Ambulatory Care in the Community

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RECENT CHANGES IN NATIONAL HEALTH MANPOWER policy (reflected in the Health Professions Educational Assistance Act of 1976—Public Law 94-484) were predicated on the purported demand for primary care and the difficulty of satisfying this demand with the decreasing numbers of primary care physicians and the proportionately smaller number of medical school graduates entering primary care training programs (*1–7*). Ambulatory care constitutes the greatest volume of medical care, and primary care comprises the largest proportion of ambulatory care. Yet, until the study described in this paper was done, the volume and nature of all ambulatory care provided for an entire community had never been adequately documented, based on the content of patients' visits.

The most comprehensive prior survey of ambulatory care was the National Ambulatory Medical Care Survey (NAMCS) conducted by the National Center for Health Statistics (*3*). This survey showed that in 1974 the average U.S. resident made 3.1 private office ambulatory visits annually for medical care. It covered a full range of ambulatory practices throughout the country; however, since only physicians' office practices were sampled, such major sources of ambulatory care as emergency rooms, outpatient departments, clinics, and patient-physician encounters by telephone were omitted. Also, the proportions of ambulatory visits that were for primary care and for nonprimary care were not determined.

In only one other comprehensive study (*8,9*), have the authors looked at primary care communitywide, analyzing all ambulatory care visits (except telephone consultations) at all sites where physicians practice. That study, however, differed from ours in certain respects. It was conducted in a county that had a large medical center, and this factor may have affected the kind of physician population practicing in the community (*10*). Further, its definition of primary care was different than ours.

In many local surveys, detailed information has been collected on certain aspects of ambulatory care. However, these surveys have provided little insight into the total system of ambulatory care, since they have been limited as a rule to solo or group practices, either in private or institutional settings, and to specific specialty groups, usually in the primary care specialties—general and family practice, pediatrics, or internal medicine (*6,7*). Moreover, in very few of the local surveys covering the content of ambulatory care, has primary care been defined, and in most local surveys, determinations of the proportion of the practices devoted to primary care have been based on physicians' self-reporting (*7,11*). In addition, the lack of information about primary care, as opposed to ambulatory care, has meant that no distinction has been made between the distribution of the

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primary care services provided by primary care physicians and nonprimary care physicians—a distinction that is the essence of the national concern about primary care.

Methods

To provide a population-based estimate of the volume and nature of ambulatory care, a survey of all ambulatory care services was conducted in one county in a Middle Atlantic State in the summer of 1974. By surveying a sample of physicians in all ambulatory care specialties, the proportion of ambulatory care that was primary care and the content of all ambulatory care visits were determined by specialty.

A semirural county of 104,000 residents was selected for this survey because it was believed to be a medically self-contained service area, that is, a geographically circumscribed region whose population received its health services from health care personnel and health facilities within the area. The largest city served as the center of the county's medical care. The majority of physicians practiced in or immediately around this centrally located city. These physicians represented a full range of specialties, which were distributed in a pattern similar to that for the United States as a whole. The single general hospital in the county was located in its largest city and offered a full range of primary through tertiary care. The sex and age of the county population was representative of that of the United States, and the population was relatively stable. However, only 3 percent of the population was nonwhite, compared with 12 percent of the U.S. population.

To confirm the assumption that the county was a medically self-contained service area and that county physicians provided all the ambulatory care for the county population, a 25 percent sample of the 158 physicians located within a 35-mile radius of the county was surveyed to determine how many county patients were seen by physicians outside the county. Since only one county patient was identified by any of these physicians during a 2-week period, the assumption that the county was medically self-contained for ambulatory care was confirmed.

The sampling design that we used for studying the content of ambulatory visits controlled for physician specialty, county location, and day of the week. Physicians were observed during a randomly selected day over a 2-week period in the early summer. Of the 84 physicians practicing ambulatory care who were eligible to participate in the survey, a randomly stratified sample of 70 were asked to participate, and 65 (93 percent) cooperated. The fact that on the day that they were to be studied, 10 of the physicians who had agreed to cooperate were on vacation or had their day off was seen as representative of the actual ambulatory services that would be available to county residents over a 2-week period. The practices of 55 physicians were actually observed for a 24-hour period, and the content of each ambulatory visit or contact was recorded. In enumerating the ambulatory care services provided, all sites in the county at which physicians rendered ambulatory services were included—offices, the emergency room and public health clinics—as well as telephone consultations. (The telephone was considered to be a site, and the term "visits" was considered to include telephone consultations.)

