The Michigan Ambulatory Medical Care Survey: Results and Utility Relative to the National Survey

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THE MICHIGAN AMBULATORY MEDICAL CARE SURVEY (MAMCS) was carried out from May 1973 through December 1975, as a supplement to the National Ambulatory Medical Care Survey (NAMCS), to obtain sufficient information about the ambulatory health care provided by office-based physicians in Michigan to present separate data for the State and to evaluate the utility of a separate State survey. The sampling plan and the method of analysis of the 1973 MAMCS have been given by Cornell and co-workers (*1,2*). The approach to the drawing of supplemental samples of physicians and to the analysis of the data was the same in 1974 and 1975, but both processes were somewhat more complex and different in detail than in 1973 because of sampling periods of different lengths and changes in the Michigan primary units in the national sample. The sampling plan for the MAMCS for the entire period has been described by Landis and coworkers (*3*), and detailed results for the entire State and for the Detroit Standard Metropolitan Statistical Area (SMSA) have been presented (*4,5*). The results for the NAMCS for 1973 (May 1973–April 1974) and 1975 have been published separately (*6–8*). One purpose of this paper is to compare the results of the MAMCS, both for the State as a whole and for the Detroit SMSA, with the results of the NAMCS for the coterminous United States with respect to marginal distributions. A second purpose is to describe an application of these data to the planning of a primary health care facility in

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order to ascertain the utility of the Michigan survey relative to that of the national survey.

Survey Highlights

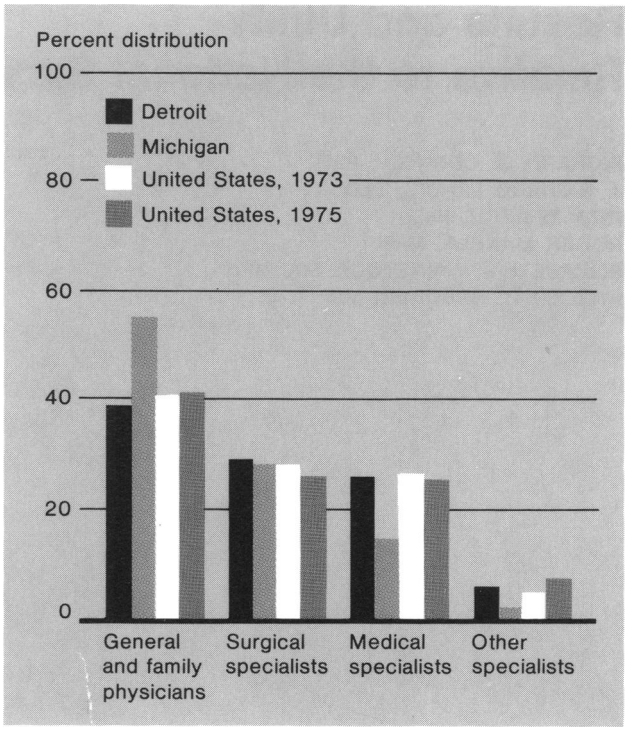
Highlights of the MAMCS for the 3-year period from 1973 through 1975 and of the NAMCS for 1973 and 1975 are depicted in figures 1 through 7, which show characteristics of patient visits. Three years of the MAMCS are included to give as much information as possible about the sample in order to obtain stable estimates. No trend for the MAMCS was observed over the 3 years so the comparisons are appropriate.

The percentage distributions of visits with respect to type of physician practice for the Detroit SMSA, the State of Michigan including Detroit, and for the nation including Michigan are depicted in figure 1. Corresponding distributions with respect to the race and sex of the patient and major classes of diagnoses are given in figures 2 and 3. Distributions with respect to whether the patient had seen the same physician for the same problem before, whether the problem was serious, and whether the patient was told to return are displayed in figures 4–6. The distributions with respect to the duration of the visit are given in figure 7.

