



Clinical Lab Intelligence

September 2, 2026

Front-line signals: preanalytics, point-of-care testing, and quality control

A bench-centered issue on faster diagnostics, specimen integrity, and the quiet environmental failures that can evade analyzer alarms.

READING KEY Finding = what the source established. Why it matters = practical or educational relevance. Limits = what should not be overclaimed.	ADVANCE-PREPARED ISSUE Dated for this issue and assembled from verified 2026 sources available by September 2.
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Core developments

01 One-step Lyme serology: high agreement, but not yet a universal replacement

Fagan et al. | JALM | September 1, 2026 | Peer reviewed, open access | [SOURCE](#)

Finding. In 119 residual sera, the InBios Lyme Detect Multiplex ELISA showed 99.2% overall concordance with standard two-tier testing, but IgM- and IgG-specific agreement with second-tier immunoblots was 76.2%.

Why it matters. A one-step workflow could shorten turnaround and simplify training, yet a laboratory would still need local verification, rules for discordant antibody patterns, and careful communication that serology must be interpreted with stage and pretest probability.

Limits / cautions. Convenience sample, modest size, research-use-only assay, and manufacturer involvement; not a clinical-outcomes trial.

02 Single-sample point-of-care high-sensitivity troponin I

Dupuy et al. | JALM | August 31, 2026 | Peer reviewed, open access | [SOURCE](#)

Finding. TriageTrue whole-blood and plasma results correlated above 0.99, and the study reported 100% negative predictive value for myocardial infarction. However, TriageTrue values averaged about 47% higher than Vitros results.

Why it matters. POC implementation is an entire clinical pathway: specimen type, assay-specific cutoffs, operator competency, connectivity, medical oversight, and symptom-onset criteria all matter more than correlation alone.

Limits / cautions. Single-center cohort with 225 plasma and 139 whole-blood measurements; a 100% NPV in this sample does not guarantee universal safety.

03 Hemoglobin H inclusion bodies remain detectable after refrigerated storage

Boriboonwong et al. | Laboratory Medicine | August 31, 2026 | Peer reviewed; access may require subscription | [SOURCE](#)

Finding. Among 322 EDTA specimens, refrigerated storage at 4 C preserved qualitative HbH inclusion-body detection through day 7 in HbH disease with a normal beta-globin background. HbE coinheritance substantially reduced inclusion counts.

Why it matters. This can inform send-out and weekend workflows while giving MLS learners a concrete example of how genotype changes the apparent stability and sensitivity of a manual morphology method.

Limits / cautions. One laboratory, one staining protocol, and genotype-specific findings; HbE and beta-thalassemia coinheritance require extra caution.

04 Simulation-trained machine learning for IV-fluid contamination surveillance

Spies and Farnsworth | JALM | August 19, 2026 | Peer reviewed, open access | [SOURCE](#)

Finding. LightGBM models trained on simulated contamination in authentic basic metabolic panels identified anomaly-and-resolution patterns retrospectively; predicted contamination was concentrated in emergency, operating-room, and intensive-care settings.

Why it matters. The practical opportunity is quality benchmarking: compare existing delta checks and redraw rates with a reproducible 'silver standard,' then target collection redesign where contamination risk appears highest.

Limits / cautions. Retrospective and simulation-based, without a true gold standard or prospective live-alert evaluation.

05 A heat pocket behind one analyzer caused vitamin B12 QC drift

Chincholkar et al. | JALM | August 17, 2026 | Peer-reviewed letter, open access | [SOURCE](#)

Finding. Persistent low-level positive QC bias on one Alinity i module was traced to a localized 32 C zone after an automation track was installed behind the analyzer; no internal instrument alarm fired. Permanent cooling normalized QC.

Why it matters. Supervisors should include mapped environmental measurements in post-installation qualification and troubleshooting. Facility changes can alter assay performance even when reagent, calibration, and maintenance records look normal.

Limits / cautions. Single-site case involving one assay and analyzer placement; the mechanism was supported by dechallenge and remediation, not a controlled study.

Unexpected Connections & Leads

Established evidence is separated from the proposed collaboration or research lead.

Surgical outcomes need laboratory-ready data standards

Bond-Smith et al. | BJS | August 21, 2026 | [SOURCE](#)

Established. An international Delphi panel created the DISH classification for dehiscence, infection, seroma, and hematoma; case-vignette inter-rater agreement was very high.

Collaboration lead. Clinical microbiology, LIS teams, infection prevention, surgeons, and quality offices could map culture, susceptibility, specimen, and intervention data to standardized surgical-site outcomes.

Next question. Does linking DISH grades to microbiology and antimicrobial data improve surveillance or only documentation?

Boundary. Consensus and vignette validation do not yet prove better patient outcomes.

A \$30 engineering prototype for blood-gas hemolysis detection

Dai et al. | JALM | May 22, 2026 | [SOURCE](#)

Established. A CMOS sensor and DVD-ROM grating produced a compact spectrometer whose 540-nm absorbance tracked the Roche hemolysis index in 51 simulated samples and supported potassium- and calcium-specific rejection thresholds.

Collaboration lead. MLS programs could pair with biomedical engineering to validate low-cost preanalytic devices, define error budgets, and design operator-safe enclosures and QC materials.

Next question. Will the device maintain calibration and clinical specificity across sites, bilirubin/lipemia ranges, and real emergency specimens?

Boundary. Small, mechanically hemolyzed sample set; not yet a multicenter clinical validation.

References

Every source cited in this issue is listed below with a full, clickable direct link.

1. Fagan K, Urban M, LaSala PR, et al. Evaluation of a One-Step Serological Test for Lyme Disease. JALM. September 1, 2026. doi:10.1093/jalm/jfag133. <https://doi.org/10.1093/jalm/jfag133>
2. Dupuy AM, Gueche Y, Bargnoux AS, et al. Single High-Sensitivity Cardiac Troponin Measurement to Rule-out/Rule-in Myocardial Infarction in the Emergency Department. JALM. August 31, 2026. doi:10.1093/jalm/jfag130. <https://doi.org/10.1093/jalm/jfag130>
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5. Chincholkar P, et al. Unexplained Quality Control Drift in an Automated Vitamin B12 Immunoassay. JALM. August 17, 2026. doi:10.1093/jalm/jfag115. <https://doi.org/10.1093/jalm/jfag115>
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7. Dai Q, Tu JY, Wang KQ, et al. Development of a Low-Cost Spectrometer for Hemolysis Detection in Emergency Blood Gas Samples. JALM. May 22, 2026. doi:10.1093/jalm/jfag068. <https://doi.org/10.1093/jalm/jfag068>

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