MDFORLIVES FULL INSIGHT REPORT

Laboratory Accessioning: Why Manual Work Still Slows Pre-Analytic Flow

A laboratory-operations report on the pre-analytic work that happens before testing: order intake, specimen identification, accessioning, clarification, status calls, barcode tracking, LIS integration, and the technology priorities leaders believe could remove the most manual friction.

Order intake → specimen receipt → identification → accessioning → clarification → tracking → LIS integration

9	3	77.8%
Survey records	Countries represented USA · UK · Canada	Completion rate

WHY THIS REPORT

Accessioning is where laboratory quality, interoperability, and physical specimen control have to work at the same time

The pre-analytic phase begins before an analyzer ever sees the sample. CLSI PRE01, published in 2024, emphasizes accuracy in examination ordering, patient registration, patient and specimen identification, labeling, transport, and handling across the preexamination process. CAP's 2025 Laboratory Accreditation Program checklist update likewise keeps patient safety and quality at the center as laboratories adopt newer technologies and operating models.

Digital connectivity is now part of that quality problem. ASTP/ONC's 2025 work on laboratory data standards examines interoperability across the workflow from ordering through results exchange, while current interoperability standards continue to define laboratory-order and result-exchange pathways. A laboratory can therefore be highly automated inside the lab and still encounter manual work when orders, identifiers, external interfaces, or specimen status do not flow cleanly across organizational boundaries.

The MDForLives survey focuses on the accessioning layer of that problem from the perspective of laboratory managers, supervisors, and directors. It looks at specimen volume, the most common pre-analytic delay, electronic versus paper intake, manual verification time, clarification delays, status-call interruptions, smart-tracking adoption, LIS integration, and the single operational investment respondents believe would improve efficiency most.

> **Methodology:** The source report contains 9 survey records across the USA, UK, and Canada, with a 77.8% completion rate. Reader-facing statistics reproduce the percentages reported for each question. Administrative tracking, bad-ID, required-text, after-question, and honeypot fields are excluded. Open-ended comments are interpreted qualitatively without assigning theme percentages.

EXECUTIVE SUMMARY

Six signals that explain why accessioning can remain manual inside a digital laboratory

01

71.4% put specimen identification first

Mislabeled, unlabeled, or mismatched tubes and containers are the leading cause of pre-analytic rejection or processing delay.

02

57.1% still work in a hybrid intake model

Most orders are electronic, but paper requisitions remain part of the daily accessioning workload.

03

42.9% spend 1-3 minutes on each paper order

Manual transcription or verification remains a measurable unit of work whenever paper enters the process.

04

42.9% wait 1-4 hours for clarification

Missing order details can leave specimens dependent on external communication long after physical receipt.

05

14.3% call LIS integration seamless

Most respondents still report at least occasional manual matching, interface gaps, or re-entry.

06

57.1% prioritize real-time smart tracking

Barcode/RFID linked directly to specimen location is the leading choice for the next operational improvement.

01

LABORATORY VOLUME

The most common laboratory volume band is 500-2,500 specimens a day, which makes small accessioning inefficiencies repeat continuously

57.1% report processing 500-2,500 diagnostic specimens per day.

CONTEXT

Specimen volume does not by itself determine accessioning quality, but it changes how often every manual step is repeated. A workflow that is manageable at low volume can become a staffing and turnaround problem when the same exception occurs hundreds or thousands of times.

WHAT THE DATA SHOWS

57.1% place their laboratory in the 500-2,500 specimens-per-day band. Another 28.6% report 2,501-10,000 specimens per day, while 14.3% report fewer than 500.

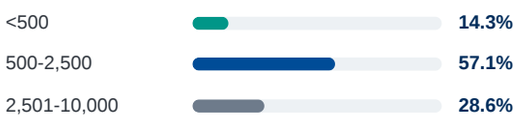
THE INSIGHT

The survey spans different operating scales, but the dominant group works in a volume range where receiving, verification, and routing are persistent daily activities rather than occasional tasks. That makes consistency at intake especially important.

WHY IT MATTERS

For laboratory managers, volume turns process variation into cumulative workload. The useful question is not simply how many specimens arrive, but how many require a manual touch that could have been prevented upstream.

Approximate diagnostic specimen volume processed per day



02

PRE-ANALYTIC REJECTION

Specimen identification errors dominate the rejection and delay question before testing even begins

71.4% identify mislabeled, unlabeled, or mismatched specimen tubes or containers as the most frequent cause of pre-analytic rejection or processing delays.