Percentages of patient visits for Detroit, Michigan, and the coterminous United States for characteristics with finer categorizations than in the figures are presented in tables 1–3. These tables display information on reasons for seeking care, frequent diagnoses, and treatments or services provided.

It is clear from these figures and tables that the results from the sampling of the three areas are similar, although the differences between the Detroit SMSA and the State of Michigan are larger than apparent since 48 percent of the visits to office-based physicians in the State took place in the Detroit SMSA. A few differences are substantial. Fifty-five percent of the Michigan visits were to general and family physicians. For the Detroit SMSA and the nation as a whole, this percentage was about 40. The difference between Detroit and the rest of the State was considerably more than 15 percent since Detroit results are included in the statewide data. Proportionally fewer of the Michigan visits were to medical specialists than were visits in the Detroit SMSA or in the entire nation. The differences in physician specialities between the Detroit SMSA and the rest of the State for patient visits may reflect the fact that these data only cover office-based care and exclude a larger portion of the Detroit experience with ambulatory care than of that for the rest of the State since outpatient clinics are more readily available in the Detroit area.

Figure 1. Visits to office-based physicians by physician's specialty: Detroit SMSA and State of Michigan 1973–75 and United States 1973 and 1975



For the Detroit SMSA, visits by nonwhite patients were twice the proportion as for the nation as a whole (22 versus 10 percent); the corresponding percentage (16) for Michigan was intermediate.

About half as high a percentage of the Michigan visits were for medical or special examinations as for the nation (3 versus 7 percent, table 2). Detroit's percentage was nearly as high as that for the nation.

The only other substantial differences were for treatment. Visits to physicians in Detroit, and in Michigan as a whole, led to injections or immunizations relatively more frequently than for the nation (31 and 27 versus about 18 percent, table 3). The opposite trend was exhibited for X-rays (4 and 5 versus 7 percent for the United States), perhaps because of a higher hospitalization rate following visits to a specialist.

The Detroit SMSA, the State of Michigan, and the nation differ little with respect to percentage distributions for other variables. However, it is important to consider whether the differences that exist are great enough to lead to different courses of action by those who use the data for the planning and evaluation of health services. For this reason, the impact of using

Figure 2. Office visits by patient's color and sex: Detroit SMSA and the State of Michigan 1973–75 and United States 1973 and 1975

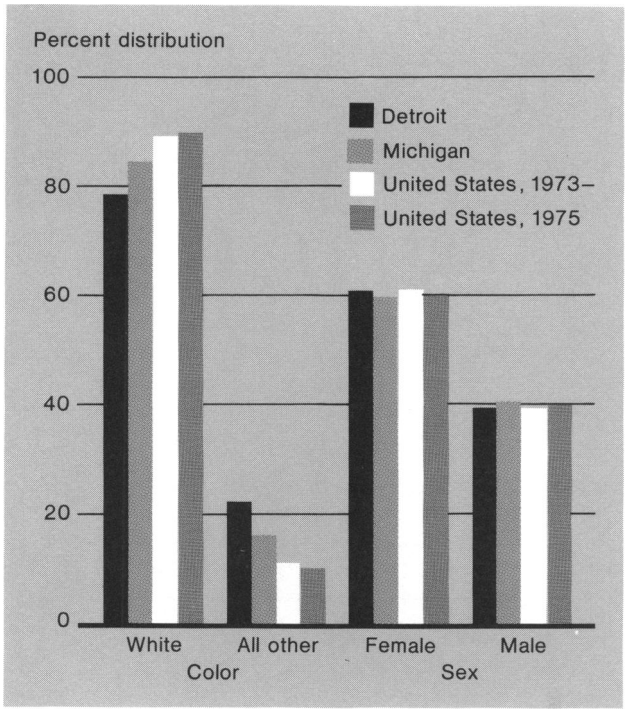


Figure 3. Visits to office-based physicians for classes of frequent diagnoses: Detroit SMSA and State of Michigan 1973–75 and United States 1973 and 1975

