

The Content of Family Practice: A Family Medicine Resident's 2½-Year Experience with the E-Book

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The purpose of this paper is to present the content of office family practice problems seen over a 2½-year residency period and to afford comparison with the well-known Virginia Study. It illustrates the usefulness of the diagnostic E-Book, with which all the data were collected and preserved.

Over a 2½-year period, the author cared for 592 patients in the family practice office. The ratio of one physician to 592 patients compares to the Virginia Study's one physician to approximately 745 patients. A total of 1,640 problems were coded in the E-Book. In this study 55 problems/physician/month were seen, whereas in the Virginia Study approximately 177 problems/physician/month were noted. Respiratory illnesses were the most common diagnostic category in both studies. Among specific problems, obesity ranked first at Hershey, with afebrile colds second, hypertension and Beta streptococcal pharyngitis third, and smoking fourth. Obesity and smoking were ranked considerably lower in the Virginia Study, whereas "health maintenance examinations" were ranked number one. Finally, for age-sex practice profiles, the present data revealed two peak age groups for both sexes, whereas the Virginia work noted only one peak age range.

Students of family medicine have long been curious about the actual content of their labors. Workers in Great Britain, especially John Fry^{1,2} and W. N. Pickles,³ led the way in this study by keeping careful records of their daily practice. Eimerl first illustrated a practical method for record keeping in clinical practice.⁴ His "E-Book" method has been much adapted but has stood the test of time,

and is still very useful in clinical practice. It consists of an organized notebook, with a separate page for every problem or diagnosis corresponding to the diagnostic code or index in use.

North America lagged somewhat behind, but by the 1960s several groups began to look at the content of family practice. Studies by Last and White in Vermont,⁵ Brown et al in Massachusetts,⁶ Riley et al in New York,⁷ and Wolfe et al in Saskatchewan,⁸ are among this early work. However, without question the now-familiar Virginia Study by Marsland, Wood, and Mayo,⁹ has established a current model for study and comparison as regards the content of family practice.

The purpose of this paper is to present the content of family practice problems seen by a family practice resident and afford comparisons with the larger scale Virginia Study. Also, it is meant to illustrate the usefulness of the diagnostic E-Book or morbidity index and hopefully to stimulate comparison work by other individual residents and practicing physicians. Finally, the data can be used to structure future residency curriculum needs, based on the documented experience of a former resident.

Materials and Methods

The data were compiled between January 1974 and July 1976, ie, the last 2½ years spent by the author in the three-year residency in family medicine at the Milton S. Hershey Medical Center in Hershey, Pennsylvania. The problems were compiled from patients seen solely in the model family practice unit. Time spent there consisted of one afternoon per week the first year, two afternoons per week the second year, and three to seven half-days per week in the third year. Patients seen in the hospital or on specialty rotations were not included.

Each day, after the last patient had been seen, approximately 15 to 30 minutes were spent transferring information from problem lists of patients seen that day to the E-Book Morbidity Index. The Metcalfe modification of the Royal College of General Practitioners' Code was used exclusively.

A chronic problem, such as diabetes mellitus, was entered and coded as one problem only, despite the fact that a given patient might be seen several times per year for that problem. The number of office visits,

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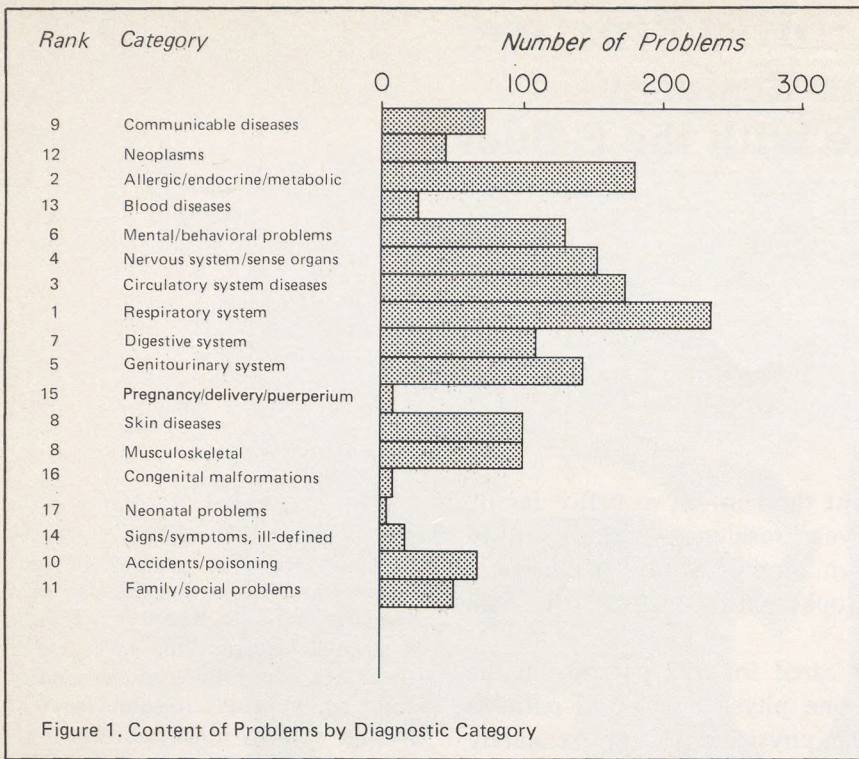


