Planning for a statewide network of dementia assessment services: A survey of geriatric assessment services in Michigan

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Abstract

All 38 geriatric assessment service units identified in Michigan were surveyed and responded as a component of planning a statewide network of diagnostic and assessment services for patients with dementia. Most units were outpatient (71 percent), urban (71 percent), and hospital-based (82 percent). Some provided primarily geropsychiatric services (21 percent), while the rest provided general geriatric services. The staff included physicians (95 percent), nurses (100 percent), social workers (95 percent) and other professionals (50 percent) such as nutritionists, neuropsychologists or clinical pharmacists. Assessments performed by most units included physical (92 percent), psychosocial (95 percent), functional (95 percent), neurological (71 percent) mental (95 percent), and financial (89 percent). Patient referral sources were most frequently self/family, followed by physician, community agencies, and community mental health. Reasons for referral were most often confusion/memory loss, followed by behavior change, caregiver stress, depression, and evaluation for placement. Most patients seen were between 65 and 84 years of age (72 percent), lived within 25 miles of the unit (87 percent), and had dementia (62 percent). Urban sites assessed significantly more persons per month (19 percent) than non-urban sites (4 percent). Community-based services spent significantly more time per month on geriatric assessments (68 hours) than did hospital-based services (26 hours). These survey results will aid the development of a statewide network of dementia diagnostic and assessment services.

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Introduction

Dementing illnesses have a devastating impact on patients and their families, such that affected families need substantial comprehensive care.[1] Early in the course of dementing illnesses, a thorough assessment and accurate diagnosis are essential in order to identify reversible causes of dementia, treat medical illnesses, provide social and family services to minimize excess disability, and permit informed decision making.[2] Early diagnosis will also be needed if emerging therapies for disorders such as Alzheimer's disease, are likely to be successful. Yet too often, families face difficulty in locating diagnostic and assessment services that are appropriate and have adequately trained staff. In Michigan, these and

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other problems were considered in the process of statewide planning to meet the needs of persons with dementia and their families.

In 1986, the Michigan Task Force on Alzheimer's Disease and Related Conditions was formed by the Governor's Human Services Cabinet to address the growing problem of dementia. The task force recommended establishing the Michigan Dementia Program to:

- Develop a statewide network of referral centers to provide standardized clinical diagnosis, referral, counselling and training;
- Organize a postmortem examination program and establish a tissue repository for research; and
- Establish a registry of known cases of dementia.[3]

These recommendations are being implemented following the passage of a series of bills mandating them by the state legislature in late 1988. Implementation is the responsibility of the Michigan Department of Public Health, assisted by professionals from around the state who serve on the Dementia Subcommittee of the state's Chronic Disease Advisory Committee. The planned components of the first recommendation, the establishment of Michigan's Diagnostic and Assessment Network, are Centers for Information on Dementia (which would provide information and referral), Regional Diagnostic and Assessment Centers, and Tertiary Diagnostic and Assessment Centers.[4] Closely involved with these efforts is the Michigan Alzheimer's Disease Research Center (MADRC), which is supported by the National Institute on Aging. The MADRC has among its goals the provision of training and education to health care professionals throughout the state, so that the recommendations of the state's task force can be achieved.

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In developing the implementation plan for the Diagnostic and Assessment Centers, members of the Michigan Dementia Program considered utilizing existing resources where feasible. As in other states, geriatric assessment was known to be offered in several settings throughout Michigan. In order to determine if dementia assessment could be appropriately based in such settings, more detailed information was needed from units throughout the state that offered geriatric assessment services. The information could then be used to plan both the training and program implementation needs for serving persons with dementia and their families.

The purpose of this needs assessment survey, therefore, was to identify units providing geriatric assessment services in Michigan and to characterize those units by gathering information about costs of the services, staffing, referral patterns and other issues related to geriatric assessment. The planning and development of the statewide network for dementia assessment services will be aided by the survey data. In addition, the data will serve as baseline information against which to compare the availability of diagnostic and assessment services provided in the future after the state's dementia program is fully implemented.

