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Evaluation of the Medicaid Value Program: Health Supports for Consumers with Chronic Conditions

District of Columbia, Medical Assistance Administration Case Study

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Dominick Esposito
Erin Fries Taylor
Kristin Andrews
Marsha Gold

Submitted to:

Center for Health Care Strategies
200 American Metro Boulevard
Suite 119
Hamilton, NJ 08619

Project Officer:
Melanie Bella

Submitted by:

Mathematica Policy Research, Inc.
600 Maryland Ave., SW, Suite 550
Washington, DC 20024-2512
Telephone: (202) 484-9220
Facsimile: (202) 863-1763

Project Director:
Erin Fries Taylor

DC's MEDICAL HOUSE CALL PROGRAM

The DC Department of Health Medical Assistance Administration (DCMAA), the District of Columbia's Medicaid agency, is responsible for the development and implementation of a comprehensive plan of health care service delivery for uninsured and underinsured residents of the District of Columbia. DCMAA offers case management services to the elderly and persons with disabilities under its Elderly and Persons with Disability (EPD) 1915(c) federally sponsored waiver program. This is a Medicaid waiver operated by DCMAA through the Centers for Medicare and Medicaid Services (CMS). As a part of the Medicaid Value Program (MVP), DCMAA studied and compared the effectiveness of one case management program, the Medical House Call Program (MHCP) operated by the Washington Hospital Center (WHC) to the larger EPD waiver program focusing on outcomes for elderly EPD patients and costs to the agency.

The primary objective of MHCP is to provide a medical home to persons who otherwise could not physically travel to a physician's office. MHCP care coordination teams manage all home, hospital, and community-based care for chronically-ill individuals who would prefer to reside at home rather than in a nursing home. By meeting these needs, MHCP staff also expects to reduce end-of-life hospitalizations, hospital lengths of stay, emergency room visits, and nursing home placements. WHC has operated MHCP since 1999 in Wards 1, 4, and 5 of the District, representing about 40 percent of the city's population.

Although there is little to no evidence base for this type of more intensive physician and nurse practitioner intervention, proponents argue it is a much needed "standard of medical practice" for elderly patients that deviates from traditional office-based care. The model was of specific interest to the MVP review panel because of its unique focus on what many regard as a hard-to-serve population with both disproportionate chronic illnesses and mobility issues that are not well addressed by current office-based practices.

ORGANIZATIONAL CONTEXT

As the District's Medicaid agency, DCMAA finances health care services for children, adults, persons with disabilities, and the elderly, through both fee-for-service and managed care arrangements. About 700 Medicaid clients who are elderly or have disabilities are enrolled in home and community-based services programs, such as MHCP, under the EPD waiver. At the time of eligibility determination for the EPD waiver (with medical eligibility based on a health history and environmental assessment[1]), DCMAA offers patients a choice of case management providers, including MHCP. The waiver is designed to give clients options to institutional care by providing a comprehensive assessment, case management, and personal care assistance at an annual cost of less than nursing home placement, which was about $64,000 per patient in 2005.

[1] According the DCMAA and MHCP staff, a number of forms must be submitted for the waiver program: (1) a Medicaid application and verifying documents, (2) a client health history and environmental assessment, (3) an individual service plan, (4) a long-term care form to verify a nursing home level of care is required for the patient, (5) a rights and responsibilities form, and (6) a beneficiary freedom of choice form.

Because of this high cost of care, DCMAA has a strong financial incentive to reduce the rate of nursing home placement.

WHC, a nonprofit teaching hospital, is the largest private nonprofit hospital in the District of Columbia and includes many specialty care centers. MHCP was designed by two geriatricians at WHC in 1999 to meet the clinical and social needs of the frail elderly and their caregivers, by bringing health care to the patients through house calls. The program is available to Medicaid, Medicare and non-Medicaid patients in the three DC wards which comprise the hospital's catchment area. (The largest percentages of patients are Medicaid and Medicare eligible.) The hospital complements the in-home care program with specialty care resources and an inpatient geriatrics unit where house call physicians provide inpatient care to patients.

