

Sağlık Harcamalarını Azaltmak İçin Hekimlerin Gereksiz Kaynak Kullanımları Nasıl Kontrol Edilebilir?

[How to Control Physicians' Overutilization of Resources to Reduce the Health Services Costs?]

ÖZET

Sınırlı finansal kaynaklar ve artan sağlık hizmetleri maliyetleri, ülkeleri bu maliyetleri düşürme ve sağlık hizmetleri kalitesini artırma yönünde farklı yaklaşımlar uygulamaya zorlamaktadır. Hekimlerin uygulamalarındaki farklılıklar, hizmetlerin kalite ve maliyetine etki etmektedir. Sağlık hizmetlerinde hekimlerin oynadığı rolden dolayı hastane yöneticileri, onların uygulamalarına ilişkin bazı kontrol mekanizmaları geliştirmelidirler. Bu yüzden çoğu ülke, farklı stratejiler uygulayarak gereksiz sağlık hizmeti kullanımını kontrol altına almaya çalışmaktadırlar. Gereksiz kullanımın en çok görüldüğü alanlar; hastaneye yatış, hasta günü, acile başvurular, laboratuvar testleri ve ilaçların reçetelenmesidir.

SUMMARY

The increasing cost of health services and the limited financial resources available force countries to find approaches to reduce cost and to improve the quality of health services. Variations in physicians practice patterns have important implications for quality and cost. Because of their central role in health care, the hospital administrators should establish some control systems that can modify the current application models of physicians. Therefore, many countries are trying to control overutilization through different strategies. Common areas of overutilization include hospitalization, hospital inpatient days, emergency center visits, diagnostic laboratory and radiology tests, and prescription drugs.

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INTRODUCTION

The increasing cost and the equitable distribution of health services resources are important political and social issues. A major contributor to cost increase is the enormous capacity of biomedical science to create new and costly medical interventions (1).

The rising cost of health services and the limited financial resources available force countries to find approaches to reduce cost and to improve the quality of health services. So, many countries are trying to control overutilization with the help of different strategies. Some of the implemented strategies have been successful while others have failed (2).

The major cost reason in health services is overutilization. Overutilization is the unnecessary medical applications (tests, treatments and studies that patients undergo). The parties responsible for overutilization are the health services providers and patients who for a variety of seemingly good reasons

conspire to use more medical services than that which is required for appropriate care (3).

Common areas of overutilization include hospital inpatient days, inpatient mental health and substance abuse services, emergency center visits, diagnostic radiology and laboratory tests, and prescription drugs (4). Many researchers (2,3,5,6,7,8,9) has studied overutilization of health services, but most of the studies have only covered some areas of overutilization. Some of studies focus on physician overutilization of laboratory tests or radiological applications (6,7,8,9). Other studies examined patients' overutilization of health care services, especially ambulatory services and emergency services (4,10).

Large variations in the use of services by physicians have been identified. Service variation per se is not a problem; service misutilization is a problem. Service variation is important because it marks potential misutilization. If service variation is

great, one might suspect that some physicians are overutilizing services or others are underutilizing services. Conversely, misutilization can occur without significant service variation when the whole profession accepts a standard of care which is inappropriate.

Some variation is necessary and even desirable in the practice of medicine, where a range of resources and professional skills and the unique presentation and preferences of each patient dictates an individualized approach to medical care delivery. However, most of the differences in utilization thus far identified cannot be explained by differences in the quality of medical care delivered and in patient outcomes. Variation of physician utilization of health services is of concern because it represents costly and poor quality medical practice when patients are subjected to increased risks with no apparent benefits. Therefore, it is in society's and the medical profession's interest to reduce wasteful and harmful practices (11).

Variations in physician practice patterns have important implications for quality and cost of health services. Along with the medical applications and diagnoses (such as prescribing drugs, ordering test, admitting patients to hospitals) physicians affect the hospital costs by 70% to 80%. Because of their central role in health services, the hospital managers should establish some control systems that can modify the current application models of physicians (12). As pressures to reduce the cost of health services increase, many have looked for ways to reduce the number of diagnostic tests that physicians perform (13). Diagnostic tests account for roughly 25% of ambulatory health services costs, with 80% of all health services expenditures directed by physicians. Scientific evidence incorporating patient clinical characteristics and preferences should be the driving force behind all health care decisions, but several studies have shown that other factors including cost-control measures, reimbursement mechanisms, and malpractice concerns are able to influence clinical decision making, potentially impacting health care quality and costs. Certain physician attitudes or characteristics like tolerance for ambiguity, cost consciousness, risk preferences, and test reliance may also influence clinical decisions, especially when medical evidence doesn't explicitly indicate the best course of action. (14). A review of the literature reveals that the percentage of physicians' overutilization of unnecessary radiological and laboratory tests ranges from 4.5% to 95%. This large variation depends on many factors

