

Iowa Medicaid Pharmaceutical Case Management Program

Report To the DHS Appropriations Subcommittee

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Submitted by The PCM Evaluation Team from The University of Iowa Colleges of Public Health, Pharmacy, and Medicine:

Elizabeth A. Chrischilles, PhD	Principal Investigator
Barry Carter, PharmD	Co-Principal Investigator
Margaret Voelker, PhD	Project Coordinator
David Scholz, MBA	Former Project Coordinator
Shari Chen-Hardee, MS	Database Analyst
Linda Rubenstein, PhD	Statistician
Tae-Ryong Park, MS	Database Analyst
Brian Lund, PharmD, MS	Clinical Pharmacist
Angela Kuehl, PharmD, MS	Clinical Pharmacist
Gary Rosenthal, MD	Medical Investigator

External Advisor

Joseph T. Hanlon, PharmD, MS	University of Minnesota
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With special thanks for assistance provided by affiliated College of Pharmacy faculty:

Randy McDonough, PharmD, MS
Karen Farris, PhD
William Doucette, PhD
William Miller, PharmD
Michael Ernst, PharmD
Jay Currie, PharmD

BACKGROUND:

- Iowa Medicaid Pharmaceutical Case Management (PCM) Program:
 - Designed to benefit people at very high risk to experience adverse effects from medications (taking four or medications).
 - Began October 1, 2000.
- PCM provides an opportunity for physicians and pharmacists to closely scrutinize the total drug regimens of their most complex patients.
- PCM is based on a model of team care known to improve medication safety in hospital and clinic settings where pharmacists and physicians are:
 - under the same roof and
 - share ready access to the patient medical record.
- To deliver this model of care in a *community* setting:
 - Iowa pharmacists and physicians who participated in the PCM program did so without benefit of a shared practice location or common access to a patient medical record. By most measures, they did so successfully.
- Pharmacist and the physician team members may be reimbursed the same amount:
 - Initial Assessment - \$75 (one only)
 - Problem Follow-Up Assessment - \$40 (four per patient per 12 months)
 - New Problem Assessment - \$40 (two per patient per 12 months)
 - Preventive Follow-Up Assessment - \$25 (one per patient per six months)
- Primary Objectives of the PCM Program Evaluation:
 - Describe the extent and content of PCM services
 - Determine the effect of the PCM program on medication safety.
- Secondary objectives:
 - Describe the health of eligible patients.
 - Determine whether there was an impact on healthcare utilization.
 - Compile the responses of physicians and pharmacists who participated in the program.

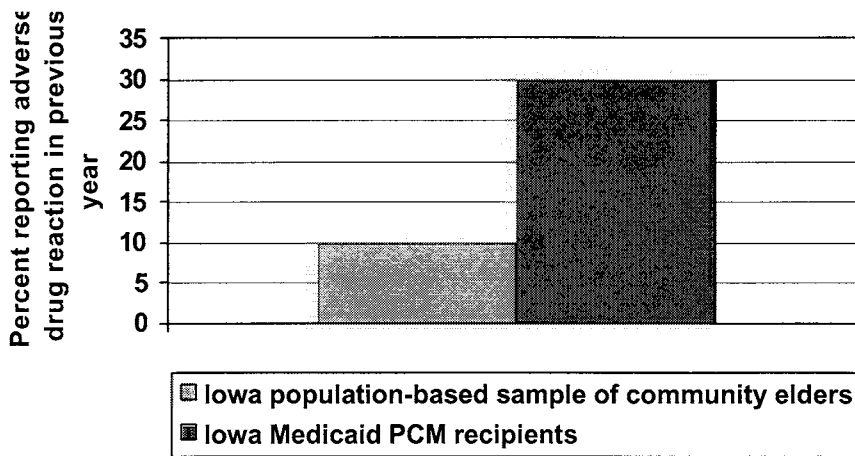
FINDINGS:

1. Those who were eligible for PCM were at very high risk for adverse medication effects.
2. PCM services were provided to many eligible patients.
3. The PCM program significantly improved medication safety.
4. Prescription drug and overall Medicaid utilization and charges did not increase.
5. The PCM program can be extremely effective if obstacles to success can be minimized.

