

Editorial

In this Issue: Hot Topics and Clinical Cases in Laboratory Medicine



Patricia Tille Ph.D MLS(ASCP) AHI (AMT) FASCS
IJBLs Editor in Chief

This edition of the IJBLs centers on precision, safety, and stewardship in transfusion medicine. A topic that includes a timely review examining how expanding medical and recreational cannabinoid use intersects with blood product safety, especially for transfusion-dependent patients with sickle cell disease and cancer. The authors synthesize emerging evidence that tetrahydrocannabinol (THC) and cannabidiol (CBD) can perturb red cell integrity, platelet function, and coagulation, while noting a striking absence of standardized donor screening for cannabinoids, an actionable gap for laboratories and regulators alike.

Complementing this systems-level lens, a rare and compelling family case series charts three instances of hemolytic disease of the fetus and newborn due to anti-Rh17 alloimmunization, all managed through a rural-tertiary care partnership. The report underscores the power of early antibody identification, serial titers with MCA-PSV surveillance, strategic use of autologous and directed antigen-compatible units, and meticulous perinatal planning, practical lessons for laboratories that may face high-stakes immunohematology with limited resources. It's an instructive blueprint for coordination, inventory foresight, and use of reference laboratories when uncommon phenotypes and high-prevalence antigens collide.

Rounding out the issue, a focused review on machine learning (ML) shows how data-driven models can sharpen perioperative transfusion prediction, reduce unnecessary crossmatching, and align inventory with true patient need. Ensemble methods trained on large, diverse datasets routinely outperform traditional risk scores, yet adoption hinges on transparent models, rigorous external validation, and robust data quality across EHR system, reminding us that technical innovation must travel with implementation science.

Altogether, this demonstrates a need for an integrated future in laboratory medicine: evidence-based policies on novel donor exposures, nimble immunohematology workflows across care settings, and ML-enabled patient blood management that is as thoughtful as it is efficient.

A handwritten signature in black ink, appearing to read 'Patricia Tille'.

Patricia Tille Ph.D. MLS(ASCP) AHI(AMT) FACSc