

Ten Years' Experience in a British Casualty Department Staffed by General Practitioners

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Ten years' documented experience in a British Casualty Department* shows that the family physician has a potentially large role to play in the accident and emergency services of his community. It is clear that a well-trained family physician in a properly equipped hospital department can care for the great majority of his patients' injuries, minor surgical operations, and anesthetic needs. This is especially so where group practice and helpful specialist colleagues provide a supportive framework for problem sharing. A case is made for education of all family practice students and residents in this large and important area of medicine.

Background

In 1963, after training involving hospital appointments in medicine, surgery, obstetrics with gynecology, pediatrics and casualty, a research fellowship, and a general practice traineeship, I entered a group practice partnership** in the Shropshire town of Bridgnorth. The population centered on this rural market town was about 11,000 in 1963 and grew to over 14,000 in the subsequent decade. The main occupation was agriculture and the area served comprised approximately 300 square miles.

The practice of six doctors provided routine general medical services as well as full medical staffing of the busy Casualty Department at Bridgnorth and South Shropshire Infirmary, the local community hospital. In addition, the maternity services (350 to 400 deliveries each year),

some anesthetic services and much of the occupational medical coverage were provided by members of the practice. Extra commitments involved dental anesthetic work, two Planned Parenthood clinics every week, participation in Red Cross and Saint John Ambulance Brigade instruction, on-call duty for a local coal mine, and occasional lecturing to high school students, women's organizations and service groups. There was also some police-related work involving cases of drunken driving, assault, acute psychiatric disturbance, and sudden death. Involvement in medical education encompassed undergraduate preceptorship with students from Liverpool University Medical School, active participation in the regional residency program, and the organization and running of a continuing education scheme on behalf of the Royal College of General Practitioners. The topographical setting of the practice and its methods of operation have been described elsewhere.¹

Data from the decade 1964 to 1974 is presented and discussed in this paper. Only material from the Casualty Service is dealt with here; night call work generated from the practice will be the subject of another paper.

In 1963, the Casualty Department handled approximately 4,000 cases, and this figure increased steadily over the decade to reach about 10,000 in 1974. It is fair to say that financial return was not a strong motivating factor for those doctors who worked in the hospital, the annual income being less than \$1,000 each, but the casualty work was viewed as a community service which all were glad to perform.

In over 85 percent of cases only one doctor was required to handle the problem, and there were never any incidents in which I was involved where five or more doctors were working in the Department at the same time. When two doctors were involved (eight percent of all), one was usually acting as an anesthetist, whereas when three were working together (six percent of all), this was usually an anesthetist, plus a surgeon, and an assistant.

The number of new cases seen by me increased threefold over the decade and, although this was largely related to increases in the practice population, the influence of the nearby town of Telford, which had no hospital, was also felt.

Description of Practice

Data from the study over a ten-year period are shown in Tables 1 through 7. It is interesting that 73 percent of patients came from the practice population, 18 percent were referred by neighboring doctors, and nine percent were vacationers or travelers in transit through the town. It might be argued that the hospital Casualty Department was serving as a treatment room for the group practice, although it should be noted that many of the conditions encountered

*"Casualty Department" is synonymous with "Accident and Emergency Room."

**"General practitioner" and "family physician" are used here as interchangeable terms since this is the custom in Britain.

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Table 1
Age Distribution: Patients 1964-1974

Age in Years	%
0-2	7
3-7	18
8-10	14
11-15	13
16-20	11
21-30	7
31-40	8
41-50	9
51-60	6
61-70	4
Over 71	2
Age not recorded	<1

This was related to the location of Bridgnorth at a junction of several routes where it is the only river crossing for miles. Other factors include increasing traffic congestion on rural roads, and perhaps the effect of railroad closure in increasing road use. Farm injuries were the next most common, and increasing mechanization, adverse working conditions, and fatigue were responsible for trauma in many cases. In my experience the unguarded chain saw is the most deadly tool yet devised, and in the hands of a tired, inexperienced farm boy on a wet day it can almost be guaranteed to cause injury. The sportsfield and home are more or less equally represented, and in the former the range of injuries was wide with rugby football providing an excessively high proportion of cases. In the home, burns are common but falls from unstable stepladders, splinters from wooden structures, and falls over rugs, stairs, and toys were all well represented. If the data on place of injury is any guide, the safest place to be is in a shop, but school and garden are also low-risk sites.

Since Bridgnorth is in a rural area used for recreation as well as farming, fishing injuries were encountered, and these were exclusively hooks caught in the hand, ear, nape of neck, or nose. The most bizarre of these was a teenage boy who presented with a fishhook in the ala of the left nostril and a live maggot wriggling at the base of the hook. The initial procedure was excision of the maggot!

Boating, swimming, and wading in the river Severn accounted for cuts on the feet, immersion chilling and one case of near-drowning. The fact that the river is polluted and a dumping ground for bottles, old bicycles, and car batteries does not seem to deter many people from using it for swimming, fishing, paddling or, occasionally, drinking!

Soft tissue trauma is summarized in Table 3, and this group comprised the overwhelming majority of patients seen. Although most trauma produced lacerations, there was an appreciable number of crush injuries and puncture wounds.

Fractures are summarized in Table 4. A single fracture was present in over 200 cases out of a total of more than 400. Fractures of the skull, spine and pelvis were rare, but the

metacarpals and phalanges were frequently damaged, and digital injury to the foot was also common. As one might expect, the classical Colles fracture was frequently represented and carpal bones, especially the scaphoid (palmar navicular), were also prominent. This distribution of fractures suggests where one might place emphasis in teaching medical students in a Casualty Department.

The vast majority of burns (Table 5) were suffered at home and were managed on an outpatient basis. Almost half occurred in children under ten, which gives one a clear indication of the best preventive strategy. Almost all of the 43 patients burned at work had been welding at nearby garages or had been involved in furnace operations at a local foundry. Two exceptions were forestry workers burned while creosoting poles in a pit of boiling pitch.

In view of the rural setting, it is not surprising that a small, but significant, number of injuries were caused by animals. The most common injury was the dog bite and the most bizarre a lacerated prepuce in a young boy who had been assaulted by a rooster! The circumstances of this strange incident were never explained to my satisfaction.

