Bacterial contamination of platelets remains the leading infectious risk from blood transfusion. Pathogen reduction (PR), point-of-release testing (PORt), and secondary bacterial culture (SBC) have been proposed as alternative risk control strategies, but a comprehensive financial comparison has not been conducted” Kacker et al (2019).

**Abstract:**

BACKGROUND: Bacterial contamination of platelets remains the leading infectious risk from blood transfusion. Pathogen reduction (PR), point-of-release testing (PORt), and secondary bacterial culture (SBC) have been proposed as alternative risk control strategies, but a comprehensive financial comparison has not been conducted.

STUDY DESIGN AND METHODS: A Markov-based decision tree was constructed to model the financial and clinical impact of PR, PORt, and SBC, as well as a baseline strategy involving routine testing only. Hospitals were assumed to acquire leukoreduced apheresis platelets on Day 3 after collection, and, in the base case analysis, expiration would occur at the end of Day 5 (PR and SBC) or 7 (PORt). Monte Carlo simulations assessed the direct medical costs for platelet acquisition, testing, transfusion, and possible complications. Input parameters, including test sensitivity and specificity, were drawn from existing literature, and costs (2018 US dollars) were based on a hospital perspective.

RESULTS: The total costs per unit acquired by the hospital under the baseline strategy, PR, PORt, and SBC were $651.45, $827.82, $686.33, and $668.50, respectively. All risk-reduction strategies decreased septic transfusion reactions and associated expenses, with the greatest reductions from PR. PR would add $191.09 in per-unit acquisition costs, whereas PORt and SBC would increase per-unit testing costs by $31.79 and $17.26, respectively. Financial outcomes were sensitive to platelet dating; allowing 7-day storage with SBC would lead to a cost savings of $12.41 per transfused unit. Results remained robust in probabilistic sensitivity analyses.

CONCLUSIONS: All three strategies are viable approaches to reducing bacterially contaminated platelet transfusions, although SBC is likely to be the cheapest overall. You may also be interested in...

**Reference:**

Financial impact of approaches to reduce bacterial contamination of platelet transfusions. Transfusion. January 8th.