MHCP provides a stable medical home to patients who otherwise cannot visit a physician's office without physical burden. MHCP staff reported that many patients who hear about the program welcome it as an opportunity to see a physician or nurse practitioner as they are often too fragile to visit an office, even with assistance from a caregiver. More than half of the patients in MHCP are referred by WHC, physicians, or other health care providers; patients who are also eligible for the EPD waiver program may enroll in either program first. In late 2006, MHCP served about 530 patients, roughly 20 percent (about 99 patients) of whom were also elderly EPD patients. DCMAA staff reported that more MHCP patients would have also qualified for the waiver if not for financial support from their families.

MHCP staff reported that WHC leadership is interested in increasing the quality of care and reducing the risk of hospitalization for chronically ill patients who are more likely to use emergency room or hospital services for problems a physician could treat routinely. WHC leadership supports MHCP as a way to address these needs with the expectation that payers (for example, Medicare and Medicaid) will also recognize MHCP's value and reimburse WHC for it. The program is currently funded through Medicare and Medicaid fee-for-service reimbursement for services, WHC internal support, and outside grant funding. WHC leadership also sees it as a way to compete with other hospitals in the District, increasing its client base one patient at a time. MHCP staff also reports that hospitalists and emergency department staff at WHC would like to reduce the number of frequent users of hospital services who could otherwise be managed through preventive care.

Federal reimbursement for the house call program shrunk in 2007 and WHC revenues, in general, fell during the MVP grant period. MHCP staff reported that this financial tightening, and the hospital's receipt of outside funding, led to increased attention by hospital administrators to the financial health of the institution. In particular, revenue-producing activities of MHCP physicians have come under increased scrutiny by WHC administration. However, determining which doctors are responsible for what revenue is complicated by issues such as referrals by MHCP doctors to WHC hospitalists. If the hospital-based doctor performs a procedure or service, the revenue is attributable to that physician and not the MHCP doctor who referred the patient for the procedure or service.

EPD Waiver

DCMAA offers case management services and several other services, such as personal care aides, personal emergency response service, and respite services that are available to the elderly and persons with disabilities under the EPD waiver program. Patients are eligible for the EPD waiver if they are Medicaid eligible with an income 300 percent of the federal poverty level or lower, require assistance with activities of daily living (as determined by an assessment by case management staff), and are elderly (65 years or older) or 18-64 years old with physical disabilities who qualify for Medicaid services. Roughly half of all elderly EPD patients resided in the MHCP catchment area from 2004 to 2006 (about 500 people), but only about 20 percent of that group (99 patients) had MHCP as their case management provider during the MVP grant period.

EPD waiver case management services for clients not in MHCP are supplied by a local social services agency or home health agency, and typically include only a social worker as the client's primary case manager. EPD waiver patients may also be provided personal care assistants and durable medical equipment to assist them with personal and medical needs at home. Most of the elderly EPD clients also have a caregiver or multiple caregivers who are usually family members. MHCP is the only EPD case management provider that has clinical staff to provide services.

PROGRAM INTERVENTION

As a case management option for Medicaid EPD waiver patients in the District, MHCP is designed to manage all aspects of patients' medical care and provide easy access to the health care system for patients who cannot do so on their own. Two care coordination teams provide medical and social services to elderly EPD patients in their homes. Each MHCP team consists of two half-time physicians, two full-time nurse practitioners, and one and a half full-time social workers.[2] When a patient first enrolls in MHCP, his or her primary physician conducts a health assessment. Both physicians and nurse practitioners visit patients to conduct formal client health histories and environmental assessments. Between the physicians and nurse practitioners, MHCP staff reported that there are about 16 visits per year per patient.[3] Staff attempt to visit patients no fewer than once every four weeks, making urgent care visits as needed and altering visit frequency depending on a patient's medical condition. If a patient is hospitalized, the patient's own MHCP physician monitors him/her while in the hospital. Social workers coordinate supportive services, including personal care assistants, delivery of durable medical equipment, legal aid, grief counseling, and conflict resolution.

