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Center for
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Resource Paper

Integrating Quality into Pharmacy Cost Containment Initiatives in Nursing Homes

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Building Pharmacy Management Capacity within State Medicaid Programs

CHCS established the Clinical Pharmacy Management Initiative to assist states in developing and evaluating programs that have the potential to create savings in Medicaid (perhaps beyond prescription drug lines) while improving the quality of care for beneficiaries. The goal of the initiative is to promote solutions that improve quality, lower costs, and are amenable to all stakeholders.

We gratefully recognize the contribution of members of the **Clinical Pharmacy Management Initiative Technical Advisory Group**, listed below, in helping to shape the content of this Resource Paper and review the findings herein:

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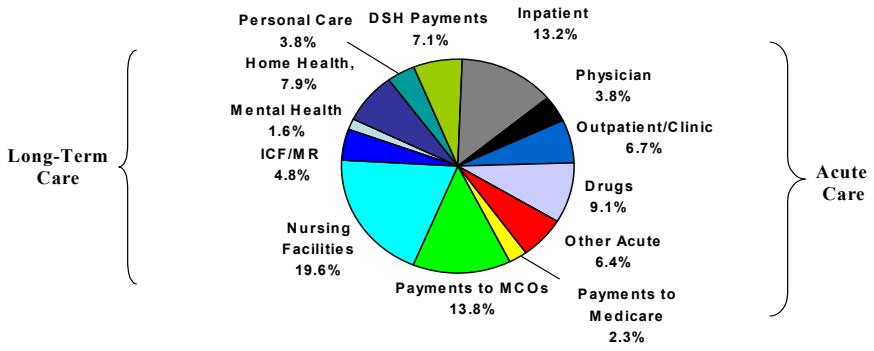
Visit www.chcs.org for additional resources on pharmacy management, including:

- CHCS Resource Paper: *Comparison of Medicaid Pharmacy Costs and Usage between the Fee-for-Service and Capitated Setting*
- CHCS Report: *Clinical Pharmacy Management Initiative: Integrating Quality into Medicaid Cost Containment*
- A CHCS Brief on behavioral health pharmacy management, available Spring 2004.

Introduction

Prescription drug spending in nursing homes is emerging as a critical issue for many state policymakers. Officials' desire to manage prescription drug use in this environment is driven by a number of factors. First, states are experiencing some of the worst budget deficits in decades and many lawmakers have targeted Medicaid programs, the largest

Figure 1: Medicaid Expenditures by Service, 2001



Total = $217.8 billion

SOURCE: Urban Institute estimates based on data from CMS (Form 64).

funding source for nursing homes, as a key area for spending reductions. Second, prescription drug expenditures continue to grow at a rate of 19 percent annually, outpacing other health care expenses. Third, utilization of prescription drugs, already disproportionately high in the long-term care setting, is expected to increase significantly as the aging population grows, and advances in pharmaceutical innovation continue. Fourth, nursing home residents include some of the nation's most frail patients, for whom quality of care issues are significant. Medicaid payments for nursing home care and prescription drugs have captured increased attention in recent years. State spending on nursing home services represents 19.6 percent of the Medicaid budget and is one of the program's largest line-item expenses.[1] According to the Kaiser Commission on Medicaid and the Uninsured, Medicaid is the largest funding source for nursing home facilities, generating 48 percent of industry revenues in 1999. In the pharmaceutical industry, the Medicaid program is responsible for approximately 17 percent of ***all*** prescription drug spending.[2] While it is a comparatively small component of Medicaid budgets, prescription drug spending is often singled out as one of the fastest growing program

[1] Urban Institute estimates based on data from the Centers for Medicare and Medicaid Services (Form 64).
[2] The Kaiser Commission on Medicaid and the Uninsured. Long *Term Care: Medicaid's Role and Challenge*, 1999.

segments. In fiscal year 2000, Medicaid fee-for-service prescription drug costs increased by 21.5 percent (to a combined federal and state level of $16.6 billion), and in 2001 the Centers for Medicare and Medicaid Services projected costs to grow by another 19.6 percent (to $19.9 billion).[3]

Figure 2: Comparison of Medicaid Recipients in Nursing Homes to Medicaid Spending on Nursing Home Drugs

State	% of Medicaid recipients in nursing homes	% of Medicaid drug claims for recipients in nursing homes
Arkansas	4	18
Georgia	2	14
Illinois	5	20
Indiana	7	25

Sources: Arkansas Dept. of Human Services; Georgia Dept. of Community Health; Illinois Dept. of Public Aid; Jim Verdier, Mathematica Policy Research, Inc. (Indiana); Washington Dept. of Social and Health Services

While nursing home residents make up only four percent of patients nationwide, this population consumes as much as four times as many pharmaceuticals as non-institutionalized populations.[4] A 2000 study of nursing facilities revealed that individual nursing home residents receive an average of 6.7 routine prescription medications and 2.7 additional medications on an "as needed" basis.[5] This number has been increasing over the last five years and the trend is expected to continue in the next decade. A recent survey of pharmacists showed that routine medication orders in nursing homes increased by 14 percent from 1997 to 2000.[6] The percentage of nursing home residents using nine or more prescription drug medications per day rose from 18 percent in 1997 to 27 percent in 2000.[7]

These nursing home pharmacy spending trends are prompting Medicaid policymakers to focus on the long-term care setting. Costs, however, are not the only factor to consider; Medicaid officials also must work to maintain or improve the quality of care received by this population. In 1999, data from the National Nursing Home Survey indicate that of the 1.6 million nursing home residents, 90.3 percent were over the age of 65 and 46.5