CONTEXT

The accessioning bench is often the first place where order data and the physical specimen are reconciled. If identifiers do not match, the laboratory cannot safely treat the sample as ready for testing. CLSI PRE01 treats specimen identification and labeling as critical controls across the preexamination process.

WHAT THE DATA SHOWS

Mislabeled, unlabeled, or mismatched specimen tubes or containers account for 71.4% of responses. Improper collection, tube type, or specimen volume, including insufficient quantity, accounts for 28.6%.

THE INSIGHT

The leading problem is not an analyzer issue. It is a handoff problem at the point where identity and specimen have to agree. That makes prevention dependent on collection-site behavior, label generation, label placement, and the accessioning team's ability to detect a mismatch before processing continues.

WHY IT MATTERS

A specimen identification error can trigger rejection, recollection, delay, clinician contact, and additional documentation. Standardized digital labeling and clear exception policies can therefore protect both patient safety and operational flow.

Most frequent cause of pre-analytic rejection or processing delay

03

ORDER INTAKE

Electronic ordering is the norm, but most respondents still manage a paper exception pathway

57.1% describe order intake as hybrid and majority electronic, with paper requisitions still representing 15%-30% of intake.

CONTEXT

Electronic ordering can make patient, test, and ordering-provider data available before the specimen arrives. But when paper remains in the workflow, the accessioning team must maintain a second intake process alongside the digital one.

WHAT THE DATA SHOWS

28.6% report nearly fully digital intake. The largest group, 57.1%, is majority electronic but still receives a meaningful paper share. Another 14.3% describe a majority-paper model requiring manual entry.

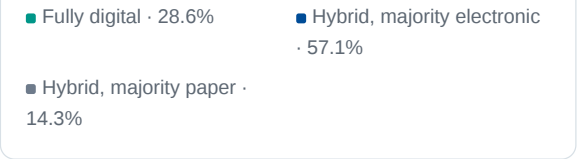
Current order intake process for arriving specimens

THE INSIGHT

The key friction is the exception lane. A laboratory may accurately describe itself as digitally connected while still assigning staff to interpret handwriting, key in data, verify demographics, and reconcile paper with the physical specimen.

WHY IT MATTERS

A minority paper stream can still create a disproportionate share of manual touches and errors. Digital transformation at accessioning should therefore be judged by exception volume and re-entry work, not only by the percentage of orders transmitted electronically.



04

MANUAL DATA VERIFICATION

Paper requisitions create a recurring time cost even when each individual order takes only minutes

42.9% say a paper requisition typically requires 1-3 minutes of manual transcription or patient-data verification.

CONTEXT

Manual order handling is easy to underestimate because the unit of work is small. Accessioning staff may only spend a few minutes on one requisition, but the task competes with specimen receipt, problem resolution, phone calls, routing, and other time-sensitive steps.

WHAT THE DATA SHOWS

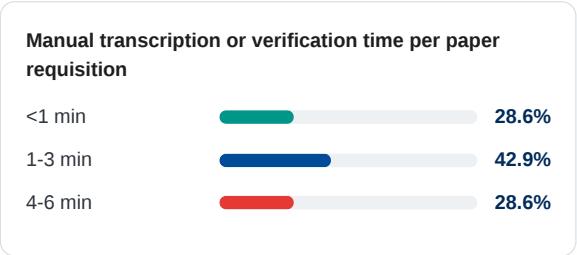
42.9% report 1-3 minutes per paper requisition. 28.6% report less than one minute, and 28.6% report 4-6 minutes.

THE INSIGHT

There is no single dominant fast path. A meaningful portion of respondents are spending several minutes on a manual task that exists only because the order did not arrive in a fully usable digital form.

WHY IT MATTERS

The operational opportunity is not to make staff type faster. It is to remove avoidable typing and verification through structured digital requisitions, validated interfaces, and better order completeness before specimen arrival.



05

CLARIFICATION DELAY

Missing order details can leave a specimen waiting for external clarification long after it reaches the laboratory

42.9% report a typical clarification time of 1-4 hours, while another 42.9% report 15-60 minutes.

CONTEXT

When an accessioning error or missing order detail is discovered, the laboratory often becomes dependent on someone outside the accessioning team. That may be the ordering physician, clinic staff, nursing team, or another department that can confirm the missing information.

WHAT THE DATA SHOWS

Only 14.3% report clarification in under 15 minutes through real-time messaging or a dedicated portal. The remaining responses are evenly split between 15-60 minutes and 1-4 hours.