Figure 1. Content of Problems by Diagnostic Category

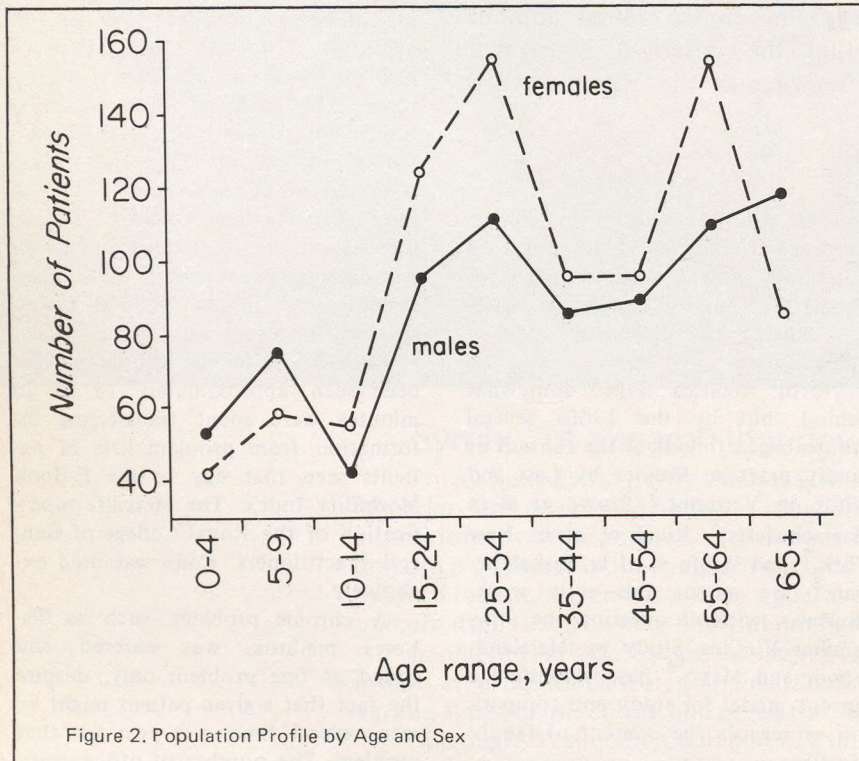


Figure 2. Population Profile by Age and Sex

ie, physician-patient encounters, did not influence or falsely elevate the total number of problems seen for chronic illness. On the other hand, if a child were seen for two or more upper respiratory infections with a "well" interval between each episode, this was coded as two or more separate problems. That is, recurrent acute illnesses were counted as separate problems.

In the Hershey Family Medicine program, residents are not assigned patients or families, but rather, gradually accumulate them over the three-year training period. This meant that it was unknown how many patients or family units a resident was seeing. The data in this study was obtained solely by reviewing and interpreting information recorded in the author's E-Book.

Results

Over the 2½-year study period, 592 patients were cared for in the family practice unit. These patients were members of a total of 440 family units living in and around the Hershey area. As is true of most family practices, all members of a few families were seen in the 2½-year period, but in many instances only one or two representatives from a family unit were attended. In all, 1,640 problems were coded and entered in the E-Book.