While visiting patients, MHCP medical staff are able to assess not only patients' medical needs but also their physical environment and caregiver situation, two aspects that a physician in

[2] Physicians spend the rest of their time teaching at WHC or working on other WHC contracts. During the MVP grant period, MHCP added a third social worker to its staff who splits time between both care coordination teams.

[3] While staff primarily make visits during working hours, MHCP staff share on-call responsibilities for emergency cases on nights and weekends.

an office-based setting cannot assess. Staff report that this knowledge of the patient, the home environment, and caregiver situation reduces length of hospital stays and informs discharge planning because physicians already know much about the patient's medical history and what resources are available to patients. A typical visit to a new patient would last one hour while visits to established patients average 30 minutes. Staff note that about 25 percent of a visit is spent on patient medical assessment, while roughly half the time is used to provide caregiver support and education; the remaining 25 percent is used for patient education. Primary topics of education include medication adherence, self-care skills, and the recognition of symptoms that require immediate medical attention.

Technology plays a central role in treating MHCP patients. Each team member carries a laptop with broadband internet access to WHC's electronic health records. Although no data are stored on the laptops themselves, team members can securely access hospital records, lab values, X-rays, and records of any other services conducted at the hospital. In addition, MHCP physicians and nurse practitioners use state-of-the-art technology to provide care in the home, including portable blood testing equipment, electrocardiogram, and pulse oximetry. In fact, given the state of medical technology, MHCP staff report that the only medical activity that cannot physically be conducted in the home is major surgery.[4]

MHCP teams have several mechanisms for communication. Each team meets once a week for one and one-half to two hours to discuss unstable patients. Team members can also share patient notes using the WHC electronic health record system. When a team member signs on to the system, electronic flags indicate that other team members left them messages about a patient. For immediate communication in urgent situations, team members also communicate with pagers and telephones.

PROCESS AND OUTCOME MEASURES

For MVP, DCMAA reported both process and outcome measures for intervention and comparison group patients with at least three months of enrollment in the EPD waiver program. Process measures included both social worker and provider contacts, while outcome measures included hospital admissions, emergency room visits, and nursing home admissions, as well as hospital and nursing home lengths of stay and costs for all components of care.[5] Using Medicaid claims data, DCMAA reported process and outcome measures for calendar years 2004 and 2005, as well as the first quarter of 2006.

To examine the effect of MHCP on patient outcomes, DCMAA planned to compare house call patients to two comparison groups of patients enrolled in the EPD waiver. The first group consisted of those clients in the MHCP catchment area but not enrolled in the program, while the

[4] Due to reimbursement regulations, staff cannot provide transfusions and some antibiotics, but could provide these services if not for regulations.

[5] DCMAA had also begun to administer a patient satisfaction survey near the end of MVP and conducted focus groups with MHCP and non-MHCP social workers to collect qualitative information about MHCP and other EPD case management providers and assess their satisfaction with the program.

second group consisted of those residing outside the catchment area. From an evaluation design perspective, each comparison group had its own limitation. First, comparing MHCP patients to those within the catchment area (the first group) and who actively chose not to use the program as their case management provider would be problematic because the two groups' motivation to use the program clearly differs. Second, comparing the intervention group to patients outside the catchment area and without the MHCP option (the second group) would include patients who, if given the option, might choose not to enroll in the program.

To circumvent these concerns, we combined data reported by DCMAA for MHCP patients and other EPD waiver patients who resided in the MHCP catchment area but did not enroll in the program; only 17 percent of patients in the catchment area received the intervention (Table 1). For this study, the comparison of EPD patients who reside within and outside of the MHCP catchment area is the most valid comparison of patient outcomes. (Because the EPD waiver is a choice program, meaning participants choose the provider they want to provide care, some EPD patients within the catchment area were not enrolled in the MHCP program). However, as explained below, in large part due to sample sizes, the data reported by DCMAA for these two groups still suffers from serious problems, making inferences on the program's effectiveness difficult.