Trained medical student observers recorded on a questionnaire the content of each face-to-face ambula-

Operational definition of primary care

Primary care is that medical care which has one or more of the following characteristics:

1. The patient presents with a problem for assessment, whether a sign, a symptom, or a problem in "life adjustment."
2. The patient requires assessment and treatment of minor trauma or referral to specialty care for further assessment and treatment of trauma.
3. The patient requires maintenance in normal uncomplicated physiological states such as pregnancy.
4. The patient requires an administrative procedure, for example, certification of the state of his health as for life insurance or work.
5. The patient needs preventive care such as routine preventive measures like immunization, vaccination, and periodic assessment for maintaining health or detecting presymptomatic disease.
6. The patient requires modification of normal physiological functioning, for example, by contraceptives.
7. The patient needs assessment or desires counseling on minor psychosocial problems.
8. The patient requires continuing maintenance care for a stable, uncomplicated, chronic disease or common complications of chronic disease. This care may be shared with the specialist at the time of initial diagnosis, reevaluation, or exacerbation of the chronic disease.
9. The patient needs coordination of care rendered by two or more subspecialists. This coordination is needed either for care of the patient as an individual or for persons in the family who have multiple disorders that require periodic specialty care.

NOTE: Adapted from Alpert and Charney's definition that "Primary care is first contact medicine, assumes longitudinal responsibility for the patient, and serves as the 'integrationist' for the patient" (*12*).

tory care contact. The information recorded included the demographic characteristics of the patient (age, sex, race, and residence), the physician's specialty, type of visit, patient's chief complaint, reason for visit, diagnoses, treatment, and disposition of the patient. A shorter version of the questionnaire was used by the students to record the content of telephone calls.

To distinguish the proportion of ambulatory care provided in the county that was primary and nonprimary, an operational definition of primary care was formulated with nine categories of service (see box) based on Alpert and Charney's definition (*12*). Using this operational definition, a panel of three board-certified family practitioners reviewed the questionnaires (which reflected all ambulatory visits in the survey county) and divided these visits into primary care and nonprimary care. Family practitioners were selected for the panel since they alone among practicing physicians have experience with the totality of primary care that is given to all patients regardless of age or sex. A primary care service was deemed to have been rendered if any part of the definition applied to the visit.

Specialists as well as primary care physicians all provide some elements of primary care. Even though the same elements of care could be effectively provided by a physician trained in primary care, once a specialist has assumed the responsibility for a clinical episode, for example, one involving a laceration, it is appropriate for that specialist to maintain continuity of care by removing the stitches. The kind of care, not the training of the provider or the site at which it was provided, determined how the panel classified the care. Disagreements about dividing the care into primary and nonprimary categories were resolved by discussion; the final classification required a panel consensus.

Results

Information was collected on 1,332 ambulatory visits. A little less than a fifth of the visits (17 percent) were accounted for by telephone consultations, while 83 percent were face-to-face encounters. Telephone calls were evenly distributed among the various age groups of patients. The majority of visits (68 percent) took place in physicians' offices; the second largest group of visits was by telephone (17 percent); next came emergency room visits (11 percent); then, visits to the public health clinics (4 percent). Since the county was small, the emergency room also provided services that a hospital outpatient clinic would provide.

Using the operational definition of primary care mentioned, the panel of family practitioners classified 1,031 (77 percent) of the total 1,332 ambulatory visits reported in the county for 2 consecutive weeks in 1974 as being for primary care and 301 (23 percent) as being for nonprimary care.