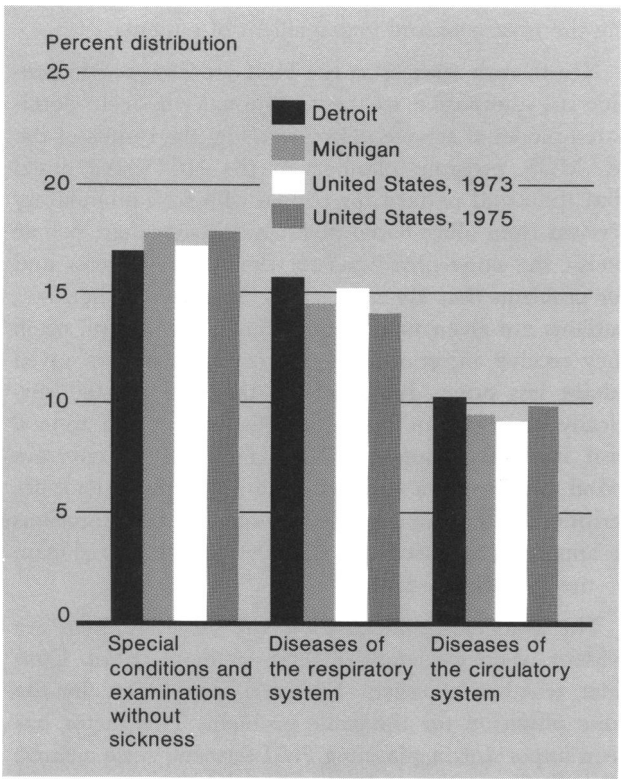


Figure 4. Office visits by patient's prior visit status: Detroit SMSA and State of Michigan 1973–75 and United States 1973 and 1975

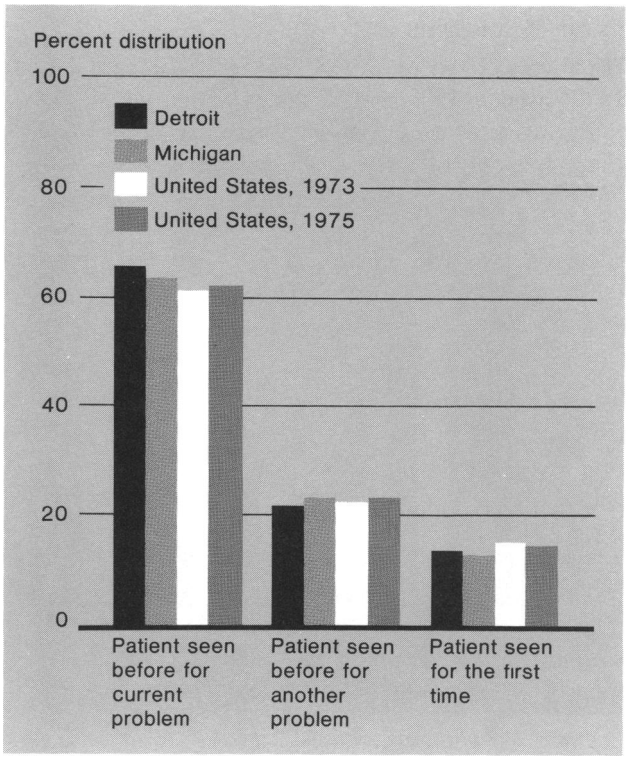


Figure 5. Office visits by seriousness of patient's principal problem: Detroit SMSA and State of Michigan 1973–75 and United States 1973 and 1975

