

# Clinical Pathology Abstracts, 1/17

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## **Impact of laboratory cost display on resident attitudes and knowledge of costs**

The Institute of Medicine report on health care quality recommends providing better care at lower costs. However, the United States has consistently seen rising health care costs instead of cost reductions. An approach to reducing unnecessary health care spending is to make physicians more aware of the cost of diagnostic tests. A goal is to have this cost transparency readily available to physicians and residents in training to help drive down health care costs. In this study, laboratory costs were displayed in the electronic health record (EHR), and investigators assessed resident physician cost awareness and estimates of Medicare reimbursement rates. The authors completed a pre- and postintervention Web-based survey of physicians from internal medicine, pediatrics, combined medicine and pediatrics, obstetrics and gynecology, emergency medicine, and orthopedic surgery at a tertiary care academic medical center. They then displayed costs in the EHR for 1,032 unique laboratory orders. Imaging order costs were used as a control in the study and were not displayed. The investigators showed that the proportion of residents that agreed/strongly agreed that they knew the costs of the tests they ordered increased from 8.6 percent to 38.2 percent after the cost display. Furthermore, cost-estimation accuracy among residents increased from 24 percent to 52.4 percent after the cost display for laboratory orders and from 37.7 percent to 49.6 percent for imaging orders. The improvement in cost awareness for imaging orders is speculated to be a spillover effect generated by providing a cost context for residents. The authors concluded that resident cost awareness and ability to estimate laboratory order costs improved significantly after implementing a comprehensive EHR cost display. They suggested conducting additional studies on optimal interventions to encourage cost-saving behaviors among trainees.

Long T, Bongiovanni T, Dashevsky M, et al. Impact of laboratory cost display on resident attitudes and knowledge about costs. *Postgrad Med J*. 2016;92:592-596.

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## **Effect of short-term versus long-term blood storage on mortality after transfusion**

Red blood cells may be stored up to 42 days prior to transfusion. However, biochemical, structural, and functional changes that occur in stored blood may reduce oxygen delivery and release cell-free DNA, which may cause a hypercoagulable state. Several randomized trials have not shown an association between duration of storage and harm to the recipient. In this study—the Informing Fresh versus Old Red Cell Management (INFORM) trial—researchers sought to determine whether the in-hospital rate of death among patients requiring transfusion was lower among those who received blood after short-term storage (mean duration, 13 days) than among those who received blood after long-term storage (mean duration, 23.6 days). Investigators randomly assigned patients who required a red cell transfusion to receive blood that had been stored for the shortest duration or the longest duration in a 1:2 ratio. The primary outcome was in-hospital mortality. In the first analysis, 20,858 patients with type A or O blood were included to ensure that a mean duration of blood storage of at least 10 days was achieved. The results showed a death rate of 9.1 percent in the short-term storage group and 8.7 percent in the long-term

storage group. Later, the study was expanded to include 24,736 patients with any blood type, and the results were similar, with a death rate of 9.1 percent in the short-term storage group and 8.8 percent in the long-term storage group. The results were also consistent in three prespecified high-risk subgroups—patients undergoing cardiovascular surgery, patients admitted to the intensive care unit, and patients with cancer. The authors concluded that this study showed that in a general hospital population, there was no significant difference in the rates of death among those who received the freshest available blood and those who received the oldest available blood according to the standard of practice.

Heddle NM, Cook RJ, Liu AY, et al. Effect of short-term vs. long-term blood storage on mortality after transfusion. *N Engl J Med*. 2016;375:1937-1945.

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