Ambulatory care visits to primary and nonprimary care specialists in survey county, by kind of care provided, June 1974

Kind of specialist	Total visits	Primary care visits		Nonprimary care visits	
		Number	Percent	Number	Percent
Total	1,332	1,031	77	301	23
Primary care	693	666	96	27	4
General or family practitioner .	502	487	97	15	3
Internist	111	99	89	12	11
Pediatrician ..	80	80	100	0	..
Nonprimary care	639	365	57	274	43
Medical subspecialist (neurologist, dermatologist, psychiatrist)	72	42	58	30	42
General surgeon ...	135	70	52	65	48
Obstetrician-gynecologist	93	82	88	11	12
Surgical subspecialist	245	84	34	161	66
Emergency room physician ..	94	87	93	7	7

Primary care constituted 96 percent of the primary care physicians' practices (see table). Among these physicians, more of the visits to internists (11 percent) than to other specialists were for nonprimary care. However, more than half (57 percent) of the total ambulatory care delivered by nonprimary care specialists was primary care. Certain nonprimary care specialists, some of whom were surgeons, provided predominantly primary care. More than half of the ambulatory care of general surgeons, and even of medical subspecialists, was primary care. Only the surgical subspecialists provided predominantly nonprimary care.

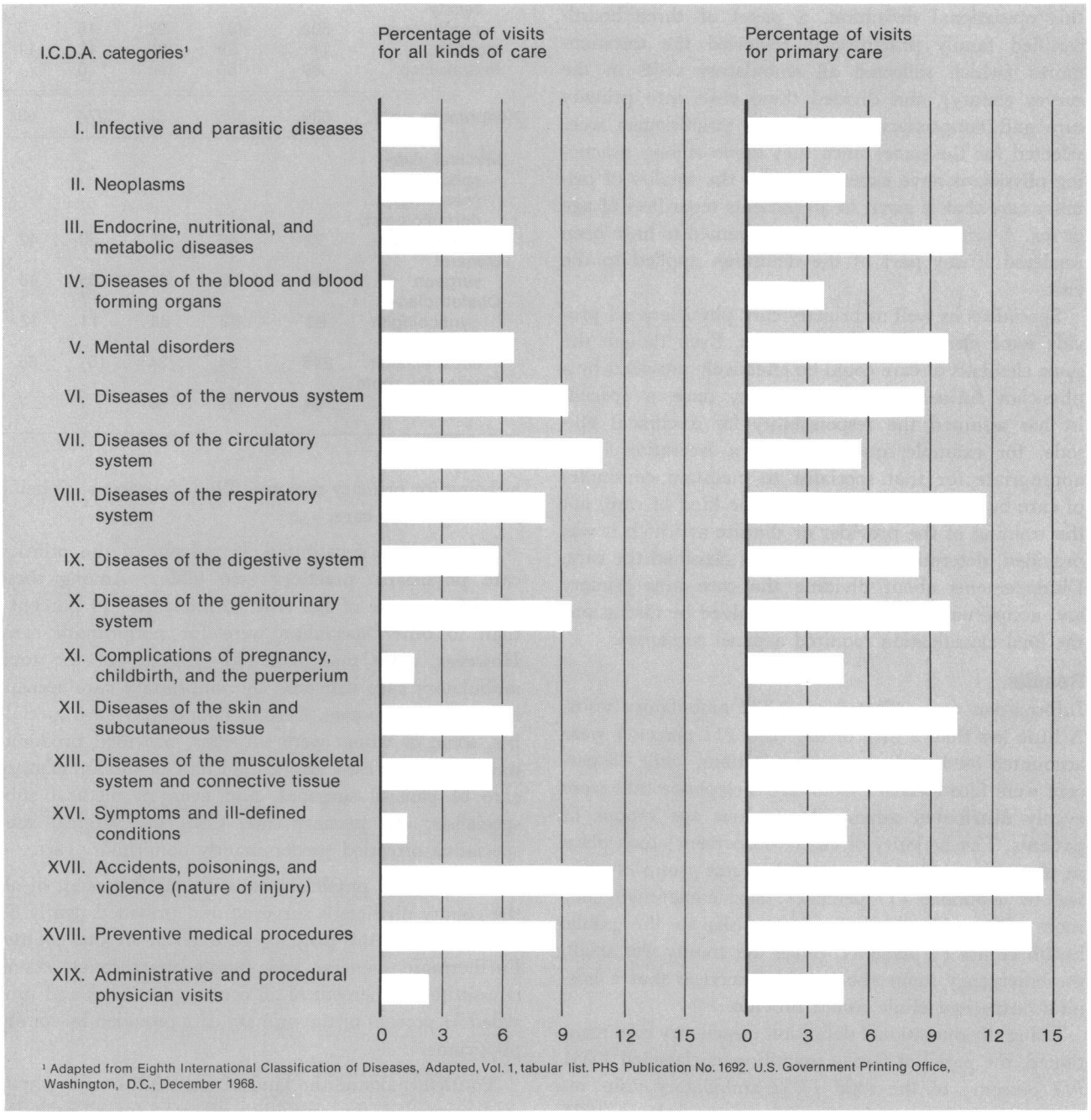
Primary care physicians constituted 49 percent of all the county physicians surveyed and provided nearly 68 percent of all the primary care given in the county. Furthermore, general and family practitioners alone constituted 29 percent of all county physicians and provided 51 percent of the primary care provided by county physicians.

