Clinical Implications of the Virginia Study

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I have been given the unique and most pleasant opportunity to discuss the clinical implications of the most massive study of patient problems that I have ever seen in published form. In this study the health care problems that 88,000 patients presented to 118 family physicians over a period of two years were coded and analyzed. A total of 526,196 health care problems were included in this study. This is truly an immense task for which the authors of the study should receive the gratitude of all of us in family practice, whether we be practicing family physicians, faculty members in teaching programs, or researchers.

When one is first confronted with this data, it seems almost overwhelming. It is difficult to decide where to start and what format one should use. It seems to me that the clinical implications are almost endless. Therefore, I have chosen to analyze the data largely from the standpoint of the more common reasons for visits to the physician. The implications of these frequencies, as I perceive them, will be briefly outlined, and I shall follow the format of disease categories that the authors used in the presentation of their data.

Several general observations concerning the sex distribution of the population are in order. It is of interest that approximately two thirds of all patient visits were made by females. Approximately the same sex distribution is apparent in every other study that I have ever seen; yet I have never seen an explanation for this. The increased percentage of females over males is even more striking in the older age group. It is tempting to speculate as to whether or not this has anything to do with the greater life expectancy of females in our population. I do believe that it points out a need for a greater emphasis on preventive medicine in our male population. Obviously, this is more difficult to accomplish if we are not seeing males as often as females in our practice. Should we place greater emphasis on obtaining the cooperation of males in the process of the prevention and early detection of disease in our clinical practices? Would this make any difference if we did? These are questions to which we have no answers currently. However, it would seem appropriate to turn more of our attention to this aspect of our practices in the future.

There are several interesting observations to be made in the first category, communicable diseases. There were 67 visits for rubella and 64 visits for rubeola, two completely preventable diseases. National statistics indicate a general lowering of immunity levels against these diseases in the general population. This would seem to indicate the need for even greater immunization efforts on the part of physicians, the public, and local government. It is interesting to note that tuberculosis is still with us, even though in diminished frequency. Could some of these cases have been prevented by early and routine tuberculin testing and the administration of prophylactic drug therapy for recent converters? Syphils and gonorrhea are still very much with us. Gonorrhea, in particular, is on the rise. This would support the importance of doing routine cultures for gonorrhea on every patient on whom we do a pelvic examination. It also behooves all clinicians to report all cases of venereal disease to the local health department so that contacts can be identified and treated. The relatively small number of cases of venereal disease reported in this study is surprising and may represent under-reporting. There was a surprising number of visits for viral warts, totalling over 2,000 visits. There is no way of telling how many separate visits this disease category represented. The large number of visits is probably due in part to the fact that at present we have no perfect way of treating this common disease. Certainly, family physicians should become as expert as anyone at treating warts.

Diagnostic category 2 was neoplasms. Almost 400 visits were for carcinoma of the lung and trachea. Since there is a direct effect between smoking and these neoplasms, it would imply that greater emphasis is needed in the area of getting people to stop smoking. Behavior modification has always been extremely difficult at best. Perhaps some of the newer techniques in behavior modification will prove of value in the future. Although certainly rare, three patients between ages 15 and 24 were found to have malignant neoplasms of the breast. This should indicate the necessity for both routine physician and patient examination of the breasts starting at puberty. A most surprising finding in the study was the marked preponderance of carcinoma of the colon in females. This is in variance with most other studies that indicate a 1.1:1 ratio in females compared to males. In this study there were 133 females to 35 males. However, the vast majority of these malignancies occurred after age 45. This might indicate the necessity of concentrating routine sigmoidoscopies in that age group. It is interesting that there were only 12 visits for malignancy of the body of the uterus. There have been some who have advocated routine uterine washings in the older age group. The present study would seem to indicate that this rather time-consuming procedure would be relatively unrewarding.
However, there were relatively large numbers of patients with the diagnosis of depressive neurosis or anxiety neurosis. The obvious implication here is that the family physician should be expert at the diagnosis and management of these common problems. He should know the indications and contraindications for the major and minor tranquilizers as well as their side effects. Family physicians should also be more attuned to suspecting these problems, particularly depression, if we are to be of maximal benefit to our patients. There were almost 4,000 visits for physical disorders of presumably psychogenic origin. This appears to be somewhat of a wastebasket and indicates a need for better diagnostic criteria. Abuse of alcohol was responsible for only 1,300 visits. This must represent under-reporting, under-diagnosis, or aversion to treatment of the alcoholic. Certainly, other studies have indicated a much higher incidence of alcoholism. Again, we must find better therapeutic modalities. However, the present study would indicate a need for better diagnostic acumen on the part of the practicing physician with respect to the identification of this common problem. Unusually low frequencies of visits were recorded in the areas of impotence, drug abuse, cigarette smoking, frigidity, marital problems, and socioeconomic problems. Again, this must represent under-reporting or under-identification. Yet, these are problems that affect the response of our patients to treatment if they go unrecognized. We should become much more adept at seeking out and dealing with these problems.