[3] Office of the Actuary, Centers for Medicare and Medicaid Services, fiscal year 2002 mid-session review of Medicaid baseline spending projections.
[4] Because CMS does not systematically analyze nursing home drug spending separately from overall Medicaid drug spending, there are no consistent data on national Medicaid expenditures attributable to drug spending in the long-term care setting.
[5] Avorn J. and Gurwitz J.H. "Drug Use in the Nursing Home." *Annals of Internal Medicine*, 123 (1995): 195-204.
[6] Tobias D.E. and Pulliam C.C. "General and Psychotherapeutic Medication Use in 878 Nursing Facilities: A 1997 National Survey," *Consultant Pharmacist*, 12, no. 12 (1997):1401-8.
[7] Tobias D.E. and Sey M. "General and Psychotherapeutic Medication Use in 328 Nursing Facilities: A Year 2000 National Survey," *Consultant Pharmacist*, 16, no.1 (2001): 65-59.

percent were over age 85.[8] Of these residents, 83 percent needed assistance with three or more activities of daily living, including bathing, dressing, toileting, transferring from bed to chair, feeding, and mobility.[9]

This Resource Paper outlines why quality should be an integral element in nursing home pharmacy cost reduction efforts. It provides examples of clinical pharmacy management (CPM) programs in nursing homes that seek to maintain quality of care while decreasing overall costs and offers a design template for states to use in developing nursing home CPM programs. The paper is divided into four sections:

- ***The Case for Integrating Quality in Nursing Homes***: Why should states incorporate quality into cost-containment efforts in the nursing home setting?
- ***Clinical Pharmacy Management Initiative Framework:*** How should states think about implementing CPM programs in the nursing home setting?
- ***Working Models:*** What best practices have emerged in nursing home pharmacy cost-containment strategies?
- ***Drawing Lessons from First Generation Programs:*** What are the key issues states should consider when developing CPM programs in nursing homes?

The Case for Integrating Quality in Nursing Home Pharmacy

The implementation of prescription drug cost-containment strategies represents new ground for states seeking to reduce Medicaid spending. To date, few of these strategies have specifically addressed the drug utilization and needs of beneficiaries in long-term care institutions. As more states look to control spending in this environment, however, understanding how quality affects cost is increasingly important.

Federal and state officials and nursing homes generally rely on consultant pharmacists to help ensure quality and efficiency in the delivery of pharmaceutical care. Federal law requires all nursing homes to contract with a consultant pharmacist, who is responsible for ensuring that resident drug use is safe and effective and that facilities comply with federal and state regulatory requirements. Contractual arrangements vary widely – consultant pharmacists may be independent or may be employees of either the nursing home or a pharmacy. Most institutional pharmacies, which specialize in providing services to residents in nursing homes, hospitals, or the hospice environment, offer consultant pharmacy services as part of their standard negotiations with client nursing homes.[10,11] Some critics argue that consultant pharmacists often lack the tools and resources necessary to implement meaningful quality programs, and sometimes lack the appropriate incentives to focus on cost-containment strategies.

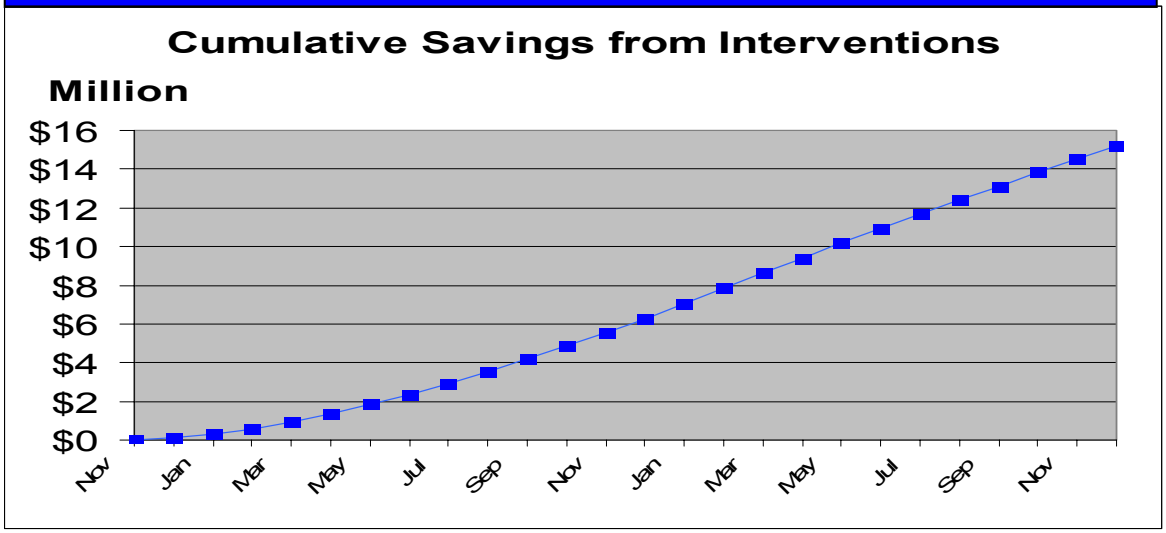
[8] National Center for Health Statistics. "National Nursing Home Survey," Centers for Disease Control and Prevention; accessed July 1, 2003, at http://www.cdc.gov/nchs/about/major/nnhsd/nnhsd.htm.
[9] *Ibid.*
[10] New Jersey is the only state with a conflict-of-interest provision stipulating that consultant pharmacists may not be employed by long-term care pharmacies.
[11] Tumlinson A., et al. "Prescription Drugs in Nursing Homes: Managing Costs and Quality in a Complex Environment." *The National Health Policy Forum*, IB 784, 2002.