TABLE 1

HOUSE CALL PROGRAM RESEARCH SAMPLES AND AVERAGE MONTHS OF EPD ENROLLMENT

	Number of Patients	Average Months of Enrollment
EPD Patients Residing Outside MHCP Catchment Area	654	25.9
EPD Patients Residing Within MHCP Catchment Area	496	11.6
MHCP patients	85	17.9
Non-MHCP patients	411	10.3

Source: Reported by DCMAA on July 19, 2006.

Note: The figures represent patients who were enrolled in the EPD waiver, for at least three months, during calendar years 2004 and 2005 as well as the first quarter of 2006. For this report, we compared EPD patients residing outside the MHCP catchment area to those residing within the catchment area, regardless of whether or not the EPD patients enrolled in the program.

Data Limitations

The data provided by DCMAA as part of the evaluation of its MVP project was generally insufficient to make inferences about the effectiveness of MHCP and had three primary drawbacks. First, due to data availability restrictions, no pre-enrollment data were available to provide baseline measures of service utilization or costs for EPD waiver patients, compounding the problem of the poor comparison group design. While DCMAA may have had data on activities of daily living collected from EPD patient assessments, these data were not available electronically and would have been burdensome to collect for the entire comparison group

population. In interviews, staff acknowledged the limitations associated with not having pre-enrollment data and inherent differences between the intervention and comparison groups.

A second limitation of the data provided by DCMAA was that patients residing inside and outside the MHCP catchment area had vastly different average number of months enrolled in the EPD waiver. Patients within the catchment area averaged 11.6 months enrollment, while those outside the catchment area averaged 25.9 months, nearly the whole time period spanning the 27-month reporting period provided by DCMAA. This large difference in the number of months enrolled adds to the challenge of interpreting patient outcomes as it is not possible to infer whether or not length of time had an influence on those outcomes. Clients with larger tenures in the EPD waiver will have had more of an opportunity to stabilize their health than those with shorter tenure. A more favorable approach to analysis would have been to report the first 6 (or possibly 12) months of enrollment in the waiver for a subset of patients. In this scenario, the time periods which patients were exposed to the waiver would be more equivalent, allowing for a more meaningful comparison.

Third, fewer than 100 elderly EPD waiver patients were enrolled in MHCP from 2004 through the first quarter of 2006 and actually received the intervention. This small sample size makes it difficult to detect any differences between intervention and comparison groups, particularly since less than 20 percent of patients within the MHCP catchment area were enrolled in MHCP.[6] According to DCMAA, many elderly MHCP patients do not qualify for the Medicaid EPD waiver because they receive financial assistance from family members.

Process Measures

Process measures reported by DCMAA included case manager and provider contacts with patients to provide an indication of how level of care under MHCP might differ from the usual care of EPD waiver patients. In terms of the intervention, short-term increases in physician and nurse practitioner visits might reduce the likelihood of emergency room use and inpatient admissions if MHCP staff are able to manage patients' health and stabilize patients' conditions at their homes (see Figure 1).

The average number of case manager and provider contacts with elderly EPD patients in the intervention group was more than twice that for patients in the comparison group over the time period examined by DCMAA (Table 2). Across both groups of patients, the average number of contacts was low—less than one contact a month. Patients had more case manager contacts than provider contacts in all parts of the District. Due to data limitations noted above, we cannot conclude that differences across the two areas were due to MHCP. However, the overall trend in contacts is a promising sign for the program, suggesting that perhaps it will result in additional contacts. Though, without more information and a more appropriate comparison group, it is also likely that other EPD waiver programs account for the differences as well.

[6] In addition, DCMAA did not have the ability to run statistical tests on the data to determine potential statistical significance.

TABLE 2

AVERAGE MONTHLY CASE MANAGEMENT AND PROVIDER CONTACTS
AMONG ELDERLY EPD WAIVER PATIENTS

	Patients Residing in the MHCP Catchment Area	Patients Residing Outside the MHCP Catchment Area	Difference
Case management contacts	0.62	0.25	0.37
Provider contacts	0.27	0.15	0.12
Contacts by either case manager or provider	0.89	0.40	0.49
Number of Beneficiaries	**496**	**654**	
Number of Months Enrolled	**5,775**	**16,934**	

Source: Reported by DCMAA on July 19, 2006 from Medicaid claims data.