Methods

A three-page questionnaire (26 items, 221 variables) was designed collaboratively by staff from the Michigan Alzheimer's Disease Research Center and the Michigan Department of Public Health. The survey instrument was developed, piloted, and revised. Data sought from units providing geriatric assessment included the components, time, settings, costs and reimbursement of the assessments; type and volume of services provided; the professional team and its time commitment and training background; sources of and reasons for referral; as well as demographic and diagnostic information on patients.

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The survey was targeted toward units that provide geriatric assessment services throughout Michigan. A list of 52 such units was compiled from several sources, including the American Hospital Association directory, units from which staff had received geriatric training at Michigan State University and the University of Michigan, and other units identified by the staff of the Michigan Department of Public Health Dementia Program.

Data collection began in late September 1991 when the survey was mailed to the 52 agencies. An explanatory cover letter was included from the Chair of the Dementia Subcommittee of Michigan's Chronic Disease Advisory Committee requesting that the survey be returned within approximately two weeks. A stamped, return-addressed envelope was included. After the initial mailing, two

letters were returned as undeliverable and five additional agencies were identified, bringing the total number of agencies to 55. The first mailing resulted in a 23 percent response rate. The second mailing (including a follow-up letter, new survey form, and return envelope) raised the response rate to 69 percent. Telephone calls to the remaining agencies in late October raised the final response rate to 100 percent. An additional two units brought to the authors' attention after the survey was completed were not surveyed. Thirty-eight units of the 55 agencies contacted identified themselves as offering geriatric assessment services and will be described below. Eleven units did not offer such services and six units were long term care facilities.

Data from the returned questionnaire were prepared for analysis. Responses to open-ended questions were grouped into similar categories and assigned response codes. The data were coded and check-coded, then entered and verified on a personal computer. Checks for wild codes and consistency were performed and the data cleaned accordingly. To allow for comparisons of service availability by urban status,

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each agency's location was categorized as urbanized or non-urbanized based upon urbanized area boundary maps of the state of Michigan prepared by the Bureau of the Census and the U.S. Geological Survey.[5] An urbanized area is defined as comprising one or more places and the adjacent densely settled surrounding territory that together have a minimum of 50,000 persons. Descriptive statistics and student's t-tests were computed using StatView II.[6]

Results

The 38 geriatric assessment units that completed the questionnaire were mainly hospital-based (82 percent, $\underline{n}$ = 31) as opposed to community-based (18 percent, $\underline{n}$ = 7). The majority of units specialized in general geriatric services (79 percent, $\underline{n}$ = 30), although some were psychiatric facilities (21 percent, $\underline{n}$ = 8). Most units provided only outpatient assessments (71 percent, $\underline{n}$ = 27), but some provided only inpatient assessments (18 percent, $\underline{n}$ = 7) or both inpatient and outpatient assessments (11 percent, $\underline{n}$ = 4). Based on U.S. Census urban area boundary maps,[5] more assessment units were located in urban areas (71 percent, $\underline{n}$ = 27) than in non-urban areas (29 percent, $\underline{n}$ = 11).

All assessment units were staffed by at least one nurse, and 95 percent of the units ($\underline{n}$ = 36) reported at least one physician and one social worker on their staff. About one-third of the units reported that these professionals had some training in dementia. Of the 36 units that described their nursing staff's preparation, 58 percent ($\underline{n}$ = 21) had at least one nurse with a master's degree. Among the 34 units describing social work staff preparation, 68 percent ($\underline{n}$ = 23) had at least one social worker with a master's degree. Twenty-seven units reported the specialties of physicians on their assessment team as geriatrics ($\underline{n}$ = 9), internal medicine ($\underline{n}$ = 9), family practice ($\underline{n}$ = 6), psychiatry ($\underline{n}$ = 5), neurology ($\underline{n}$ = 1), and surgery ($\underline{n}$ = 1). Half of the units had a variety of other professionals, either full-time or as needed, as well as the usual core team of physician, nurse, and social worker. These additional professionals included psychologists, dieticians, neuropsychologists, pharmacists, recreational/activity therapists, and others.

