

Tool decreases superfluous lab testing, cuts health-care costs

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Anyone who's spent a night in a hospital knows the drill: In comes a phlebotomist, first thing in the morning, for lab tests. Physicians have long recognized that lab testing isn't necessary for all hospitalized patients on a daily basis. Regardless, such tests are often conducted because of routine.

A new paper, authored by University of Utah hospitalists and published in the *Journal of Hospital Medicine*, outlines how the 500-bed academic medical center used a tool developed at University of Utah Health Care, Value Driven Outcomes (VDO), to reduce superfluous lab testing, which is expensive, doesn't improve health outcomes and can harm patients.

"Frequently, patients do need labs every morning, but that can create a culture where you're ordering tests without really thinking about what you're going to do with the results," said lead author Peter Yarbrough, M.D., an assistant professor of internal medicine who practices at the VA Salt Lake City Health Care System.

When the VDO tool was used as a part of a multi-faceted quality improvement initiative, the number of tests ordered each day dropped, decreasing lab costs by nearly 10 percent per patient visit. If the approach were applied to all inpatient visits, it was estimated the hospital could potentially save over \$1.5 million each year.

"The novelty of it is that it's so simple and it could potentially be widely disseminated," said senior author Kensaku Kawamoto, M.D., Ph.D.,

M.H.S., an assistant professor of biomedical informatics.

Unnecessary lab testing contributes to the estimated \$910 billion wasted each year in U.S. health care. Beyond costs, lab testing is an important patient safety issue. The sheer number of tests ordered can lead to incidental findings that result in unnecessary follow-up testing and potentially harmful interventions, and early morning blood draws can prevent much needed rest. Vulnerable patients can even develop anemia and associated complications from over-testing.

Yarbrough, Kawamoto, and co-authors Devin Horton, M.D., Karli Edholm, M.D., and Polina V. Kukhareva, M.S., M.P.H. describe in the new paper a 15-month intervention launched in 2013 to address this problem of unnecessary laboratory testing. At the time, the University had just developed VDO, which allows providers to understand the costs of health care by providing actual cost data down to the patient level.

"Prior to VDO, we never had cost information," Yarbrough said. "All you ever had were charges, and charges are very difficult to interpret as far as how much things really cost."

Using VDO, Yarbrough discovered that lab testing was costing University Hospital about \$2 million a year just among patients cared for by hospitalists, who are internal medicine physicians specializing in the care of acutely ill hospitalized patients.

"That number was impressive to me because I saw just how much the common routine tests could add up," Yarbrough said. "Most of the tests don't cost very much, but their numbers were so high that the total cost became significant."

With the ultimate goal of changing the culture of routine [test](#) ordering into a thoughtful process, a working group analyzed workflows to

determine how lab tests were ordered. Interestingly, they found that it's often one of the least experienced members of the care team, the intern, who is in charge of ordering tests at hospitals.

"The literature would say that the intern on the team actually has the greatest influence on what lab tests are ordered and what aren't," Yarbrough said.

The group looked at efforts that had been successful at other institutions and opted to incorporate multiple approaches into a single intervention to determine if the combination would be sustainable. Rounding processes were standardized to include a checklist review for all patients that ensured discussion of labs, telemetry, pain, central lines, nursing presence, communication with family and follow-up needed. Decisions about [lab tests](#) had to be discussed with more senior members of the team. Third-year medical students were responsible for ensuring that all items were covered daily for each patient.

The results of the interventions over a 15-month period were tangible. An intervention group of 6,310 hospitalist patient visits were compared to a control group of 25,586 non-hospitalist visits. The interventions reduced the mean cost per day for laboratory testing from \$138 to \$123 and the mean cost per visit decreased from \$618 to \$558. There was also a significant reduction in laboratory cost per day, laboratory cost per visit, and the number of tests per day.

"As we look at how we can conserve our resources as a nation and improve the value that we provide with health care, it's imperative for us to help get professionals in [health care](#) systems to be good stewards of resources and to avoid unnecessary diagnostics and interventions," Kawamoto said.

The hospitalists continue to use the checklist system, and they consider

routine VDO data essential to know how they are doing with lab costs.

"It's one thing to tell somebody that they're ordering too many tests, it's another to quantify it and put dollars and cents to their activity," Kawamoto said. "Having the VDO tool allowed for timely feedback to be provided to physicians so they know how they're doing."

More information: "Multifaceted Intervention Including Education, Rounding Checklist Implementation, Cost Feedback, and Financial Incentives Reduces Inpatient Laboratory Costs" by Peter Yarbrough, Polina Kukhareva, Devin Horton, Karli Edholm, and Kensaku Kawamoto will be published online in the *Journal of Hospital Medicine* on February 4, 2016.

Provided by University of Utah Health Sciences

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