such as definition of overuse or unnecessary tests used by researchers, control mechanisms and strategies to control utilization available in the institution, level of experience of physicians, financial incentives, and type of hospital (teaching or nonteaching) (15). Physicians order excessive tests for hospitalized patients for defensive reasons or ease of access or because they cannot manage the fear of uncertainty (6).

Health services research has demonstrated that physicians respond to this uncertainty in a variety of ways. There are wide variations in many aspects of medical practice, such as **medical operation**, hospitalization, length of stay, diagnostic test ordering, and drug prescribing (16).

Excessive ordering increases the use of technology and unnecessary costs to the delivery of health care (6). Additionally, the continuous technological advances in medicine have led to a rising use of high tech diagnostic tests which are often expensive. Therefore, many efforts have been undertaken to increase the effectiveness and efficiency of diagnostic tests.

Physicians who give priority to the reduction of their exposure to malpractice as compared to the health of their patients practice defensive medicine. Far-reaching yieldingness to unjustified requests of the patients in order to avoid unpleasant quarrels also falls into this category. Among other things, increases in diagnostics, consultations and in-patient treatments as well as decreases in risky medical measures are the consequences. Estimation of the costs of defensive medicine is difficult because of the many conflicting and overlapping motivations facing physicians (17).

Indeed, many diagnostic tests are performed although the incremental knowledge gained through testing will not affect the course of treatment. Physicians' concerns about malpractice liability are at least partially to blame for excessive test use. Many surveys suggest that between 20% and 81% of physicians have increased their use of diagnostic tests because of liability concerns. Probably, the risk of malpractice liability makes clinical errors more costly, so physicians turn to diagnostic tests in hopes of reducing the chances of such errors. Furthermore, ordering tests may provide physicians some protection against liability exposure when clinical errors are made. In other words, some diagnostic testing appears to be "defensive testing" - that is, testing performed to reduce physicians' malpractice liability risks. Regardless of physicians' motives, the costs of additional tests are passed on to patients, their insurers, and society (13).

Physician overutilization was identified by several studies of hospital inpatient days. Admission of patients who could have been treated in outpatient clinics and retention of patients longer than necessary lead to excessive hospital days. This also ties into managing chronic diseases such as diabetes and congestive heart failure through education and management of the disease by patient and physician. This model of disease management reduces emergency visits and inpatient stays (18).

Many studies performed in developed countries reported that the rate of unnecessary hospitalization was 70% to 80%, 2% to 5%, and 12% to 25% because of physician or hospital, patient or family, and environmental factors, respectively. The commonly causes of inappropriate use attributable physicians and hospitals might be the earlier hospitalization or unnecessary medical care in hospital conditions (12). It is estimated that more than 50% of US inpatient care is unnecessary (4). In Canada, it is estimated that 10% to 35% of all hospital admissions are inappropriate and 80% of physicians prescriptions are considered unnecessary (19). In a research performed at Gulhane Military Medical Faculty Training Hospital, Demir et al (12) found that the unnecessary hospitalization rate and unnecessary stay rate were 4.8% and 15.75%, respectively. In another study (20) performed at the same hospital, these rates were 21.3% and 49.1% respectively.

Emergency departments (EDs) are the leading providers of fragmented and uncontrolled costly healthcare. Many patients come to the ED because they do not have a physician and have no other mechanism for accessing healthcare. Patients who present to EDs for nonemergent problems cause overcrowding, prolonged patient waits with decreasing patient satisfaction, delays in treating other seriously ill patients (increased intensive care unit [ICU] diversion), compromised quality assurance issues (such as increased revisits and poor discharge planning), and an inefficiency that can undermine staff satisfaction and effectiveness. In addition, because of the Emergency Medical Treatment and Labor Act requiring access to emergency services for all individuals, physicians must assess, treat and stabilize patients before discharge or transfer regardless of the patient's ability to pay. This encourages physicians to admit patients for observation when it may not be required or needed (21).

