

# Analysis of the Work of Nurse-Practitioners in Family Practice and its Effect on the Physicians' Activities

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A three-year study on the inclusion of nurse-practitioners (18 months basic training) in family medicine is presented. The nurses were entitled to screen patients and to treat minor ailments. Patient-nurse contact rates were 6.1, 7.1, and 4.2 per year in 1971, 1972, and 1973, respectively. The increased responsibility given the nurses resulted in a decrease in patient-physician contacts from 4.0 in 1970 to 2.0, 2.1, and 1.3 in 1971, 1972, and 1973, respectively. This permitted the physicians to spend more time with each patient, to look for disease in the community, to participate actively in the work of the department of medicine in the regional hospital, and to engage actively in research. As a result, numerous surveys have been performed and a great amount of important medical and epidemiological information has been accumulated.

More than one third of all patients handled by nurses suffered from respiratory infections; these were followed by musculoskeletal disorders and skin infections. Diagnosis and treatment accounted for 50 to 53 percent of the nurses' activities. Consequently, the medical and social status of the nurses rose markedly and patients seem to rely increasingly on their judgment.

The role of the primary nurse as the first contact in primary health care has been analyzed in the United States,<sup>1-5</sup> England,<sup>6-7</sup> and Canada.<sup>8</sup> Three basic factors are involved: (1) the type of auxiliary personnel; (2) their training; and (3) the type of activity and extent of responsibility imposed. These depend on the health-care system and vary from one place to another.

In Israel, primary medical care is provided mainly by Kupat Holim (Worker's Sick Fund) which serves approximately 75 percent of the country's population. In rural areas, one physician is responsible for about five villages with a total population ranging between 1,600 and 2,000 subjects.

The doctor visits each village two or three times each week and sees patients for a few hours during each visit. A "practical" nurse with 18 months of basic training is responsible for the medical care of the population in the absence of the physician. Because of the relatively small size of the villages, one nurse is usually in charge of two villages. The practical nurse has to provide technical assistance to the physician, administer provisional treatment in his absence, and refer emergency cases to the nearest medical center. Laboratory tests and more specific drugs are available in larger outpatient clinics, usually situated within a few miles from the village. Preventive medicine is provided by the Ministry of Health, which runs pre and post-natal care stations in each village. Kupat Holim and the Ministry of Health generally function separately, the degree of coordination depending on local factors.

In contrast to this general pattern, we have experimented for the past three years with a teamwork system, where the nurse, working in close cooperation with the physician, is given more responsibility to screen patients and to treat minor ailments.<sup>9</sup> Since this system was found to have numerous advantages, it was recently expanded to include 11 rural settlements organized within a medical center which was affiliated to the department of medicine of a university hospital. The present report analyzes the activity of the primary nurses in this setting and its effect on the work of the physicians.

## Materials and Methods

The Shimshon Family Medical Center in Beit Shemesh (30 km from Jerusalem) is responsible for the primary medical care of the population of nine villages and two kibbutzim (communal settlements). The distance between the villages and the Center varies between 5 and 8 km. The total population under care is almost constant and totals approximately 4,000 subjects (Table 1) subdivided into five ethnic groups: Ashkenazi, Kurd, North African, Yemenite, and Indian Jews. Most villages are populated by subjects belonging to one ethnic group. The Center was established at the end of 1970. It was then affiliated to the Department of Medicine "A" of the Hadassah University Hospital, and its physicians became full-fledged members of this Department. A detailed description of the project has been published elsewhere.<sup>10</sup>

The staff of the Center comprises two physicians, one qualified nurse, and one medical secretary. Four additional primary nurses (18 months training) work in eight of the villages (one nurse for every two villages), while a fifth nurse works in only the largest village. Each kibbutz has a nurse who lives there, as well as facilities for examination of patients by the physician. For this reason, we have not included the kibbutz nurses in this analysis.

Each village has a clinic which contains simple drugs, dressings, and equipment such as sphygmomanometer, otoscope, etc. The primary nurse sees patients every day and, after screening, those patients who need to be seen by the doctor, are transported

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Figure 1. Patient Visit Form

Village \_\_\_\_\_

Nurse Contacts  
\_\_\_\_\_

No.	Name of patient	Sex		Age group				Reason for visit					Treatment				
		M	F	1	1-18	19-54	55+	R	GI	MS	SK	0	1	2	3	4	5

- R = Respiratory disorders
- GI = Gastrointestinal
- MS = Muskuloskeletal
- SK = Skin
- O = Others
- 1 = injection
- 2 = bandaging
- 3 = medical diagnosis and treatment
- 4 = advice
- 5 = other

to the Center by a special minibus. The physicians at the Center see all referred patients three days a week and emergency cases only during the remaining three days. In addition to consultation, the Center provides laboratory tests, electrocardiogram examinations, and drugs not available in the village clinics.