Note: The figures represent patients who were enrolled in the EPD waiver, for at least three months, during calendar years 2004 and 2005 as well as the first quarter of 2006.

Outcome Measures

Claims-based outcome measures reported by DCMAA included hospital admissions, emergency room visits, and nursing home admissions, as well as hospital and nursing home lengths of stay. DCMAA also reported total costs and costs of personal care assistants, prescription drugs, nursing home use, inpatient visits, and durable medical equipment. These outcomes all provide a sense of how well the MHCP was implemented and whether it had an effect. For example, cost data for personal care assistants and durable medical equipment provide an indication of how physicians and nurse practitioners are able to assess all aspects of patients' health care to determine when patients require these Medicaid-covered services. Provision of these services should have a direct impact on future emergency room use, inpatient admissions, nursing home admissions and total medical costs (Figure 1), helping to stabilize patients' health to the point that they can remain at home without additional medical assistance. Moreover, there is the potential for cost savings in terms of institutional care and transportation expenses normally paid by Medicaid.

Reported outcome measures for 2004 through the first quarter of 2006 provide a mixed picture for MHCP. Patients residing within the MHCP catchment area had about 50 percent more inpatient admissions and about one-third more emergency department visits (measured per 1,000 months eligible for Medicaid) than patients in the comparison group (Table 3). Emergency room visits were lowest for the small group of MHCP recipients compared with all other patients, but there is no valid counterfactual with which to compare this group. Moreover, without pre-intervention data, we cannot tell if there may be any trends that might help us determine intervention effects.

Consistent with program expectations, intervention group patients had a lower rate of nursing home admission and days of nursing home residence than comparison group patients. In

particular, the number of nursing home days per 1,000 months for intervention group patients was 73 percent lower than for comparison group patients. While DCMAA did not provide any statistical tests, this difference is sufficiently large to suggest that the program played a role in limiting nursing home days amongst patients in the intervention group though the methodological weaknesses described above limit our conclusions.

TABLE 3

INPATIENT ADMISSIONS, EMERGENCY DEPARTMENT VISITS, NURSING HOME ADMISSIONS, AND NURSING HOME DAYS AMONG EPD WAIVER PATIENTS
(Per 1,000 Months Eligible for Medicaid)

	Patients Residing in the MHCP Catchment Area	Patients Residing Outside the MHCP Catchment Area	Difference
Inpatient admissions	44.0	29.6	14.4
Emergency department visits	181.6	134.9	46.7
Nursing home admissions	1.7	4.4	–2.7
Nursing home days	57.5	215.7	–158.2
Number of Beneficiaries	**496**	**654**	
Number of Months Enrolled	**5,775**	**16,934**	

Source: Reported by DCMAA on July 19, 2006 from Medicaid claims data.

Note: The figures represent patients who were enrolled in the EPD waiver, for at least three months, during calendar years 2004 and 2005 as well as the first quarter of 2006.

Average monthly medical costs were more than 80 percent larger for patients within the MHCP catchment area compared with those outside the area (Table 4). While this difference is likely statistically significant, the primary driver of these larger costs was costs for more hours of care provided by personal care assistants, pharmaceuticals, and durable medical equipment. This composition is a favorable sign that MHCP patients are receiving services that they require. In particular, by visiting patients in their homes, MHCP staff can assess whether or not personal care assistants and specific durable medical equipment (some of which may also be used in conjunction with pharmaceuticals) are required to help stabilize patients' health. Over the period studied by DCMAA, these measures provide some evidence that the process of MHCP works, but not that the program can influence longer-term outcomes. In truth, house call program staff noted that finding the optimal mix of care coordination team support and personal care assistant support would likely be a critical element in achieving overall cost savings for Medicaid. MHCP patients had the largest average expenditures for these services, more than 25 percent more than other clients in the catchment area and more than three times as large as clients outside the catchment area.

