MEDICAL CARE'S NEXT REVOLUTION Believe it or not, doctors often don't know which treatments pay off best for patients. A vanguard of physicians hope to conquer this ignorance.

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(FORTUNE Magazine) – CONSIDER what doctors, to say nothing of patients, don't know about the value of just one procedure. Each year about 80,000 Americans get a carotid endarterectomy, a kind of Roto-Rooter job on clogged neck arteries. Typically costing $9,000, counting the bill for a hospital stay, the operation is designed to prevent strokes. Another triumph of modern medicine? Or an overly risky, overdone alternative to cheaper drug therapy? Incredibly, no one knows for sure, and no one is tracking the patients on a systematic basis to find out. The same holds true for scores of other medical ministrations. Food companies know the impact of a redesigned ketchup bottle on sales. But the virtuosos performing hysterectomies, installing pacemakers, and bypassing diseased coronary arteries have only patchy information about the real payoffs. "Half of what the medical profession does is of unverified effectiveness," asserts Dr. Paul M. Ellwood Jr. of Minneapolis, in a phalanx of physicians who want to cut down on the guesswork. Half of something as stupendous as the U.S. health bill -- now 11.4% of GNP, or nearly twice what the military gets -- implies a huge ore body that could be mined for savings. That should be of special interest to business, which picks up the biggest chunk of medical expenditures. Health insurance premiums have jumped anew in 1988, following several years in which companies successfully slowed the rise. Abetting the persistent upward trend is what one consultant calls "MD- ification." Corporations, for all their new cost-containment mechanisms, don't know enough to go eyeball to eyeball when professionals are determined to do an operation. Yet business executives would be shocked if they knew of the doctors' own uncertainties.

The problem is rare in the cut-and-dried matter of treating acute afflictions -- prescribing penicillin for pneumonia or setting a broken bone. But doctors increasingly toil in the murky area of chronic ailments: arthritis, angina chest pain, impaired vision. Here the question of which treatment is best can be settled only with data. The need for much more of it has never been so urgent. The new law liberalizing Medicare payments for catastrophic illness promises to boost demand for health services still further. So could the extension of health insurance to the uninsured (FORTUNE, September 26). A rollback of ignorance would bring huge benefits. With better data, business could effectively challenge proposed treatments. Many doctors might enjoy better protection against malpractice suits. Patients could be the biggest gainers. If the pros and cons of alternative treatments were better known and conveyed in lay language -- a rarity now -- patients could have a real say in how they are scanned and sliced. THE GROWTH of health maintenance organizations, whose membership has tripled to 31 million in the past six years, was supposed to supply much of the missing knowledge. Operating on a fixed ''subscription'' payment set annually for their members, HMOs have strong reasons to study their centralized patient files for ways to weed out wasteful procedures. Alas, such studies have not been extensive. Until recently, HMOs have managed to save plenty of money just by cutting down on hospital stays. That's particularly disappointing to Ellwood, 62, a witty, searingly insightful visionary who heads a medical think tank called InterStudy. He led the proselytizers when the concept of prepaid care was barely known in the . early 1970s, and the very term HMO is his. But the rates at which HMO doctors perform various procedures, it turns out, are not so different than elsewhere. Caesareans and other debatable operations, moreover, are way up, just as they are in the country at large. ''What HMOs haven't done, which I had hoped, is manage the content of medical care,'' Ellwood says. Why not? ''HMO doctors are ignorant, just like all doctors.'' Having shaken up the medical system once, Ellwood seeks to do it again. He wants the records of millions of encounters between doctor and patient, whether in HMOs or in the traditional fee-for-service system, recorded in computers and the results of treatment routinely monitored through follow-up questionnaires to patients. ''When we're spending a half trillion dollars a year on health care,'' Ellwood says, ''we ought to know what works.'' Dr. Arnold S. Relman, editor of the influential New England Journal of Medicine, says that ''assessments'' and the general concern about quality are ''the third revolution in medical care,'' the first being the spread of health insurance and the second the revolt of the payers. Physicians must be in charge of the third revolution, Relman says, for only they have the training. Though better information could put an end to some fat fees, doctors are starting to rally behind the idea. Many fear a loathsome alternative: another round of heavy-handed cost controls imposed by non-doctors. Dr. William L. Roper, a pediatrician who runs the federal government's Medicare and Medicaid programs, adds that ''those on the firing line want better information so they can do a better job for their patients.'' MEDICAL RESEARCH is hardly in short supply. Teams of doctors report all the time on the success of this new operation or that diagnostic device. But the studies often leave important questions unanswered because the number of patients is small, the scope of inquiry narrow, or the methodology faulty. Take the controversy on how to treat hardening of the leg arteries, which can turn walking to agony and lead to amputation. Doctors have four main alternatives: Do nothing, prescribe physical therapy and exercise, perform bypass surgery, or use a newer procedure called percutaneous transluminal angioplasty, or PTA -- inserting a balloon and inflating it to clear the arteries. During a 1987 visit to Duke University's Center for Health Policy Research and Education, Dr. Raphael Adar, a prominent Israeli surgeon, pored over 39 papers on the use of PTA for the leg. As disclosed in a recent issue of Health Affairs magazine, Adar found all

