Appendix C: The Impact of Nonclinical Factors on Physicians' Use of Resources

Although clinical factors are still the most important determinants of physicians' clinical decisions (61), research suggests that a number of nonclinical factors also influence physicians' diagnosis and treatment choices, among them malpractice liability concerns.

The influence of malpractice risk on physician behavior is discussed at length in chapters 2 and 3 of this report. This appendix briefly reviews some evidence on the influence of other nonclinical factors in physicians' decisions about resource use.

AWARENESS OF AND SENSITIVITY TO TEST COSTS

A number of studies have suggested that physic cians are sensitive to costs when ordering tests and prescribing treatments (1 1,65,97,1 33,225). For example, one study found that physicians who were given information on test costs ordered 14 percent fewer tests per patient than physicians who are not given cost information (225).

In a study of test use for hypertensive patients, cost to patient was cited as an important reason for not ordering electrocardiograms (65). An OTA-sponsored clinical scenario study found that physicians with greater levels of cost-consciousness (measured by using attitude scales) reported they would use fewer resources than physicians with lower levels of cost-consciousness (73).

FINANCIAL INCENTIVES

Several studies have found that diagnostic testing and other service use is lower in prepaid and salaried practice settings than in fee-for-service systems (64,92, 136, 140,208). Other types of financial incentives have also been shown to have an effect on use.

For example, a study of physicians in a for-profit chain of ambulatory care centers found that use of laboratory tests and x-rays increased substantially (23 and 16 percent, respectively) after physicians were offered bonuses for increasing patient care revenues (91).

Other studies have shown that physicians respond to reduced fees by increasing the volume of services they perform (189,195,205). Finally, physician ownership of testing and treatment facilities has been associated with increased resource use (93,2 14,245).

INSURANCE COVERAGE

Insurance status of patients has also been associated with willingness to use resources. This may reflect physicians' sensitivity to both their own and patients' financial concerns. Research has consistently shown that hospitalized patients with private insurance coverage stay in the hospital longer and receive more procedures (especially more discretionary and high-cost procedures)

than patients with Medicaid coverage or patients who lack health insurance (238).

For example, a recent study of low-income pregnant women in Massachusetts (82) found that public health insurance coverage increased their likelihood of undergoing a Caesarean section. Service-specific financial incentives did not play a role, as the public insurance program paid a global fee regardless of type of delivery. Another study of patients with ischemic heart disease in California hospitals found that, after controlling for demographic, clinical, and hospital characteristics, the frequency of coronary revascularization procedures (coronary artery bypass surgery and coronary angioplasty) was almost two times higher in fee-for-serv ice patients than in health maintenance organization (HMO) and Medicaid patients (121). The same study also found that the rate of coronary revascularization increased more quickly in fee-for-service and HMO patients than in Medicaid patients between 1983 and 1985 (121).

PROXIMITY OF TECHNOLOGY

Some studies have shown that the availability of technologies influences their use. For example, a recent study of acute myocardial infarction (AMI) patients in Seattle found that patients admitted to hospitals with onsite cardiac catheterization facilities were three times as likely as patients in hospitals without those facilities to undergo coronary angiography. After adjusting for clinical factors, the existence of onsite catheterization facilities was the strongest predictor of use of coronary angiography (66). A similar study in New York corroborated these results, finding that AMI patients admitted to facilities offering cardiac catheterization, bypass surgery, and angioplasty services were two to six times as likely as patients in facilities not offering them to receive these services (18).

Another study of physician practice patterns suggested that some of the otherwise unexplained variation may be influenced by differences in physicians ' "enthusiasm" for using certain interventions (39). This enthusiasm may be a byproduct of other related issues, such as greater familiarity with the technique, a role in its pioneering, or availability of technology.

OTHER FACTORS

Other factors associated with physicians' use of tests and procedures include physician specialty and training (62, 123,126, 175,257,259), practice setting (e.g., managed care versus unrestricted private practice) (135, 136) and patient expectations (144).

[1]For example. one study found that internists and family practitioners ordered more diagnostic tests than general practitioners (62).