To further define the kind of care that county physicians provided, the morbidity reported for all ambula-

tory care was analyzed. When grouped by major diagnostic categories of the ICDA (International Classification of Diseases, Adapted), as figure 1 shows, the most frequent category of medical care provided for all ambulatory visits in the county was for "accidents, poisoning, and violence" (11.4 percent of visits); "diseases of the circulatory system" was the next most frequent category (10.9 percent of visits). "Diseases of the genitourinary system" (9.3 percent) "diseases of the nervous system and sense organs" (9.2 percent), and "preventive medical procedures" (8.7 percent) followed in frequency. For primary care diagnoses, "diseases of the circulatory system" accounted for 2.5 percent of visits, "accidents, poisonings and violence" for 11.6 percent, and "preventive medical procedures" for 10.8 percent.

Figure 2 shows the primary care diagnoses grouped by major ICDA categories and distributed according to

Figure 1. Percentage distribution of the ambulatory care visits recorded in the survey county over a 2-week period in 1974, by diagnostic category

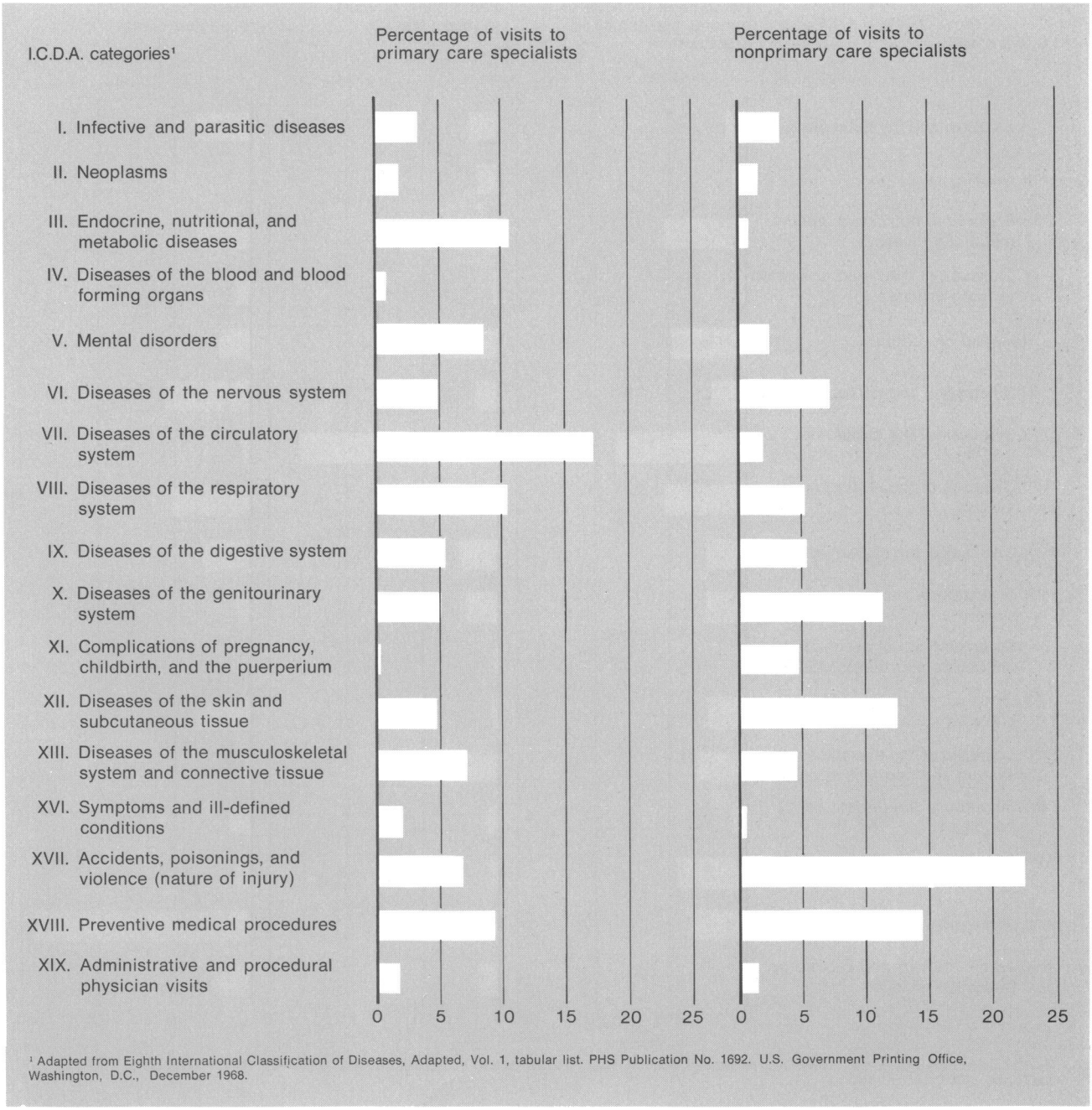


[1] Adapted from Eighth International Classification of Diseases, Adapted, Vol. 1, tabular list. PHS Publication No. 1692. U.S. Government Printing Office, Washington, D.C., December 1968.

the proportion of patient visits in each category that were made to primary care specialists and to nonprimary care specialists. Of primary care visits to primary care specialists, a large proportion was accounted for by "diseases of the circulatory system" (17.1 percent); visits for "endocrine, nutritional, and metabolic diseases" accounted for 10.6 percent and "preventive medical procedures," for 9.2 percent. The pattern of diagnoses in primary care visits to nonprimary care specialists, on the other hand, was different: nearly a fourth were for "accidents, poisonings, and violence" (22.5 percent); the next most frequent categories were "preventive medical procedures" (14.3 percent), "diseases of the skin and subcutaneous tissue" (12.6 percent), and "diseases of the genitourinary system" (11.6 percent).

When primary care diagnoses, grouped by broad ICDA categories, were stratified by primary care specialty (fig. 3), "diseases of the circulatory system" were

Figure 2. Percentage distribution of the primary care visits recorded in the survey county over a 2-week period in 1974, by diagnostic category and whether primary care or nonprimary care specialist