the studies deficient. Not even the better ones reported on the outcomes of greatest concern to patients: the relief of pain and the continued ability to walk. "For people who read this kind of information, it's very frustrating," says Dr. David Eddy, a professor of health policy at Duke and a critic of much medical research. Meaningful numbers on the cost effectiveness of tests can also be hard to come by. When left in the dark, Eddy says, panels of doctors charged with evaluating the tests' usefulness fall back on their own best clinical impressions. One panel was asked to estimate the effect of a particular testing regimen -- annual sigmoidoscopy and stool specimens -- in reducing cancers of the colon and rectum, which annually take the lives of about 60,000 Americans. The answers ranged all the way from a 5% reduction in deaths to 95%. Elsewhere, shafts of knowledge have begun to pierce the darkness. Financed primarily by foundation funds, Rand Corp., a research organization in Santa Monica, California, has looked into those carotid endarterectomies. First the researchers studied the literature and listed the hundreds of situations in which the treatment might help. Then they asked a panel of nine doctors to rate its appropriateness in each situation and reviewed the records of 1,302 Medicare patients in three areas who got the operation in 1981.

The conclusion, published earlier this year: Just over a third of the carotid endarterectomies were appropriate, while 32% were borderline. The other 32% should not have been performed, mainly because the symptoms did not seem serious enough to warrant the considerable risks. During the hospital stay, 3.4% of all the patients who got carotid endarterectomies died because of complications from the operation. Another 6.4% had strokes -- just what they had hoped to avoid. The researchers recommended that the operation be curtailed. Three other procedures have come under Rand's scrutiny. As the table on page 127 shows, the researchers found two diagnostic tests much in vogue to be overdone, though not as greatly as some critics assert. But Rand recently came down hard on coronary artery bypass surgery. More than 230,000 Americans had coronary bypass operations last year, twice as many as in 1980. Few are life-and-death affairs performed on patients who & have just had heart attacks. The aim generally is to relieve chest pain. Two alternatives -- drugs and clearing the coronary arteries with an inserted balloon -- are less costly and sometimes just as effective. Reviewing 386 bypass operations done in three hospitals in 1979, 1980, and 1982, Rand concluded that only 56% were clearly appropriate. "Appropriateness" studies are a giant step forward, but they have limitations. They are based on what committees of specialists believe is the right time to test or operate. To know what works requires surveys of how patients made out later on -- typically at least a year later. Contact with patients often ends when they walk out of the hospital or the doctor's office. Dr. John E. Wennberg, an epidemiologist at Dartmouth Medical School, made some fascinating discoveries in a follow-up study of men who underwent prostate operations. WENNBERG, 54, has a quietly earnest manner that befits one with a sense of mission. Because doctors don't know the probable outcomes of one treatment vs. another, he says, medicine is in an "intellectual crisis." When studying health care patterns in rural New England in the 1970s, Wennberg was struck by significant variations in the rate at which doctors performed tonsillectomies, hysterectomies, and other operations. Later he found sharp differences in medical spending in Boston and New Haven, Connecticut. Though the health characteristics of both cities' populations are similar, Boston was spending the equivalent of 16% of GNP on medical care to New Haven's 9%. Prostate operations, which varied from place to place by a factor of four in the earlier New England study, provided an opportunity for Wennberg and his colleagues to pioneer. Few are performed to save a man's life; even cancer of the prostate is rarely fatal. But many physicians have long advised