Each primary nurse is responsible for about 100 families (700 to 900 individuals). None of the nurses has had special formal training as a nurse practitioner and their major qualification is a deep involvement in the problems of the population with which they have lived and worked for many years.

During the first year of the Center's operation, the primary nurses were asked to come to the Center with their patients three times a week. During every such visit, they would spend a few hours with the physician learning simple procedures, eg, examination of throat, lymph glands, the spine, turgor, blood pressure measurement, and discussing problems relating to the patient's diagnosis and treatment. The value of laboratory tests, method of treatment, indications for referral of patients to physicians, etc, were discussed and explained. Additional efforts included regular staff meetings with the nurses held at first once a week and later once in two weeks, as well as systematic theoretical lectures and discussions of health and medical problems. The physicians visit each village once a month and, together with the primary nurse, see the chronically ill, bedridden, and welfare patients.

### The Work of the Primary Nurse

In addition to the duties of all nurses which include bandaging, injections, etc, the primary nurses deal with the following:

**1. Treatment of acute mild disease:** The primary nurse treats mild respiratory, gastrointestinal, musculoskeletal, and skin ailments, either at the village clinic or in the patient's home. She is permitted to examine the throat of the patient and to prescribe oral penicillin when, in her judgment, the causative factor is hemolytic streptococcus. She may also prescribe antipyretic and analgesic drugs, and is authorized to order simple laboratory tests (ECG and x-ray examinations excluded), and to refer emergency cases to the emer-

Year	Male				Female				Total
	1	1-18	19-54	55+	1	1-18	19-54	55+	
1971	1	1,102	797	149	38	1,095	719	153	4,030
1972	13	1,107	771	154	44	1,102	725	147	4,093
1973	14	1,113	782	152	33	1,112	739	154	4,129

gency service of the Hadassah University Hospital when the physician cannot be reached. Infants with fever or gastroenteritis, all patients with symptoms lasting more than a few days, those who demand to see the physician, and all patients whose complaints are of uncertain etiology are referred to the physician.

**2. Follow-up examination of chronic patients:** The primary nurse keeps records on flow sheets, describing the conditions and treatment of all chronic patients. Special forms are used for hypertensive and diabetic patients. The nurse examines these patients periodically and refers them to the physician at regular intervals; she supervises the patients' treatment, the regular administration of drugs, and approaches the patient when he fails to appear for treatment. She makes home visits to bedridden chronically ill patients, accompanied by a social worker if necessary.

**3. Health education and advice on psychosocial problems:** Because of the existing division of authority in Israel, health education in schools, and pre and post-natal care are the responsibility of the Ministry of Health and not of the primary nurses associated with the Center. However, nurses from the Ministry visit each village only once a week. The primary nurses in the village fill in the gap during the rest of the week, dealing with general and specific psychosocial problems such as alcoholism or family conflicts.

In addition to the above, the primary nurses are also expected to inform patients of results of laboratory tests sent by the physicians along with instructions; to supply drugs pre-

scribed by the physician, to explain special diets, to send healthy individuals for routine examinations, etc.

In order to analyze the activities of the primary nurses, each nurse was provided with a special form on which she was asked to note all contacts with patients by age, sex, reason for visit, and type of treatment (Figure 1).

### Results

#### Patient-Nurse Contacts by Year, Village, Sex, and Age (Figure 2, Tables 2 and 3)

Data for 1973 are presented in two parts — the first nine months of the year and the last three months which include the October War and its aftermath. Analysis of total contacts includes home visits.

The average patient-nurse contact rate depended more on the nurse than on the ethnic background of the population. Thus, the contact rate of Yemenite Jews was much higher in village 2 than in villages 4 and 6 (Figure 1). The average contact rate for all villages was 6.1 in 1971, 7.1 in 1972, and 4.2 in 1973 (Table 2). The female-male contact rate ratio was about 1.4 (except for the war period). Children and teenagers (age 1 to 18 years) had fewer contacts than all other groups (Table 3).