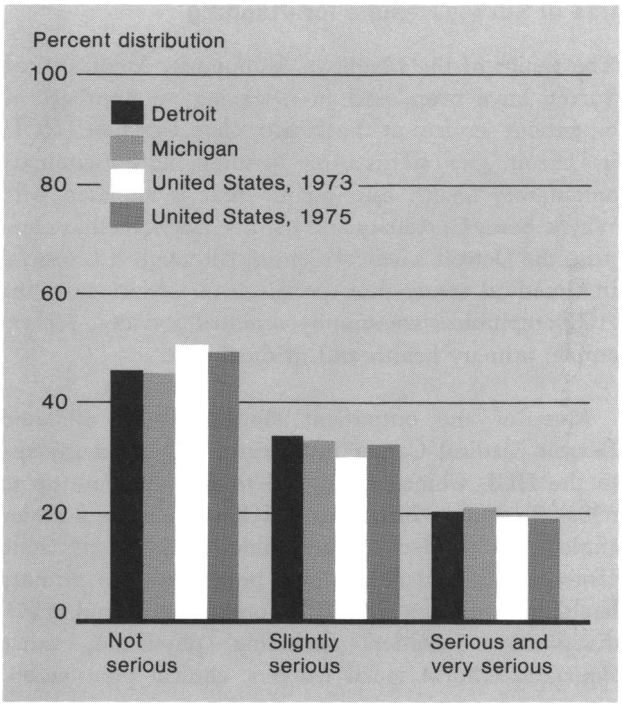


Figure 6. Office visits by disposition: Detroit SMSA and State of Michigan 1973–75 and United States 1973 and 1975

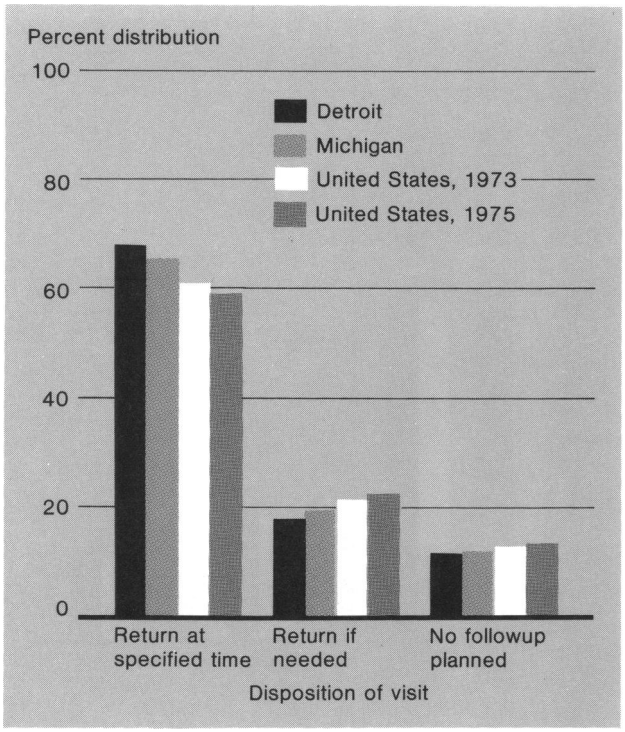
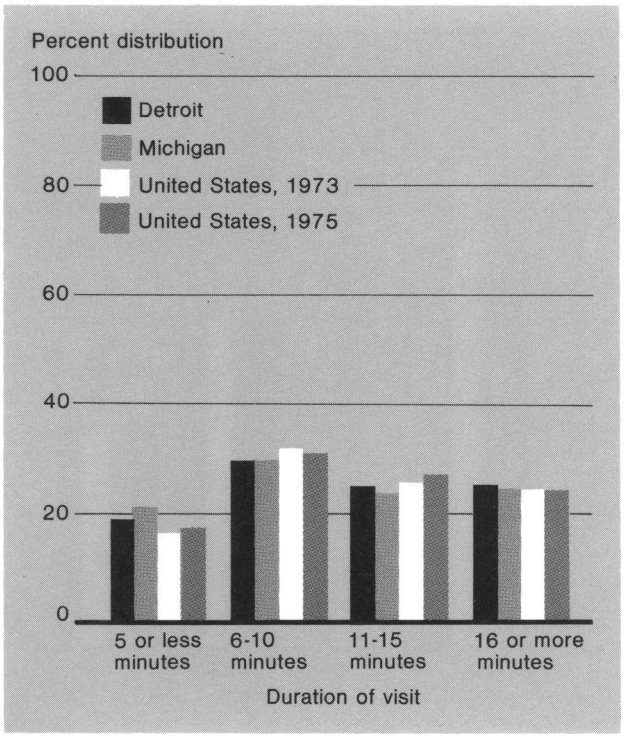