TABLE 4

AVERAGE MONTHLY MEDICAID EXPENDITURES AMONG EPD WAIVER PATIENTS

	Patients Residing in the MHCP Catchment Area	Patients Residing Outside the MHCP Catchment Area	Difference
Total medical costs	$3,245	$1,748	$1,497
Personal care assistant costs	$1,044	$361	$683
Pharmacy costs	$252	$139	$113
Inpatient costs	$186	$204	–$18
Durable medical equipment and supplies costs	$95	$46	$49
Nursing home costs	$66	$67	–$1
Number of Beneficiaries	**496**	**654**	
Number of Months Enrolled	**5,775**	**16,934**	

Source: Reported by DCMAA on July 19, 2006 from Medicaid claims data.

Note: The figures represent patients who were enrolled in the EPD waiver, for at least three months, during calendar years 2004 and 2005 as well as the first quarter of 2006.

CHALLENGES

This project's primary challenges were unrelated to the MHCP intervention itself, but rather were centered on low enrollment in MHCP, data availability, and its comparison group design. The number of elderly patients enrolled in both the EPD waiver and MHCP for at least three months was less than 100 from 2004 through 2006. Medicaid data prior to enrollment in the waiver was unavailable and the proposed comparison group design was not ideal. These factors made it difficult to determine if differences between treatment and comparison groups were due to the program or occurred by chance. However, despite the uncertainties surrounding the evaluation, DCMAA staff perceive that the program is beneficial for its clients.

MHCP staff noted that determining the proper way to account for their program's revenue was a challenge for the Washington Hospital Center (WHC). While the hospital has received positive press coverage on the program, financial tightening (due, in part, to shrinking federal reimbursement rates for hospitals) has created more scrutiny on the house call physician's ability to produce revenue for WHC. However, determining which doctors were responsible for what revenue is complicated by issues such as referrals by house call doctors to hospital-based physicians. Overall, as measured directly, MHCP costs the hospital more than what was originally budgeted and its direct revenues to the hospital are not as large as anticipated. On the other hand, the program generates admissions which have direct returns to the hospital, though not necessarily directly accountable to MHCP. While specific to WHC, this challenge is generalizable to private agencies seeking to implement such a program and Medicaid agencies hoping to use it as an option for clients.