When asked to indicate which of a list of geriatric evaluations were included in a complete assessment, the majority of the responding units

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reported that they provided evaluations of psychosocial (95 percent, $\underline{n}$ = 36), mental (95 percent, $\underline{n}$ = 36), functional (95 percent, $\underline{n}$ = 36), and physical (92 percent, $\underline{n}$ = 35) status. The majority of units also evaluated financial status (89 percent, $\underline{n}$ = 34) and performed a neurological evaluation (71 percent, $\underline{n}$ = 27). Slightly less than half of the responding units indicated performing neuropsychological assessment (45 percent, $\underline{n}$ = 17). About half of the units provided a variety of other evaluations (45 percent, $\underline{n}$ = 17), including environment/home, nutrition, caregiver concerns, and occupational therapy assessments. The mean number of persons assessed per month was 14.3 ($\underline{SD}$ = 17.8), and a typical assessment took 4.6 hours ($\underline{SD}$ = 4.1). A mean of 2.6 visits was required to perform an initial assessment ($\underline{SD}$ = 1.9). The mean number of hours per month spent doing outpatient assessments was 35 ($\underline{SD}$ = 43.2). Most units scheduled a follow-up visit after the initial assessment (88 percent).

Urban-based units estimated seeing significantly more patients per month than non-urban units (25 patients versus 11 patients; $t34 = 2.3$, $\underline{p} < .03$), and also seeing a significantly larger estimated percentage of Black patients (26 percent versus 10 percent; $t34 = 3.1$, $\underline{p} < .01$). Community-based units estimated spending significantly more

Table 1. Number of geriatric assessment units in Michigan performing each screening test routinely on new patients (N = 38).

Sceening test	n	%
Oral examination	23	61
Clinical breast exam	21	55
Digital rectal prostate exam	20	53
Fecal occult blood	18	47
Foot assessment	17	45
Auditory screening	16	42
Pap/pelvic exam	16	42
Vision screening	15	39
Chest-X-ray	13	34
Mammogram	8	21
Other[a]	4	11

[a] Includes: EKG; immunizations; blood/other lab work.

hours per month conducting outpatient geriatric assessments (68 hours versus 26 hours; t31 = 2.5, p < .02) than hospital-based units.

Regarding the assessment of new patients, respondents indicated which of a list of screening procedures were performed routinely as part of a geriatric assessment. An oral examination was the most frequently performed screening exam (61 percent, n = 23). Just over half of the units routinely performed a clinical breast exam on their female patients (55 percent, n = 21) and a digital rectal prostate exam on their male patients (53 percent, n = 20). Other screening procedures were performed by less than half of the assessment teams, as shown in Table 1.

The units provided other services in addition to geriatric assessment. About two-thirds provided ongoing follow-up (61 percent, n = 23) and psychosocial counseling to dementia patients and/or their caregivers (68 percent, n = 26). About half provided case management (53 percent, n = 20), and one third provided primary geriatric care (32 percent, n = 12). Half the units offered assessments for clients in nursing homes (50 percent, n = 19). However a substantial portion of those only "rarely" did so (n = 11). Sixteen units (42 percent) provided geriatric assessments in clients' homes, but four of these units provided them only "rarely."

Characteristics of patients evaluated at Michigan geriatric assessment units are shown in Table 2. Respondents estimated the percentage of their clients in each age, racial, and geographic category. The majority of clients fell into two age groups: 65 to 74 years old (mean percentage = 32) and 75 to 84 years old (mean percentage = 40), although an average of 18 percent were age 85 years and older. Most clients were White (mean percentage = 81.7 percent). On the average, nearly two-thirds of the geriatric assessment clients lived within 25 miles of the unit. However, responses in Table 2 show a wide range of estimates.