#### Type of Disease Handled by the Nurse (Figure 3)

Mild respiratory infections represented the most frequent cause for visits to the nurses. They accounted for about 34 percent of all contacts in 1971 and 1972, and 58.1 percent in 1973. Skin diseases (mainly bacterial and fungal infections) were responsible

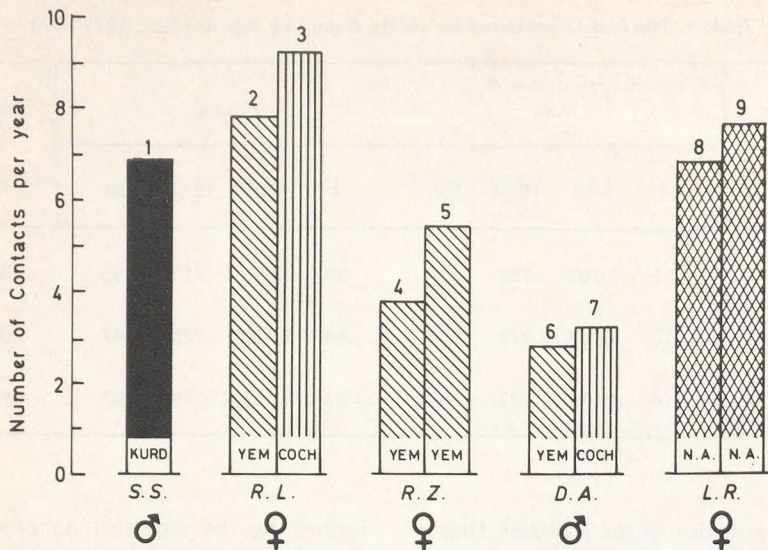


Figure 2. Average patient-nurse contacts per year, Shimshon Family Health Center, Beit Shemesh 1971-1973.

Table 2. Patient-Nurse Contact Rates by Sex and Age, 1971-1973

Visits per person per year (age adjusted)

1971			1972			1973		
Male	Female	Total	Male	Female	Total	Male	Female	Total
5.0	7.1	6.1	5.8	8.3	7.1	3.6*	5.1	4.2
						2.3	4.1	3.2

\*First nine months above, last three months (October War) below

Table 3. Patient-Nurse Contact Rates by Age Groups (Years)

1971				1972				1973			
1	1-18	19-54	55+	1	1-18	19-54	55+	1	1-18	19-54	55+
								11.2*	2.6	6.1	7.2
10.5	3.8	9.6	11.2	9.8	4.3	10.4	10.9	10.2	2.2	5.6	6.9

\*First nine months above, last three months (October War) below

for about 13 percent of all contacts, and gastrointestinal problems for about 9 percent. Musculoskeletal disorders (mainly low back pain, ischialgia, and myalgia) accounted for 15.4 percent in 1972 and 7.4 percent in 1973. "Other diseases" included headache, weakness, malaise, conjunctivitis, allergic conditions, and urinary tract infections. These accounted for 3.9 percent of all contacts in 1971, 2.9 percent in 1972, and 5.2 percent in 1973.

The distribution of diseases by diagnostic categories in the villages again depended on the nurses and not on the ethnic group of the population. Variations in nurses' diagnoses were due, at least in part, to differences in categorizing the diseases.

#### Content of Primary Nurses' Activities (Figure 4)

The largest category of the nurses' work was actual examination and treatment of patients. This accounted for 50 to 53 percent of their activities. Distribution of drugs represented about 15 percent, injections (penicillin, iron, insulin, etc) 10 to 12 percent, and bandaging 10 to 16 percent. Advice to families, measuring blood pressure, etc, required about 8 to 10 percent of their time.

#### Effect of Primary Nurse Activities on Patient-Physician Contacts (Table 4)

In 1970, before the Center was established, the average patient-physician contact rate was four per year. This decreased by 50 percent in 1971 and in 1972, and by 68 percent in 1973. In the "classical" primary health-care system, many of the activities of the nurse described as "other treatment" are usually performed by the physician. Since, in our system, these functions were transferred to the primary nurses, they handled 60 to 67 percent of patients who would otherwise have to be seen by the physicians. This figure ranged from a minimum of 52 percent in one village to a maximum of 80 percent in three other villages.

#### Discussion

The teamwork system introduced in the Shimshon Medical Center was expected to achieve three main goals: (1) to provide better medical care to the community; (2) to increase the

status of the nurse to that of a co-partner in the nurse-physician team; this was to be effected by allowing her to screen patients, to treat minor ailments, and to follow patients with chronic diseases; and (3) to provide the physician with more time for each of his patients, for hospital activities, and for research in the community. These goals conform to the recommendations of the American Medical Association Committee on Nursing.<sup>11</sup>

The effect of a new medical care system on the health status of the population is very difficult to assess. In fact only Spitzer et al, in a suburban area of Ontario, have described an evaluation of a system involving nurse practitioners.<sup>12</sup> Their findings showed that there were no differences in mortality, physical functional capacity, and social and emotional functions between two groups of patients, one of which received conventional care by family physicians while the other was taken care of mainly by nurse practitioners. However, indirect evidence points to a considerable improvement in some parameters in the teamwork system used in our Center.