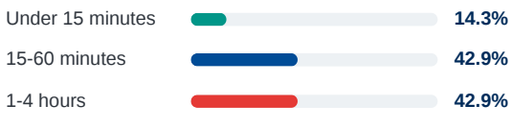
THE INSIGHT

The specimen can be physically present but operationally unavailable. This is a communication latency problem as much as an accessioning problem, because the next step cannot occur until the missing information is resolved.

WHY IT MATTERS

Laboratory leaders can reduce this friction by making order requirements explicit, validating completeness before submission, and creating rapid clarification channels that are visible to both laboratory and clinical teams.

Time to clarify an accessioning error or missing order detail



06

COMMUNICATION INTERRUPTIONS

Specimen-status calls create a second workflow that competes with the work of accessioning itself

57.1% say inbound calls asking where a specimen is have a moderate impact on accessioning focus.

CONTEXT

Clinicians need visibility when a specimen is clinically important or delayed. The operational question is whether that visibility is available through the workflow itself or whether staff have to interrupt accessioning to locate the specimen and report its status by phone.

WHAT THE DATA SHOWS

57.1% describe a moderate impact with frequent calls that require dedicated staff time. 14.3% describe severe disruption, while 28.6% say the impact is minor because calls are handled by an automated system or call center.

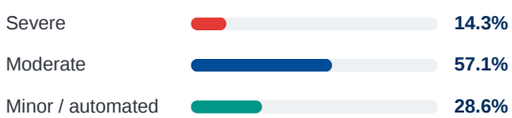
THE INSIGHT

The communication burden is not evenly distributed, but the largest group is spending real staff time on status questions. That suggests specimen location and status are not always visible to the people who need them.

WHY IT MATTERS

Real-time tracking can have two operational benefits: reducing internal search time and reducing inbound status calls. The value proposition therefore extends beyond specimen control to interruption management.

Impact of inbound specimen-status calls on accessioning focus



07

SMART TRACKING

More than half report fully integrated smart tracking, but the remaining workflow still includes manual confirmation or planned implementation

57.1% say every specimen is scanned on receipt with automated LIMS confirmation.

CONTEXT

Barcode and smart-tracking technologies are meant to make specimen identity and location visible at defined workflow points. CAP guidance has long supported standardized labeling practices, and current laboratory standards increasingly assume electronic identification and data exchange as part of quality systems.

WHAT THE DATA SHOWS

57.1% describe smart tracking as fully integrated. 28.6% use barcodes but still require manual confirmation or double-entry, and 14.3% are evaluating or planning implementation within the next 12 months.

THE INSIGHT

The survey does not describe a technology-naive laboratory environment. Many respondents already have a strong tracking layer. The remaining challenge is whether every label is scannable, every handoff is captured, and every system accepts the same information without a manual reconciliation step.

WHY IT MATTERS

The open-ended comments make this practical: one respondent describes barcode placement that prevents scanning, while another calls for better scanning and tracking in the receiving area because high volume makes specimens easier to lose.

Smart tracking technology during initial specimen logging

08

LIS INTEROPERABILITY

The LIS usually communicates with ordering systems, but seamless integration is still the exception

57.1% rate LIS integration as fair, while only 14.3% describe it as seamless.

CONTEXT

ASTP/ONC has highlighted laboratory-data interoperability as a workflow-wide issue spanning orders, results, public health, and exchange across organizations. For accessioning, the practical question is whether the order arrives in a form the LIS can use without manual matching.

WHAT THE DATA SHOWS

57.1% say systems communicate well but occasionally require manual matching for external orders. 28.6% report poor integration with frequent interface glitches or missing feeds that force manual re-entry. Only 14.3% report seamless population with zero manual intervention.

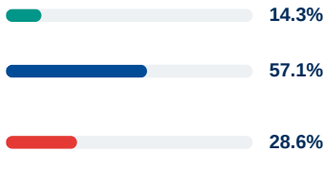
THE INSIGHT

The digital connection often exists, but reliability is uneven. That distinction matters because a partially working interface can still leave staff responsible for detecting missing information, matching external orders, and re-entering data when the feed fails.

WHY IT MATTERS

Interoperability quality should be measured at the exception level: how often orders fail, which trading partners create the most rework, and how quickly staff can recover without delaying specimens.

LIS integration with ordering systems during accessioning



09

NEXT OPERATIONAL INVESTMENT

Laboratory leaders prioritize real-time specimen tracking, but digital order intake is close behind because the workflow needs both ends connected

57.1% choose smart barcode/RFID scanners linked directly to real-time specimen tracking as the single improvement with the greatest expected boost to pre-analytic efficiency.

