WCAF v2.0 User Manual: Laboratory Waste Calculation & Forecasting

This manual provides a comprehensive guide to navigating and utilizing the **Waste Calculation and Forecasting (WCAF) v2.0 tool**.

The Waste Cost Assessment Framework (WCAF) v2.0 is a tool to support laboratories with a standardised format for forecasting waste disposal costs for infectious disease testing (eg HIV viral load (VL) and early infant diagnosis (EID), hepatitis C & B, HPV, Tuberculosis (TB) and COVID-19) to develop an estimated annual budget for proper waste management at the laboratory level. This tool was co-developed by US CDC and Roche Diagnostics under a public-private partnership for the waste generated by laboratories in PEPFAR-supported countries. It is supplier agnostic, making it useful to calculate volumes of solid and liquid waste across centralised and point of care platforms used in the country. Thanks to the country teams who supported the development and assessment of the tool: Ethiopia, Eswatini, Kenya, Lesotho, Malawi, Nigeria, Uganda, Zambia, Zimbabwe. For any questions around the use of the waste management tool please contact Monte D. Martin, gqe5@cdc.gov and David Bressler dpb8@cdc.gov.

Pre-Session Data Checklist

Before you begin your session in the **WCAF v2.0 tool**, ensure you have the following information and data points ready to ensure an accurate calculation.

A. Laboratory & Disease Profile

a. **Laboratory Identification:** Basic details regarding your facility.
b. **Disease Scope:** A list of the specific infectious diseases your lab tests for that you wish to include in the cost analysis.
c. **Analyzer Inventory:** A complete list of all analyzers currently used for the selected infectious diseases.

B. Testing Volume Data

a. **Historical Volume:** Total test volumes recorded for the previous year.
b. **Projected Volume:** Estimated test volumes anticipated for the upcoming year.
c. **Workload Allocation:** The percentage of testing volume assigned to each specific analyzer (e.g., if multiple platforms are used for the same test, know the split such as 70% to Platform A and 30% to Platform B).

C. Waste Management & Logistics

a. **Waste Handling Percentages:** An estimate of what percentage of your packaging waste is currently disposed of, recycled, or reused.
b. **Disposal Methods:** Details on your specific methods for off-site disposal for liquid, solid, and recycled waste.
c. **Internal Costs:** Data regarding waste administration, handling personnel, and the cost of waste containers.
d. **External Costs:** Information on disposal permits, off-site treatment fees, and autoclave operation costs.
e. **Transportation Costs:** Current rates for the transport of various waste types to disposal sites.

D. Financial Information

a. **Currency Conversion:** The current exchange rate to convert your local currency into United States dollars (USD).
b. **Funding Details (Optional):** Information regarding your funding sources and how those funds are distributed

---

1. Getting Started

To begin your session, access the WCAF v2.0 tool via the provided web link.

- **Authentication:** Sign up for a new account to get started or Log In if you are a returning user.
- **Navigation:** Throughout the tool, click **'Next'** or **'Continue'** after each step to save your progress and proceed to the next section.
- **Session Management:** From the Overview page, you can select **'Start New Session'** or access saved work to pick up where you left off.

---

2. Preparation and Requirements

Before entering data, the tool guides you through a preparation phase to ensure accuracy.

- **Dashboard & Instructions:** Review the high-level overview of the tool's structure and proceed to the **'Instructions'** section designed for Lab Heads.
- **Data Requirements:** The Requirements page lists all necessary data points and potential sources.

- **Need help?** Click the **'?' icon** next to any item for an explanatory note regarding that specific data point.

---

3. Building Your Laboratory Profile

This stage involves inputting core operational data used to calculate waste and testing costs.

Step	Section	Action Required
1	**Lab Details**	Enter basic laboratory identification and information.
2	**Disease Selection**	Select the specific infectious diseases to include in your costing calculation.
3	**Test Volumes**	Input test volumes from the previous year and projected volumes for the upcoming year.
4	**Equipment Setup**	Select the analyzers used for your chosen diseases. Use the **"Add Analyzer"** button to list your full inventory.

---

4. Mapping Tests to Platforms

After setting up your equipment, you must allocate workload to your chosen analyzers.

- **Allocation:** Assign a percentage of the total workload for each test to a specific platform.
- **Balancing:** Ensure the total allocation for each test category equals **100%**.
    - *Example:* For HIV Viral Load (HIVVL), you might assign 70% to an Abbott Alinity m and 30% to a Hologic Panther.

5. Waste Generation & Cost Analysis

The tool breaks down waste into several categories to provide a granular view of your lab's output.

Waste Categories

The tool generates a comprehensive breakdown of:

- Assay-related waste (Packaging, Solid, and Liquid).
- Analyzer-specific waste.
- Personal Protective Equipment (PPE).

Cost Calculation

1. **Internal Costs:** Input data for administration, handling, and waste containers.
2. **External Costs:** Complete sections for disposal permits, off-site treatment, and autoclave operation costs.
3. **Logistics:** Provide costs for transportation and disposal based on your specific off-site methods for liquid, solid, and recycled waste.

---

6. Finalizing the Budget Report

The final section summarizes your total estimated budget for waste disposal.

- **Currency Conversion:** Enter the current conversion rate to see figures in **United States dollars (USD)**.
- **Additional Details:** You may optionally include funding sources, distribution info, and additional notes.
- **Exporting Results:** Once finalized, the tool generates a summary table of forecasted costs. You can **Save**, **Print**, or **Download as a CSV file**.