Overuse of hospital emergency departments has been identified as a problem. Several studies

conducted in the United States revealed that more than 60% of all cases treated in hospital emergency rooms are not true emergencies (4,10). Lowe suggests that these emergency department visits may reflect the limited access that patients have to their primary care units. The primary care physician needs to design access to health care in a manner preferred by the patient and the needs of the patient. Improving access to primary care units will reduce cost of emergency department visits (22).

STRATEGIES TO CONTROL OVERUTILIZATION

In order to control overutilization, physicians' practice patterns should be altered through different mechanisms. Generally, there are seven general mechanisms that have been used to alter physicians' practice patterns: cost awareness, education and feedback on utilization, computer-based interventions, peer management, practice guidelines, administrative interventions and legal interventions. Some of these mechanisms target physician behaviors related to diagnostic test ordering and drug prescribing. Other interventions target patient overutilization of ambulatory and emergency services (15,18).

Cost awareness

Inevitably, costcontainment efforts require changes in physician practices. The role that physicians should play in the allocation of resources is a matter of debate. On the one hand, it has been argued that cost should never enter into physicians' decision making at the bedside. On the other hand, it has also been pointed out that their responsibility toward society requires physicians to become stewards of scarce resources. This debate reflects what is, in effect, a deep role conflict that physicians face when they are in a situation where they must allocate resources in clinical practice. So, a key question is how do physicians confront and resolve the ethical challenges posed by resource constraints and cost containment efforts (23)?

Provision of price information of different imaging and laboratory tests to physicians was one of the interventions used to control overutilization. There is evidence that provision of price information was associated with a significant change in physician test ordering behaviors (7,24). In a study, price information to physicians led to a 27% reduction in test charges. Even in the absence of direct financial pressure, the increase in cost awareness improved the efficiency of physicians' practice patterns. With

varying success, the provision of price information was shown to be an effective tool in the inpatient setting (7). It also resulted in the reduction of unnecessary tests and imaging procedures in the emergency department (7,24). Other investigators have concluded that this effect of reducing overutilization via cost information can impact ordering unnecessary tests. Many studies have documented that physicians are poorly equipped to consider cost when prescribing. This is not surprising, given the paucity of formal education on this subject in most medical schools and residency training programs (25). Several studies have shown that education of physicians about drug prices can change their prescribing patterns and reduce cost expenditures by improving selection of cost effective treatments (7,25). Ernsr et al (26) found that 64.4% of physicians believe they are undereducated about the cost of the medications they prescribe, and 93.6% of the physicians believe that regular pricing information would help them prescribe more cost effectively. Korn et al (25) found that physician were interested in prescribing cost effectively, but most felt unaware of the actual drug costs and few had received formal education on drug costs.

Physicians should receive the proper education and guidance in examining practice guidelines for ordering diagnostic tests. It would be beneficial that at the time a specific test is ordered a physician was aware of its cost. This would create an atmosphere of cost awareness to the ordering physician. This can be easily accomplished by putting the price directly on the ordering form or, in the case where tests are ordered electronically, the price can be made a part of the ordering information available to the physician (15).

Education and feedback on utilization

The rationale for education as a way to improve physicians' practices is straightforward. It is presumed that physicians who are more knowledgeable and clinically skilled will use fewer and more appropriate medical services. In this context, the idea of education implies that information will be transferred to doctors to improve their knowledge about the value or the cost of particular diagnostic or therapeutic services. Although some authors, writing about ways to change medical practice, have included feedback about utilization rates to physicians as a form of education, this blurs the distinction between education and feedback. Doing so confuses the cognitive influence of the knowledge with the behavioral influence of the feedback (16).

Education and feedback on laboratory utilization have been found to result in short-term change in physicians' ordering behaviors (24). Several researchers found that educational intervention results in persistent behavioral change when coupled with other interventions such as utilization audits and practice guidelines. Education to the patients directly on how they can manage their disease themselves through medication adjustment, specific signs and symptoms, and when to contact their physicians can also reduce overutilization (18). Education to enable physicians to communicate effectively with patients and families will reduce inappropriate demands for test (27).

Utilization review must be conducted regularly regarding physician's appropriate use of diagnostic tests and drug ordering. Feedback and recommendations for improvement should be provided to each physician via peer review. Accurate data must be compiled, examined, and utilized to change their patterns of medical care (15).