Diagnostic category 6 includes diseases of the nervous system and sense organs. There were over 9,000 visits for acute otitis media. This would certainly indicate the absolute necessity for the family physician to be expert at the management of this most common disease. There were over 1,800 visits for vertigo. We do not know whether this was true vertigo or subjective “dizziness.” I believe that this is a symptom that many of us do not have a good handle on. We probably need to develop greater skills in the precise diagnosis and management of this relatively common complaint. The family physician should be well versed in the management of the epileptic patient in view of the 1,200 visits that this diagnosis occasioned.

Diseases of the circulatory system constituted diagnostic category 7. It is not surprising that this disease category was responsible for a very large number of visits. In fact, hypertension was the second most common cause for visits to the physician, arteriosclerosis (including cardiovascular disease) ranked 16, and congestive heart failure was 19. There was a total of approximately 42,000 visits for these three conditions. Again, this obviously implies that the family physician should be quite expert in the diagnosis and management of these diseases. He should know how to use the latest diagnostic procedures and apply intelligently the various therapeutic modalities. It is interesting to note that rheumatic fever is still with us. There was a total of 203 visits for this disease in patients under 25. This points out the necessity of performing a throat culture for the identification of the beta hemolytic streptococcus on all young people with sore throats. Only by treating all strep throats can we virtually eliminate this disease.

Diagnostic category 8 was diseases of the respiratory system. Pharyngitis and tonsillitis ranked fourth as a cause for visit and were followed by acute bronchitis. The common cold and influenza-like illness ranked eighth and tenth, respectively. There were 4,700 visits for acute sinusitis and 4,000 visits for pneumonia or pneumonitis. The clinician must be extremely skilled in the diagnosis and treatment of these common diseases. In particular, he must know when and when not to use antibiotics. In view of the tremendous number of antibiotics prescribed in the United States every year, one must suspect that some of them are being prescribed for viral illnesses for which there is no indication.