The content of problems by diagnostic category is illustrated in Figure 1. Diseases of the respiratory system ranked number one, with allergic, endocrine, and metabolic diseases second, and diseases of the circulatory system third.

Table 1 lists the 18 most common problems coded over the 2½-year study period. Obesity was number one, with non-febrile upper respiratory infections second, Beta streptococcal pharyngitis and essential hypertension tied for third, smoking fourth, and febrile upper respiratory infections fifth.

Figure 2 shows the population profile by age and sex. Overall, there were 866 problems coded for females and 774 for males. The graphic profile reveals peaks in the age range 25-34 and 55-64 for females. Males showed

peaks in the 25 to 34 range and in the 65 plus range.

Discussion

In comparing this study to the larger scale Virginia Study, several important differences must be kept in mind. While this data represents problems seen solely in the family physician's office, that larger study represented problems seen in the office, hospital, nursing home, and home. Furthermore, the durations of data collection are different — 30 months in this study and 25 months for the Virginia work. Finally, in the present study, using the E-Book, a chronic problem was coded once, regardless of how many times the patient was seen, whereas in the Virginia Study each separate visit for a chronic problem was coded — thus perhaps falsely elevating the statistics on some chronic problems. Despite this, some interesting and stimulating comparisons can be made.

In the present study, one physician attended 592 patients and in the Virginia Study, 118 physicians attended approximately 88,000 patients for a ratio of 1:745. The two studies are quite comparable on this point, because the Virginia data included patients seen in the hospital and nursing home.

However, when compared in terms of the number of problems seen/physician/month, the author saw, 1,640/1/30, or 55, and the Virginia Study saw 526,196/118/25 or 177 problems per physician per month. This difference of 55 versus 177 may represent in part a greater volume of problems, but no doubt it is also due to the false elevation of the Virginia statistics because chronic problems were recorded more than once.

Table 2 compares the ranking by diagnostic category in the Hershey Study and the Virginia Study's teaching practices. Respiratory system problems ranked first in each study. Several interesting contrasts were noted. Accidents and poisoning ranked second in Virginia and tenth in Hershey. At Hershey, nearly all accidents and trauma go directly to the nearby medical center Emergency Room. The broad category of allergic, endocrine, metabolic, and nutritional problems ranked second at Hershey and ninth in

Table 1. Most Common Problems Coded

Rank	Number of Cases	Problem
1	64	Obesity
2	47	Non-febrile URI, "cold"
3	44	Hypertension, benign or essential
3	44	Beta streptococcal pharyngitis
4	41	Smoking
5	39	Febrile "colds"
6	32	Acute otitis media
6	32	Acute bronchitis
7	31	Lacerations, contusions, abrasions
8	28	Benign skin neoplasms
8	28	Other heart disease including functional murmurs
9	27	Acute cystitis
10	23	Depressive neurosis
11	21	Diabetes/hypoglycemia
12	20	Pneumonia
12	20	Low back pain (only)
13	19	Lipid abnormalities
14	18	Family/social/marital conflicts
14	18	Iron deficiency anemia
15	17	Viral warts
15	17	Other skin diseases
16	15	Otitis externa
16	15	Vaginitis, vulvitis
16	15	Sprains, strains

Virginia. The great contributor to this category in the Hershey study was obesity. One might speculate that this reflects either a greater incidence of obesity in the Hershey area, or a lack of coding for this problem in Virginia. Finally, one notes both mental and behavioral problems (sixth) and family/social problems (eleventh) ranked considerably higher in the Hershey Study. Again, this could represent a difference in incidence or merely a different coding bias in the two studies.

Table 3 compares the ranking by specific problems in the Hershey and Virginia studies. The most frequent problem in the Virginia study was "health maintenance," ie, examinations for preventive purposes, and this problem does not appear in the Hershey data or rankings. "Health maintenance" was listed as problem one on nearly all of the author's charts, but visits just for this problem were not consistently coded into the E-Book. This should be a specific criticism of the present study.

Alternatively, specific criticisms of the Virginia work include the relatively low rankings given to obesity, smoking, benign skin neoplasms, lipid abnormalities, and family/social conflicts. In a busy office practice it is certainly easy not to code obvious problems such as obesity and smoking when you are deluged with acute problems. However, to do accurate and complete family practice, the longevity risk factors must be identified and addressed with patient education. Family/social conflicts are likewise commonly missed in the midst of multiple acute or chronic complaints, but these problems must be identified, labeled, and added to the problem list.

