Editor's Note

Can Physicians Practice Cost-Effective Medicine?

Introduction

Physicians reading peer-reviewed and other types of medical literature, including newspapers, are bombarded with information about this or that drug, this or that procedure, and this or that clinical trial. It is becoming increasingly difficult to ascertain what is effective and what is not. I would like to review some

of the ingredients that help the physician practice cost-effective medicine. This is no simple task. Before one can discuss cost-effective medicine, the term must be defined.

What Is Meant by "Cost-Effective Medicine"?

Cost effectiveness is not the same as cost containment. Cost containment means saving money. It may have nothing to do with cost effectiveness.

In the medical field, cost is defined as the amount paid or to be paid for a service, drug, or procedure. The best or the standard of practice, service, drug, or diagnostic or therapeutic procedure may have nothing to do with expense. It may be the most expensive or the least expensive. Effectiveness is defined as producing or designed to produce the desired effect of the service, drug, or procedure. The "Conti" definition of cost-effective medicine is as follows: Diagnostic and therapeutic strategies that are the least expensive but remain the "standard of practice."

What Is Meant by Standard of Practice?

Standard of practice is medicine based on guidelines, consensus opinion, and experience. The best or standard of practice service, drug, diagnostic or therapeutic procedure may not be the least expensive and, conversely, the least expensive service, drug, or diagnostic or therapeutic procedure may not be best for the patient.

Do Americans Want Cost-Effective Medicine?

The answer is yes, but! Most Americans want the best possible diagnosis and treatment of their condition. Most Americans want their doctors to do what those doctors think is best for them.

Do Most Americans Care about Cost of Service, Drugs, or Procedures?

Americans answer yes, but! Most patients who have excellent insurance pay little attention to the cost of diagnosis and treatment unless they must make payments in addition to what insurance pays. Americans who pay high premiums that provide 100% coverage always want the best! Some patients who do not have insurance are concerned about what it may cost them, but rarely are they concerned about what it may cost society to diagnose and treat their condition. Many pay nothing and generally also want excellent medical treatment. In order to provide excellent medical treatment, society must pay the bill.

Clinical Judgment and Decision Making

Clinical decisions about providing a service, drug, or procedure are usually a matter of judgment (It was said, I believe, by C. Walton Lillihel, that all clinicians need good judgment: good judgment comes from experience and experience comes from bad judgment), but judgment should be based on best medical information. Best medical information is derived from at least two sources: (1) scientific data (evidence-based medicine) and (2) consensus and knowledge of experienced physicians. These sources provide the appropriate information to develop guidelines. The American College of Cardiology has taken a role of leadership and provides guidelines in several areas, for example, coronary angiography, coronary angioplasty, exercise testing, echocardiography, acute myocardial infarction, and so forth.

Guidelines

It is important to emphasize what guidelines are. Guidelines provide physicians with information about the appropriateness of service, drugs, and diagnostic or therapeutic techniques. Guidelines are not rules. Guidelines are a statement of policy or procedure. Rules are an authoritative direction for conduct. These terms should not be confused or misinterpreted by patients, payers, or lawyers.

Guidelines are developed from (1) clinical trials, which generally consist of randomized studies and case control studies; (2) observational studies; and (3) consensus opinion of experts. Clinical trials provide information about populations, not about the individual patient. Clinical decisions are made for the individual patient, not for populations. Clinical decisions are case-specific and not generic. For example, not all heart attacks are alike. Statistical data are important but there

are no statistics that apply to one patient. Clinical trials data apply to the individual only when the patient satisfies the entry criteria for the trial, that is, the patient would be a candidate for randomization. Clinical trial data may not apply to a patient who has other complicating diseases.

Use of Procedures and Outcome Results

Recently, an article published in the *New England Journal of Medicine* reported data on myocardial infarction and the use of procedures and outcomes in elderly patients after the infarction. The authors compared use of cardiac procedures and outcomes in elderly patients in the United States and in Canada in 1991.¹ They found that the use of coronary angiography and the performance of angioplasty or heart surgery was markedly higher in the United States than in Canada (specifically, Ontario, Canada). A second observation was that the cumulative mortality in the United States and Canada (Ontario) were identical over a 52-week period after myocardial infarction.

There are some limitations to this type of medical report. For example, (1) the quality of life is not known; (2) this is an administrative database and does not carry the same weight as a randomized clinical trial; (3) results are from Ontario only, not all of Canada, whereas the results from the United States are from all 50 states; and (4) 52 weeks may not be a long enough period to show a difference.

Clinical Trials and Cost-Effective Strategies

I think it is important to ask whether clinical trial results are always cost-effective strategies. I will use two examples to illustrate the extreme.

Example 1: Assume 1 million patients have condition "X," for which the mortality rate is 2% without treatment. With treatment, mortality is reduced to 1% (50% reduction). Thus, 98 of 100 patients would have survived without treatment. To save 1 of 100 patients (50% reduction), all 100 patients with condition "X" must receive the given treatment.

Example 2: Assume 1 million patients have condition "Y," for which the mortality rate is 30% without treatment. With

treatment, mortality is reduced to 15% (50% reduction). Thus, 70 of 100 patients would have survived without treatment and to save 15 of 100 patients (50% reduction), all 100 patients must be treated.

The therapy of condition "Y" patients seems to be much more cost effective since the results apply to a broader population with a much higher mortality rate.

How Can We Accomplish What Most Americans Want and Still Provide Cost-Effective Care?

Physicians can control some, but not all, of the cost of effective medical care. Doctors must ask themselves one important question: Does the service, drug, diagnostic test, or procedure being considered for the patient provide information that will alter the management strategy favorably? In other words, in the doctor's judgment, will the expected outcome be good for the patient? If the answer is "yes," the doctor has a moral and/or medical obligation to advocate, recommend, or provide the service, drug, or procedure to the patient no matter what the cost. If the answer is "no," recommending or providing the service, drug, diagnostic or therapeutic procedure can not be medically and/or morally justified.

Conclusion

There is no question that medical care is expensive, but we have the best medical care in the world. We do not want to become second best. I believe physicians can practice cost-effective medicine if we recommend diagnostic and therapeutic strategies that are the least expensive but remain "standard of practice."

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References

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