Diseases of the digestive system constituted diagnostic category 9. There were 5,700 visits for abdominal pain other than colic. Here, again, we are dealing with a symptom rather than a disease. This points out the absolute necessity for the clinician to have a diagnostic plan to deal with the many possibilities that such a symptom can represent. He must know when and when not to order radiological studies. He must be aware of the potential hazards of excessive
radiation and at the same time not
miss potentially lethal or disabling
conditions. This represents one of the
more challenging problems that a
physician faces, and really tests his
diagnostic acumen and clinical skills.
There were large numbers of visits for
both diarrhea and vomiting. These
symptoms also demand considerable
skill on the part of the family physi-
cian if he is to treat them appropriately
and avoid unnecessary hospitaliza-
tion. The frequency of visits for
acute gastritis or duodenitis was some-
what higher than could have been
expected (2,864), and the frequency of
visits for peptic ulcer was lower
(1,085). The practicing physician
should be skilled at diagnosis and
treatment of these two disease entities.
Diagnostic category 10, diseases of
the genitourinary system, not unex-
pectedly, is responsible for a large
number of visits to the physician.
Vulvitis, vaginitis, cervicitis, and
cystitis as a group were the reasons for
over 10,000 patient visits. This would
indicate the need for expertise in
the treatment of these conditions. It also
points to the necessity of being able to
perform certain diagnostic tests in the
office, such as urine cultures, rough
colony counts, gram stains, KOH
preparations, saline drops, etc. It is
only in this manner that specificity of
diagnosis and therapy can be attained.
There was also a large number of visits
for other infections of the urinary
system including prostatitis. Again, the
physician must be able to accurately
diagnose and treat these conditions.
Visits for disorders of menstruation
were rather numerous. This demands
that the physician develop a rational
plan for investigating the cause of
these disorders. It is only in this
manner that rational therapy can be
prescribed. Empirical treatment of this
symptom complex is only to be
condemned. The relatively small
number of visits occasioned by dys-
menorrhea and dyspareunia is sur-
prising, and may represent under-
reporting. Dyspareunia is probably
much more common than we suspect,and
discovery of the true incidence
probably bears some relationship to
the frequency with which the question
is asked. Only a little over 1,000 visits
for menopausal symptoms were
recorded. Since there were over 130,000
visits by women over 45 years of age,
under-reporting can again be sus-
pected. Nonetheless, the family physi-
cian should be skilled in the manage-
ment of patients presenting with these
symptoms.

Pregnancy, parturition, and the
puerperium constitute diagnostic cate-
gory 11. There are no real surprises
here. However, it should be noted that
there were 7,189 visits for prenatal
care. This means that many family
physicians are involved in prenatal care
and, presumably, deliveries. If this is
true, then the family physician should
be skilled in the management of preg-
nancy, parturition, and the puer-
perium.

It comes as no surprise that there
were 28,513 visits for problems of skin
and cellular tissue, diagnostic category
12. This means that one out of 18
visits was for a problem in this area.
The obvious implication is that the
family physician should have ready
access to diagnostic modalities, such as
cultures and biopsies, in order to
properly diagnose the many conditions
falling under this general heading. He
should also be precise and efficient in
their management.

Diagnostic category 13 included
diseases of bones and organs of
motion. There were over 9,000 visits
for the various forms of arthritis. This
would imply that the physician should
know how to distinguish among the
various arthritides. In addition, he
should be familiar with the drug
therapy of these diseases and the
limitations and side effects of therapy,
and finally, he should know the indica-
tions for the various forms of physical
therapy and surgery. There were 2,837
patient visits that were listed under the
code "back pain alone." This probably
represents an inability on our part to
arrive at a specific diagnosis for many
patients with this symptom. Hope-
fully, as we grow more knowledgeable,
the size of this patient pool should
decrease. The present size does indi-
cate the absolute necessity for the
clinician to have a working knowledge
of the various causes of back pain.
He should also have a diagnostic plan for
elucidating the cause. He should also
be skilled in the use of the various
drugs used in the treatment of low
back pain as well as the various forms
of physical therapy, exercises, braces,
surgery, etc. There were almost 2,000
visits for bursitis. This being the case,
the clinician should have a good
anatomical knowledge with respect to
the location of the various bursae. He
should also be expert at injecting the
bursae with steroids, when indicated.
Tenosynovitis and fibrosis were also
responsible for relatively large num-
bers of visits. Again, this would require
sufficient skill to properly diagnose
and manage these diseases.

The small number (754) visits for
congenital malformations, diagnostic
category 14 was most surprising. This
represents only 1 visit in 697 for this
problem. Although there may be some
under-reporting at work here, it may
well be that more of these problems
are managed by specialists in other
fields.

Diagnostic category 15 included
certain diseases of infancy. Here,
again, we are dealing with very small
numbers of visits, 308 out of 526,196.
Failure to thrive (97 visits) and feeding
problems (70 visits) occurred less
often than expected, perhaps as a
result of under-reporting.