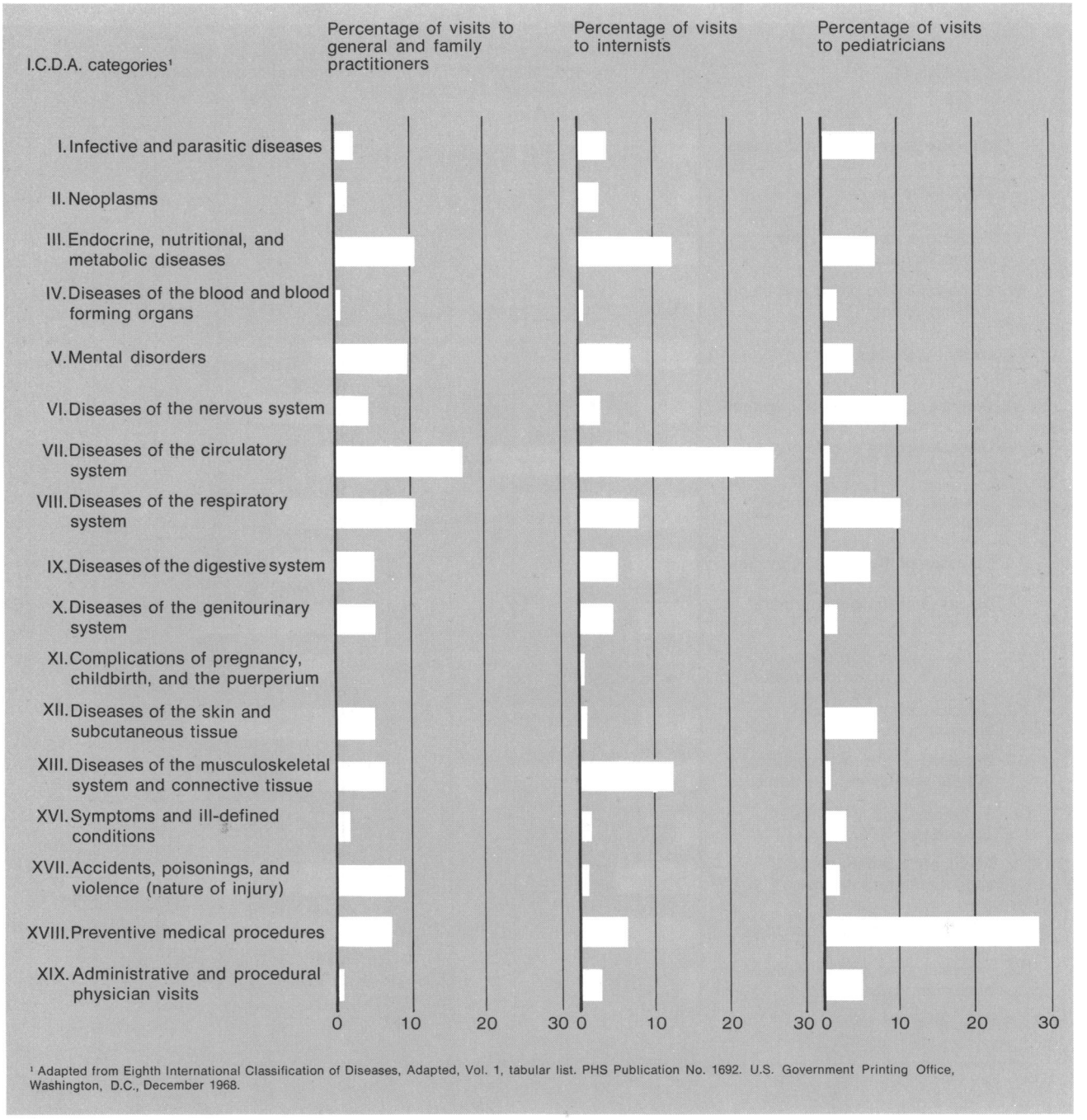
[1] Adapted from Eighth International Classification of Diseases, Adapted, Vol. 1, tabular list. PHS Publication No. 1692. U.S. Government Printing Office, Washington, D.C., December 1968.

the most common morbid conditions found in the practices of general and family practitioners (17.1 percent) and internists (26.0 percent). Pediatricians most frequently cared for patients requiring "preventive medical procedures" (28.4 percent), a category that includes well-baby examinations and immunizations. The three categories of primary care specialists differed distinctly from one another in the frequency with which they encountered the various primary care diagnoses in their practices.

Discussion

What was unique about our county survey was that we documented the proportion of ambulatory care that was primary care (77 percent) by using population-based data and a definition of primary care based on

Figure 3. Percentage distribution of the primary care visits recorded in the survey county over a 2-week period in 1974, by diagnostic category and type of primary care specialist



[1] Adapted from Eighth International Classification of Diseases, Adapted, Vol. 1, tabular list. PHS Publication No. 1692. U.S. Government Printing Office, Washington, D.C., December 1968.

the nature and content of the patient visit. Although in the survey we collected data on a broad spectrum of ambulatory care by including physicians' offices, the telephone, clinics, and the emergency room, certain factors need to be considered in relating these data to other communities. The survey was carried out in late June, when morbidity is lower than the average annual level, particularly for respiratory diseases, which have marked seasonal variations and occur 2½ times more frequently in winter than in summer (*13*). Accidents also have a seasonal variation; they are more frequent in summer. Additionally, the population of the survey county differed from that of the United States in regard to race. The fact that the proportion of blacks in the county was small might affect the kinds of illnesses for which the population sought medical care, since blacks use fewer medical services (*1,14*), have more morbidity, and use fewer preventive services on the average than whites (*15–17*).

