

REDUCE UNNECESSARY LABS IMPROVE PATIENT CARE

GET TO KNOW THESE NUMBERS:

250

Estimated charge for "routine" daily labs (per patient, per day) at VUMC

100

Volume (mL) of phlebotomized blood leading to a 2 point drop in a patient's hematocrit²

50

The average volume (mL) of blood removed by phlebotomy per day in an ICU patient³

The volume (mL) of phlebotomized blood required to increase a patient's risk for moderate to severe hospital acquired anemia by 20%⁴

5

The five most common "routine" labs ordered on a recurring basis are:
CBC, BMP, calcium, magnesium, phosphorous⁵

An intervention aimed at reducing unnecessary ordering of these labs achieved the following results:⁵

- 12% fewer inpatient tests
- 21% fewer inpatient phlebotomies
- A decrease in the average number of patients requiring blood draws during morning phlebotomy rounds from 127 to 84
- An estimated yearly savings of \$73,000 just by reducing the amount of chemical reagents needed to perform these five tests

2

Estimated number of weeks it takes for high-risk ICU patients receiving frequent lab draws to require a blood transfusion due to phlebotomy³

1

The number of people it takes to make a difference by ordering fewer unnecessary labs

WHAT'S YOUR DEFAULT?



CHOOSE WISELY.

Brought to you by the Vanderbilt Choosing Wisely House Staff Steering Committee*

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Meghan Kapp, MD - Pathology Resident | David Leverenz, MD - Internal Medicine Resident | Cody Penrod, MD - Pediatrics Resident
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FACULTY ADVISORS

Donald Brady, MD - Associate Dean for Graduate Medical Education | Jeff Creasy, MD - Neuroradiology Attending
Bonnie Miller, MD - Sr. Associate Dean for Health Sciences Education | Jack Starmer, MD - Chief of Quality Informatics

References:

1. Stuebing EA, Miner TJ. Surgical vampires and rising health care expenditure: reducing the cost of daily phlebotomy. Arch Surg. 2011 May;146(5):524-7. (PMID: 21576605) | 2. Havendiranathan P, Bagai A, Ebidia A, Detsky AS, Choudhry NK. Do blood tests cause anemia in hospitalized patients? J Gen Intern Med. 2005 June;20(6):520-524. (PMID: 15987327) | 3. Lyon AQ et al. Simulation of repetitive diagnostic blood loss and onset of iatrogenic anemia in critical care patients with a mathematical model. Computers in Biology and Medicine. 2013;43:84-90. (PMID: 23228481) | 4. Salisbury AC, et al. Diagnostic blood loss from phlebotomy and hospital-acquired anemia during Acute Myocardial Infarction. Arch Intern Med. 2011 Oct 10;171(18):1646-1653. (PMID: 21824940) | 5. May TA, et al. Reducing unnecessary inpatient laboratory testing in a teaching hospital. Am J Clin Pathol. 2006;126(2):200-6. (PMID: 16891194) | 6. ChoosingWisely.org, top five lists by the Society of Hospital Medicine and the Critical Care Societies Collaborative

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REPETITIVE LAB TESTING: FREQUENTLY HELD MISCONCEPTIONS AND ASKED QUESTIONS

1

What if I miss something important?

You won't. Multiple studies looking at both ICU and floor patients have demonstrated significant (up to 42%) reductions in blood tests without any negative impact on mortality, length of stay, transfer to ICU, readmission rates or ventilator days.¹⁻⁵ If their clinical status unexpectedly changes you can always order labs at that time.

2

What will my attending think if I don't have labs?

They will be impressed with your commitment to evidence based, cost-effective care. They may even give you an "Aspirational" ranking on your ACGME Milestone evaluation (MK2 and SBP3 – "recognize and address common barriers to cost-effective care and actively participates in initiatives").

3

What's the harm in just ordering the labs?

Unnecessary testing can result in several types of harm to the patient: technical errors, injuries, pain, hospital acquired anemia, and risks associated with working up incidental or erroneous abnormal results.¹ Hospital acquired anemia due to excessive phlebotomy has been associated with increased morbidity and mortality.⁶

4

More labs = better patient care.

Not necessarily. Sometimes these labs will result in unnecessary harm as discussed in *Misconception 3*. In addition, excessive labs can significantly increase the patient's bill, interrupt sleep, increase suffering due to needle sticks, decrease patient satisfaction and increase the overall cost of healthcare.

5

What can I do?

Discuss lab results on rounds with your team. Mention them explicitly when making a plan for the patient. Ask if they are really needed. If in doubt, try not getting labs. You can always order them later. Do you have to have the labs in the morning for rounds? Or can it wait until you have a specific concern based on clinical findings? It is possible to make a difference. Other institutions have successfully demonstrated 20 – 40% drops in the number of tests ordered.¹⁻⁶

1. Flabouris A, Bishop G, Williams L, Cunningham M. Routine blood test ordering for patients in intensive care. *Anaesth Intensive Care*. 2000;28(5):562-5. (PMID: 11094676) | 2. Roberts DE, Bell DD, Ostryzniuk T, et al. Eliminating needless testing in intensive care--an information-based team management approach. *Crit Care Med*. 1993;21(10):1452-8. (PMID: 8403952) | 3. Wang TJ, Mort EA, Nordberg P, et al. A utilization management intervention to reduce unnecessary testing in the coronary care unit. *Arch Intern Med*. 2002;162(16):1885-90. (PMID: 12196088) | 4. Neilson EG, Johnson KB, Rosenbloom ST, et al. The impact of peer management on test-ordering behavior. *Ann Intern Med*. 2004;141(3):196-204. (PMID: 15289216) | 5. Attali M, Barel Y, Somin M, et al. A cost-effective method for reducing the volume of laboratory tests in a university-associated teaching hospital. *Mt Sinai J Med*. 2006;73(5):787-94. (PMID: 17008940) | 6. Salisbury AC, Reid KJ, Alexander KP, et al. Diagnostic blood loss from phlebotomy and hospital-acquired anemia during acute myocardial infarction. *Arch Intern Med*. 2011;171(18):1646-53. (PMMID: 21824940)