Concentrating on the quality components of programs that address nursing home costs is important given the challenging and complex health care needs of this population. About 18 percent of persons over 65 experience seriously limiting chronic conditions such as arthritis, hypertension, and heart conditions, and more than half of seniors are on two or more medications.[12] As stated above, nursing home patients consume significantly more prescription drugs, approximately three to four times that of non-institutionalized people.[13] Consequently, these residents are more at risk for complications from polypharmacy[14] and other drug-related problems, such as adverse drug interactions, medication compliance, contraindications, and pharmacokinetic changes.

The costs of adverse drug use are considerable and rising in nursing homes. An analysis of prescription drug spending in nursing homes found that for every dollar spent on drugs in nursing facilities, $1.33 in health care resources are consumed in the treatment of drug-related problems, amounting to $7.6 billion nationally.[15] Additionally, researchers simulating costs of drug-related morbidity and mortality have estimated an increase from $76.6 billion in 1995 to $177.4 billion in 2000.[16] This simulation model predicted that 70 percent of such costs would be incurred in hospital admissions, and 18 percent in long-term care admissions.[17] While the percentage of Medicaid costs attributable to drug-drug interactions has never been adequately studied, most observers have concluded that preventing adverse drug reactions through pharmacy-focused quality improvement initiatives would most likely achieve savings in nursing homes.

[12] Bootman J.L., Harrison D.L., Cox E. "The Health Cost of Drug-Related Morbidity and Mortality in Nursing Facilities." *Archives of Internal Medicine,* 1997;157(18);2089-96.
[13] Beers M.H., Baran R.W., Frenia K. "Drugs and the Elderly, Part 1: The Problems Facing Managed Care." *American Journal of Managed Care*, 2000; 6(12):1313-20.
[14] Polypharmacy is the "practice of prescribing too many prescriptions to a patient."
[15] *Ibid*.
[16] Ernst F.R., Grizzle A.L. "Drug-Related Morbidity and Mortality: Updating the Cost-of-Illness Model." *Journal of American Pharmaceutical Association,* 2001:41(2):192-9.
[17] *Ibid.*

Figure 3: North Carolina Polypharmacy



Two states, North Carolina and Utah, recently implemented CPM programs that achieved significant savings. North Carolina's Polypharmacy Initiative, which targets residents taking a high volume of prescription drugs, saved the state approximately $16 million in 2002 and saved nursing homes an average of 4.2 percent per patient in drug costs. The program is estimated to have an annual savings-to-cost ratio of 13:1. Utah's Threshold Program, which targets high-volume prescribers, has saved the state approximately $2.3 million in the first eight months of operation.[18]

Some of the states profiled for this Resource Paper also are beginning to see improvements in quality. In Minnesota, state administrators measure select nursing homes on specific quality metrics around which CPM programs have been developed (e.g., fall prevention, ulcer reduction, and pharmacy management programs). For example, Broen Memorial Nursing Home developed a CPM polypharmacy initiative to reduce inappropriate medication use and has seen the number of beneficiaries taking nine or more medications drop by five percent. In addition, staff who administer medications at Broen have attended educational seminars addressing prescription drug therapy for the four conditions commonly associated with high-volume prescribing.[19]

[18] Utah's Drug Regimen Review Threshold Program targets Medicaid beneficiaries taking seven or more prescription drugs per month, a portion of which are nursing home residents. Prescribers for the identified beneficiaries are sent a letter that describes the patient's complete drug regimen and informs the prescriber(s) of any medication duplication, inappropriate medications, etc.

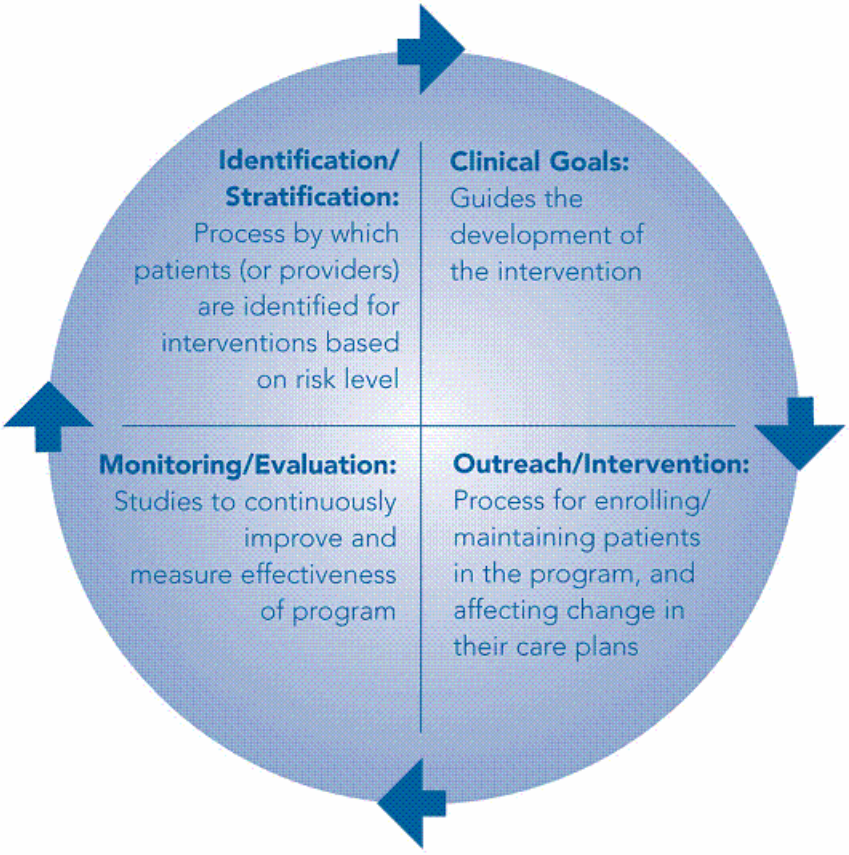
[19] Interview with Jan Gerhard, Quality Improvement Coordinator, Minnesota Department of Human Services, May 8, 2003.