CONCLUSIONS

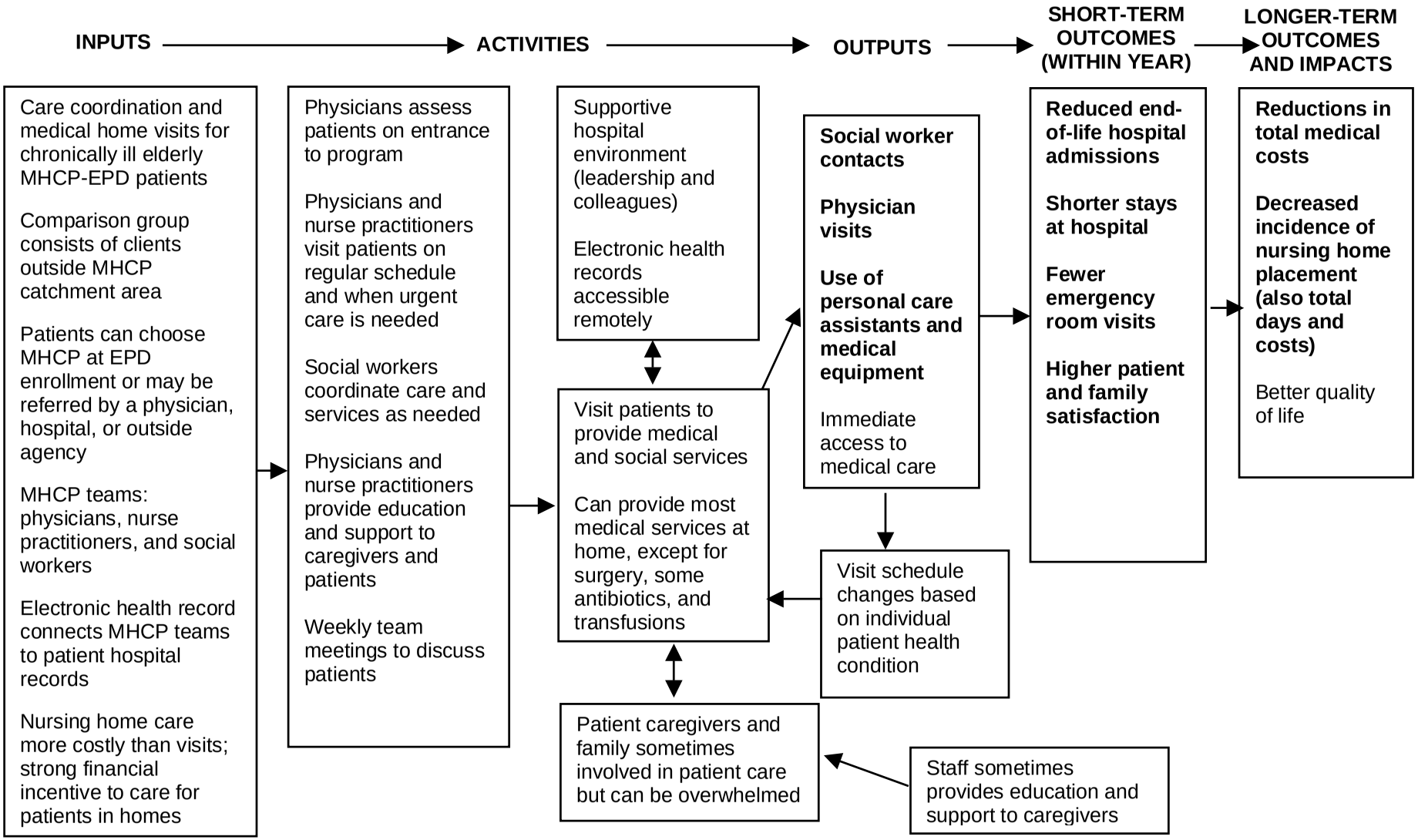
WHC's house call program is a case management program that integrates medical and social services staff to provide comprehensive care for homebound patients. MHCP medical staff have access to not only patients but also their environment and caregivers, allowing physicians and nurse practitioners to readily assess patients' needs for services like personal care assistants and durable medical equipment. Provision of these services increases the likelihood that patients' health will stabilize and reduces the chances that they will seek care for avoidable adverse events, be admitted to institutional care, and incur costly transportation expenses.

Although the program's effect on patients' outcomes was difficult to assess for MVP, MHCP is built on a care coordination model that is likely generalizable to similar urban settings with homebound clients. However, its success likely hinges on the dedication of its care coordination team members and the program's sponsor who must champion and provide leadership for it. Moreover, because this model of care is not traditional, a financing structure must be identified to account for staff's ability to generate revenue for their sponsor, particularly as it pertains to referrals. In this intervention's case, while MHCP staff reported that WHC leaders were supportive of the program from its inception, financing issues have driven administration to review the program's finances critically in comparison to its other internal, hospital-based departments. For Medicaid agencies hoping to use such a program, this challenge could be a key determinant in the type of options available to patients.

Less than ideal circumstances in terms of evaluation design and data availability made this MVP intervention difficult to evaluate on process and outcome measures. However, the house call model (essentially providing a stable medical home for patients without the ability to travel to one) deserves a rigorous assessment of its potential impacts. In an environment of increasingly shrinking Medicaid budgets, this type of intervention, at the least, might offer clients an option beyond that of expensive institutional care, which would be a benefit to resource-constrained Medicaid agencies.

FIGURE 1

LOGIC MODEL FOR DC'S MEDICAL HOUSE CALL PROGRAM



Note: **Bold** indicates reported process and outcome measures.