The Overuse of Diagnostic Testing

Read the excerpts below and answer the questions that follow.

“Observe, record, and communicate. Use your five senses.... Learn to see, learn to hear, learn to feel, learn to smell . . . only with practice can you become expert.”

Sir William Osler (1849-1919)

A good physician should be able to reach the correct diagnosis - or make a diagnostic hypothesis - in 70 to 80% of cases, with a complete medical history and accurate physical examination. Further investigation should confirm our diagnosis, not make it. We are expected to treat the patient standing in front of us, not the exam.


Some physicians order unnecessary diagnostic imaging tests such as CT scans because they are afraid of being sued. Worried and anxious patients also add to the overuse of diagnostic imaging scans by demanding unnecessary tests. It is estimated that up to one-third of the nation’s health care expenditures are consumed by the “worried well.”


1. Why do some clinicians order diagnostic tests that they might not really need?

2. What are the effects of “over-testing” on patients and health institutions?

3. What are some ways to prevent clinicians from ordering unnecessary tests?
VUMC Reduces High-Volume Diagnostic Tests

A new study from Vanderbilt University Medical Center (VUMC) sets out a strategy for eliminating a large percentage of inpatient diagnostic testing.

A committee of physician leaders and clinical experts at VUMC has found a safe, simple, and painless method for reducing the excessive use of laboratory, radiology, and cardiology tests. The **dramatic** findings were published in the Annals of Internal Medicine.

With health care costs rapidly on the rise, clinicians, insurance companies and policy makers are looking for ways to cut unnecessary costs from the system while maintaining quality and safety.

By using biomedical information systems, VUMC is leading the search for ways to reduce the excessive use of clinical resources, said the study’s senior author, Eric G. Neilson, M.D., chair of the department of Medicine.

“We’re facing an economic crisis in health care, and payers — insurers, employers, and government — are getting pretty **fed up** with levels of spending at the bedside,” Neilson said. “Either we’ll manage spending ourselves, or someone will do it for us; either way, it’s going to happen. The goal is to do the right thing, and only the right thing, in patient care. It sounds easy but it isn’t.”

In the mid 1990s, Vanderbilt developed a computer program, called WizOrder, to support clinical decision-making in the hospital. Clinicians use the program to order patient tests and treatments. The program alerts the user against any orders that appear unsafe or **inappropriate**.

Headed by Neilson, the VUMC Resource Utilization Committee searches for ways to reduce excessive use of clinical resources. They’ve focused on WizOrder as a way to limit unnecessary diagnostic testing in the hospital.

In late 1999 and early 2000, the committee changed the way that users order certain high-volume tests. Each morning as they logged into the system, users who had ordered automatically repeating tests got a pop-up message asking if they wanted to continue the testing or cancel the test.

Weeks later, some mild **constraints** were added. Users were prevented from placing automatically repeating orders for certain **high-volume** tests. Common blood chemistry tests that previously could be ordered as a group now had to be ordered separately. Users also received a graphic display of blood chemistry results from the previous week on the same screen that they used for ordering blood chemistries.
Among other things, the study looked at orders entered, orders discontinued, net orders (that is, orders entered minus orders discontinued), and quality of care indicators such as rates of repeated hospital admissions, transfer to intensive care units, mortality, and length of stay. This final phase of the study lasted three years.

The pop-up messages were associated with reduced usage of some tests, but the ordering constraints and graphical displays that came later brought dramatic overnight reductions. From the start to the finish of the study, daily blood chemistry orders dropped 39 percent (from 1,837 to 1,124), daily portable chest X-ray orders dropped 23 percent (from 87.0 to 67.1), and daily electrocardiography orders dropped 28 percent (from 40.0 to 28.7).

As noted by the study authors, the reductions were achieved without preventing clinicians from ordering the tests they wanted. “Our approach was reasonably unobtrusive to the decision makers. …Doctors generate 80 percent to 90 percent of the cost in health care,” Neilson said. “We have to take some responsibility for that. It’s not that people don’t need testing, but we must begin to define the boundaries for acceptable levels of testing.”

The authors wrote that if the study were generalized to other hospitals that allow automatically repeated tests to be ordered, up to 25 percent of high-volume testing could be eliminated nationally.


Questions About Reading

1. What is WizOrder? What was it originally used for?

2. Why did some users get pop-up messages on their computers?

3. Name two constraints that were put on lab tests ordered on the computer.

4. Name three types of diagnostic tests that were ordered less frequently after the study began.
5. What percent of high volume diagnostic testing do the authors think could be eliminated nationally?

6. Judging from this reading, why do some clinicians order diagnostic tests that they don’t need?

7. How can a system like Wiz Order benefit patients?

Vocabulary Practice

Look at the underlined words in the sentences below and answer the following questions about each.

- What part of speech is each word? Is it a noun, adjective, verb, or preposition?
- What does each word or phrase mean? Go back to the reading above and find the word or phrase in context. Write a synonym or definition for each.

1. The dramatic findings were published in the Annals of Internal Medicine.

2. . . . insurers, employers, and government — are getting pretty fed up with levels of spending at the bedside.

3. . . . to support clinical decision-making in the hospital. Clinicians use the program to order patient tests and treatments; the program alerts against any orders that appear unsafe or otherwise inappropriate.

4. . . . some mild constraints were added: users were prevented from placing automatically recurring orders . . .
5. In late 1999 and early 2000, the committee changed the way that users order certain high-volume tests . . . users who had ordered automatically repeating tests. . .

6. . . . the study looked at . . . quality of care indicators such as rates of repeated hospital admissions, transfer to intensive care units, mortality, and length of stay.

7. . . . users who had ordered automatically repeating tests got a pop-up message asking if they wanted to continue the testing or cancel the test.

8. . . . but the ordering constraints and graphical displays that came later brought dramatic overnight reductions.

9. . . . the reductions were achieved without preventing clinicians from ordering the tests they wanted. Our approach was reasonably unobtrusive to the decision makers.

10. It’s not that people don’t need testing, but we must begin to define the boundaries for acceptable levels of testing.