Clinical Pharmacy Management Initiative (CPMI) Framework

CPM programs typically establish systems or processes to monitor and intervene in the treatment of patients taking prescription drugs. The monitoring and intervention may be episodic, occurring at various points in time, or it may be an ongoing activity that involves patients over a period of months or years. In all cases, CPM initiatives seek to prevent medical complications, manage the progression of illnesses, and control rising medical costs.

The process by which states have implemented the pharmacy programs profiled in this Resource Paper can be described using the CPMI Framework developed by the Center for Health Care Strategies (Figure 4).

Figure 4: CPMI Framework



First, specific criteria are established to **identify** patients or physicians as candidates for a type of pharmacy management program and some programs then stratify patients by risk level. Second, **clinical goals** are established for the CPM program. Third, to accomplish established goals, CPM programs rely on some type of **intervention** in the patient's therapy or care plan, or in the provider's practice patterns. A process to enroll and maintain beneficiaries in the program, as well as an **outreach** plan to encourage provider and enrollee participation is also important to incorporate into the intervention. Finally, states and plans must consider the data and personnel systems necessary to **monitor and evaluate** the ongoing success of program implementation.

States looking to create CPM initiatives for nursing home residents can adopt this framework to guide program development.

Working Models

Three states with clinical management programs targeting nursing home residents are profiled in this Resource Paper: North Carolina, Minnesota, and Arkansas. In general, the CPM initiatives studied can be divided into two broad categories: pharmacy case management and physician or patient profiling.

Pharmacy case management refers to a system or program in which Medicaid or private insurers identify and manage beneficiaries meeting one or more of the following criteria: generate high prescription drug costs, take a high number of prescription drugs, and/or have a certain disease. Case management is typically triggered when a patient reaches a set drug limit, generates claims above an established level or is diagnosed with a particular disease.

Physician profiling is a technique used to identify providers who prescribe outside of accepted guidelines. Physician profiling programs are typically triggered through drug utilization reviews, which generate data on physician prescribing histories and compare these data to expected prescribing patterns within select drug categories. Depending on the degree of variation, interventions might rely on general educational materials on prescribing protocols, or a pharmacist consultation to review specific patient medication issues.

Currently North Carolina, Minnesota, and Arkansas have pharmacy case management programs in place targeting nursing home residents. Only one state, Arkansas, was identified as having a physician profiling program in nursing homes.

North Carolina Nursing Home Polypharmacy Initiative[20]

Through its Access Primary Care Case Management Program, North Carolina Medicaid implemented a number of clinical pharmacy management initiatives, including an innovative pharmacy case management program for beneficiaries in nursing homes. The state developed the following program after discovering that an overwhelming number of nursing home beneficiaries were taking six or more prescription drugs daily, and that a disproportionate share of the prescription drug Medicaid budget was being spent in this setting.

Framework

- ***Identification/Stratification:*** North Carolina selected 13 nursing homes served by physicians in the Access network to participate in the program. Pharmacy claims data were analyzed to identify nursing home beneficiaries taking a high number of medications (i.e., more than eight prescription drugs per month) and/or taking high cost prescription drugs, such as anti-psychotics. Approximately 670 beneficiaries were identified and stratified as high- or low-risk based on the relative cost of their drug regimen or the number of drugs they take.

- ***Clinical Goals:*** The intervention is designed to reduce the total number of drugs and/or shift the type of prescription drugs taken by beneficiaries to either generic or therapeutic alternatives.

- ***Intervention/Outreach:*** Algorithms were developed by program administrators to screen patient records for signs of potential inappropriate and/or polypharmacy drug therapy problems such as therapeutic duplication, inappropriate drug utilization,[21] multiple prescriber issues, and higher than normal drug use. A physician-pharmacist team hired by the state verifies the completeness of the patient database as well as the completeness of the drug profile for each patient during the first visit to the nursing home facility. The physician-pharmacist team reviews and confirms patients' prescription regimen and then makes recommendations to prescribers.

- ***Monitoring/Evaluation:*** The pharmacist-physician team identified the need for medication changes for 37 percent of the patients (changes could be attributed to therapeutic or generic substitution, medication duplication, and/or inappropriate use of medication). In 2002, the state estimated that it saved approximately $16 million and saved nursing homes an average of 4.2 percent per patient in drug costs. The economic benefits outweighed the investment of implementing this program by a ratio of 13 to 1.[22]

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[20] Interview with Jeffrey Simms, Assistant Director, Managed Care, and Torlen Wade, ACCESS II and III Project Director, January 2003.
[21] Inappropriate utilization could be determined by patients' utilization of drugs contained on the "Beers' list," which is "a list of drugs to be avoided in elderly patients along with a list of recommended alternatives."
[22] Christensen D. and Trygstad T. "Assessment of the Polypharmacy Initiative in Nursing Homes: A Preliminary Analysis." University of North Carolina School of Pharmacy; July 2002.