Other injuries caused by beasts included fractured toes in a farmer's wife who was trodden on by a cow, a case of "goring" by a bull, and several fractured clavicles and forearm bones due to falls from horseback. It is to the credit of the local horse-riding fraternity that no cases of fractured skull were encountered, probably because protective hunt caps were universally worn in the field.

Soft tissue sepsis treated by incision and drainage, with or without chemotherapy, provided about 50 cases a year for management (Table 6). Although no detailed data were recorded, it is interesting that the most prominent sites of sepsis were the hand and perineum. Perhaps this is related to the frequency of trauma in the former and the proximity to large bowel pathogens in the latter.

So many patients presented in the practice with leg ulcers that it was sound organization to run a "leg clinic" in the hospital Casualty

could only have been dealt with effectively in the hospital environment.

One is struck by the high proportion of patients between the ages of 3 and 15 years (Table 1) and the more or less even distribution among other age categories. To a certain extent, this distribution can be accounted for by the frequency of minor trauma in childhood, but an additional factor was the tradition of using the Casualty Department as an "open house" consultation facility, especially for children. This was despite the fact that there was easy access to family practice appointments in the nearby practice building during the working day. There is a common feeling that a Casualty Department is a kind of "open clinic" where first aid, nursing help, and, if required, a doctor are easily available at any time of day or night. The difficulty with this approach was the requirement placed upon the nursing staff by the administration that all patients be seen by a doctor and that the responsibility for treating any condition whatsoever, "sight unseen," must always rest with the doctor himself.

Reviewing the geographic locations where injuries occurred, it may be seen (Table 2) that the great majority were the result of traffic accidents.

Department. This had the advantage of providing a high volume service where one doctor could cope with a big patient load. Ambulance services could be organized to transport the patients once a week and methods of treatment could be standardized and compared.

Only three varicose ulcer patients in ten years required hospital admission for treatment. In 32 cases ultraviolet light as well as dressings were given and in 256, oral antibiotics for cellulitis were given as a necessary part of treatment.

In some settings these patients might have been treated at home by the district nurse or in the treatment room of a health center. The peculiar setting of the practice with great distances from the center to the patients' homes made it more practicable to use the hospital Casualty Department for the treatment program.

Patients with foreign bodies commonly present to the family physician for help, and in this series (Table 7) the eye was the most frequently affected site. Grit blown by wind, eyelashes, flakes of rust from beneath cars, and fragments projected from grindstones were all common. It was striking that many of the industrial eye injuries caused by foreign bodies were inflicted despite the fact that the patient possessed protective goggles. It would appear that existing designs of industrial eyeshields are uncomfortable, cumbersome and as likely to be worn in a supraorbital mode during work than in the proper protective fashion. Several of the workmen with ocular foreign bodies had been injured before, but even so failed to wear protective eyeshields.

Wood splinters were commonly encountered. I found that the easiest to remove were those that had not been "soaked" at home first, and that an efficient pair of splinter forceps was an essential piece of equipment.

Metallic staples were encountered in the hands of young women working in a local factory producing industrial gloves, and the fact that three patients were injured by shotgun pellets indicated a failure of elementary safety precautions that should have been applied during a local informal "shoot."

Excluded from the figures was a

case of a young poacher who climbed out of his car early one morning with a short shotgun under his arm. The fact that it was loaded and cocked made the subsequent blast that tore his axilla to shreds almost inevitable. The injury was so extensive that my tasks were limited to first-aid arrest of hemorrhage, emergency transfusion, and the injection of morphine, penicillin, and tetanus toxoid prior to his removal to a major trauma center.

Minor surgery in a less-harassed style was practiced in a series of 128 vasectomies that have been reported in detail elsewhere.² The fact that I was in daily contact with minor trauma surgery and involved in the workings of a well-equipped department made it fairly easy to establish an effective free vasectomy service for the patients of our own practice.

Circumcision was seldom performed and, indeed, in recent years it has been done in Britain only when there are good clinical indications, such as phimosis with or without repeated infection. Anesthesia was, of course, always general and provided by one of my partners. The patients were all under the age of six, since any older boy or adult needing circumcision was referred to a colleague with higher surgical qualifications and much greater experience of operative work than myself.

Remaining data from the study show a miscellany of minor surgical operations, emergency dental work and a series of anesthetic procedures. There were also 23 cases of drug overdose requiring resuscitation or of shock from hemorrhage and major trauma.

Elective minor surgery involved the removal of sebaceous cysts, warts, moles, lipomata and verrucas, while the dental procedures consisted of temporary fillings, suturing bleeding tooth sockets and repair of gum trauma, all carried out at times when dental surgeons were unavailable.

The family physician in Britain is seldom called upon to administer anesthetics except when he holds a hospital appointment on a regular basis. In Bridgnorth, all the doctors working at the Infirmary were expected to be able to give "straight-forward" short-duration inhalation anesthetics and also local infiltration anesthetics for minor surgical procedures.

Table 2. Injuries: "Where And How"

Road traffic accidents (RTA)	633
At work (including farm)	332
Sports (including football and cricket)	199
At home	177
Street (other than RTA)	66
School excluding organized sport	53
Animal bite, kick, or peck (including farm)	53
Gardening (leisure)	34
Boating, swimming, and wading	13
Fishing	11
Shops (customer)	4
Total	1,575

Table 3. Soft Tissue Trauma

Lacerations	844
Combination of injuries	481
Crush injuries	134
Puncture wounds	120
Incised wounds	63
Total	1,642

In view of the very short duration of the procedures undertaken in the department, "top circle" semi-closed technique using a Boyle's machine was the standard general anesthetic method in most cases. In my earlier years in the practice I used "open" ether with ethylchloride induction using a Schimmelbusch mask for small children. However, this was discarded to make way for more sophisticated and safer techniques when experience with halothane had been gained in adults. Most intravenous inductions were with ultra short-acting barbiturates, but a short

series of eight fracture reduction cases using propanidid was included as a trial of a new agent. Since no great advantages were reported by the consultants whose advice was sought, propanidid was not introduced on a greater scale.