preventive surgery to avoid a greater risk when the man is older. More than 300,000 operations on benignly enlarged prostates were performed in the U.S. last year at a cost of about $3,500 each. Two-thirds of Maine's practicing urologists agreed to participate in Wennberg's survey of patients getting prostatectomy operations, starting in mid-1983. Most of the patients were 65 and older. An initial interview detailing each man's symptoms was followed by another three months after surgery and telephone interviews after six and 12 months. The findings, based on 263 men who completed all three postoperative interviews, were published ^ last spring in the Journal of the American Medical Association. The researchers found that the "preventive" argument for surgery is wrong, for the operation caused a slight decrease in life expectancy. It is justified solely, they concluded, for what physicians call quality-of-life reasons: The patient is having problems urinating. For most of the men, the quality of life improved over a year: 78% reported mild or no symptoms and 16% moderate problems, leaving only 6% with serious symptoms. The results of the survey have been incorporated into a videodisc that will be tested before focus groups of doctors and patients this fall. Running 28 minutes, not counting additional information the viewer can select at the press of a button, the disc is a breakthrough in medical consumer information. To background music, the title comes on screen: CHOOSING -- Prostatectomy or Watchful Waiting. Dr. Charles Culver, a psychiatrist who serves as narrator, says the operation brings "improvement at a price. We'll tell you the harms and benefits, but then you must decide." Four patients appear. One of two who agreed to the operation can scarcely contain his enthusiasm: "Now I can put my initials in the snow!" One who chose "watchful waiting" is asked whether his condition interferes with daily activities. His mildly jovial reply: "All tickets at the theater or the airlines had better be on the aisle." While pointing out the advantages of the operation, the narrator cautions that the negatives must not be overlooked. Within three months of the operation, 8% of the men were back in the hospital with serious complications. Others encountered new difficulties: 4% of those who never had the problem became incontinent to some degree, and 5% of those who previously had erections became impotent. If the videodisc were generally available, many men would probably turn down the operation, particularly those who don't have severe problems. Not too many years hence, Wennberg hopes, a typical doctor's office will have perhaps a score of videodiscs covering as many illnesses. To those accustomed to the dictatorial style of medicine, it might seem utopian to expect doctors to furnish information enabling patients to argue with them. But many doctors, particularly family physicians, might welcome the chance to help patients make up their minds. It's a safe bet, too, that payers would encourage the practice. Wennberg favors a big increase in funding for a little-known federal agency called the National Center for Health Services Research and Health Care Technology Assessment. Despite the impressive name, its budget has declined since the 1970s, to $47 million. Wennberg and others want the figure boosted to at least $200 million. That would finance more studies like the one on prostatectomies. Says Wennberg, who notes that the drug industry spends billions evaluating its products: "The fundamental assessments of whether procedure A or B works better just haven't been done." Ellwood has something far more ambitious in mind, which he calls "outcomes management." The health system would keep track of all patients and their progress after treatment. Initially the goal would be to track chronic illnesses whose treatment is of uncertain value. Doctors would constantly adjust their procedures in response to feedback on what works best, much as a retail chain adjusts its buying according to on-line data that show what is selling. THE BEGINNINGS of such a system can already be discerned. Medicare boss Roper's outfit, the Health Care Financing Administration, has agreed to pay for pilot studies of outcomes management at ten Midwestern HMOs. Quality