North Carolina confronted a key challenge with beneficiary and physician advocacy groups in the early design and planning stage of its nursing home case management initiative. Advocates perceived the program as potentially restrictive and administratively cumbersome. It proved critical that program administrators reached out to these important groups from the onset, bringing them into the planning and implementation processes and design meetings. After obtaining support from key stakeholders in the state, implementation of the program was smooth.

Minnesota's Alternative Payment System

In 1995, Minnesota passed legislation to implement the Alternative Payment System (APS). The APS is a voluntary reimbursement program intended to provide nursing homes with more financial flexibility to create quality-focused programs. Contract managers, hired by the state, negotiate "contract-based reimbursement" with the nursing homes for a per diem rate adjusted for inflation and case mix in lieu of filing annual cost reports.[23] Under the APS system, nursing homes are able to keep any savings achieved below the negotiated rate.

To participate in the APS, nursing homes conduct an analysis of Minnesota's Minimum Data Set (MDS) quality indicator data. [24,25] Nursing homes develop and submit a "quality of care plan" to the Minnesota Department of Human Services based on the analysis. Once the program is approved, the nursing home is exempt from filing an annual cost report. This exemption allows nursing homes to keep any savings accumulated from their quality initiatives. Of the 425 nursing homes in the state, 324 are currently participating in the program.

Through the APS program, Broen Memorial Nursing Home operates a polypharmacy initiative. After analyzing all of the home's MDS quality indicators in early 2002, staff at Broen realized that approximately 53 percent of its residents receive nine or more medications each month.[26] The ranking for this quality indicator was above average compared to other nursing homes in the state.

Framework

- ***Identification/Stratification:*** Consultant pharmacists conduct an analysis of pharmacy claims data to identify residents taking nine or more prescriptions. The most common diagnoses of the high-volume users are identified (e.g., pain, congestive heart failure, diabetes, and Chronic Obstructive Pulmonary Disease) to determine the most relevant areas for staff education. Consultant pharmacists also

[23] Prior to implementation of the APS program, nursing homes were required by the state to submit itemized cost reports. This would serve as the basis for reimbursement.
[24] Minnesota Department of Human Services. "Legislative Background Information; S.F. #448, H.F. #491;APS Quality Improvement Program and Reporting Requirements," 2003.
[25] MDS quality indicators refer to a specific set (a "Minimum Data Set") of quality indicators related to quality of life measurements for patients within nursing homes, e.g., mobility change, restraint prevalence, and antipsychotic medication prevalence**.**
[26] From May 2000 to April 2003 the comparison group percentage (other facilities in Minnesota) of residents receiving nine or more medications increased from 41 percent to 53 percent.

identify high-risk patients whose drug regimens can improve through substitution or elimination of certain medications.

- ***Clinical Goals:*** The program attempts to reduce the average number of medications used by residents. Program officials also seek to educate providers and nursing home staff on prescribing best practices of common disease states of those residents using more than nine medications.

- ***Intervention/Outreach:*** Once identified, consultant pharmacists, along with pharmacy students from the University of Minnesota, review the drug regimens and diagnoses of identified patients. The pharmacists then provide written recommendations for high-risk patients with potentially duplicate therapies. The pharmacists develop and administer education programs on best prescribing practices for the four diagnoses most commonly associated with a high volume of prescriptions. The educational sessions target the nursing staff of the facility, though most sessions are well-attended by others.

- ***Monitoring/Evaluation:*** Broen reduced the percentage of residents taking nine or more medications by approximately five percent. No formal evaluations have been conducted on the cost-effectiveness of this program, but given the decrease in the prevalence of polypharmacy, pharmaceutical cost savings can be assumed. The consultant pharmacist for Broen also reviewed quality metrics, such as duplication of medication, sub-optimization of medication dose, and proper documentation of diagnoses for medication use. Based on these quality metrics, the consultant pharmacist made 20 recommendations for changes to prescribers and requested additional staff education for the diseases and conditions most commonly associated with the identified populations: chronic obstructive pulmonary disease, congestive heart failure, diabetes, and pain assessment and management.[27]

Of the nursing homes that have developed pharmacy programs, according to state officials, many cite difficulty with physician participation. Some physicians do not seriously consider the recommendations of the pharmacist. Although staff at Broen Memorial Nursing Home did not experience this issue, some staff within other participating nursing homes expressed frustration with the amount and level of information overload. Staff stated that it was difficult to stay updated regarding the most recent prescription drug treatments available to their residents.[28]

Although the Broen program has been widely accepted by staff and physicians, nursing home administrators have not linked program participation to individual employee performance metrics. One interviewee suggested that program participation would increase significantly if individual staff and physicians were provided an incentive to do so.

[27] Clinical Management, Quality Improvement Study on the use of 9 or More Different Medications. Consultant Pharmacist Summary to Broen Memorial Nursing Home, May 1, 2002 – April 30, 2003.
[28] Interview with Rebecca Odden, Broen Memorial Nursing Home, May 19, 2003.