Most inhalation procedures involved the use of halothane (Fluothane), and this agent was found to be safe and reasonably easy to administer. A limited experience of

methoxyflurane (Penthrane), using this agent as an analgesic, did not encourage me to use it for anything more extensive.

The series of local anesthetic administrations included 20 patients who were anesthetized with prilocaine (Citanest). These were all vasectomy patients and prilocaine was in use on a trial basis to gain experience of the longer-acting anesthetic properties of this drug. In all cases the local anesthetic effect was satisfying and seemed prolonged enough to give pain prevention for at least four hours after operation.

difficulties experienced by some patients in gaining access to effective health care.

Solutions will have to be found within the next few years, not so much to the technical questions posed by medicine but to the more mundane and equally important matter of how competent and consistent medical care can be made available to every citizen irrespective of locale, income, and social background. No society has all the answers, and in Britain there are chronic difficulties in securing enough competent physicians to staff the accident and emergency services. It is an indictment of clumsy health-care planning to find Britain's Casualty Departments closing through lack of staff, and the remaining ones functioning under severe strain. One possible answer might be to revise the working patterns of family physicians to be more attuned to the needs of the local community.**

This paper has reviewed emergency and minor surgical service provided by one doctor as part of a team in a small hospital in rural England. The work was made possible by a cooperative style of practice, with the heavy emotional and physical loads being shared by five equally committed and active partners. It is inconceivable that a similar workload could have been handled in the absence of a close-knit partnership, however interesting the work or necessary the job.

Supportive consultant colleagues were always available to the family physicians involved in the Casualty Department described here. Indeed, the feeling that one always had an interested surgical, orthopedic or other specialist as back-up in the event of difficulty or complication had much to do with the confidence with which the work was handled in the Department. This feature of close cooperation between family physician and consulting specialist is worthy of

Table 4. Fractures and Dislocations

Skull	12
Spine	3
Upper limb	
Metacarpals and phalanges	198
Carpus	68
Colles	59
Humerus	16
Lower limb	
Multiple	232
Metatarsus and phalanges	96
Pott's	29
Femur	17
Tarsus	5
Pelvis	3
Total	738

Discussion

One of the most satisfying aspects of medical practice is the use of practical skills to bring relief or cure to one's patients. Much "surgical" disease encountered by a family physician is on a scale that he can deal with effectively and safely given adequate training, regular practice, suitable surroundings and good equipment.

Historically, in many areas of Britain the family physician is divorced from hospital practice, especially in major cities. In rural areas, on the other hand, there are still many small hospitals that rely upon general practitioners, who often give their services free or for very little recompense. However, the present situation in Britain is very unstable and current medico-political upheavals may yet see a review of the general practitioner's role with more active participation in the hospital work of cities as well as the country.* It is, therefore, especially pertinent to explore again the scope of family practice.

Two of the most intractable problems of our times are the geographic maldistribution of physicians and the

Table 5. Burns

Severity	
Minor	455
Requiring hospital admission	31
Age	
Under 10 years	206
10-60 years	195
61 years and over	80
Age not recorded	5
Location of accident	
Domestic	401
At work	43
Other	42
Total	486

*The upheavals referred to include a "work to rule" (strike) by junior hospital doctors, the controversial reorganization of the National Health Service bureaucracy and political pressure by the Socialist Minister of Health and Social Security to abolish by legislation all forms of private practice.

**A minority of British family physicians have hospital privileges. This has produced feelings of frustration in many and possibly, even, lower standards of practice than those encountered where access to hospitalized patients is the norm.

close attention by anyone planning the emergency services either in town or country — and this is true on both sides of the Atlantic.

The problems of patients in rural areas are no less difficult than those of city people. Sparsely populated American towns have difficulty attracting physicians because of a relatively deficient social milieu, poor schools, geographic isolation, and a cultural deprivation felt to a greater or lesser extent by those who reside there. Broadly speaking, this is the reverse of the British situation. America, however, has the great advantage of considerable financial resources, a tradition of innovation and flexibility, and the opportunity of a revival of enthusiasm for family practice, to formulate effective remedies to whatever deficiencies there are in the health-care system.

It is submitted that the sort of work illustrated in this paper can be undertaken by most adequately trained family physicians and that the task for medical educators is to prepare the student and resident for competency in this field. At present accident and emergency work is given a low priority in the curriculum. If family physicians of the future are to play an effective part in all aspects of primary care, greater emphasis must be placed on casualty work, especially the practical surgical aspects.

At present one may not infrequently encounter senior students and even residents near the end of their training, who have never administered an anesthetic, never reduced a simple fracture, never removed a corneal foreign body, and whose experience of suturing is limited to two or three cases. The fact that they are erudite in cytogenetics, molecular chemistry and tumor immunology is unlikely to impress the father of a child with a shattered limb or the worker with a burned face.

The main purpose of this paper, therefore, is to make a plea to those responsible for planning curricula to look again at the wide potential of the family physician and especially to take cognizance of the need to provide practical training in the surgical skills that are fundamental to the effective delivery of primary care in all its aspects.

This position has been recognized by the American Board of Family

Practice who require every post-graduate training program to include a two-month rotation through the accident and emergency department before such a program is acknowledged as suitable training for the family practitioner.

Although this is a sound beginning, it might be even more useful for every resident to keep a log of the procedures he has performed to be compared with an ideal list consisting of the 20 most common procedures encountered in practice. This paper offers documented experience upon which such a list might be based.

In Britain, casualty experience is optional, and it is possible for the young doctor to enter family practice without ever having set a fracture or sutured an injury. I believe that this is unsatisfactory. With the rapidly shifting perspectives of evolving health-care delivery systems, it would be wise to think again about the value of integrating general practitioners into reformed accident and emergency services.

Family physicians have the obligation to respond effectively to their patients' needs in emergency situations. The community has the power to ensure that material resources, including well-equipped casualty units and treatment rooms, are provided to make effective responses possible.

The medical educator has the responsibility for devising productive training programs, monitoring the effectiveness of such training, and encouraging greater enthusiasm for this fascinating branch of medicine than has been the case up until now.

Summary

Data from a decade of work in the Casualty Department of a small British community hospital is tabulated and discussed.