First and most striking was the effect of this system on the content of the physicians' work. The average number of patients seen by a physician decreased to about 20 per day and the patient-physician contact rate to 1.3 per year, the latter representing about one sixth of the overall average in Israel. In 1971 to 1973, acute diseases accounted for 48.7 percent of all visits to the family physicians in the country, but for only 34.6 percent of the visits in the Center. Acute respiratory infections constituted 41.3 percent of all acute ailments seen in the Kupat Holim clinics in the country, but only 31.2 percent of those seen in the Center. The smaller number of patients visiting the Center permits more time for thorough examination of each patient, as well as for an active search for disease in the community. Thus, screening surveys for anemia, thalassemia, glucose-6-phosphate dehydrogenase deficiency, rheumatic heart disease, diabetes, hypertension, and ischemic heart disease have already been carried out or are presently in progress. A special search was undertaken for patients suffering from hemorrhoids and hernias, and most of these were electively operated

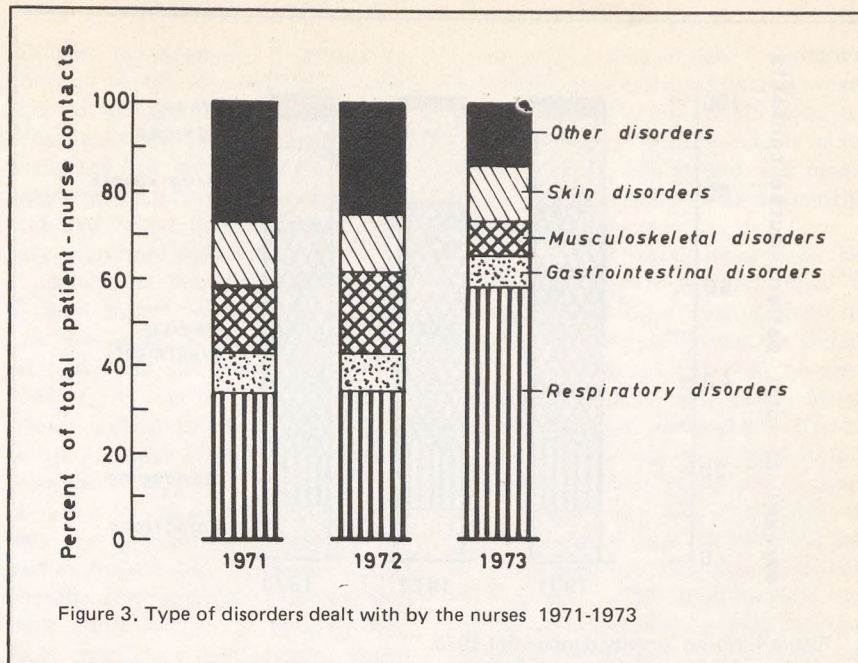


Figure 3. Type of disorders dealt with by the nurses 1971-1973

on. Seven viral epidemics have been described epidemiologically and proven by laboratory means. A survey of the prevalence of hepatitis B antigen and of serum and secretory immunoglobulins is in progress. Routine follow-up examination is performed on all patients with chronic diseases. Home visits to bedridden patients and families with social problems are carried out at frequent intervals. In addition to these activities, each physician has been able to spend a block period of six weeks in the Department of Medicine.

The teamwork system has had a very marked influence on the social and medical status of the primary nurse. Although trained as practical nurses only, their continuing education together with increased responsibility is likely to satisfy their professional pride. Patients seem to rely increasingly on the nurses' judgment and decisions. Consequently, demands to see the physicians have substantially

decreased. Furthermore, the overall patient-medical staff contact rate fell from 8.1 in 1971 and 9.2 in 1972 to 4.9 in 1973. As seen in Table 2, this downward trend cannot be ascribed to the October War. It is probably due to the impact of the health education, the increased number of elective home visits and, possibly, to a more thorough solution of the problems of individual patients.

Unfortunately, no training programs for primary nurses are available as yet in Israel. Therefore, there are wide variations among the nurses with respect to their experience, background and education. This may account for the variations in results obtained.