Arkansas' Process Indicators Group

In the mid-late 1990s, Arkansas conducted analyses of pharmacy claims data, which demonstrated that nursing home beneficiaries consumed a disproportionate amount of psychotropic medications. In 1998, the state developed the Medicaid Medication Management (M-3) Project. This voluntary program provided teams of psychiatrists and pharmacologists to conduct chart reviews at nursing homes and made recommendations to prescribing physicians about psychotropic medications. The M-3 program ultimately failed, in part because nursing homes did not have incentives to participate. Nursing home officials cited lack of financial resources and administrative burden as the main reasons for non-participation.

On the heels of this failed attempt, in 2001, state administrators implemented the Process Indicators Group (PIG), which is a lecture-based pilot program that seeks to improve nursing home quality of care by educating staff on clinical standards for care delivery. The PIG, which was designed to be less financially and administratively burdensome, emphasizes best practice guidelines for anti-psychotic medications and behavior management.

Framework

- ***Identification/Stratification***: Nursing homes throughout the state are eligible for participation in the PIG. Nursing home participation is voluntary, as is the participation of the nursing home staff.

- ***Clinical Goals***: The clinical goal of the program is to reduce the number of psychotropic medications used by nursing home residents by emphasizing best practices guidelines for anti-psychotic medications and alternatives to medications.

- ***Intervention/Outreach***: The PIG project consists of a series of workshops that present guidelines and clinical standards for care delivery to nursing home staff. The first workshop was dedicated to discussing alternatives to psychotropic medications for nursing home residents in need of behavioral interventions.[29]

- ***Monitoring/Evaluation***: No evaluations have been conducted on the cost-effectiveness or quality implications of this program.

Policymakers who developed the PIG benefited from earlier program experiences. The PIG project has secured the support of most nursing home administrators and staff for a variety of reasons. First, there is a clear incentive for nursing homes to participate and improve certain quality metrics because surveyors have the option of factoring use of the best practice guidelines into their review process. Second, they view the PIG workshop as a less burdensome alternative to the intense review associated with the M-3 program. Third, the nursing homes appreciate the holistic approach of the PIG program. Rather

[29] Interview with Carol Shockley, Director, Arkansas Division of Long-Term Care, August 13, 2002.

than focusing on a particular component of care, the program emphasizes process of care delivery in its entirety.

Drawing Lessons from First Generation Programs

The final section of this Resource Paper summarizes key design and implementation issues using the CPMI framework, and offers states a starting point for considering pharmacy programs for nursing home residents.

Many states are in the design phase when it comes to developing cost-containment/quality strategies targeting nursing homes. It is important for states to catalog existing resources and understand current capabilities and current beneficiary characteristics and needs (e.g., what data can be used to establish CPM programs? What, if any, additional resources are needed to more fully develop these programs?). For example, with the help of the University of Kansas' College of Pharmacy, Kansas officials have performed several detailed analyses of Medicaid pharmaceutical claims data from nursing homes throughout the state. Instances of polypharmacy and inappropriate drug use have been identified, and the state plans to implement a provider profiling program in select nursing homes. Kansas is delaying program implementation, however, until its new Medicaid Management Information System, or electronic claims processing system, is installed in late 2003.[30]

In contrast to many CPM programs affecting patients and providers in non-institutionalized settings, the nursing home initiatives studied generally do not rely on the services of third-party vendors, such as disease management companies, pharmacy benefit managers, and/or specialty pharmacies. Some nursing homes use specialty pharmacists for product distribution and by federal law, all work with consultant pharmacists, but none used services of outside vendors to identify patients for an intervention, develop programs, or evaluate existing programs. CPM programs treating complex patients may benefit from the involvement of third-party vendors with experience in this area, for example by reducing start-up costs and achieving economies of scale.

Identification/Stratification

The process of identifying and then stratifying individuals or populations in this setting can be a daunting task for most states; having the proper infrastructure in place to collect and analyze beneficiary data is essential.

Identification

Of the CPM programs identified, most relied on pharmacy claims data to target high-volume prescription drug users or patients taking certain classes of drugs (e.g., anti-

[30] Interview with Robert Day, Kansas Medicaid Director, and Karen Bramen, Senior Policy Analyst, Kansas Department of Social and Rehabilitation Services, May 8, 2003.

psychotic medications). Some of the officials interviewed also expressed interest in using the minimum data set to identify nursing home beneficiaries with certain types or a certain number of conditions for participation in CPM programs. The minimum data set is an accessible tool for most nursing homes, since it is collected by the state nursing facility inspection authority.

North Carolina presents an example of the "flagging" criteria states can establish to select beneficiaries for a CPM program. Analysts in that state developed algorithms to identify beneficiaries who met one or more of the following criteria:

- High volume of prescription drugs used.
- Inappropriate prescriptions for the elderly (i.e., drugs listed on the Beers list).
- Prescription drugs used beyond the usual time limit.
- Prescription drugs prescribed against warnings and precautions.
- Prescription drugs prescribed that are not on the Prescription Advantage List.
- Prescription drugs that are potentially therapeutically duplicative.

Stratification

Most CPM programs did not stratify enrollees because of the complexities associated with treating nursing home residents. Many residents are taking six or more medications chronically and have been diagnosed with multiple conditions. In the Broen Memorial Nursing Home, many of the residents (43 percent) taking more than nine prescription drugs were found to have more than one disease state.