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Respondents estimated that, on the average, nearly two-thirds (62 percent) of their geriatric assessment clients had some form of dementia. However estimates ranged from 0 to 100 percent. They estimated that 42 percent of their patients had been diagnosed with Alzheimer's disease (range = 0 to 100 percent), 26 percent with depression (range = 0 to 80 percent), 15 percent with multi-infarct dementia (range = 0 to 45 percent), 8 percent with Parkinson's disease (range = 0 to 30 percent) and 1 percent with progressive supranuclear palsy (range = 0 to 10 percent).

Respondents ranked their top five reasons for and sources of referral for geriatric assessments from lists of possible reasons and sources on the questionnaire. As shown in Table 3, confusion was the top ranked (i.e., most frequent) reason among ten possible reasons for referral, followed by a change in behavior or function. Abuse/neglect received the lowest ranking (least frequent reason of the ten). Of seven possible sources of referral for geriatric assessment, self/family was ranked as the most frequent source, followed by a physician (see Table 4).

The estimated cost reported for a geriatric assessment ranged from $0.00 to $780.00, with a mean of $295.64. Of 33 units providing information about sources of funding for geriatric assessment, 21 percent (n = 7) were

Table 2. Characteristics of patients receiving geriatric assissment in Michigan (N = 38).

	Estimated Percentage	
Characteristic	Mean	Range
Age group (n = 34)		
Under 55 years	1.6	0 - 18
55 to 64	7.4	0 - 40
65 to 74	32.4	10 - 80
75 to 84	40.0	10 - 75
85 years and over	18.0	0 - 50
Race/Ethnicity (n = 36)		
White	81.7	18 - 100
Black	15.5	0 - 80
Hispanic	1.5	0 - 15
Native American	.5	0 - 5
Arab	.4	0 - 5
Asian	.4	0 - 5
Distance to Center (n = 32)		
0 to 25 miles	62.4	0 - 100
26 to 50 miles	19.5	0 - 100
51 to 75 miles	7.2	0 - 30
over 75 miles	7.8	0 - 75

Table 3. Reasons for referral for geriatric assessment in Michigan.

Reason for referral	Mean Ranking[a]
Confusion	2.11
Change in behavior or function	2.31
Caregiver stress	4.19
Depression	4.28
Evaluation for placement	4.72
Other[b]	5.42
Falls	5.44
Incontinence	5.58
Weight Loss	5.81
Abuse/neglect	5.94

[a] Respondents rank ordered the top five reasons for referrals to their assessment center from a list of 10 possible reasons. Among the reasons ranked in the top five, coding ranged from 1 to 5 (most frequent to least frequent). If a reason was not ranked in the top 5, it was coded as a 6; thus the possible range of rank scores for each of the 10 possible reasons was 1 to 6.

[b] Includes: Adult day care, polypharmacy, complex needs, physical/medical problems.

completely self-supporting and an additional 14 units were partially self-supporting. Table 5 shows estimates of the percentage of units' costs covered by five payment sources. Respondents estimated that over half of their costs were covered by Medicare.

Discussion

A survey conducted to characterize Michigan geriatric assessment units for planning a statewide network of diagnostic and assessment services for persons with dementia yielded responses from all 38 such units identified, assuring adequate representation. No other such survey was located in the literature, although several reviews have described geriatric assessment centers, their costs, and evaluation procedures.[7-10]

Typical units among respondents to this survey were hospital-based, in urban areas, and provided comprehensive geriatric assessment in an outpatient setting. Their team composition was most often a nurse, physician, and social worker, with other professionals as needed, a pattern similar to that reported by Rubenstein, Siu, and Wieland.[11] The majority of units reported providing the following types of patient evaluations, also noted by others:[11]

- Physical;
- Neurological;
- Psychosocial;
- Mental;
- Functional; and
- Financial.

Neuropsychological and other specialized evaluations were reported by less than half the units.