The proportion of office-based physicians in the primary and nonprimary care specialties was virtually the same in the survey county as in the United States (*18*), but the surgical subspecialties were overrepresented in the county (25 percent in the county versus 18 percent in the United States). As a result, the morbidity recorded for this small county may have been somewhat distorted. Specifically, the number of urologists was relatively large for a population of 104,000 people (*3*). Their number may have accounted for the relatively high frequency of urinary tract diagnoses, which ranked as the third most common specific diagnoses in the survey county. In contrast, in the National Ambulatory Medical Care Survey (*3*), urinary tract diagnoses did not rank among the 15 most frequent specific diagnoses. To some extent, physicians create the demand for their services, since once a disease is diagnosed, patients return for care at intervals determined by the physician. A number of epidemiologic studies have been carried out in the survey county, but they have provided no indication that diseases of the genitourinary tract are more common there than in other areas. The finding of a relatively high frequency of urinary tract diagnoses raises the possibility that the morbidity in ambulatory practice is affected by the composition of the physician population as well as by the needs of the general population. Since the distribution of specialists is not determined by assessments of patients' needs, the morbidity rates in ambulatory practice may reflect the composition of the physician population as well as the morbidity patterns in the population.

The description of ambulatory care that we derived from the survey county differed from that obtained in national and other community surveys of physicians, in part because in prior surveys no information was obtained about telephone visits or primary care diagnoses. Judging from our survey data, we would have obtained information on fewer than 7 of 10 ambulatory visits had we reviewed only data on office practices, as was done in the National Ambulatory Medical Care Survey (*3*). Telephone visits accounted for 17 percent of all visits in the county; the emergency room and public health clinics accounted for 15 percent. Compared with the periodic National Health Survey (*13*), in which physician visits over the previous 2 weeks are recorded based on patients' recall, the proportion of total visits accounted for by telephone calls was high in the survey county. However, telephone visits may have been underreported in the National Health Survey because recall of such visits may have been poorer than recall of face-to-face visits. Emergency room visits, on the other hand, may be easier to recall because they are longer in duration and are usually made for more severe illnesses than office or telephone visits.

Information about visits to the emergency room and public health clinic visits and by telephone is needed not only to cover the totality of ambulatory care in an area, but also to complete the picture of the kinds of ambulatory care provided, since the spectrum of diseases encountered in such visits differs distinctly from that encountered in visits to physicians offices alone. The need for inclusion of these other sites of care is particularly apparent in the case of trauma, which is often treated in the emergency room and which in the study county was the most common reason for physician-patient encounters. The fact that emergency room care was not assessed in the National Ambulatory Medical Care Survey may be the reason that trauma was not among the most common reasons for ambulatory care visits nationally, even though it accounts for an increasingly large proportion of the ambulatory care in most communities.

The need for primary care physicians is a major national manpower issue. We found that more than three-quarters of all ambulatory care provided in the study county was primary care. General and family practitioners and pediatricians provided primary care almost exclusively. However, the proportion of the ambulatory care provided by internists that was primary was similar to the proportion provided by obstetricians and gynecologists, although the content of the primary care provided by each group was very different. Many people regard obstetricians and gynecologists as primary care physicians (*19*). However, most of the primary care performed in the survey county by obstetricians and gynecologists was related to pregnancy and

did not cover the breadth of primary care as defined by Alpert and Charney. Obstetricians and gynecologists spend more time in hospitals than primary care physicians, and their training does not prepare them to be integrators of care or to manage diseases other than those related to the reproductive system on a long-term basis. Thus, to classify these physicians as primary care physicians in the broadest sense of the term is misleading.

