

CLINICAL MICROBIOLOGY – SETUP & RESULTING

MODERATED USABILITY TESTING

PROTOTYPE EVALUATIONS – ROUND 2

PREPARED BY

ROSSANA BABAKHANI

UX RESEARCHER & DESIGNER

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OVERVIEW

This second round of usability testing evaluated the interactive prototype for the Clinical Microbiology Setup & Resulting workflow. The prototype incorporated design refinements based on findings from the initial wireframe evaluation and focused on validating end-to-end workflows, navigation, task efficiency, and overall usability prior to development.

Participants completed representative Clinical Microbiology workflows while providing feedback on workflow alignment, navigation, task efficiency, and overall usability. The sessions also evaluated whether design changes introduced after the wireframe evaluation successfully addressed previously identified concerns and supported real-world laboratory workflows.

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STUDY SNAPSHOT

DETAIL	DESCRIPTION
Project	Clinical Microbiology Setup & Resulting
Evaluation	Interactive Prototype (Round 2)
Research Method	Moderated Usability Testing
Participants	5 Clinical Microbiology client representatives
Session Length	Five 60-minute individual sessions
Format	Remote, one-on-one
Prototype	Interactive high-fidelity prototype
Primary Focus	Workflow validation, navigation, task efficiency, and usability

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RESEARCH PROGRESS

This study built upon the findings from the initial wireframe evaluation by validating design refinements incorporated into the interactive prototype.

METRIC	ROUND 1	ROUND 2
Prototype Evaluated	Low-fidelity wireframes	Interactive high-fidelity prototype
Participants	5	5
Session Length	Five 60-minute sessions	Five 60-minute sessions
Primary Goal	Validate workflow concepts and information architecture	Workflow validation, navigation, task efficiency, and usability
Outcome	Identified terminology, workflow, and information architecture improvements	Validated workflow direction; identified opportunities to improve workflow efficiency, onboarding, and terminology adoption

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STUDY DETAILS

The evaluation consisted of moderated usability testing sessions conducted using an interactive prototype. Participants completed representative Clinical Microbiology workflows while thinking aloud and providing feedback on workflow alignment, navigation, efficiency, and usability. A moderator guided each session, observed participant interactions, and documented usability observations and participant feedback.

Research Method

- **Method:** Moderated usability testing
- **Prototype:** Interactive high-fidelity prototype
- **Session Length:** 60 minutes
- **Participants:** 5 client representatives
- **Format:** Remote, one-on-one sessions
- **Approach:** Scenario-based task completion using representative Clinical Microbiology workflows

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PARTICIPANTS

Five Clinical Microbiology professionals representing client laboratories participated in the study. Participants had extensive experience performing routine microbiology workflows and evaluated the prototype using realistic laboratory scenarios. Their feedback reflected current laboratory practices, workflow expectations, and operational requirements.

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RESEARCH OBJECTIVES

- Validate workflow refinements introduced after the wireframe evaluation.
- Evaluate the usability of the interactive prototype.
- Assess workflow efficiency across common microbiology tasks.
- Validate navigation between specimen-related information.
- Identify remaining usability concerns prior to development.
- Confirm whether previous research findings had been successfully addressed.

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TASKS EVALUATED

Participants completed representative Clinical Microbiology workflows including:

- Locating work from the backlog.
- Creating personalized worklists from the backlog.
- Completing specimen setup.
- Reviewing automatically configured plates.
- Adding or removing plates when appropriate.
- Navigating between specimen pages.
- Reviewing specimen summary information.
- Reviewing specimen documents.
- Adding observations to plates.
- Completing resulting activities.

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DESIGN CHANGES VALIDATED

The interactive prototype incorporated several improvements based on findings from the wireframe evaluation.

DESIGN CHANGE	VALIDATION OUTCOME
Increased visibility of specimen comments	Participants found important information easier to locate.
Interactive end-to-end workflow	Successfully validated through representative laboratory scenarios.
Personalized worklists	Highly valued for organizing daily work.
Material navigation refinements	Became intuitive after brief use and was viewed positively.
Workflow refinements	Supported successful task completion; participants continued to perceive an increase in workflow interactions.

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KEY FINDINGS

KF-01

Shared Terminology Increased the Learning Curve

MEDIUM

OBSERVATION

Participants continued to experience confusion with terminology throughout the application. This finding was consistent with the wireframe evaluation.

EVIDENCE

Participants questioned terminology that differed from their current Clinical Microbiology systems and occasionally required clarification during testing.

IMPACT

Continued terminology confusion may extend onboarding time for new users, though it occurred only occasionally this round and did not prevent task completion.