Although varying widely, estimates from the geriatric assessment units surveyed indicated that on the average, the majority of patients were 65 to 84 years old. Patients age 85 and over represented an average of 18 percent of patients seen in the units, with estimates ranging up to 50 percent. Compared to Michigan's total population's age group distribution, these older age groups were over-represented, suggesting that the geriatric assessment units were appropriately attracting a high proportion of older patients. Indeed, others have written that targeting specific types of patients for geriatric assessment can contribute to more successful patient outcomes.[11]

Among Michigan citizens age 55-and-over, 88 percent are White, 11 percent are Black, and other racial groups (e.g., Asian/Pacific Islanders, Native Americans) represent less than 1 percent each.[5] This distribution is similar to the survey respondents' estimates of the racial composition of their patients (see Table 2). The wide range of estimates for the relative representation of Black and White patients is probably associated with the finding that assessment units in urban areas report serving significantly more Black patients than do units in non-urban areas. This may reflect the large proportion of Black residents in Detroit and other urban areas, rather than special urban outreach efforts to Blacks and other minority groups.

Utilizing the existing geriatric assessment units in the development of a statewide network of diagnostic and assessment services for patients with dementia seems reasonable for several reasons. First, these units are already attracting many patients with dementia. The top two reasons given for patient referrals were confusion and change in behavior or function,

Table 4. Sources of referral for geriatric assessment in Michigan

Source of referral	Mean Ranking[a]
Self/family	1.84
Physician	2.35
Other[b]	4.35
Community mental health	4.70
Information & referral agency	4.76
Alzheimer's Association	5.19
Local health department	5.49

[a] Respondents rank ordered the top five sources for referrals to their assessment center from a list of 7 possible reasons. Among the sources ranked in the top five, coding ranged from 1 to 5 (most frequent to least frequent). If a source was not ranked in the top 5, it was coded as a 6; thus the possible range of rank scores for each of the 7 possible sources was 1 to 6.

[b] Includes: Department of Social Services, law enforcement, nursing home, home health agency, aging services agency, hospital, discharge planner, group home, non-relative, other service agencies.

Table 5. Percentage of geriatric assessment costs covered by each source.

Source	Mean Percentage	Standard Deviation	Range
Medicare (n = 29)	59.6	31.5	0 - 100
Self-pay (n = 30)	10.5	22.5	0 - 100
Medicaid (n = 29)	9.7	21.2	0 - 100
Blue Cross/Blue Shield (n = 29)	8.2	9.6	0 - 30
Other Insurance (n = 29)	7.4	19.7	0 - 100

symptoms frequently found in persons with dementia. In addition, an average of nearly two-thirds of the patients were estimated to have dementia. Second, these units provide many of the evaluations and services that are appropriate for persons with dementia, such as psychosocial, mental, functional, and physical evaluations, among others. Moreover, in addition to a comprehensive evaluation of patients' status and functioning, most of the units also provide follow-up and counseling, a key feature of geriatric assessment thought to contribute to successful patient outcomes.[11] About half provide case management services. Third, a portion of the staff have received some training in dementia. Through their active participation in the state's planning for dementia services, many of these individuals demonstrate their interest in providing such services to persons with dementia and their families. Their participation in the survey is another example of their interest. In order to successfully utilize the existing geriatric assessment units for dementia assessment, planners should be sensitive to concerns about reimbursement[12] and to the effects on outcome measures of assessing and managing such patients.[8,13]

The survey results will be useful in the development of a statewide network of diagnostic and assessment services for persons with dementia. The need for more extensive training of staff in dementia is evident in the survey results and can be provided through the collaborative efforts of the Michigan Alzheimer's Disease Research Center and the Michigan Dementia Program. Specific areas of the state needing improved access to geriatric assessment services can be targeted with coordinated program planning efforts. Other states may wish to consider a similar model in their planning for the provision of diagnostic assessment services for persons with dementia, one component of the Michigan Dementia Program.❑

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