During three years of activity, the primary nurses have handled 67 percent of all medical episodes without consulting a physician, a percentage similar to that reported by Spitzer et al.<sup>12</sup> We have not been able to detect cases of negligence or delay

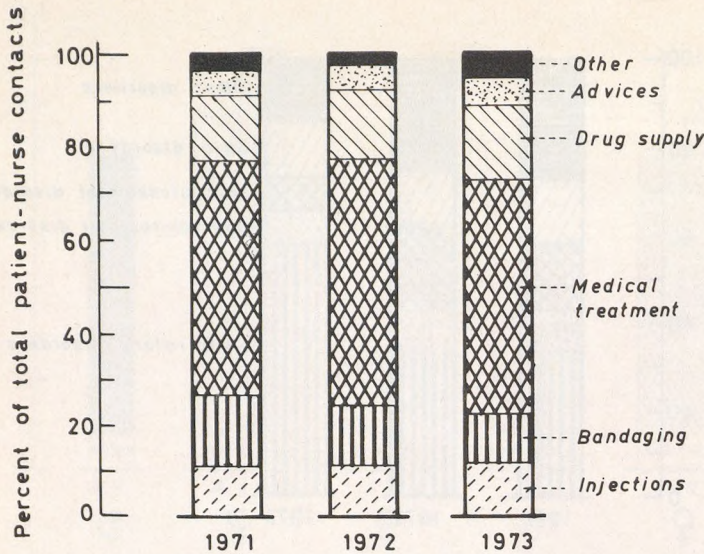


Figure 4. Nurses' activity during 1971-1973.

in administering proper treatment.

The value and usefulness of the teamwork system in Israel, as well as in other countries, depends on the willingness of both physician and nurse to adopt it, on the development of special training programs for primary nurses such as those described by Duke<sup>13</sup> and McMaster,<sup>14</sup> and on convincing the public of the benefits of such a system.

#### Acknowledgements

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Table 4. Effect of Primary Nurses' Activities on Patient-Physician Contact Rates (1971-1973)

Patient-Physician Contact Rate			Patient-Nurse Contact Rate (Medical Treatment Only)			Nurses' Screening (Percent of Total Contacts)		
1971	1972	1973	1971	1972	1973	1971	1972	1973
2.0	2.1	1.3*	3.6	4.3	2.6*	64.2	67.2	66.7*
		1.0			1.5			60.0

\*First nine months above, last three months (October War) below

already in the family could recover the value of these losses. This is another example of the potential liability of physicians to third parties.

In a recent case, *Fernandez v Salina Memorial Hospital, et al*,<sup>23</sup> the defendants including a surgeon, anesthesiologist, and the hospital settled for almost a million-and-a-quarter dollars for brain damage, including blindness, deafness, aphasia, total paralysis, loss of bowel and bladder control to the six-year-old plaintiff following anesthesia for an apparent surgical abdomen. Despite the fact that the patient had eaten shortly before the surgery, neither gastric aspiration nor endotracheal intubation was undertaken preoperatively with resultant vomiting, aspiration and cardiac arrest during surgery. Drug therapy during surgery and care in the recovery room was also below the accepted standard of care. Basing its decision on *Dillion v Legg*,<sup>24</sup> the court also approved a settlement of \$25,000 in damages to the mother based on the theory of negligent infliction of mental distress. This is another case in which the courts have imposed liability on a physician to a non-patient third party, who suffered harm as a result of negligent care to a patient.

### Changing Standard of Care

For the past few years the "law" has imposed strict product liability for injuries caused by their products on the manufacturers of food, drugs and dangerous instruments. The cases that are noted represent an extension of this strict liability doctrine to health care providers. This is in concert with the increasing awareness and recognition that a physician has the responsibility to identify any reasonably foreseeable harmful situations.<sup>23,25,26</sup>

It is becoming apparent from a review of recent cases, that the courts are now allowing awards to patients who are the victims of gross errors or

mistakes in judgment.<sup>26</sup> This is in contrast to the long-established principles of damages only for deviation or departure from the standard of care, negligence, or errors or mistakes in judgment. Some courts are requiring a preferred rather than the usual, ordinary or average standard of care.<sup>27,28</sup>

Liability of physicians for damages to third parties resulting from negligent treatment of patients, although established in the law, has been expanding. It may be part of the increased willingness of courts to impose an all pervasive liability on negligent physicians. Physicians should recognize that in caring for some patients they also acquire legal duties to third parties. Specifically, physicians should consider their obligations to potential third party victims of patients with such conditions as coronary artery disease, cerebral arteriosclerosis, diabetes mellitus and other medical conditions. To be practical, a physician will satisfy his responsibilities if he only reveals that information that he professionally believes to represent a clear and present danger to the public.