Figure 7. Office visits by duration: Detroit SMSA and State of Michigan 1973–75 and United States 1973 and 1975



State or national results instead of Detroit SMSA findings is discussed next in the context of planning an innovative approach to ambulatory health care.

Use of Survey Results for Planning

The results of the Michigan Ambulatory Medical Care Survey have been used in designing an approach to outpatient services at the Health Care Institute (HCI) in Detroit. The HCI is a free-standing, multidisciplinary ambulatory health care facility that is affiliated with Wayne State University and the five hospitals that comprise the Detroit Medical Center. Although it is located in a medical center that specializes in tertiary care, the HCI emphasizes community oriented services; for example, primary health and medical care.

Most of the outpatient clinics of the affiliated Detroit Medical Center institutions will be transferred to the HCI, which is designed to accommodate up to 650,000 patient visits a year. HCI will also be a major clinical site for faculty and students in Wayne State University's allied health care programs. The primary health care services at HCI are organized around multidisciplinary providers including physicians, nurse clinicians, clinical social workers, clinical pharmacists, clinical psychologists, nutritionists, and health educators. This staffing pattern allows a variety of health professionals to be involved in decision making regarding the treatment and management of patients.

Health care services at the HCI are designed to provide an alternative to the traditional physician-dominated model of service delivery. Using the results of the MAMCS, program planners at the HCI have noted that the usual pattern for people who seek ambulatory services from office-based physicians is that most people revisit the same physicians for the same problems and for problems that are not serious. More often than not, patients are given prescriptions during visits, and often they receive injections. They are counseled or given advice less often. Infrequently, they are treated surgically or given an X-ray. About half of the time a visit lasts 10 minutes or less, and most patients are asked to return at a specified time (*9*). This general description of services provided by office-based physicians is appropriate, based on the Detroit, the Michigan, or the NAMCS results.

The practical implications of the survey findings are evident when we consider them in more detail. Consider whether a patient has been seen before by the same physician for the same problem. This factor has been important in planning HCI services, since a nurse

Table 1. Percentage distribution of visits to office-based physicians by reason for visits: Detroit SMSA and State of Michigan 1973–75 and United States 1973 and 1975

Reason for visit	1973–75 MAMCS		NAMCS	
	Detroit	Michigan	1973	1975
Progress visits	12.7	12.6	11.7	[1]
Pregnancy examination	4.3	4.3	4.0	3.9
Visit for medication	3.9	3.4	2.0	2.1
Gynecologic examination	2.3	2.5	2.0	2.0
Cold, influenza	3.3	3.1	[2] 2.1	[2] 1.7
Problems of lower extremity	2.9	2.9	4.0	3.7
Cough	2.3	2.7	2.8	2.4
Problems of back	2.5	2.6	2.9	3.0
Abdominal pain	2.7	2.5	2.5	2.6
Throat soreness	2.3	2.5	3.2	2.7
Problems of upper extremity	2.2	2.4	2.9	2.6

[1] Not available.
[2] Cold only.
NOTE: MAMCS—Michigan Ambulatory Medical Care Survey, NAMCS—National Ambulatory Medical Care Survey.

clinician or other health professional could provide followup services adquately for many repeat visits without again requiring a physician to appraise a patient's clinical status.

Any of the three surveys would lead to similar estimates of the overall portions of such repeat visits and to the same alternative planning considerations, but none of them would provide data specific enough to estimate the proportion of these repeat visits which may not require a physician's attention. This proportion would have to be estimated by a health planner from other sources of information. This second estimated proportion would be subject to a higher level of uncertainty than that reflected by a minor difference among the surveys in the overall proportion of repeat visits. Thus, each of the three surveys would have the same implications and limitations concerning this item.