The place of the family physician as a "minor surgeon" in the rapidly evolving health-care systems is suggested and a plea made for more effective training of all doctors entering family practice through approved education programs.

Table 6. Soft Tissue Sepsis

Hand	243
Perianal	113
Other sites, including head and neck, feet, and lower limbs	80
Axilla	57
Breast	19
Ischiorectal	15
Bartholin's Abscess	7
Total	527

Table 7. Foreign Bodies

Location of foreign body	
Eye	186
Other sites, including scalp, feet, and trunk	157
Hand	68
Nose	15
Ear	13
Identity of foreign body	
Grit	298
Rust fragment	55
Wooden splinters	42
Metallic splinters	17
Fishhook	12
Other	12
Shotgun pellets	3
Total	439

Acknowledgements

I am indebted to Dr. W.L. Stewart and my other colleagues at the Department of Family Practice, Southern Illinois University, School of Medicine, for their encouragement and helpful comments.

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these activities are not absolute, however, and this raises some questions as to the actual impact of the "civil immunity provision."⁴⁶ Aside from the question of whether Congress can grant immunity from state criminal law and civil proceedings,⁴⁷ the major question concerning the actual impact of the provision is whether the conditions imposed on attaining immunity render the grant of immunity ephemeral, amounting only to a restatement of state common law and practice.

The sanctions against noncompliance are economic. For example, if a physician (provider) demonstrates "an unwillingness . . . substantially to comply [with the standards],"⁴⁸ he may be excluded "from eligibility to provide such services on a reimbursable basis."⁴⁹ Economic sanctions will, of course, change behavior if sufficient alternative sources of economic gain are not available. Although a small percentage of physicians have chosen not to treat patients whose costs are reimbursed by Medicare and Medicaid, it is not likely that many more will do so, since nearly one-fourth of all Americans are covered by these programs.⁵⁰ Thus, considering the numbers of patients whose care is potentially reviewable by PSRO, the economic sanction will probably persuade most physicians to comply with the standards. An alternate economic sanction, and one which appears somewhat more punitive in nature, is that the provider may be required to pay the federal government an amount equal to the cost of medically improper or unnecessary services.⁵¹ Clearly, these are fairly severe economic sanctions for noncompliance. Whether they are such that providers will be inclined to follow the standards developed by local PSROs is not yet known, but, as stated above, an affirmative prediction can be drawn from the Medicare-Medicaid experience.

Thus, PSRO differs from the present forms of process controls in several important ways. First, the review of medical care services provided to Title V, XVIII, and XIX beneficiaries is required by law.⁵² Second, PSRO utilizes a structure for that review

which contains considerations for both process and outcomes control measures. Third, there are incentives for compliance with the law and strong sanctions against noncompliance.

Although some characteristics of PSRO may differ only in degree from previous methods of peer review, others reflect differences in kind. The most important difference in kind is the capability of PSRO to examine measures of the quality of outcomes; and it is this difference, set in the structure of mandatory peer review, that creates the environment within which alternatives to the present system of patient injury compensation can be considered. If PSRO works in the control of quality of care through conscientious, intelligent, and fair review of services rendered, it should prove to be a more efficient control of the quality of outcomes than the malpractice system.

Most significantly, PSRO will be an efficient and effective means of controlling outcomes of care because it directly ties measurement of outcomes to change in outcomes. That is, it will measure outcomes of care and where those outcomes do not comply with developed standards of care, it will change the process leading to the outcome to effect an increase in the quality of the outcome. Hence, there will be a direct link between measurement, change in process, and outcome. The change in process will be carried out with the purpose of effecting the change in outcome.

Malpractice as a system of control of quality of outcomes is less efficient simply because its measurement of outcomes is not tied directly to change in outcomes. That is, it measures outcomes of care to ascertain whether there was compliance with the standard of care, as does PSRO, but not for the purpose of changing process to improve outcome. Instead, the measurement is done to find whether the outcome and its related process were outside the standard of care to the degree that liability will fall on the provider. Malpractice does not complete the circuit needed to control the quality of outcomes. It measures outcomes and process, but any change it effects in process is merely fortuitous and that change in process, if related at all to the original outcome, is tenuously related at best.⁵³

By operating within the system rather than externally, PSRO offers an additional improvement in outcomes control. PSRO review functions will be carried out by medical care providers with a view to changing the quality of care. The malpractice system, on the other hand, is almost wholly external to the system of care, and any increase in the quality of care it effects is a fortuitous by-product of that system.

Defensive Medicine as a Facet of Malpractice

Defensive medicine, defined as medically unjustifiable care provided for the purpose of reducing the possibility of a malpractice suit,⁵⁴ is frequently alleged to represent bad medicine and to increase the costs of medical care. Defensive medicine is generally stated to be of two kinds: positive, eg, the provision of medically unnecessary services, and negative, eg, the failure to perform an otherwise beneficial procedure which carries significant risk of a bad result and which thereby is thought to be a likely cause of suit.⁵⁵ While there is general agreement as to its definition and to its occurrence, defensive medicine has been neither well qualified nor quantified.⁵⁶ Everyone says it exists, but few physicians will admit they themselves practice it in any specific case, and no one knows the actual incidence of the practice. Whether this lack of objective data regarding the practice is a function of the paucity of studies that have been done⁵⁷ or of the near impossibility of accurately quantifying its incidence is not known.

The two extant general surveys of

defensive medicine, both sponsored by medical organizations or medically-related publications, clearly indicate that physicians believe the practice of defensive medicine is widespread and highly prevalent.⁵⁸ The problem with both surveys, from the standpoint of the validity of their quantitative data at least, is that both asked in essence the question "Do you practice defensively?" The easy answer, of course, is "Yes," but such a question and response fail to take into consideration the notion that behavior is a function of a multiplicity of factors, and while it may be true that one of the factors active in a diagnostic or therapeutic decision is fear of a malpractice suit, there are clearly many others. The more important question to be asked of a physician is whether, in any specific case, defensive medicine plays a significant role in a medical care choice. In addition, it is necessary to inquire as to whether that significance can be translated into cost of care, not only as measured in dollars, but also in factors such as physician frustration, patient injury or a host of opportunity costs which are only partially measurable in terms of dollars. In other words, is defensive medicine bad medicine, or is what is named defensive medicine actually good medical care by another name.⁵⁹

The only study regarding defensive medicine which has gone beyond merely asking the question whether a physician practices defensively attempted to quantify the incidence of the practice but also recognized that other factors are responsible for behavior or medical care choice.⁶⁰ The basic conclusions of the study were that defensive medicine is practiced, but not to the extent alleged, and that, in fact, other factors are far more important in specific case decision-making.⁶¹ However imperfect the study design may have been, and in spite of severe criticisms of its conclusions, these basic conclusions stand unchallenged by objective data.