### Tort of Outrage

In recent years the courts have been imposing liability for the tort of "outrage." This has been defined in 1 Restatement of Torts 2d, Sec. 46 as follows:

- (1) One who by extreme and outrageous conduct intentionally or recklessly causes severe emotional distress to another is subject to liability for such emotional distress, and if bodily harm to the other results from it, for such bodily harm. (2) Where such conduct is directed at a third person, the actor is subject to liability if he intentionally or recklessly causes severe emotional distress; (a) to a member of such person's immediate family who is present at the time, whether or not such distress results in bodily harm, or (b) to any other person who is present at the time, if such distress results in bodily harm.

In a 1971 Oregon case<sup>29</sup> a mother recovered for emotional distress when a physician refused to continue to treat her baby, critically injured in an auto accident. His refusal was made known to the mother in an extremely outrageous manner.

In the most recent report case the Washington Supreme Court ruled<sup>30</sup> that a husband had a cause of action in medical malpractice because the physicians and hospital failed to provide medical care for his wife. The husband claimed extreme emotional suffering resulting in physical injury because the defendants, under outrageous circumstances and exceeding the bonds of decency, abandoned his wife and refused to treat her notwithstanding her dire condition. The court reversed the lower court dismissal, holding that the plaintiff had a cause of action for his own mental suffering while having to watch his wife die. In its opinion, the court stated that the plaintiff's allegations were sufficient to sustain the cause of action.

The first case represents an overt act of outrageousness, the second is an extension of the doctrine to a situation where the failure to act was considered outrageous. This can be considered an elaboration of the doctrine espoused in *Dillon v Legg*<sup>24</sup> where the court recognized the right of a third-party bystander, not within the zone of danger or injurious impact to recover for emotional trauma and physical harm resulting from witnessing an accident in which a closely related person is injured or killed by the negligent act of the defendant if an ordinary man should have foreseen injury to the third-party plaintiff.

### Summary

This paper represents a brief review of recent developments in the law which have imposed increased liability

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on the physician. It undoubtedly represents one of the causes for the malpractice crisis. The implications for the physician are obvious.

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## Private Practice Management

It is important that the business and financial aspects of family practice be built on the same scholarly foundations as the rest of our material. We hope that this column, and those to follow in future issues, will provide a substantial, thought-provoking basis for dealing creatively with what might otherwise appear to be obstacles to family care. The articles will be prepared by R. J. Vargo, Ph.D., Director of Graduate Studies, and R. E. McGillivray, Ph.D., CPA, from the College of Business Administration, The University of Texas at Arlington.

### Tax Reform Act of 1976 Changes Which Affect Individuals' Business-Related Activities

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There are several changes in the Tax Reform Act of 1976 relating to the generation of income from the practice of medicine which will affect physicians in the operation of their practice, as well as in the filing of their individual tax returns. There are other changes which relate to the generation of investment income. Those changes will be discussed in a future article.

The first change to be discussed is that related to child care, when both parents are employed outside the home, or in the case of an unmarried parent. The law has permitted a deduction for child care in past years, but

there were restrictions placed upon the deduction which eliminated its use by many physicians. The situation is not so restrictive now.

The 1976 Reform Act changes the deduction for child care from an itemized deduction from income to a tax credit, which is a deduction from the tax liability shown on an individual's return. The credit is 20 percent of the amount paid for child care to a maximum of \$2,000 of child care expense to be included, if one child is involved, or a maximum of \$4,000 of expense, if two or more children are being provided with the care.

The credit applies only to those individuals who provide child care for children under 15 years of age and who qualify for a dependency exemption on the individual's tax return, or for any other individual who is physically or mentally incapable of taking care of him/herself and for whom the taxpayer provides more than one half of their support (the dependency exemption is not a requirement), or for care provided for the taxpayer's spouse, if the spouse is incapable of caring for him/herself.

The taxpayer is required to file a joint return with his or her spouse if they are married at the close of the taxable year, with a special exception to the requirement for an individual not living with his or her spouse for the last six months of the year, who files a separate tax return and who has maintained a home for more than half the year for him/herself and a qualified dependent. The payment for child care may be for care provided in the home or outside the home; however, care provided outside the home is eligible only in the case of children under 15 years of age.