RECOMMENDATION

The terminology supports both Clinical and Environmental laboratory workflows within a shared platform and therefore could not be modified for this feature. Support adoption through user training, onboarding, and product documentation.

clinisys

Home > Samples > Processing

Chris West

Processing

Bin Batch resulting

Batches

Incubation 70 2 added since last... Gram Stain 135 20 Stat, 115 Routine Task 3 50 20 Stat, 115 Routine Task 4 50 20 Stat, 115 Routine Task 5 50 20 Stat, 115 Routine Task 6 50 20 Stat, 115 Routine Task 7 100 20 Stat, 115 Routine

Manage tiles

Incubation

Binocular / Container ID 123451-A-1

Lab Order ID	Lab Container ID	Patient Identifier	Patient Name	Matrix	Collection Procedure	Collection Date	Test Code	Analyte List	Priority	Active Status
ORD12345	UR001234	PT123456	Pat Patient	Urine	Clean Catch	03/01/2025	Culture	Incubation	Routine	Waiting
ORD12345	UR001234	PT123456	Pat Patient	Urine	Clean Catch	03/01/2025	Culture	Incubation	Routine	Waiting
ORD12345	UR001234	PT123456	Pat Patient	Urine	Clean Catch	03/01/2025	Culture	Incubation	Routine	Waiting
ORD12345	UR001234	PT123456	Pat Patient	Urine	Clean Catch	03/01/2025	Culture	Incubation	Routine	Waiting
ORD12345	UR001234	PT123456	Pat Patient	Urine	Clean Catch	03/01/2025	Culture	Incubation	Routine	Waiting
ORD12345	UR001234	PT123456	Pat Patient	Urine	Clean Catch	03/01/2025	Culture	Incubation	Routine	Waiting
ORD12345	UR001234	PT123456	Pat Patient	Urine	Clean Catch	03/01/2025	Culture	Incubation	Routine	Waiting
ORD12345	UR001234	PT123456	Pat Patient	Urine	Clean Catch	03/01/2025	Culture	Incubation	Routine	Waiting
ORD12345	UR001234	PT123456	Pat Patient	Urine	Clean Catch	03/01/2025	Culture	Incubation	Routine	Waiting
ORD12345	UR001234	PT123456	Pat Patient	Urine	Clean Catch	03/01/2025	Culture	Incubation	Routine	Waiting

Rows per page: 10 1-10 of 70

KF-02

Material-Based Navigation Was Well Understood After Initial Use

● LOW

OBSERVATION

Participants initially required time to understand the material-based navigation model. After completing representative workflows, most participants viewed the organization positively.

EVIDENCE

Users reported that once they understood the relationships between materials, navigation became intuitive and provided a clear representation of the specimen lifecycle.

IMPACT

The initial learning curve may create brief friction for new users, but does not appear to affect usability once the navigation model is understood.

RECOMMENDATION

Continue refining onboarding materials and visual cues that reinforce material relationships during initial system adoption.

The screenshot displays the Clinisys Sample Processing interface. At the top, the header shows the Clinisys logo and navigation links: Home, Samples, and Processing. The main content area is divided into several sections:

- Sample Processing Header:** Includes fields for Name (Kensington, Wilamena Katrina), DOB (14-Dec-1993 (31y)), Client (Raleigh Medical Center), MRN (IMHSI 12345678), Billing Account Number (6543656), Encounter Type (Inpatient), and Encounter Location (7 North (7N)).
- Materials Section:** A sidebar on the left lists materials under the category 'Urine'. It includes:
 - A** (Urine Cup) - Received
 - A-1** (Chocolate Agar) - Ordered
 - A-2** (MacConkey Agar) - Ordered
 - A-3** (Slide) - Complete
- Chocolate Agar (12345-A-1) Task Card:** A detailed view of the 'Incubation' task. It includes:
 - Instrument:** Input
 - Analyte:** Incubation
 - Status:** Active
 - Comments:** 0 Comments
 - CC:** Input
 - Textual:** Input
 - Spiked?** Radio button
 - Analyst:** Chris West
 - Run Date:** 03/11/2025
 - Run Time:** 10:00
- Preliminary ID Task Card:** A detailed view of the 'Preliminary ID' task. It includes:
 - Instrument:** Input
 - Analyte:** Preliminary ID
 - Status:** Active
 - Comments:** 0 Comments
 - CC:** Input
 - Textual:** Input
 - Organism:** Gram Positive Cocci
 - Analyst:** Chris West
 - Run Date:** 03/11/2025
 - Run Time:** 10:00
- Waiting Tasks and Other Actions:** Sections at the bottom for managing tasks and actions.

KF-03

Workflow Efficiency Requires Objective Measurement

● HIGH

OBSERVATION

Participants consistently perceived that the prototype required substantially more clicks than their current laboratory systems.

EVIDENCE

Although participants successfully completed representative workflows, they described the task-based workflow as requiring additional navigation and interaction. The feedback reflected perceived workflow effort rather than measured inefficiency.