Computer-based interventions

Computerized Physician Order Entry systems were found to decrease physicians' overutilization of imaging and laboratory tests. The degree of change increased when reminders are sent to physicians (5,7,15,28). The Laboratory Advisory System is another system that assists physicians with test selection and result interpretation throughout the laboratory investigations stage of patient care. It was found that the Laboratory Advisory System reduces the number of sample collections, number of tests, laboratory costs, and the time required to reach a diagnosis (15,29).

Peer management

In order to control overutilization, peer influence is able to be effective. The extent to which an individual's attitudes and behaviors are subject to peer influence depends largely on the degree of uncertainty surrounding the behaviors and decision in question. Peer influence is greatest in situations characterized by high levels of uncertainty, where objective, unambiguous information is not readily available. Given the uncertainties inherent in clinical practice, we would expect physicians to model their behaviors after those of their peers (30).

Identifying opinion leaders and changing their behavior leads to a strong and efficient way of changing all physicians' ordering behaviors (6,31,32). Through peer management, normative data can be

developed and used to compare physician performance (15).

Practice guidelines

Different studies suggest that the effect of implementing practice guidelines on reducing physician overutilization of imaging and laboratory test is varied (8,9,24,32). Sucov et al (8) found that practice guidelines resulted in a 25% reduction of total testing. Solomon et al (24) found distribution of guidelines ineffective, but when combined with a change in the test to be performed, ordering volume was reduced. The following interventions were performed: assessment of baseline utilization of selected tests, development and dissemination of guidelines for ordering, and reassessment of utilization. These interventions resulted in decreased ordering of tests and improved appropriateness. Guideline dissemination alone doesn't sustain clinician behavior change even when clinicians are in agreement (24).

Ordering protocols and guidelines should address high-volume ordering areas. Ordering protocols and guidelines should be developed with simple rules that can be easily remembered by clinicians, conveniently expressed in the test order, and easily carried out by the laboratory (15).

Administrative interventions

Another way to change physicians' practice patterns is to limit their alternatives. When administrative rules designate which services physicians may prescribe, it might seem unnecessary to educate physicians or to provide them with feedback. An example of administrative rules that affect medical decision making is the exclusion of drugs from hospital formularies. If a hospital doesn't stock a drug, physicians may not order it for inpatients. In addition to limiting the services that are available, a hospital may require that physicians order the services in a certain way. For example, expensive antibiotics may need to be approved by an infectious disease physician (16).

Administrative interventions were found to be effective in controlling overutilization. Deletion of prothrombin time and partial thromboplastin time from standard admission laboratory orders was found to have resulted in a reduced volume of these tests and improved appropriateness of orders. Also, restricting first-year residents to only 8 laboratory tests per patient was a successful intervention. Requiring justification of tests on the request form

was found effective in increasing appropriateness of the tests and reducing overutilization (24).

Legal interventions

In the United States, several states have laws stating that private third-party payers are not required to reimburse for services provided by entities in which the referring physician or other practitioner has an interest. These laws prohibit physicians from referring their patients to ancillary services in which physicians have a financial or ownership interest resulting in decreased utilization. Another example of legal intervention is the Antikickback Law that was designed to address the problems of overutilization and cost containment in Medicare and Medicaid (31). Literature review revealed that multidimensional interventions are more successful in changing physicians' ordering behavior and reducing overutilization (15,24).

There are several interventions targeted to reduce patient overutilization of emergency and ambulatory services. Restricting patient self-referral to a specialist by requiring a referral from primary care physicians was implemented in many countries such as Canada and has successfully reduced patient overutilization of specialists' services. Triage systems in the emergency department were also implemented by many countries to reduce nonemergent cases (15,18,33). Other implemented interventions such as increasing the primary care physician fees and paying co-payments for unnecessary health services had some effects in reducing overutilization (15,33).

DISCUSSION AND CONCLUSIONS

Controlling overutilization is one of the successful strategies for reducing health services costs, but appropriate interventions must be chosen carefully and must not sacrifice the quality of health services provided. All areas of health services overutilization must be studied, causes of overutilization must be identified, variances analyzed, and the use of multidimensional interventions implemented and monitored. The effects of implemented interventions on the cost and quality of the health services must be evaluated.

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