



# Michigan Project Creates Screening System and Develops and Tests Quality Measures for Home-Based Medicaid Patients

## Evaluation of the Michigan Managed Long-Term Care Initiative

### SUMMARY

From 1997 to 2001, researchers from the University of Michigan under the direction of Brant E. Fries, Ph.D., conducted development and evaluation work on the Michigan Managed Long-Term Care Initiative (since renamed MI Choice). It allows eligible adults to receive Medicaid-covered services-similar to those provided by nursing homes-in their homes or another residential setting.

The project was part of the Robert Wood Johnson Foundation (RWJF) *Home Care Research Initiative* national program (for more information see [Program Results](#)).

### Key Results

- *The development and implementation of an algorithm-based screening system.* The system consists of a 15- to 20-minute telephone screen and, for those who are eligible for further assessment and possible program enrollment, a 60-minute in-person assessment.
- *The development of a set of 22 Home Care Quality Indicators to evaluate the care provided by home and community-based agencies.* These indicators measure clinical conditions (e.g., nutrition, pain, physical function and hospital use) at a single point in time and client improvement or decline (e.g., incontinence and health instability) over time.

### Key Findings

- The MI Choice Screening System "algorithm" agrees with expert opinions substantially better than systems based on ADL<sup>1</sup> and IADL<sup>2</sup> (as reported in the *Gerontologist*, vol. 42, no. 4, 2002).

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<sup>1</sup> **ADL** (activities of daily living): Basic daily tasks of life, such as eating, continence, transferring in and out of bed, toileting, dressing and bathing. An ADL scale allows a health professional to establish the levels at which an older adult functions in caring for himself or herself and performing these activities.

- The MI Choice telephone screen identifies potential program participants efficiently and economically, but callers exaggerate about how sick they (or the people they represent) are.
- Clients in MI Choice had a positive change in 16 of 22 Home Care Quality Indicators.

## Funding

RWJF supported this project with a \$284,357 grant. The State of Michigan also contributed \$108,036 to the project.

## THE PROBLEM

In the mid-1990s, Michigan policy-makers recognized the need for a statewide effort to allocate long-term care services more equitably and rationally and, by doing so, to moderate the growth in long-term care expenditures. They developed the Michigan Managed Long-Term Care Initiative (later renamed MI Choice), a system to provide comprehensive long-term care services for enrollees.

MI Choice, implemented in October 1997, allows eligible adults who meet income and asset criteria to receive Medicaid-covered services—similar to those provided by nursing homes—in their homes or another residential setting.

Researchers at the University of Michigan and the Hebrew Rehabilitation Center for Aged's Research and Training Institute (Boston), working under a contract from the State of Michigan, provided key components of MI Choice. Hebrew Rehabilitation Center for Aged is a network of care for seniors; its mission is to keep seniors living independently in the community as long as possible and, when necessary, to provide the best quality long-term care. Researchers from both organizations developed the Resident Assessment Instrument-Home Care (RAI-HC) as part of a multinational consortium, and this instrument was implemented in the MI Choice program.

The RAI-HC includes a detailed assessment instrument called the Minimum Data Set for Home Care (MDS-HC) and care planning guidelines. MDS-HC is a broad-based instrument that includes clinical and functional domains important for care planning, such as ADL<sup>3</sup>, IADL, cognition, disease diagnoses and service use.

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<sup>2</sup> **IADL** (instrumental activities of daily living): Activities include using a telephone, shopping, preparing food, housekeeping, doing laundry, using transportation, taking medications and handling finances. An IADL scale measures competence in these functions, which are less bodily oriented than physical self-maintenance.

<sup>3</sup> **ADL** (activities of daily living): Basic daily tasks of life, such as eating, continence, transferring in and out of bed, toileting, dressing and bathing. An ADL scale allows a health professional to establish the levels at which an older adult functions in caring for himself or herself and performing these activities.

The researchers also began to develop the MI Choice Screening System: an algorithm to screen clients and assign them to levels of care, a telephone screen and an in-person assessment. They based the system upon data from the MDS-HC on 813 clients who requested long-term care services in Michigan between November 1996 and October 1997.

## **THE PROJECT**

Researchers at the University of Michigan conducted development and evaluation work on Michigan's long-term care system, MI Choice. Blending funds from the State of Michigan and RWJF, the researchers completed the development of the MI Choice Screening System. The system is composed of an algorithm, a telephone screen and an in-person assessment.

The algorithm, designed to screen clients and assign them to the appropriate level of care, is based on client characteristics from the MDS-HC (e.g., dependence in bathing, independent decision-making, meal preparation by others or current use of a home health aide) that predict eligibility for one of five levels of care: nursing home, information and referral, home care, intermittent personal care and homemaker services. MI Choice staff use the algorithm to conduct telephone screens and in-person assessments.