Next, consider the proportion of visits for problems that are not viewed as serious. This percentage is about 5 percentage points higher for the national survey than for either the Detroit or Michigan analyses. If such a difference were expanded to 650,000 patient visits per year, it would have a substantial impact on projected manpower needs, provided alternative plans were closely aligned with the estimated number of nonserious visits. However, the information on the percentage of nonserious visits has been used by HCI planners only in a general way. More detailed planning would require more specific information about the problems regarded as not serious and the need for physician consultation. Thus, the observed differences in survey results for this item would not affect planning considerations unless additional information were obtained.

Table 2. Percentage distribution for visits to office-based physicians for frequent individual diagnoses: Detroit SMS/ and the State of Michigan 1973–75 and United States 1973 and 1975

Reason for visit	1973–75 MAMCS		NAMCS	
	Detroit	Michigan	1973	1975
Medical or special examination	5.9	3.4	6.1	7.2
Prenatal care	4.0	3.9	3.9	3.7
Medical and surgical aftercare	3.9	3.9	5.0	4.7
Essential benign hypertension	3.4	3.3	3.5	4.0
Chronic ischemic heart disease	3.1	2.9	2.4	2.2
Acute respiratory disease	2.7	2.8	3.3	2.6
Diabetes mellitus	2.5	2.1	1.4	1.7
Neuroses	2.4	1.6	2.6	2.4
Obesity	2.2	1.9	1.6	1.3
Acute pharyngitis	2.1	2.1	1.6	1.5

NOTE: MAMCS—Michigan Ambulatory Medical Care Survey, NAMCS—National Ambulatory Medical Care Survey.

There are, however, instances where accurate estimates are useful for planning purposes. An example of services that can be closely tied to a survey estimate is the proportion of visits which lead to X-rays. The survey estimate of X-rays for the Detroit SMSA is less than that for the State of Michigan, which is in turn less than that for the nation (4, 5, and 7 percent, respectively). Although the range of these percentages is only 3, this range expands to 19,500 visits per year with X-rays when the estimate is applied to a projected annual total of 650,000 visits. Thus, direct use of the

Table 3. Percentage distribution of visits to office-based physicians by treatments and services provided: Detroit SMSA and State of Michigan 1973–1975 and United States 1973 and 1975

Treatment or service	1973-75 MAMCS		NAMCS	
	Detroit	Michigan	1973	1975
Injection or immunization	30.6	26.6	18.6	18.3
Office surgery	6.7	7.5	8.9	6.7
Psychotherapy	6.4	8.0	4.3	4.3
Medical counseling	13.3	12.8	19.7	12.3
X-rays	4.1	5.0	7.1	7.4
General history or examination	[1]	[2] 37.0	35.9	[1]
Laboratory procedure or test	[1]	[2] 27.3	19.6	[1]
Drug therapy	[1]	[2] 51.6	49.4	[1]

[1] Not available because of changes in data collection form.
[2] 1973 data only.
NOTE: MAMCS—Michigan Ambulatory Medical Care Survey, NAMCS—National Ambulatory Medical Care Survey.

national estimate in this instance would lead to forecasts of many more X-rays than are suggested by the Detroit SMSA estimate and plans for nearly twice as large an X-ray facility. Thus the impact of even small percentage differences in planning facilities for service delivery is large.

In addition to using the most pertinent ambulatory care survey results to plan such a facility, a planner would also have to decide if the organization of services at a facility such as the HCI is different enough from the survey settings to produce changes in the anticipated use of the service, for instance, of X-rays. This consideration is particularly relevant since the HCI provides an alternative mode of service not only to care from office-based physicians, upon which information is provided by MAMCS and NAMCS, but also to a portion of the care obtained from hospital outpatient clinics and emergency rooms. The planners would also need to know the number of other tests in addition to X-rays per visit. Moreover, changes in the design and activities of service delivery systems during HCI's development would also have to be taken into account.