Finally, comparison is made between age and sex profiles in this study and the Virginia Study. Whereas two peaks were noted in the Hershey study, ie, in the young adult and older adult age groups, only one peak was noted in the Virginia Study — that in the 15 to 25-year age range for both sexes, with a gradual tapering of patients in the later years. This may be attributable to a true difference in population age groups or to some subjective bias on the part of the physicians seeing patients. Hopefully, other practices will be stimulated to record and compare their practice profiles to the present two studies.

**Table 2. Comparative Ranking by Diagnostic Category:
Hershey vs Virginia Teaching Practices**

	Rank in Hershey Study	Rank in Virginia Study
Communicable diseases	9	10
Neoplasms	12	13
Allergic, endocrine, metabolic, nutritional	2*	9
Blood diseases	13	14
Mental, behavioral problems	6*	11
Nervous system, sense organs	4	3
Circulatory system	3	5
Respiratory system	1	1
Digestive System	7	7
Genitourinary system	5	6
Pregnancy, delivery, puerperium	15	15
Skin diseases	8*	4
Musculoskeletal problems	8	8
Congenital, problems	16	17
Neonatal problems	17	18
Ill-defined signs, symptoms	14	12
Accidents, poisoning	10*	2
Family/social problems	11*	16

*ranking difference of 4 or more positions

**Table 3. Comparative Ranking of Specific Problems:
Hershey vs Virginia Study**

	Rank in Hershey Study	Rank in Virginia Study
Obesity	1*	9
Non-febrile URI, "cold"	2	8
Hypertension, essential	3	2
Beta streptococcal pharyngitis	3	4
Smoking	4*	249
Febrile URI	5	10
Acute bronchitis	6	5
Acute otitis media	6	11
Lacerations, contusions, abrasions	7	3
Other heart disease (functional murmurs)	8*	50
Benign skin neoplasms	8*	146
Acute cystitis	9	20
Depressive neurosis	10	12
Diabetes, hypoglycemia	11	7
Pneumonia	12	25
Low back pain	12	38
Lipid abnormalities	13*	291
Iron deficiency anemia	14	29
Family/social/marital conflicts	14*	91
Other skin disease	15	90
Vital warts	15	55
Otitis externa	16	46
Vaginitis, vulvitis	16	17
Sprains, strains	16	6

*categories of wide difference in rank

Conclusion

Both similarities and contrasts have been noted between this study and the larger Virginia Study in terms of the content of family medicine. Hopefully, the utility of the E-Book or Morbidity Index as a unique family medicine research tool has been demonstrated. Furthermore, the data presented and summarized from the Hershey study can be critically evaluated by the residency staff and incoming residents to assist in structuring the best possible model unit experience for the future.

In a larger sense, this paper is one demonstration of the fact that family practice research is coming of age. Because a common diagnostic code exists, two studies of widely different magnitude, context, and location can be realistically and critically compared. Both the present Hershey study and the much larger Virginia Study should be open to much comment and constructive criticism. However, the fact that the specialty of family medicine can now define its content and compare one practice to another is most significant.

References

1. Fry J: Profiles of Disease. London, E&S Livingstone, 1966
2. Fry J: On the natural history of some common diseases. *J Fam Pract* 2:327-331, 1975
3. Pickles WN: Epidemiology in County Practice. Torquay Devon, Devonshire Press, 1939, re-issued 1972
4. Eimerl TS: Organized curiosity. *JR Coll Gen Pract* 3:246, 1960
5. Last JM, White KL: The content of medical care in primary practice. *Med Care* 7:41-48, 1969
6. Brown JW, Robertson LS, Kasa J, et al: A study of general practice in Massachusetts. *JAMA* 216:301-306, 1971
7. Riley GJ, Wille CR, Haggerty RJ: A study of family medicine in upstate New York. *JAMA* 208:2307-2314, 1969
8. Wolfe S, Badgley RF, Kasius RV, et al: The work of a group of doctors in Saskatchewan. *Milbank Mem Fund Q* 46:103-129, 1968
9. Marsland DW, Wood M, Mayo F: A data bank for patient care, curriculum, and research in family practice: 526,196 patient problems. *J Fam Pract* 3:25-28, 1976