To resolve the questions posed above objective information regarding defensive medicine is needed. Specifically, an identification of those procedures or practices in which fear of suit

is a significant factor, and a quantification, to as great an extent as possible, of the costs of the practice in the specific case must be undertaken. Only one such study has ever been accomplished and it stands as an excellent example of the possibilities of what can be done.⁶² In this study, the premise that routine skull x-rays were necessary in every case of head trauma was examined. The results revealed that the premise was invalid, and that in fact, and perhaps more importantly, criteria could be constructed which could objectively determine whether or not to take skull x-rays.⁶³ The implications for PSRO are apparent. Through data generated at the national level, a large quantity of information concerning the beneficial nature of routine procedures could be generated. Compiled and analyzed these data could become the basis on which more objective physician decision-making could take place. The process, of course, consumes time; but the expenditure would go directly to the heart of the practice of medicine and the ultimate question of whether patient outcome is improved by physician intervention. If there is an issue demanding research in health care it is this, and PSRO can be the vehicle within which it can take place.

In a time of increasing awareness of the limitations on resource expenditures, it is reasonable for society to allow certain decisions to be made on the basis of total societal cost versus total benefit. Not only would the consideration of the efficacy be reasonable in developing standards of medical care, but so would the balancing of the cost of medical care and its benefit. The establishment of PSRO norms and standards could be among those decisions susceptible in part to cost-benefit analysis. In this light, a balance between quality and cost of medical care, reviewed by PSRO, could be the setting within which other elements of medical care could be reexamined and made more efficient.

It is in this way that PSRO will have an impact on those costs of the malpractice system attributed to defensive medicine. If decisions with regard to care of the patient can begin to be based to a greater degree on data generated from a large base which has as its specific end an evaluation of the

benefits of that decision, health-care providers will become more secure in their practices and will be less compelled by uncertainty to practice defensive medicine.

A more visible way PSRO may diminish the practice of defensive medicine derives from the civil immunity provision of the PSRO Act,⁶⁴ which provides that no provider of health services shall be civilly liable on account of any action taken by him in reliance on PSRO standards providing he exercises due care. Although this provision is susceptible to various interpretations, it appears to give some guidance to those physicians who extensively practice defensive medicine. For these physicians, the civil immunity provision would tend to imply that they need do no more than follow the standards of care developed by the local PSRO to be insulated from liability. For example, if the local PSRO determines that patients with uncomplicated completed myocardial infarction, based on certain criteria, should be hospitalized seven to fourteen days, the defensive physician can feel reasonably comfortable in holding that category of patients less than the 21 days he presently does. Thus, defensive medicine is reduced and the cost of care is decreased. However, if the physician at the other end of the spectrum is considered, the opposite result may occur. That is, the physician who keeps such patients hospitalized only four days may feel forced to keep them at least seven in order to feel immune from suit. Thus, defensive medicine (defined in this case, however, as care believed medically unjustified by the treating physician) may increase.

It can be seen, however, that whether PSRO increases or decreases the incidence of defensive medicine depends on a number of factors. It depends, first, on the definition of defensive medicine. If the definition is "medically unjustified care provided for the purpose of reducing the possibility of a malpractice suit,"⁶⁵ then further definition of the words "medically unjustified care" is necessary. Specifically, it is significant to know whether the care is defined as unjusti-

Continued on page 259

fied by the physician or by the review agency. Clearly, if the care which is medically justified is that which falls within the standards of the local PSRO, then the review agency has defined "medically unjustified care" so that the physician who *increases* his utilization of hospital beds, diagnostic tests, or treatment modalities to fall within the standards is not practicing defensive medicine. What he is doing to satisfy the standard is to increase the quality of his care from what may in fact have been substandard care.

Second, whether PSRO decreases the incidence of defensive medicine depends upon the range of practices the local PSRO's will consider to fall within the standards. If, for example, a PSRO sets standards on the basis of a survey of all practitioners within the area, allowing the range of variation to be concurrent with the range of actual practice variation, it is unlikely that the incidence of defensive medicine will diminish. Third, the effect of PSRO on defensive medicine may well be determined by the impact, both legal-technical and in practice, of the civil immunity provision of the Act, a factor considered in the following section.

The Civil Immunity Provision

The provision of the PSRO legislation which purports to bestow immunity from civil liability on physicians who follow the PSRO standards⁶⁶ has a direct application to malpractice. There have been major questions raised from a variety of interests as to the actual import and potential impact of this section. While questions can be asked regarding the technical interpretation of the words "in compliance

with or reliance upon [the standards]"⁶⁷ or of other specific phrases within the provision, the most critical questions touch on the requirement that a physician complying with the standards must also exercise "due-care" in order to qualify for protection. "Due care" is, of course, a legal-technical term which is barely definable generally and is only definable specifically in certain cases. It applies to the standard of care to which physicians are held and in general involves three elements: (1) that the physician possess that knowledge, skill, and ability that other physicians similarly situated possess; (2) that he exercise reasonable care and diligence in the application of his knowledge and skill to the particular case; and (3) that he uses his best judgment in the treatment and care of the patient.⁶⁸

In general, injured patients claiming negligence on the physician's part as the basis for their injury will attempt to show that the physician failed to measure up to the second element of due care — that he failed to exercise reasonable care in the application of his skill. The first element, that he failed to possess the requisite knowledge, is difficult to prove in view of state licensure which would prima facie indicate that the physician is qualified. The third element, involving the physician's best judgment, is likewise difficult to prove. "Reasonable" or "due" care will be determined by an examination of what is or was reasonable under the circumstances, and proof of the reasonableness or unreasonableness of care most often turns on what other physicians would have done in the same or similar circumstances. Physician opinion — often in testimony, occasionally in texts, and rarely in specialty society guidelines — becomes the evidence of reasonable care, and the jury or court may choose from among all the evidence given that which is most reasonable.