Conclusions

In considering how program planners at the HCI have used results from ambulatory care surveys, a pattern emerges which is applicable elsewhere. The main features of this pattern and recommendations follow:

1. The National Ambulatory Medical Care Survey is most useful for characterizing the general outline of office-based physician practice and for making comparisons at different points in time to see if its important features have changed. Periodic but infrequent State or local augmentation of such a national survey is useful, since it indicates whether the same general pattern holds and, when it does, to give local credence to national estimates. Regular or frequent State augmentation is warranted if it is found that survey estimates for a State or other locality differ markedly from the national pattern.

2. Small differences in most estimates between national and State surveys are not of practical importance, since in most cases the parameters estimated are only a subset of those which must be assessed in order to draw specific plans. Usually some other parameters must be assessed subjectively in the absence of information that is specific to the problem at hand.

3. The information on a few survey items is specific enough to have a direct impact on planning and evaluation. For these items, small differences in estimates are important. The number of such items is small enough so that, even when the general patterns for national and local surveys are checked periodically and found to be similar, more frequent special studies of these items would be feasible and useful. Often such studies could best be done separately from the NAMCS and would be relatively inexpensive because of their specificity and limited scope.

These statements also apply to many other national surveys. They generally provide background or baseline data that are of interest in themselves, but the data are not specific enough for local needs. Their major usefulness is as a starting point in designing data collection needed for unique contexts.

For the MAMCS, the results for the Detroit SMSA and for the State of Michigan as a whole are similar enough to the NAMCS results so that the national survey can be applied to the description, planning, and evaluation of health care services in Michigan. This finding is important since it enables national estimates to be used with more confidence and since data on the larger national sample can be analyzed and used for finer categories, such as separate physician specialities or specific types of patient problems. It also is important because it shows that there is no need to augment the NAMCS in Michigan regularly, although special studies of particular items, such as X-rays, may be needed.

The data collection for the augmentation of the NAMCS in Michigan was carried out in 1973–75. To reestablish a local credibility for the national results, or alternatively, to detect any potential change in the medical care pattern over time, it would be advisable to carry out additional State-level surveys centered at the times of decennial or special censuses. The first additional survey should be conducted several years after the 1973–75 MAMCS at a time when census data can be compared with the findings. Census and ambulatory care data, collected at approximately the same time, would be especially useful to health care planners working on community-oriented health care delivery systems.

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SYNOPSIS

CORNELL, RICHARD G. (University of Michigan School of Public Health), LANDIS, J. RICHARD, ZEMACH, RITA, MANELA, ROGER, WAINSTOCK, ELIZABETH J., and GARDNER, HAROLD H.: *The Michigan Ambulatory Medical Care Survey: results and utility relative to the national survey. Public Health Reports, Vol. 95, July–August 1980, pp. 369–375.*

Percentage distributions for variables in the Michigan Ambulatory Medical Care Survey (MAMCS), both for the Detroit Standard Metropolitan Statistical Area (SMSA) and the State as a whole, are compared with those from the National Ambulatory Medical Care Survey (NAMCS). The MAMCS data are a subset of the NAMCS data, since the MAMCS was carried out by augmenting the NAMCS in Michigan.

Differences in the impact of survey results for the three areas are examined in the context of planning and developing ambulatory health care services. A specific application of survey data is examined, namely, its use in planning the Health Care Institute of Wayne State University and the Detroit Medical Center. The survey results for the three areas are similar enough to warrant the use of data from the national survey in the planning and evaluation of health services locally, although special studies of a few items such as X-ray usage may be needed. To reestablish local credibility for national results, or to detect changes in patterns which may develop, another State-level survey is suggested at the time of a census. Based on the experience with the MAMCS, augmentation of the NAMCS or other national surveys would be useful in other States.