This article describes a method for estimating systemwide reductions in PLT outdates after PLT shelf life is extended” Blake (2017).

Abstract:

BACKGROUND: The regulatory shelf life for platelets (PLTs) in many jurisdictions is 5 days. PLT shelf life can be extended to 7 days with an enhanced bacterial detection algorithm. Enhanced testing, however, comes at a cost, which may be offset by reductions in wastage due to longer shelf life. This article describes a method for estimating systemwide reductions in PLT outdates after PLT shelf life is extended.

STUDY DESIGN AND METHODS: A simulation was used to evaluate the impact of an extended PLT shelf life within a national blood network. A network model of the Canadian Blood Services PLT supply chain was built and validated. PLT shelf life was extended from 5 days to 6, 7, and 8 days and runs were completed to determine the impact on outdates.

RESULTS: Results suggest that, in general, a 16.3% reduction in PLT wastage can be expected with each additional day that PLT shelf life is extended. Both suppliers and hospitals will experience fewer outdating units, but wastage will decrease at a faster rate at hospitals. No effect was seen by blood group, but there was some evidence that supplier site characteristics influences both the number of units wasted and the site’s ability to benefit from extended-shelf-life PLTs.

CONCLUSION: Extended-shelf-life PLTs will reduce wastage within a blood supply chain. At 7 days, an improvement of 38% reduction in wastage can be expected with outdates being equally distributed between suppliers and hospital customers.

Reference:

Blake, J.T. (2017) Determining the inventory impact of extended-shelf-life platelets with a
network simulation model. Transfusion. September 6th.

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