Prior tax law stated that the child care deduction would be allowed only to those individuals whose income was below a certain level. This is now changed. The income restriction now applies to the amount of expense that can be considered as related to the amount of income generated by the taxpayers. The law states that the credit for child care will be 20 percent of the amount of expense paid

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for child care to the maximums stated previously, but that the parent or parents must have earned that amount of income. In the case of taxpayers filing a joint return, the spouse with the lowest amount of income will establish the amount of expense to be included in the credit calculation. In addition, the income must be related to employment, and not from investments or inheritances, etc. This change is effective for tax years 1976 and after.

The Tax Reform Act of 1976 liberalized the deduction permitted for those individuals who find it necessary to relocate their residence. The change is that now one will qualify for the deduction when the move involves a distance of 35 miles or more in tax years beginning after 1976. The law requires that a new work location be 35 or more miles from the taxpayer's old residence in order to qualify. In addition, the law now allows a maximum deduction for "house-hunting" trips and temporary living costs at the new location of \$1,500. The prior law allowed a maximum of \$1000 for this type of expense. The other provisions of the tax law relating to moving expenses remain the same as before.

The Tax Reform Act of 1976 places some rather severe restrictions upon the deductions taken for an office in the home of a taxpayer. Now, for the taxpayer to qualify for a deduction of depreciation, utilities, etc, related to an office in his residence, or at the same site as his residence if not physically attached to the residence, the space must be used exclusively for an office, ie, no deduction will be permitted for an area that is used partially as an office and partially for the family's use. Also, the law requires that the area be used on a regular basis as either the taxpayer's principal place of business, or a place of business used for meeting with patients, clients, or customers. In addition, there is a requirement for employees of others that they meet the above requirements and also that the office use is for the convenience of their employer. Finally, there is a limit on the amount of deduction permitted if all the other

requirements are met. This limitation is that the maximum amount one may deduct for the use of an office in a home cannot exceed the amount of income which is attributable to the business use of that portion of the residence after application of those deductions which are permitted, regardless of the use of the property (mortgage, interest and real estate taxes).

For example, a physician who maintains an office in his home, in addition to his regular office, which is used exclusively and on a regular basis for patient visits, has income from this use of \$5,000. The mortgage interest on the home is \$3,000 and the taxes are \$1,100. The office is one quarter of the total square footage area of the home. The other deductions for utilities, depreciation, and other expenses related to the office portion of the home amount to \$4,600. The deduction would be calculated as:

Income	\$5,000
Less 1/4 Interest and taxes	(1,025)
Maximum Deduction for other expenses permitted	\$3,975

Therefore, the physician would only be able to deduct \$3,975 of the \$4,600 of other office expense, because the income generated by the office was not large enough to permit deduction of the total amount of expense. This section of the law is effective for all tax years beginning after 1975.

The Tax Reform Act of 1976 eliminated the sick pay deduction for many individuals. The prior law permitted an exclusion of \$75 or \$100 per week for those individuals who were incapacitated and receiving compensation under a sickness benefit plan maintained for their benefit by their employer. For tax years after 1975, the law now

permits an exclusion of \$100 per week, but only for those individuals, under age 65, who are retired because of a disability and who are permanently and totally disabled. In addition, the exclusion must be reduced on a dollar-for-dollar basis for all adjusted gross income over \$15,000 shown on the taxpayer's return. Individuals who do not meet the requirement of being totally and permanently disabled do not qualify to exclude any income received during a period of illness.

The Reform Act, also, places restrictions on the amount of deductions a physician will be allowed when attending medical conventions held in foreign locations. Foreign locations are defined in the law as any location outside the United States, its possessions, and the trust territory of the Pacific. The limitations are in two parts. First, no deduction will be permitted for expenses incurred in attending more than two conventions held in foreign locations in any one year. In addition, there are requirements that must be met in order to deduct the costs of the first two conventions attended in a foreign location. These requirements are that the convention schedule includes six hours of activities for each full day and three hours for each half day's activity, and the physician must attend at least two thirds of the scheduled activities. Parties and other social functions are not included in those time requirements. In addition, the physician is required to submit, with his tax return, a signed statement from the organization sponsoring the convention which states the days and number of hours spent attending the convention. Also, the amount of subsistence expenses, ie, those expenses for lodging, meals, local transportation, and other personal expenditures, cannot exceed the per diem rate established for US civil servants for the same period of time. Deduction of the costs of going to and returning from the convention will be totally deductible only if one half or more of the total days of the trip are devoted to business-related activities; otherwise, the transportation costs will have to be allocated according to the number of days spent in business-related activity vs the non-business days. This provision of the law pertains to all foreign conventions held after December 31, 1976.

cally, he reviews the evidence bearing on the relationships between physical and mental disorders. He identifies the strong points and the deficiencies in the studies that have been done. He has designed and carried out his own sophisticated and in some ways unique study to further clarify these relationships, and he reports on this study in detail. The book is organized in a way that makes it possible to read only parts of it and still learn a great deal. There are no illustrations, save for graphs, and the book is quite readable considering it is basically a literature review and report of a study.