CONTEXT

The final investment choice tests whether respondents see the larger opportunity at the physical-specimen side or the order-data side of accessioning. Both options target manual work, but they address different failure points.

WHAT THE DATA SHOWS

57.1% prioritize smart barcode/RFID scanning linked to real-time tracking. 42.9% prioritize automated client order verification and digital requisition intake that removes paper.

THE INSIGHT

The preference for tracking is consistent with the open-ended concern about losing specimens in high-volume receiving and with the complaint about barcode placement. The near-even split with digital intake also shows that upstream order quality remains a major part of the accessioning problem.

WHY IT MATTERS

A strong future-state workflow needs both: reliable digital order data before arrival and reliable specimen identity and location after arrival. Improving one side without the other can simply move the manual workaround to a different point in the process.

Operational improvement with the greatest potential to boost pre-analytic efficiency

57.1%
Smart barcode/RFID linked to real-time specimen tracking

42.9%
Automated order verification and digital requisition intake

OPEN-ENDED PERSPECTIVE

When laboratory leaders describe the unresolved headache, the recurring theme is the handoff between labels, location, and systems

Respondents were asked for the single biggest daily accessioning headache or manual workaround that technology vendors have yet to solve. Several responses were detailed enough for qualitative interpretation, while very brief entries were not expanded into themes.

Labels must be scannable, not merely present

One respondent describes barcodes placed in an orientation that prevents scanning. Another calls out handwritten names and numbers and argues for digital labels to reduce pre-analytic errors.

High-volume receiving needs location visibility

A respondent says specimen volume makes it easy to lose samples and specifically calls for better organization, scanning, and tracking in the receiving area.

Send-outs expose interoperability gaps

One comment points to poor integration between the laboratory LIS and third-party vendors, especially for send-out specimens, showing how external workflows can fall outside the strongest internal interfaces.

Not every response supports a broader theme

Entries such as "still exploring," ellipses, or other very brief text were not interpreted beyond what was written. No qualitative percentages were created.

What the comments add: The quantitative data identifies the size of the friction. The open-ended responses show the concrete form it takes at the bench: a label that will not scan, a specimen that is hard to locate, an external interface that does not connect cleanly, or a handwritten identifier that sends the team back into manual verification.

LABORATORY OPERATIONS LENS

What a more resilient accessioning workflow could look like

The survey points toward a practical operating model that reduces exceptions before they reach the accessioning bench and makes every specimen easier to identify, locate, and reconcile.

Standardize identification at the source

Use structured digital labels, clear placement rules, readable identifiers, and collection-site training so the specimen arrives ready to scan and match.

Close the paper exception lane

Expand electronic order entry and digital requisitions, then track which clients, sites, or order types still require manual transcription or verification.

Create a fast clarification pathway

Define who owns missing order details, how the laboratory contacts them, and what real-time channel can reduce specimens sitting on hold for hours.

Make tracking and interoperability end-to-end

Connect barcode/RFID events, LIS acknowledgement, receiving-area location, send-out workflows, and external interfaces so the team can see both the specimen and the order without duplicate entry.

PEOPLE ALSO ASK

Frequently asked questions about laboratory accessioning

What is laboratory accessioning?

Laboratory accessioning is the process of receiving a specimen and its order, confirming patient and specimen identifiers, entering or validating required information, assigning or confirming an accession, and routing the specimen into the correct testing workflow.

What causes pre-analytic specimen errors?

Pre-analytic errors can arise before testing begins, including patient or specimen misidentification, labeling problems, wrong containers, insufficient specimen volume, missing order details, transport issues, and manual data-entry mistakes.

How can barcode specimen tracking reduce laboratory errors?

Barcode tracking can strengthen identification and location visibility when labels are correctly generated, placed, and scanned at defined workflow points. It works best when the barcode process is integrated with the LIS and backed by readable identifiers and exception procedures.

What is a laboratory information system (LIS)?

A laboratory information system is software used to manage laboratory orders, specimen accessioning, workflow, results, interfaces, and related operational data. The exact capabilities vary by laboratory and system configuration.

How does LIS-EHR integration affect accessioning?

Good integration can reduce duplicate entry and make order details available before or when a specimen arrives. Interface gaps, external orders, and missing feeds can create manual matching, re-entry, or clarification work for accessioning teams.

How can laboratories reduce paper requisitions and manual data entry?

Common approaches include electronic order entry, standardized digital requisitions, interface validation, client education, barcode-supported specimen identification, and defined exception workflows for incomplete or external orders.