Diagnostic category 16 is an inter-
esting one and includes signs,
symptoms, and ill-defined conditions.
There were over 4,000 patient visits in
this category. This indicates the neces-
sity for the family physician to be able
cope with ambiguity and uncer-
tainty, which may well be one of the
major distinguishing factors between
the family physician and the sub-
specialist.

Lacerations, amputations, contu-
sions and abrasions, all of which fall
under diagnostic category 17, ac-
counted for 21,137 visits and ranked
third in frequency of visits. Sprains
and strains ranked sixth and were
responsible for 12,830 visits. The
implications here are obvious. The
family physician should certainly be
expert at the diagnosis and manage-
ment of minor trauma. A large number
of fractures were also seen; an indica-
tion that the family physician should
be able to adequately manage the
majority of the more common ones.

Prophylactic procedures consti-
tuted diagnostic category 18. It should
not be surprising that the number one
reason for all office visits was other
medical examinations for preventive
and presymptomatic purposes. Visits
for these reasons numbered almost
44,000. In addition, there were large
numbers of visits for cervical smears,
contraceptive advice, immunizations,
health education counseling, etc. All
of this would certainly indicate that
the family physician should be expert in the prevention and early detection of presymptomatic disease. He should also be quite skilled at counseling. It is to be hoped, but unfortunately not proved yet in many cases, that the activities described above will reduce morbidity and mortality in later life.

Diagnostic category 19 includes abnormal diagnostic procedures. The absolute numbers here are relatively small, only 2,130. This small number probably represents a combination of under-reporting and inclusion under other diagnostic categories.

Diagnostic category 20, which includes problems other than specific diagnostic/symptomatic, is an interesting category. Under-reporting is obviously taking place here. For example, only 36 patient visits had economic problems listed. This is inconceivable in a total of 526,196 patient visits. Family relationship problems were only listed 1,203 times. Educational problems were listed only 85 times, and employment problems 34 times. This very likely points out the reluctance on the part of both residents and practicing physicians to list these various psychosocial problems in the problem list. On the other hand, these various factors can have an enormous impact on the effectiveness of therapy. A conscious consideration of these factors should be the hallmark of the good family physician. It could be argued that these factors are taken into consideration even when they are not listed as problems. This may be true to some extent, but I have never seen any documented evidence to demonstrate that this is generally true. The truism, "out of sight, out of mind," appears to be operative here.

A family history of selected diseases constitutes diagnostic category 21. Again, the total numbers here are unbelievably small, only 2,138. For example, only 26 patient visits had listed as a problem a family history of tuberculosis. There were more patients than that listed as actually having tuberculosis, so that gross under-reporting is likely. As mentioned above, practicing physicians and residents are frequently reluctant to list these as problems. But, is this not what we say family practice is all about? Shouldn't we check the patient with a strong family history of myocardial infarction for a possible elevation of his blood lipids? It seems to me that this is the essence of both preventive medicine and family medicine. Potential health hazards and psychosocial as well as actual physical problems will have to be listed with increasing frequency if we are ever to climb out of the abyss of only treating fully developed disease.

The final diagnostic category, 22, is a selective therapeutic index and contains numbers too small to offer any meaningful information.

It is interesting that the top 20 diagnoses contain a number of problems for which we have specific therapy, such as hypertension, arteriosclerotic cardiovascular disease, etc. However, we still have a long way to go in their prevention. Viral illnesses also constitute a large portion of what we see in office practice. It is interesting that trauma is still responsible for a large number of office visits. One could speculate what effect the control of the ninth ranked problem, obesity, would have on the incidence of some of the other top 20 problems, eg, hypertension, diabetes mellitus, and arteriosclerotic cardiovascular disease.

The authors are to be complimented on this monumental study which not only provides a wide spectrum of new information but also points the way to further research addressing new questions.