The 22-page section on "Concepts of Mind and Body" could be read profitably by family physicians at any level of training or practice, including advanced medical students. This would also apply to other members of the team involved in patient care and counseling. The detailed report on research projects would be of more interest to other researchers in the field, but a very nice concise summary reports all of Dr. Eastwood's main findings.

Since the basic theme of the book, the relation between physical and mental illness, is one of the main issues in the teaching and practice of family medicine, I think it would be useful to have a copy of this book in a department of family medicine library where it could be used selectively by those interested in the different aspects of the problem, both research and historical.

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**Clinical Implications of Laboratory Tests.** *Sarko M. Tilkian and Mary H. Conover. The C. V. Mosby Company, St. Louis, Missouri, 1975, 232 pp., \$7.50.*

This volume brings a new dimension to the array of books dealing with clinical pathology. In a logical and well-organized manner, the authors — a physician and a nurse — effectively

correlate the myriad of modern laboratory studies available today to specific disease entities and diagnostic problems. The book is divided into two sections, the first of which deals with the interpretation of abnormalities in the commonly utilized screening tests: the chemistry profile, the complete blood count, and the urinalysis. This volume goes further, however, than merely giving a long list of differential diagnoses and associated conditions, but rather in paragraph form discusses the implications of the tests and avenues of further investigation. The second section is divided by organ systems, and here the authors relate a short description of anatomy, physiology, and pathophysiology to the laboratory studies relevant to each system. They also discuss some specific disease entities and helpful tests for diagnosis and follow-up. The book ends with a 25-page appendix of normal values for most laboratory studies.

In its 232 pages a very wide range of material is covered, including electrocardiography, roentgenology and other specialized tests. Therefore, none of the discussions are very thorough, which is the main weakness of this text. For instance, only one page is allotted to discuss pulmonary function studies and only two pages to blood gases. This lack of depth makes this volume of limited, if any, value to the family physician. However, the authors' stated audience is nursing and allied health professionals, and for these readers this book would have great value. Many medical students would also find this volume useful as they sort through reams of laboratory results in their first patients in their clinical medicine rotations.

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**Surgery in the Aged.** *Lazar J. Greenfield (ed). W. B. Saunders Company, Philadelphia, 1975, 151 pp., \$12.50*

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# HYCOMINE<sup>®</sup> SYRUP III

**DESCRIPTION** Each teaspoonful (5 ml) contains:

- Hydrocodone bitartrate ..... 5 mg
- WARNING:** *May be habit forming.*
- Phenylpropanolamine hydrochloride ..... 25 mg

**USUAL ADULT DOSE** 1 teaspoonful every four hours after meals and at bedtime (not to exceed 6 teaspoonfuls in a 24 hour period).

**ACTIONS** Hydrocodone bitartrate is an effective semisynthetic narcotic antitussive. Phenylpropanolamine is a sympathomimetic amine which provides nasal decongestion.

**INDICATIONS** To control cough and to provide symptomatic relief of congestion in the upper respiratory tract due to the common cold, pharyngitis, tracheitis, and bronchitis.

**CONTRAINDICATIONS** Hypersensitivity to any component of the drug. Should not be used in patients receiving monoamine oxidase inhibitors.

**PRECAUTIONS** Use with caution in diabetes, hyperthyroidism, hypertension, cardiovascular disease and in the aged. Since drowsiness and dizziness may occur, patients should be cautioned about driving or operating machinery.

Before prescribing antitussive medication to suppress or modify cough, it is important to ascertain that the underlying cause of the cough is identified, that modification of the cough does not increase the risk of clinical or physiologic complications, and that appropriate therapy for the primary disease is provided.

**ADVERSE REACTIONS** HYCOMINE<sup>®</sup> SYRUP is generally well tolerated. Occasional drowsiness, cardiac palpitation, dizziness, nervousness or gastrointestinal upset may occur.

**HOW SUPPLIED** As an orange-colored, fruit-flavored syrup.

**CAUTION** Federal law prohibits dispensing without prescription.

*Oral prescription where permitted by State Law.*

**Endo Laboratories, Inc.**  
Subsidiary of E. I. du Pont de Nemours & Co. (Inc.)  
Garden City, New York 11530