Standards developed by local PSROs, if they are admissible, would constitute evidence of the standard of care in the area of the PSRO. Absent the civil immunity provision, they would be only one piece of evidence and would be subject to refutation by any other competent evidence. The civil immunity provision would appear on its face to mandate that PSRO

standards be deemed irrefutable as the proper standard of care unless it could be shown either that those standards were not promulgated by a body with authority to do so, that insufficient guidelines were given the promulgating body, or that the delegation of standard-making itself was unconstitutional.⁶⁹

However, the requirement that the physician exercise due care to avail himself of the immunity conferred by the provision may well negate its desired impact. This requirement could, of course, be understood in a number of ways.⁷⁰ First, it could be taken to mean that the physician who desires immunity must not only comply with the PSRO standards, but he also must exercise due care in his actions. If this is the case, there would appear to be no change from present civil law, and the issue would still be whether the physician in fact exercised due care, his compliance or noncompliance with PSRO standards being immaterial. If the provision is understood in this way, it will serve no useful purpose and it will in effect have been interpreted out of existence.

A second way in which the provision might be interpreted is to presume that due care is exercised if a PSRO standard appropriate to the patient's treatment is correctly followed. This would require that the physician exercise due care in activity "related to, and resulting from,"⁷¹ actions taken in compliance with or reliance on the standards. Were this to be the interpretation, the physician would be immune from liability arising from a decision to follow the standard, but he would still have to exercise due care in any actions taken subsequent to or prior to that decision. For example, if the physician relied on a PSRO standard providing that patients with completed uncomplicated myocardial infarction may be discharged from a hospital in seven to fourteen days, and his patient, falling within the stated category, was discharged within the stated period and later developed a fatal cardiac arrhythmia, the physician would be immune from suit absent other negligence. That is, the patient may not sue and recover on the basis

Continued on page 260

that the physician was negligent in discharging him on the tenth day. If, however, the patient was mistakenly placed in the class "completed, uncomplicated myocardial infarction" by the physician who then relied on the standard, the physician would not be immune from suit, since his presumed negligence was not "related to" a reliance on the norm.

There is a third alternative interpretation. If the physician follows the norms, he shall not be civilly liable; that the "due care" provision applies only to his following of the norms, and that his decision as to whether they are applicable is insulated from suit. It is not likely that this alternative is the method by which Congress intended the provision to operate.⁷² Nor would it be the manner in which courts would interpret it, for neither the stated purpose of the provision nor the purpose of the legislation would be served by it.

The legislative history of the provision is sparse,⁷³ but it does give some indication of congressional intent. It is clear that the provision was enacted as an incentive to comply with the PSRO norms and standards: "The intention of this provision . . . is to remove any inhibition to . . . the following by practitioners and providers, of standards and norms recommended by the review organization."⁷⁴ However, beyond the stated intent, what Congress did provide as an incentive is not clear. Only three further sentences touch on the issue, and their meaning, while appearing consistent with the second alternative interpretation of the provision above, is not certain:

[A] physician following practices which fall within the scope of those recommended by a PSRO would not be liable, in the absence of negligence in other respects for having done so.

It is not intended, however, that this provision preclude the liability of any person who . . . misapplies or causes to be misapplied the professional standards promulgated by a review organization.

A physician or provider should not be relieved of responsibility where standards or norms are followed in an appropriate manner . . .⁷⁵

The most probable interpretation of the provision is that physicians must continue to exercise due care in all patient care decisions and procedures, but that due care will be conclusively presumed when the PSRO norms and standards that are strictly applicable to the specific case are followed.⁷⁶ This interpretation would be consistent with the language of the act and its history as well as the intent of the provision. It would provide an incentive to follow PSRO developed standards, but would not confer immunity from civil liability beyond that strictly applicable to the following of the standards.

Beyond the question of the interpretation of the provision, a practical and legal-technical problem arises. The PSRO developed standards and norms are intended for the review of care (screening) and are not strictly intended as a measure of the standard of care,⁷⁷ which in any single case may be different. General guidelines, for example, are rarely admitted into evidence as to standards of care in any field because guidelines lack the specificity a single case or controversy requires.⁷⁸ Recommendations, even by duly constituted medical organizations and even though quite specific, have been held inadmissible as evidence of the proper standard of care.⁷⁹ This is to suggest that if the PSRO standards are to be introduced into evidence as the proper standard of care, they may need to be more specific; in fact, quite specific. This possibility may not have a negative impact on the physician-defendant since it is the fact of his compliance with the standard that would convey immunity rather than the quality or specificity of the standards itself. On the other hand, it may well have a negative impact on the patient-plaintiff, since he would, in attempting to show that the standard was not followed, have to prove its worth as a standard in the specific case.

In addition, the plaintiff would labor under the additional burden of the legislative history which provides in any case that "[f]ailure to order or provide care in accordance with the norms employed by the PSRO is not intended to create a legal presumption of liability."⁸⁰ That is, absent the civil immunity provision, it is possible that neither the physician-defendant nor

the patient-plaintiff could introduce into evidence PSRO developed standards and norms as evidence of the standard of care applicable in a specific case. The reason for this, as stated, is that since they are quality review or screening guidelines, the standards are too general in nature to be sufficient evidence of the standard of care.⁸¹ Even were they admissible, absent the civil immunity provision, they would have only as much weight as any other piece of evidence regarding the applicable standard.

What the civil immunity provision appears to do, if the PSRO standards are not admissible as evidence of the proper standard of care, is allow the physician to introduce his compliance with the standards as a factor insulating him from liability derived from acts specifically relating to that compliance, but not allow the plaintiff to introduce the issue of noncompliance to create a presumption of liability. If on the other hand, the norms and standards were admissible on the issue of the applicable standard of care, failure to comply might still not constitute a prima facie case of malpractice, there being no presumption of liability attached to such noncompliance. In addition, not only could expert testimony rebut the PSRO defined standards, but the legislation and legislative history would appear to allow the physician by his own explanation to rebut the standards and norms in a specific case.⁸²

Summary

The effect of PSRO on the practice of defensive medicine and the effect of the civil immunity provision on the numbers of malpractice suits may well be substantial. Cost savings in terms of

Continued on page 261

control of overutilization and of the potential for patient injury engendered by that overutilization will ensue. While substantial, those effects will be small compared to the effect of PSRO on the present medical malpractice system.