CLOSING PERSPECTIVE

Accessioning becomes truly digital only when the exceptions stop pulling staff back into manual work

The MDForLives data describes a laboratory workflow that has already moved well beyond paper-only operations, but has not eliminated the manual rescue work that accumulates around specimen identity, incomplete orders, communication delays, external interfaces, and tracking gaps.

The strongest signal is specimen identification. Mislabeled, unlabeled, or mismatched tubes and containers are the leading reported cause of pre-analytic rejection or processing delays. The open-ended responses make the issue concrete: barcode placement can prevent scanning, and handwritten labels can push staff back into visual interpretation and manual verification. Standards such as CLSI PRE01 frame identification and labeling as foundational preexamination controls, which aligns closely with what respondents are experiencing.

Order intake creates a second layer of friction. Most respondents describe a majority-electronic environment rather than a paper-first one, yet paper requisitions are still common enough to require transcription and verification. A few minutes per paper order may sound modest, but the laboratory has to perform that task while simultaneously receiving specimens, resolving mismatches, routing work, and responding to status questions.

Clarification and communication are the third layer. Only a small share report resolving missing details in under 15 minutes, while many wait 15-60 minutes or 1-4 hours. Status calls then create additional interruptions around the same visibility problem. A specimen that cannot be matched or located is not only delayed; it generates follow-up work for the laboratory and uncertainty for the clinical team.

The technology findings show why more software alone is not enough. More than half already report fully integrated smart tracking, but seamless LIS integration is uncommon. Respondents therefore prioritize two improvements that close opposite ends of the pre-analytic chain: real-time barcode/RFID tracking for the physical specimen and automated digital requisition intake for the order. The operational opportunity is to make those two streams meet without a human having to reconcile them.

1 · Make every specimen scannable at first touch

Standardize digital identifiers, label content, and placement so accessioning starts with a reliable match rather than a visual workaround.

2 · Measure the paper exception rate

Track which sites and order types still arrive on paper and how much manual verification they create.

3 · Shorten the clarification loop

Use defined ownership and rapid messaging channels so missing order details do not leave specimens on hold for hours.

4 · Expose specimen status without a phone call

Extend tracking visibility to the teams asking where the specimen is, reducing avoidable interruptions to accessioning staff.

5 · Treat interface exceptions as operational defects

Monitor missing feeds, manual matching, and re-entry by interface or trading partner instead of accepting them as background work.

6 · Connect order and specimen data end-to-end

Make digital requisition, barcode/RFID events, LIS acknowledgement, routing, and send-out status part of one traceable pre-analytic chain.

Help future laboratory insights reflect what really happens before testing begins.

Share your perspective with MDForLives and help build a clearer view of accessioning, specimen identification, LIS integration, barcode tracking, paper exceptions, and pre-analytic quality in real-world laboratory operations.

Join the Panel

Sources used for this report

1. **MDForLives Lab Admin Insight Survey_Aug, SGID 8949574.** Source survey report: 9 survey records, 77.8% completion rate, three countries, and question-level values used exactly as reported. Administrative, required-text, after-question, and honeypot fields were excluded. Open-ended themes were interpreted qualitatively without coding percentages.
2. **Clinical and Laboratory Standards Institute (CLSI).** PRE01, Patient and Laboratory Specimen Identification Processes, First Edition, published March 8, 2024. Covers examination ordering, patient registration, patient and specimen identification, labeling, collection, transport, handling, and electronic patient-ID systems. https://clsi.org/shop/standards/pre01/
3. **College of American Pathologists (CAP).** 2025 Laboratory Accreditation Program Checklists, announced December 10, 2025. The update emphasizes patient safety, regulatory clarity, digital pathology, specimen self-collection, and quality standards across laboratory practice. https://www.cap.org/news/cap-puts-patient-safety-and-regulatory-clarity-at-the-forefront-with-new-laboratory-checklist/
4. **College of American Pathologists (CAP).** Practical Guide to Specimen Handling in Surgical Pathology, 2025. Includes laboratory checklist references and practical guidance on specimen identification and labeling controls. https://documents.cap.org/documents/Practical_Guide_to_Specimen_Handling_in_Surgical_Pathology_2025.pdf
5. **ASTP/ONC.** Laboratory Data Standards for Interoperability, September 5, 2025, updated June 9, 2026. Reviews data standards and interoperability across laboratory workflows from ordering through results exchange. https://healthit.gov/news/laboratory-data-standards-for-interoperability/

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