

Appropriate lab orders save money



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Clinical laboratory testing plays an essential role in modern health care, but studies show waste because of unnecessary or inappropriate testing. Refraining from ordering certain tests may improve patient outcomes and save costs.

ARUP Laboratories, the primary reference laboratory used by Fairview Laboratories, provided test use data to guide physicians in choosing appropriate tests. ARUP has indicated that the following examples, ordered during 2007 at Fairview, fall

outside typical ordering patterns for health systems:

Cancer screening

- Free PSA is indicated for cancer screening only if the total PSA is between 2.5 and 10 µg/mL. Forty-six percent of free PSA orders had a total PSA of <2.5 or >10 µg/mL in 2007.
- In 2007, potential savings to Fairview totaled \$9,600.

Cardiac risk markers

- Neither the U.S. Preventive Task Force nor the National Cholesterol Education Program recommend routine use of novel cholesterol markers, such as Lipoprotein-associated phospholipase (355 orders), apolipoprotein B (20 orders) and apolipoprotein A-1 (15 orders).
- In 2007, potential savings to Fairview totaled \$45,600.

Chlamydia

- The Chlamydia Trachomatis culture has poor sensitivity. Chlamydia Trachomatis by polymerase chain reaction (PCR) is recommended.

Hepatitis C

- The CDC algorithm for diagnosis states that physicians should order

- RIBA testing only for samples with a low positive screen. Samples with a high positive screen should go straight to PCR.
- Only 13 percent of RIBA tests were ordered on samples with a low positive screen.

Lyme disease

- Lyme antibodies IgG/IgM by Western Blot exhibit a high false negative rate. This test should be performed only on patients for whom the Lyme EIA was positive or equivocal.
- If known tick bite and erythema migrans are present, proceed with treatment—testing is not necessary.

Muscle damage

- Creatine kinase is preferred rather than aldolase for measuring muscle damage.
- Aldolase is used primarily to evaluate children for muscular dystrophy. Eighty-three percent of aldolase orders were for patients older than 18 (606 orders).

Pheochromocytoma

- Urine catecholamine is not needed when metanephrine is ordered. Seventy-one percent of urine catecholamine orders were ordered with a metanephrine (143 orders).
- In 2007, potential savings to Fairview totaled \$7,100.

Syphilis

- It is not clear that VDRL CSF with Reflex to Titer testing is indicated in the absence of a history consistent with syphilis. In 2007, there were no positive results using VDRL CSF.
- In 2007, potential savings to Fairview totaled \$1,400.

Thyroid hormone

- T3 Uptake and rT3 tests (112 orders each) are obsolete. TSH and free T4 are the primary recommended tests and T3 is a useful adjunct test.
- Free T3 (1465 orders) is redundant and potentially misleading due to the method's poor precision.
- In 2007, potential savings to Fairview totaled \$23,400.

Fairview tests comprise 0.5 percent of ARUP's outreach testing. Below are examples of tests that make up a disproportionate percentage of ARUP testing:

Test	Measurement or diagnosis	# of orders	Approx. percentage of ARUP volume	Total cost
AFB Culture	Mycobacterial infection or tuberculosis	2,845	15	\$264,000
Bone specific Alk Phosphatase	Rate of bone formation	662	8	\$60,800
Carnitine, free and total	Carnitine deficiency	662	7	\$16,200
Hepatitis Delta Virus, IgM	Hepatitis Delta Virus	27	9	\$2,300
Parvovirus B-19 by PCR	Parvovirus	301	8	\$24,100
Poliovirus Antibodies	Poliovirus	239	7	\$30,900
Vitamin B1, plasma	Thiamine assessment	1,544	9	\$27,800
Vitamin B2 (riboflavin)	Deficiency or toxicity	1,453	42	\$153,000