As a social system, malpractice has two positive purposes. It serves as a measure of quality control on outcomes of medical care, and it serves to compensate people for injuries received in medically-related situations. How well it serves these purposes is unknown, but what little data exist indicates that it does not significantly enhance the quality of care nor provide an efficient method of compensation. It exists in theory because it is the final check and balance on physician practice—the only existing control on the outcomes of care. Until some system other than malpractice could be conceived which was at least as efficient in outcomes control, malpractice was destined to continue, and no other method of patient compensation could be considered seriously since the compensation and quality control aspects of malpractice were so inextricably bound. With the advent of PSRO, another means of outcomes control came into existence, and as PSRO becomes operational nationwide, that system will prove an efficient and effective system of control over the quality of outcomes of medical care. Within the environment of PSRO, malpractice as a system of outcomes control has little reason to exist, and its worth as a system of patient compensation can be reexamined. It is within the framework of PSRO that other systems hopefully more just and more efficient than malpractice. This the greatest impact PSRO will have on malpractice. It is, of course, a long-term process, and one which will not produce immediate results. In fact, the role of PSRO in effecting a change in patient compensation may never be recognized directly. It is only within the existence of a working system controlling the quality of outcomes of medical care that the injustices of the malpractice system can be righted and alternatives to that system can be considered.

References

1. PSROs were mandated by the Social Security Amendments of 1972, Title XI, § 249 F (b), 42 U.S.C. §§ 1320c et seq (1974). Throughout this article PSRO is used in the present tense to represent the concept of the program.
2. 42 U.S.C. § 1320c (1974). See also S. Rep. No. 1230, 92d Cong., 2d Sess. 267 (1972) [hereinafter cited as S. Rep. No. 1230].
3. S. Rep. No. 1230, supra note 2, at 256.
4. Id.
5. Id. at 254.
6. Id.
7. Project, *The Medical Malpractice Threat: A Study of Defensive Medicine*, 1971 Duke, L.J. 939, 942 [hereinafter cited as *Malpractice Threat*]. See also Bergen, *Defensive Medicine is Good Medicine*, 228 J.A.M.A. 1188 (1974); Hershey, *The Defensive Practice of Medicine: Myth or Reality*, 50 Milbank Memorial Fund Q. 69 (1972) [hereinafter cited as *Hershey*].
8. Statement by the Honorable Caspar W. Weinberger, Secretary of the Dept. of Health, Education, and Welfare, in announcing utilization review regulations under Medicare and Medicaid. Press Release, Dept. of Health, Educ., and Welfare, November 29, 1974. See generally S. Rep. No. 1230, supra note 2. See also Note, *Federally Imposed Self-Regulation of Medical Practice: A Critique of the Professional Standards Review Organization*, 42 Geo. Wash. L. Rev. 221 (1974) [hereinafter cited as *Self-Regulation*].
9. See generally Note, *PSRO Malpractice Liability and the Impact of the Civil Immunity Clause*, 62 Geo. L.J. 1499 (1974) [hereinafter cited as *Malpractice Liability*]. This will be the case, of course, only with regard to those suits based on injuries which were themselves due to poor quality of care, and not to those due to inherent risks.
10. One reason given for the overutilization as a result of defensive medicine is that physicians are unclear concerning the standard of care, medical or legal, which they must meet. See *Malpractice Threat*, supra note 7, at 943.
11. 42 U.S.C. 2 1320c-16(c) (1974).
12. See S. Rep. No. 1230, supra note 2, at 267.
13. J. Waltz & F. Inbau, 17 *Medical Jurisprudence* 30-58 (1971) [hereinafter cited as *Waltz & Inbau*]; Carlson, *Health Manpower Licensing and Emerging Institutional Responsibility for the Quality of Care*, 35 *Law & Contemp. Prob.* 849, 861 (1970) [hereinafter cited as *Carlson*]. Although this is generally true, there are many individual institutions which which varying degrees of formality utilize review of outcomes of care to determine sanctions against physicians practicing in those institutions.
14. For brief discussions of malpractice as a quality control, see Carlson, supra note 13; Cohen, *Manpower and Social Controls*, 48 *Hospitals*, J.A.H.A. 105, 108-09 (April 1974); Roemer, *Controlling and Promoting Quality in Medical Care*, 35 *Law & Contemp. Prob.* 284, 297-98 (1970) [hereinafter cited as *Roemer*]. See generally United States Dept. of Health, Education and Welfare, *Report of the Secretary's Commission on Medical Malpractice* (1973) [hereinafter cited as *Malpractice Comm'n Report*].
15. Hershey, supra note 7, at 90-93.
16. See, Grutman, *Views of Claimant's Lawyer*, Proceedings of the 1971 National Medical College Symposium 36 (Jointly sponsored by the American Medical Ass'n and the American Bar Ass'n, March 18-20, 1971) [hereinafter cited as *Grutman*].
17. The efficiency of PSRO in the control of quality is unknown, of course, since no local PSROs are yet in operation. The intent of the legislation is clearly to improve quality, however. See S. Rep. No. 1230, supra note 12; OPRM Memo No. 4 (April, 1974) at 3. There is, in addition, no general agreement that PSRO will fulfill its legislative intent. See, eg, Capet, *The Quality in Medical Care*, 291 *New Eng. J. Med.* 1136

(1974); Evans, *The Lessons of PSRO*, 6 *Private Practice* 27 (1974) [hereinafter cited as *Evans*]. PSROs: How the First Ones are Working, *Medical World News*, October 25, 1974, at 53. See also Association of Am. Physicians & Surgeons v Weinberger, Civil No. 73C-1653 (N.D. Ill., filed June 26, 1973).