IMPACT

If perceived inefficiency reflects a genuine increase in interaction effort, it could affect adoption and daily productivity; since this round captured perception rather than measured data, the actual effect on efficiency is unconfirmed and should be validated objectively before development proceeds.

RECOMMENDATION

Conduct a Consumption Report (Cost of Interaction analysis) comparing the current workflow with the proposed design. Measure objective interaction metrics—including clicks, navigation steps, screens visited, and task completion effort—to determine whether the proposed workflow introduces additional effort or simply redistributes interactions. Use these findings to guide future workflow optimization.

KF-04

Increased Context Improved Workflow Awareness

● LOW

OBSERVATION

Participants appreciated the increased visibility of specimen comments and contextual information throughout the workflow.

EVIDENCE

Users reported that having comments readily available reduced the need to navigate to other areas of the application to retrieve important specimen information.

IMPACT

Surfacing this information directly in the workflow reduces navigation overhead and appears to meaningfully improve efficiency during resulting tasks.

RECOMMENDATION

Continue surfacing high-value specimen context throughout the workflow while maintaining a clean and uncluttered interface.

The screenshot displays the Clinisys Sample Processing interface. The top navigation bar includes the Clinisys logo and a breadcrumb trail: Home > Samples > Processing. The main header shows the sample name 'Kensington, Willamena Katrina', birth date '14-Dec-1993 (31y)', and the facility 'Raleigh Medical Center'. The procedure is 'Incubation' with a container ID 'Input'. The materials section on the left lists 'Urine' with a 'Clean Catch' note, and 'Chocolate Agar (12345-A-1)' which is 'Ordered'. The 'Ready Tasks' section on the right shows the 'Incubation' task with fields for 'Instrument' (Input), 'Analyte' (Incubation), 'Status' (Active), 'Comments' (a link to 'Comments'), 'CC' (Input), and 'Textual' (Input). Below this, the 'Preliminary ID' section shows 'C12345-1' as the 'CC' (Input), 'Organism' (Gram Positive Cocci), 'Analyst' (Chris West), and 'Run Date' (03/11/2025). The bottom section shows 'Waiting Tasks' and 'Other Actions'.

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VALIDATED DESIGN DECISIONS

The study confirmed several design decisions that effectively supported Clinical Microbiology workflows.

Task-Based Workflow: Confirmed the task-based workflow supports representative Clinical Microbiology activities.

Personalized Worklists: Participants consistently valued the ability to organize and prioritize work directly from the backlog.

Material-Based Navigation: Although unfamiliar initially, participants reported that the organization became intuitive after working through representative scenarios.

Increased Contextual Information: Improved visibility of comments and specimen details reduced the need to navigate elsewhere for critical information.

Automatic Plate Configuration: Participants continued to support backend-driven plate generation while allowing additional plates to be added or removed, when appropriate.

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PRIORITIZED RECOMMENDATIONS

PRIORITY	RECOMMENDATION	TIMELINE
High	Conduct a Consumption Report comparing the current and proposed workflows	Before Development
High	Continue enhancing personalized worklists	Future Design Iterations
Medium	Improve onboarding for the material-based navigation model	Product Adoption
Medium	Continue increasing visibility of contextual specimen information	Future Design Iterations
Low	Support shared terminology through training and documentation	Implementation

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RESEARCH IMPACT

The second round of usability testing provided confidence that the proposed workflow aligned with the needs of Clinical Microbiology users while identifying targeted opportunities for refinement prior to development, and confirmed the validated design decisions summarized in Section 10.

Design Improvements Influenced by Research

- Validated the introduction of personalized worklists.
- Reinforced the value of increased visibility of specimen comments and contextual information.
- Identified workflow efficiency as the next area requiring objective analysis.
- Confirmed the need for onboarding to support adoption of the material-based navigation model.
- Reinforced the decision to maintain shared terminology across the Clinical and Environmental platforms.

Outstanding Considerations

- Conduct a Consumption Report (Cost of Interaction analysis) to objectively compare workflow efficiency.
- Continue evaluating opportunities to optimize navigation without compromising workflow flexibility.
- Support adoption of shared terminology through documentation and onboarding.
- Continue refining onboarding materials to reduce the initial learning curve.

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RESEARCH OUTCOME

The interactive prototype successfully validated the overall workflow direction established during the initial wireframe evaluation. Participants completed representative workflows successfully and responded positively to key design improvements, including personalized worklists, increased visibility of contextual information, and the refined material-based navigation model.

The remaining feedback focused primarily on adoption and workflow optimization rather than fundamental usability concerns. Overall, the findings indicate that the proposed solution is well-positioned to progress into development while continuing to refine workflow efficiency through objective interaction analysis.