Clinical Goals

As states begin to focus their efforts on controlling prescription drug spending in nursing homes, they may benefit from existing nursing home processes that establish quality and safety goals, and track the facility's success. For example, many homes have voluntarily established programs to reduce the number of falls in a given timeframe or prevent the inappropriate sedation of patients. Facilities can be proactive in establishing programs with specific clinical goals, which the state can use to measure success. These quality-focused programs also can serve as a model for state administrators.

Most programs studied had identified general clinical goals before implementation, such as a reduction in the number of prescription drugs taken by identified beneficiaries.

Outreach/Intervention

Role of the pharmacist: The programs identified for this Resource Paper each developed a clinical intervention that involved a pharmacist – the consultant pharmacist, other outside pharmacist, or pharmacy students from local universities.[31] Administrators stated that nursing homes could benefit from using existing resources and staff (e.g., consultant pharmacist) to raise the level of knowledge regarding potential adverse drug use, new prescription therapies, and formulary compliance (if one existed). At the Broen Memorial Nursing Home in Minnesota, the nursing home's quality program uses its consultant pharmacist to conduct patient drug reviews.

The North Carolina Polypharmacy Initiative used a physician-pharmacist team to conduct preliminary analyses and drug reviews. Policymakers cite the team as the core reason for savings, stating that the "the pharmacist-MD team cut costs and upped quality."

Payment for prescription drugs: State Medicaid programs generally reimburse for nursing home care in a disaggregated fashion: payment for pharmaceuticals is done separately from payment for residents' care at the nursing facility. Pharmaceuticals are typically reimbursed on a per-drug basis, while nursing facility care is reimbursed according to a standard daily rate.

States may have the opportunity to develop financial incentives for nursing homes to adopt CPM programs that can improve beneficiary care and control costs. Minnesota implemented the APS program to provide nursing homes with financial incentives to develop programs with a strong quality focus. Through the APS program, the state allows nursing homes to opt out of the current cost-based payment system and negotiate individual payment rates based, in part, on the nursing homes' ability to meet agreed upon quality standards. At least one home, Broen Memorial, chose to participate in the APS and use pharmacy as the quality metric. Preliminary analyses conducted by Broen demonstrate that the program has reduced the number of beneficiaries taking nine or more medications by approximately five percent.

Provider "buy-in:" A key challenge found in many nursing home clinical management programs is the lack of provider "buy-in" and participation. Staff at nursing homes participating in Minnesota's APS program expressed frustration with the lack of involvement and interest of prescribing physicians. For example, some interventions in Minnesota nursing homes were designed to train staff at all levels through educational activities to identify possible duplicate therapies or alternative therapy opportunities for certain patients. It was perceived that some physicians did not seriously consider the treatment changes proposed by consultant pharmacists, nurse practitioners, nurses, and other staff involved in the program.[32]

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[31] Federal law requires all nursing homes to contract with a consultant pharmacist, who is responsible for ensuring that resident drug use is safe and effective and that facilities are in compliance with federal and state regulatory requirements.

[32] Interview with Jan Gerhard, Quality Improvement Coordinator, Minnesota Department of Human Services, May 12, 2003.

Arkansas recently discontinued its Medicaid Medication Management program due to lack of provider participation. The PIG project was established in response to the criticisms received about the M-3 program. As a result, state officials report that there are early reports of higher levels of participation. Although a determination of whether or not this lower intensity program can significantly affect patient quality and costs, state officials have reported higher levels of participation in the PIG program than the M-3 program.

Monitoring/Evaluation

While most CPM programs in nursing homes are in their infancy, many plan to evaluate program success based on established clinical quality goals. For example, Minnesota's APS requires each participating nursing home to evaluate its quality improvement plan one year after inception. At this time, there is no requirement for a cost analysis of any of the programs.

Fewer CPM programs plan to perform cost analyses. An exception is North Carolina, which recently conducted a preliminary analysis, including both cost and quality indicators, of its polypharmacy initiative. The state plans to conduct another more comprehensive assessment in the near future. Both assessments would not have been possible without a key partnership formed between the state's Medicaid Access programs and the University of North Carolina's School of Pharmacy. When contemplating the means to conduct regular monitoring and evaluation activities, states may want to consider partnerships with local academic centers.

Conclusion

The management of prescription drugs in long-term care will continue to gain attention in the coming years. As baby boomers reach retirement age and more prescription drugs enter the market, it will be critical for policymakers to understand the unique elements of the nursing home environment – from how prescription drugs are distributed within and reimbursed in long-term care facilities to the impact that quality improvements can have on costs. Emerging CPM programs indicate that nursing homes have levers under their control to affect the rise in costs and trends in prescription drug utilization while simultaneously improving beneficiary care.

There is promising preliminary state data to suggest a savings opportunity for this setting. In addition, the federal government is conducting a detailed state-by-state description of Medicaid prescription drug use in nursing homes, using 1999 claims and eligibility data.[33] This report should be available in late 2003 or early 2004.

Aside from costs, patient safety concerns and quality of care remain the most compelling reasons for states to look closely at CPM programs in nursing homes. Beneficiaries in long-term care facilities represent some of Medicaid's most vulnerable populations. They

[33] Analysis is being conducted by Mathematica Policy Research, Inc.

generally have numerous conditions and consume more than three to four times the amount of prescription drugs than non-institutionalized patients. Establishing CPM initiatives in nursing homes will help to ensure that residents reap the benefits of practice guidelines and appropriate, well-managed pharmacy care.