The proportion of the ambulatory visits to general and family practitioners, internists, obstetricians, and gynecologists that was for primary care contrasted markedly with the proportion for other physicians. Like the obstetricians and gynecologists, emergency room physicians provided a large number of primary services but did not practice primary care in breadth. Indeed, they were the first contacts of most patients, but they neither functioned as integrators of care, nor provided continuity of care.

The large number of primary care visits that are made to nonprimary care physicians have implications for health manpower training. This point was confirmed by Thacker and associates in their study in Durham County (*8*), in which they showed that specialists were providing large amounts of primary care. In the survey county, more than half of the ambulatory care provided by general surgeons and medical subspecialists was primary care. Only the surgical subspecialists did not provide predominantly primary care, but even among them, primary care accounted for more than one-third of their ambulatory care visits. This result is consistent with a recent national study (*20*) showing that surgeons were not using their surgical skills because the need for surgery was less than the supply of surgical manpower. Is some primary care given by surgeons due to lack of surgical demand?

Although most physicians in the survey, regardless of specialty, provided a substantial amount of primary care (some provided such care almost exclusively), the spectrum of primary care provided by different kinds of physicians was not the same. All physicians with an ambulatory care practice, regardless of specialty, handled various aspects of primary care. Therefore, all these physicians should be trained to handle the conditions actually encountered in their practices. The primary care provided by those specialists in our study who dealt with special populations (pediatricians and obstetrician-gynecologists) focused heavily on preventive medical procedures. The primary care practice of the general and family practitioners was more evenly distributed among the disease categories of the International Classification of Diseases, Adapted; their most frequent primary care contact was for diseases of the circulatory system. The primary care practice of internists paralleled that of general and family practitioners, with the slight difference that internists treated proportionately more diseases of the circulatory system and the musculoskeletal system; general and family practitioners also cared for a higher volume of patients. The disease pattern in visits to emergency room physicians was concentrated on accidents, poisoning, and violence, followed by diseases of the digestive system; these physicians never treated many categories of disease. That an unusally large proportion of the primary care provided by surgical subspecialists was for diseases of the genitourinary system may have been due to the large number of urologists in the study county.

Although primary care comprised a substantial proportion of the ambulatory care practices of nonprimary care specialists, such as general surgeons, the primary care that they provided apparently differed functionally from that provided by primary care physicians. Visits to nonprimary care specialists were for the purpose of obtaining a specific primary care service, such as the assessment of trauma, rather than to make a primary care contact for integrative or long-term care management, as was the purpose of visits to primary care physicians. The difference between the two types of primary care visits was determined on the basis of their concordance with Alpert and Charney's definition of primary care. If one considers a primary care service different from a primary care contact because in that contact the physician does not provide continuity of care or exercise the integrationist function (as, for example, in visits to an emergency room physician for a laceration), then many visits with nonprimary care specialists differ in function from visits with primary care physicians. This statement implies that in serving as a primary care provider, the nonprimary care physician often does not act in the same way as the primary care specialist, even though each physician provides primary care services. Further study of ambulatory practice could clarify these distinctions and increase our understanding of the content of patient-physician encounters.

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SYNOPSIS

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To document the volume and kinds of ambulatory care, particularly primary care, being provided in a medically self-contained community, a survey was conducted in a county in a Middle Atlantic State during the summer of 1974 at all sites where physicians provided ambulatory care. These sites included not only physicians' offices, but also the emergency room, public health clinics, and physician-patient telephone encounters.

Primary care was found to constitute 77 percent of all ambulatory care in the county and to account for 96 percent of all visits to primary care physicians. It also accounted for more than 50 percent of the visits to all physicians except the surgical subspecialists.

Most of the primary care visits were for common disorders, common procedures, and common preventive measures. Distinct patterns were observed in the primary care morbidity treated by primary care physicians and that treated by specialists—patterns that seemed appropriate for those practices. The specialties of the physicians who were available to the population may have influenced morbidity patterns in the community surveyed. The primary care provided by primary care specialists appeared to differ in some functional aspects from that provided by other specialists.