Researchers evaluated the MI Choice Screening System's algorithm and telephone screen. They tested the algorithm against existing screening systems, using MDS-HC data from 813 people who had requested long-term care services between November 1996 and October 1996 (pre-MI Choice). They evaluated the telephone screen by analyzing data from 6,260 callers who had also received in-person assessments, measuring how closely information from the telephone screen matched information from the in-person assessments.

Researchers also developed a set of outcome measures for home care, the Home Care Quality Indicators, which they used to evaluate the treatment outcomes for some 5,000 to 10,000 MI Choice clients at 23 Michigan agencies for eight quarters (January 1999 through December 2001).

They had also planned to develop software and related support materials (e.g., an assessment instrument and screening and eligibility protocols) for the program that Michigan and other states could use, but when the state decided to develop its own software, this part of the project was no longer necessary.

The State of Michigan also contributed funds to the project for data collection and some development work (\$108,036).

## RESULTS

- **MI Choice implemented the MI Choice Screening System in July 1999.** When potential MI Choice participants (or their representative: family member, hospital discharge planner, etc.) call the program, a staff member uses the 15- to 20-minute telephone screen to identify people who are eligible for further assessment and possible program enrollment. Screeners refer people who are not eligible for MI Choice to information and other community resources. People who pass the telephone screen receive a 60-minute in-person assessment, usually at their homes (but sometimes at a hospital or nursing home). A registered nurse or a licensed social worker conducts these assessments. Based on the results of the assessment, people receive information and referral or homemaker services, or are enrolled in MI Choice. Care planning for those who are enrolled in MI Choice is based on the assessment.
- **Researchers developed a set of outcomes measures for home care.** As part of a multinational consortium, the researchers developed and validated 22 Home Care Quality Indicators to evaluate home and community-based care agencies. Based upon the RAI-HC, 16 indicators measure the prevalence of clinical conditions at a single point in time (e.g., nutrition, pain, physical function, psychosocial function, medication, safety/environment, vaccination and hospital use), and six indicators measure incidence of client improvement or decline over time (e.g., incontinence, psychosocial function and health instability).

## Findings

As reported in the *Gerontologist* (vol. 42, no. 4, 2002):

- **"The [MI Choice Screening System] algorithm agrees with expert opinions substantially better than systems based on ADL and IADL only."**
- **Using the MI Choice algorithm, 58 percent of the participants were correctly classified, according to the experts.** In 77 percent of the instances in which the screen did not agree with expert opinion, the difference was a single level of care.
- **"The MI Choice algorithm is highly sensitive<sup>4</sup> and specific<sup>5</sup> in identifying those in need of nursing home care (82 percent and 95 percent, respectively).** For home care, the algorithm is somewhat less sensitive and specific (67 percent and 75 percent, respectively), but is more sensitive in identifying those who would qualify for either the nursing home or home care level (76 percent)."
- **"The screening algorithm can be used both over the telephone to identify clients who will not be fully assessed (as they are unlikely to receive services) and in**

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<sup>4</sup> **Sensitivity:** How well a "test" identifies the correct item being studied, for example, people who have the condition being studied. Any test will balance sensitivity and specificity.

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**person to recommend the appropriate level of care"** (nursing home, home care, intermittent personal care, homemaker services or information and referral).

As reported to RWJF:

- **The MI Choice telephone screen identifies potential program participants efficiently and economically, but callers exaggerate.** Callers consistently reported that the potential participant was "sicker" than assessment findings showed. The extent of over-reporting depended upon the type of caller, i.e., the more professional the caller the more accurate the information. Hospital discharge administrators were the most accurate and patients the least accurate.
- **Clients in MI Choice had an overall positive change in their Home Care Quality Indicators.** Sixteen of the 22 indicators (e.g., mood, falls, hospitalizations, weight loss and social isolation) improved substantially and significantly. Four indicators remained the same (pain, disruptive pain, injuries and the lack of a needed assistive device), and two indicators worsened (intense pain and lack of therapy provided to clients with rehabilitation potential).

## Limitations

In evaluating the telephone screen, researchers only surveyed people who received an in-person assessment; they did not survey the 356 people who had received information and referral. It is possible that some of these people should have received in-person assessments.

## Communications

Researchers published five articles (with three forthcoming) on the project, including two in the *Gerontologist*. They made about 40 presentations to professional groups. See the [Bibliography](#) for details.

## LESSONS LEARNED

1. **Budget constraints can delay projects.** Budget constraints delayed the timely implementation of the reporting system, including the MI Choice Screening system. This, in turn, lengthened the entire timeline for the evaluation work conducted under this grant. (Principal Investigator)

## AFTERWARD

Researchers continue to refine the telephone screen and the Home Care Quality Indicators. Because the state is considering increasing requirements for enrollment in MI Choice, the researchers are exploring ways to recalibrate the system to focus on people who most need these services. The Department of Veterans Affairs has adopted the

screening algorithm for nationwide implementation. Three states are interested in implementing the screening system.

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