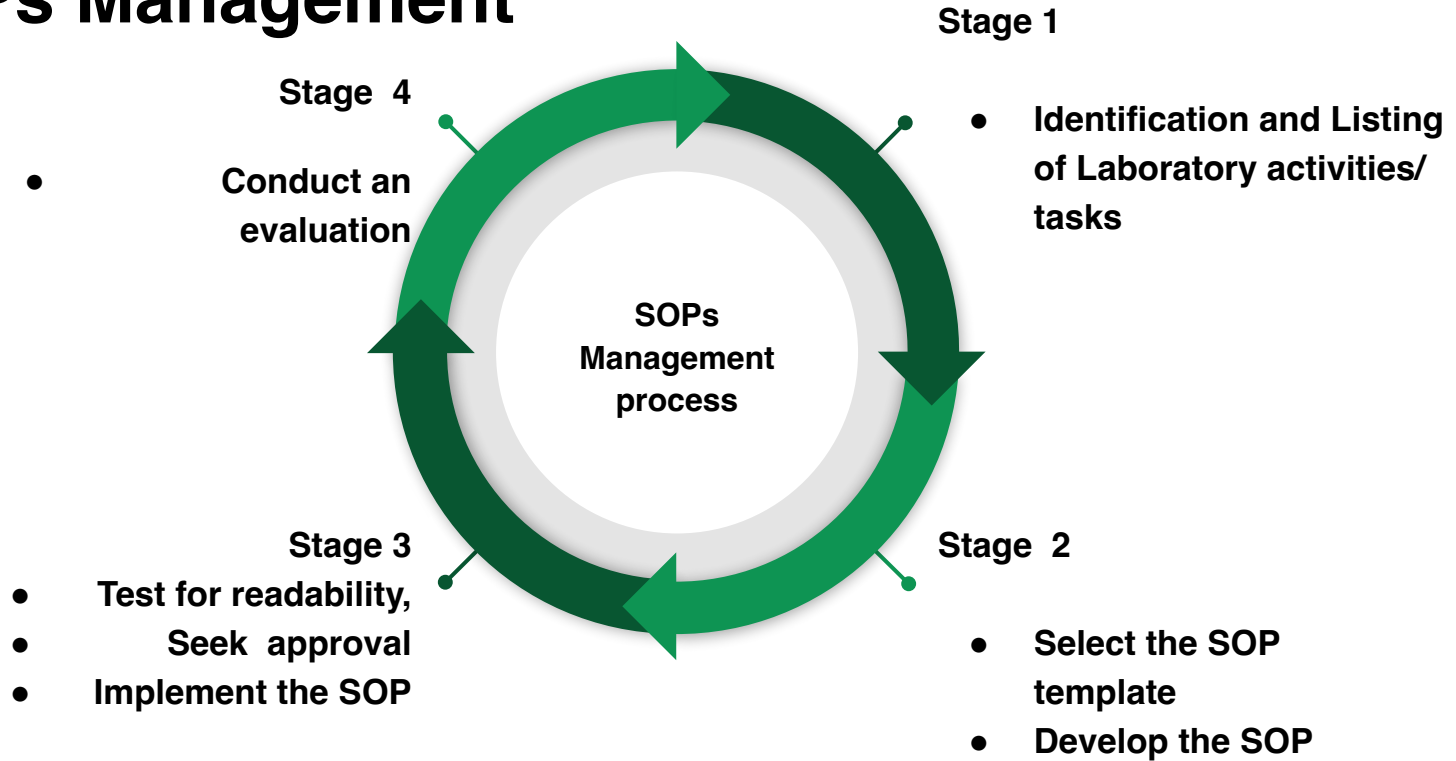
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Implementation

This SOP has been read and understood by:

Name	Designation	Date
1.		
2.		
3.		
4.		
5.		
6.		
7.		

# SOPs Management



# Minimum required technical SOPs in a Forensic DNA Lab

1. Material/Sample reception
2. Sample preparation
3. Fluid identification
4. Extraction
5. Set-up
6. Quantification
7. Amplification
8. Genetic analysis
9. Result analysis
10. Report writing

# References

1. World Health Organization (WHO). Laboratory Quality Management System Handbook. 2011. Geneva: WHO; 2011. [http://apps.who.int/iris/bitstream/10665/44665/1/9789241548274\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/44665/1/9789241548274_eng.pdf)
2. Barbé, B., Verdonck, K., Mukendi, D., Lejon, V., Lilo Kalo, J. R., Alirol, E., Gillet, P., Horié, N., Ravinetto, R., Bottieau, E., Yansouni, C., Winkler, A. S., van Loen, H., Boelaert, M., Lutumba, P., & Jacobs, J. (2016). The Art of Writing and Implementing Standard Operating Procedures (SOPs) for Laboratories in Low-Resource Settings: Review of Guidelines and Best Practices. *PLoS Neglected Tropical Diseases*, 10(11), 1–12. <https://doi.org/10.1371/journal.pntd.0005053>
3. Environmental Protection Agency, U. S. (2007). Guidance for Preparing Standard Operating Procedures ( SOPs ). Epa, April, 1–55. <http://www.epa.gov/QUALITY/qs-docs/g6-final.pdf>
4. Sachowski, J. (2016). Map Investigative Workflows. Implementing Digital Forensic Readiness, 113–128. <https://doi.org/10.1016/b978-0-12-804454-4.00011-3>
5. SWGDE. (2004). SWGDE/SWGIT Recommended Guidelines for Developing Standard Operating Procedures. 7, 1–9. <https://www.swgde.org/documents/Archived Documents/2004-11-15 SWGDE-SWGIT Recommended Guidelines for Developing SOPs v1.0>



*Thank You!*