18. Although a major reason for the continued existence of the malpractice suit is that it is a partial control on quality of care, and although there are general statements regarding its effectiveness, there is no data relating to the efficiency or inefficiency of the malpractice suit as a control on the quality of care. See, eg, Center for the Study of Democratic Institutions, *Medical Malpractice* 3 (1971); Carlson, supra note 13, at 861; Grutman, supra note 16.

19. See *Malpractice Commission Report*, supra note 13, at 27-59.

20. See 42 U.S.C. 2 1320c (1974).

21. The PSRO enabling legislation provides that each local PSRO "shall apply professionally developed norms of care, diagnosis, and treatment based upon typical patterns of practice in its regions." 42 U.S.C. § 1320c-5(a) (1974). Because of a lack of precision in the legislation in the definition of the terms "norms" and because of the utilization of the similar terms "standards," "criteria," and "guidelines," a sub-unit of the American Medical Association's Advisory Committee on PSRO (Task Force on Guidelines of Care) in conjunction with the National Professional Standards Review Council set up under the legislation, developed the following definitions:

Criteria: Medical care criteria are predetermined elements against which the quality of a medical service may be compared.

Norms: Medical care appraisal norms are numerical or statistical measures of a usual observed performance.

Standard: Standards are professionally developed expressions of the range of acceptable variation from a norm or criterion.

Guidelines: Guidelines are flexible models designed for the use and application of norms, criteria, and standards by individual organizations such as PSROs (defined by AMA Task Force only).

See Department of Health, Educ. and Welfare, Office of Professional Standards Review, *PSRO Program Manual VIII*: 16 (1974); *PSROs and Norms of Care*, 229 J.A.M.A. 166 (1974).

22. Carlson, supra note 13, at 861-62. Parenthetically, it may be added that from the viewpoint of the consumer of health services, the result, or outcomes measures, is what matters most. It is ironic then that the health-care system has attempted to evaluate or assure quality in a way which is in inverse order to the patients' concerns.

23. See U.S. Dept. of Health, Educ. and Welfare, *Report on Licensure and Related Health Personnel Credentialing 1-7* (1972) [hereinafter cited as *Licensure Report*]; H. Cohen and L. Milke, *Developments in Health Manpower Licensure* 39 (1973); Cohen, *State Licensure Board, and Quality Assurance: A New Approach to an Old Problem*, in *Quality Assurance of Medical Care* 49 (1973); Roemer, supra note 14, at 287-91. See also Forgotson & Cook, *Innovations and Experiments in Uses of Health Manpower—The Effect of Licensure Laws*, 32 *Law & Contemp. Prob.* 731, 732-33 (1967).

24. See, eg, Hershey, *An Alternative to Mandatory Licensure of Health Professionals*, 50 *Hospital Progress* 71 (1969); Stevens, *Are We Ready to Modernize Licensure?*, *Prism*, June, 1973 at 22; Tancredi & Woods, *The Social Control of Medical Practice: Licensure versus Output Monitoring*, 50 *Milbank Memorial Fund Q.* 99 (1972).

25. Technically, PSRO is not intended to affect input measures. It is possible, however, that were PSRO-reviewed outcomes

Continued on page 280

use a credit of two percent of the first \$9,000 of taxable income or a credit calculated by multiplying \$35 by the number of personal exemptions they are claiming, other than those which are permitted for taxpayers and their spouses that are over 65 years of age or blind. Each individual should make both calculations and use the resultant amount that is the highest. A helpful guideline in the calculation of the credit is that if you have \$9,000 or more in taxable income and have fewer than six exemptions on your return, you should use the two percent of \$9,000 of taxable income. If the taxpayer has six or more exemptions other than those for over 65 or being blind, the taxpayer should use the \$35 per personal exemption in making the calculation. With less than \$9,000 in taxable income, both calculations should be made to insure the highest amount is used to reduce the tax liability.

The fourth change contained in this section of the Reform Act extends the tax credit which was made available to those individuals who have less than \$8,000 in "earned income" per year and have dependent children living at home. Very few physicians could qualify for this credit due to the amount of income they generate each year. If a physician finds himself in the position of having less than \$8,000 in "earned income" per year, he should investigate this section of the law further, because it will provide him with additional tax benefits. These two credits are available for tax years 1976 and 1977.

The fifth change relates to the use of the optional tax tables. This change is major because the methodology used with the tables is completely changed. Prior to the change, the taxpayer determined his "adjusted gross income" and the number of exemptions he was entitled to use, and if the "adjusted gross income" was under \$10,000, then looked up the tax from these tables. Under the Reform Act, the Internal Revenue Service is instructed to create new tables which are based upon taxable income, not the "adjusted gross income." This change will require that each taxpayer calculate his taxable income before using the tax tables. The tables are to

be applicable for taxable incomes to \$20,000. If the taxable income exceeds that amount, the taxpayer is required to use the standard tax tables which also are based upon taxable income. The taxpayer will be required to determine whether he should use the "percentage standard deduction," "low income allowance," or "itemized deductions" (whichever is higher) in determining his taxable income. The taxpayer will also be required to calculate the allowable amount for his personal and dependency exemptions because these two deductions are used to calculate taxable income. Once taxable income is determined, the tax tables will indicate the tax liability for the taxpayer.

The sixth change contained in this section of the Reform Act relates to the deductibility of alimony payments. Prior to this change, an individual making alimony payments could use them as a deduction in determining his taxable income, only if he itemized his personal deductions. Individuals using the "percentage standard deduction" were not allowed to include a deduction for alimony payments in determining their taxable income. The Reform Act permits an individual paying alimony payments to use these payments as a deduction used to determine "adjusted gross income" in tax years beginning after 1976. The effect of this change is that alimony payments will be allowed as deduction to all individuals regardless of whether they itemize their personal deductions or use the "percentage standard deduction."

The seventh and eighth changes in this section of the act relate to a tax credit for those individuals who are over 62 and receiving retirement income of one form or another. The changes liberalize the credit available for those individuals and are beyond the scope of this article. Individuals who think they might qualify for this credit should insure that these changes are considered, when filing their tax returns for tax years commencing after 1975.

The ninth change in this section of the act relates to the tax benefit allowed to individuals over 65 who sell their personal residence and do not purchase another residence. The tax

Continued on page 292

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AUGUST 1973

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