Quest, a subsidiary of Ellwood's InterStudy, will be in charge. One of the first tasks is to select a short, standardized "quality of life" questionnaire in which patients would describe their condition before treatment and later on. Such questionnaires, developed in the past few years by Boston psychometrician John E. Ware and others, include general queries on the patient's well-being and ability to function as well as some related to his specific illness. Sample question for a victim of heart disease: "Do you need to sleep sitting up at night?" Ten other organizations are interested in financing pilot studies, among them the state of Massachusetts and the Blue Cross and Blue Shield Association in Chicago. When asked what he thinks of Ellwood's idea, the association's president, Bernard R. Tresnowski, responds, "Right on!" "The health care system," Ellwood declares, "has become an organism desperately in need of a central nervous system that can help it cope with the complexities of modern medicine." Until a single national databank can be created, he would settle for a sharing of information among insurers and health organizations. One of the biggest data pools is Health Information Reporting Co., set up three years ago by nine of the largest Blue Cross and Blue Shield plans and the national association to analyze payment and utilization trends among 15 million members. Another is the federal government, which has years of claims data covering 32 million Medicare recipients. In neither case are patients surveyed later on to gauge the effectiveness of treatments, though the Blues and Medicare are both interested in the idea. Data on patients' fates are already gathered, however, for some major illnesses. For example, the National Cancer Institute has access to data on more than a million patients, and a pool of data banks called Aramis tracks 28,000 arthritis victims. Some of the findings are available to the public.

Doctors' offices, which long ago turned to computers for billing, are still paper holdouts when it comes to maintaining patients' medical records. Many hospitals and health care organizations, on the other hand, have gone heavily electronic. Intermountain Health Care of Salt Lake City, which in 1975 took over hospitals formerly owned by the Mormon church, has created what may be the best computerized clinical database in the U.S. At some bedsides, doctors can call up a patient's history on terminals, including past test results and even recommended procedures. Dr. Brent James, who is director of medical research at Intermountain, plans to add follow-up surveys of discharged patients. Computers already influence what doctors do. At Wishard Memorial Hospital in Indiana University's Indianapolis medical center, at least 400 doctors have access to computerized patient records. In an experiment at reducing blood tests in the mid-1980s, terminals began flashing information on the odds that each of eight common tests would reveal a suspected abnormality. Result: Billing for the eight tests dropped 9%. United HealthCare, a Minneapolis firm that owns seven HMOs and provides contractual services to 16 others, maintains prescription records for two million people. About 500,000 live in the Twin Cities area, where pharmacies are tied into a computer network. When the computers spotted excessive use of diet pills a few years ago, the HMOs stopped paying for them and doctors cut down on prescribing them. The next medical revolution will quickly sputter if it merely amasses information that doctors ignore. It's unlikely insurers will let that happen. Willis Goldbeck, president of the Washington Business Group on Health, a national organization of large companies with employee medical plans, says that

"physicians will change their behavior if the new knowledge is tied to reimbursement." SUCH TIES are already being forged. Citing Rand Corp.'s studies, California Blue Shield has decided to require a second opinion on carotid endarterectomies. One of Rand's senior researchers on the medical studies, Dr. Mark Chassin, has become senior vice president of a new company called Value Health Sciences, which is turning the Rand findings into a computer software program that insurers will be able to use as a cheaper alternative to a second doctor's opinion. Thus the payers are using doctor-generated information to control what doctors receive. The implications cause a few shivers among physicians. Will medicine become a "cookbook" affair, with the treatment for each set of symptoms limited to what shows up on a computer screen? No two patients are alike, after all, and doctoring has always been a subtle blend of feel and fact. Roper, for one, doubts that cold science will eliminate the need for healing art. Airline pilots are required to follow all sorts of standard checkout procedures, he says, but flying the big ship still calls for experience. By putting as much uncertainty as possible behind them, doctors should find their calling more satisfying than ever.

CHART: NOT AVAILABLE CREDIT: NO CREDIT CAPTION: TOO MUCH DOCTORING, SAY THE DOCTORS Big savings might result from better data on which patients really need fancy operations and tests. Panels of doctors developed the criteria upon which these findings are based.

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