Appendix: Identified Clinical Pharmacy Management Programs: Focus on Nursing Homes

State	Delivery System (Date)	Type of Clinical Management Program[34] (Vendor)[35]	Name of Program/ Disease(s) Covered	Identification/ Stratification	Intervention/Outreach	Clinical Goals/ Evaluation
Arkansas	Fee-for-service (2000-2002)	Pharmacy Case Management: *High Volume*	M-3 Program	Patients taking psychotropic medications identified for review residing in participating nursing homes.	State-hired pharmacist reviewed patient charts for duplicate prescriptions and potential medication errors, with focus on psychotropic medications.	20% of nursing home charts reviewed: •76 % had > two psychotropic medications. •15% received larger than normal dosages of psychotropic medications. •Only 20% had no problems in their files.
	Fee-for-service (2001-current)	Provider Profiling	PIG (Process Indicators Groups)	Providers within nursing homes given option of participating in program.	Workshops for providers on "process" of health care, which include discussion of guidelines and clinical standards for care delivery.	Reduce the use of psychotropic medications, given program's non-intrusive methods. Nursing home participation expected to be higher than that in the M-3 program.

[34] This initiative focuses on those programs with a strong pharmacy management component. In general, clinical pharmacy management activities fall into two broad categories: pharmacy case management and physician profiling. Pharmacy case management refers to a system or program in which Medicaid or private insurers identify and manage beneficiaries meeting one or more of the following criteria: generate high prescription drug costs, take a high number of prescription drugs, and/or have a certain disease.

[35] If the state contracts (contracted) with a vendor, it will be noted in this column in parentheses. If a vendor is not listed, then the state Medicaid program administered all aspects of the clinical management initiative.

State	Delivery System (Date)	Type of Clinical Management Program[34] (Vendor)[35]	Name of Program/ Disease(s) Covered	Identification/ Stratification	Intervention/Outreach	Clinical Goals/ Evaluation
Minnesota	Fee-for-service (2002-current)	Pharmacy Case Management: *High Volume*	Minnesota Altenative Payment System: Broen Memorial Nursing Home example	Residents of nursing home with nine or more medications identified.	Consultant pharmacists review drug regimens of targeted patients and education provided to nursing staff on key conditions causing large numbers of prescriptions.	Reduce the percentage of residents with greater than nine prescription drugs. Upon evaluation of program, the percentage of residents with nine or more medications drastically decreased.
	Fee-for-service (2002-current)	Pharmacy Case Management: *High Volume*	Minnesota Altenative Payment System: Pipestone County example	Residents of the nursing home with nine or more medications and use anti-psychotropic drugs.	Nursing home staff given education on pain management in order to provide alternative treatments to manage pain, other than prescription drugs (i.e., paraffin wax treatments for arthritic and joint pain).	Reduce the percentage of residents with greater than nine prescription drugs and reduce the percentage of residents taking anti-psychotropic drugs. Evaluation of the program has shown decreases in the number of residents with greater than nine prescription drugs and the number of residents taking anti-psychotropic drugs.

State	Delivery System (Date)	Type of Clinical Management Program[34] (Vendor)[35]	Name of Program/ Disease(s) Covered	Identification/ Stratification	Intervention/Outreach	Clinical Goals/ Evaluation
	Fee-for-service (2002-current)	Pharmacy Case Management: *High Volume*	Minnesota Altenative Payment System: Parkview Home example	Residents of the nursing home who use anti-psychotropic drugs. Identified residents are divided into low- and high-risk categories based upon diagnoses (low-risk individuals do not have psychoses diagnosis, while high-risk patients have at least one psychoses diagnosis).	Staff provided two four-hour educational sessions on the use of antipsychotic medications (including behavior modifications helpful for low risk residents). Consultant pharmacists provided recommendations to medical staff when appropriate.	Reduce the percentage of residents taking anti-psychotropic drugs; Evaluation of the program shows decreases in the number of residents taking anti-psychotics (especially in the low-risk group). No official cost-effectiveness analysis, but facility staff expect that savings were achieved through reduced numbers of injuries and prescription drugs.
North Carolina	Primary Care Case Management (2002-current)	Pharmacy Case Management*:* *High Volume*	Polypharmacy Initiative	Patients in selected nursing homes who are taking six prescriptions or more.	State hired physician/pharmacist team reviews patient drug regimens.	Decrease number of prescription drugs used inappropriately. Preliminary results show that benefits outweigh the investment of implementing by a ratio of 13:1.

State	Delivery System (Date)	Type of Clinical Management Program[34] (Vendor)[35]	Name of Program/ Disease(s) Covered	Identification/ Stratification	Intervention/Outreach	Clinical Goals/ Evaluation
Utah	Fee-for-service (2002-current)	Pharmacy Case Management*:* *High Volume*	Drug Regimen Review Center Threshold Program	All Medicaid residents with greater than seven prescription drugs per month are identified for review. Among the 200 top utilizers each month, 50 are chosen from targeted nursing homes.	All prescribers of identified beneficiaries are sent detailed letters informing them of potential duplicate and inappropriate therapies. Letters include a complete list of medications, along with the amount, strength, supply, and prescriber number for each prescription, as well as suggested recommendations from Utah's College of Pharmacy.	Decrease the number of beneficiaries exceeding seven prescriptions per month. Preliminary evaluations of the first eight months of the program indicate that the average number of prescriptions of the heaviest utilizers has decreased from 14.2 to 11.2 prescriptions per month with estimated savings of $2.3 million.