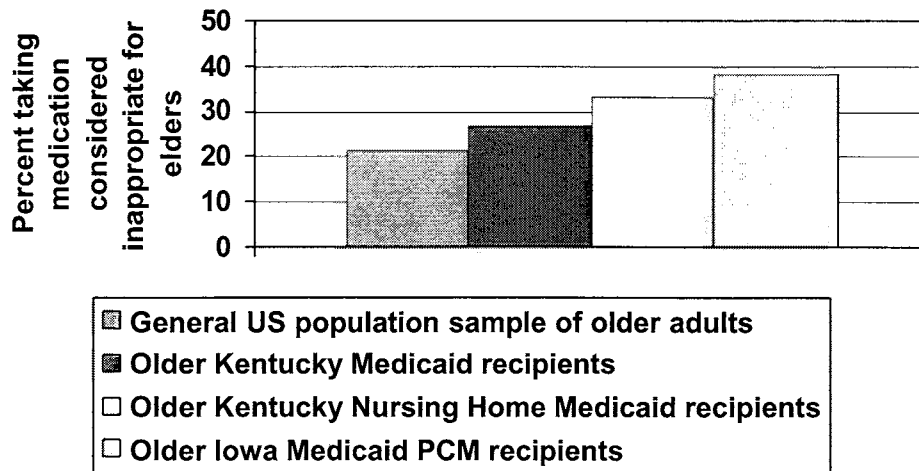
DATA:

1. Those who are eligible for PCM are at very high risk for adverse medication effects:

- a. Their **physical health status** was 1.7 standard deviations below the U.S. general population mean.
- b. More than one-third had **drug-drug interactions**.
- c. Thirty percent self-reported an **adverse drug reaction** in the previous year. This is *three times* the rate observed in a different population of elderly lowans not on Medicaid (Chrischilles EA, Segar ET, Wallace RB Ann Intern Med 1992;117:634-40).



- d. 38.3% of PCM recipients aged 65+ **took medication considered inappropriate** for use among older adults. This is much higher than the rate observed in other samples of older (age 65+) adults (Liu GG, Christensen DB Am Pharm Assoc 2002;42:847-57).



2. PCM services were provided to many eligible patients:

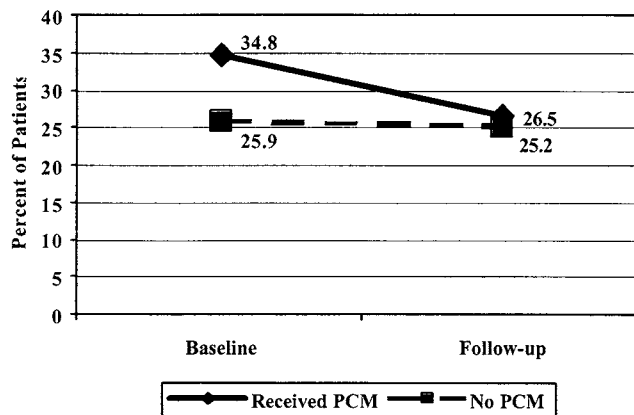
- a. During the first year of the program, in 114 pharmacies a total of 3,037 were eligible for PCM services. **Pharmacists met with 943 of these patients.**
- b. The mean **patient age** was 52.5 years, two-thirds were age 45 or older, and 6.4% were children.
- c. **Pharmacists detected** an average of 2.6 medication-related problems per patient and made a mean of 3.8 recommendations per patient.
- d. **Physicians accepted 49.2%** of pharmacist recommendations.
- e. **Pharmacist recommendations included:**
 - Add a drug (52% of patients)
 - Change medication (36% of patients)
 - Discontinue medication (33% of patients)

3. The PCM program significantly improved medication safety:

- a. Those who received PCM services had a statistically significant 12.5% **improvement in the Medication Appropriateness Index**, a detailed, structured measure of ten domains of prescribing quality.
- b. Among PCM recipients age 60+, those using **medications considered inappropriate** for use among the elderly decreased by 24%, a statistically significant decrease relative to those who did not receive PCM services.

Percent of PCM eligible patients aged 60 and over taking medications that are considered high-risk, i.e. potential risk outweighs potential benefits, by whether PCM was received.

218 patients age 60+ received PCM services and 505 did not.



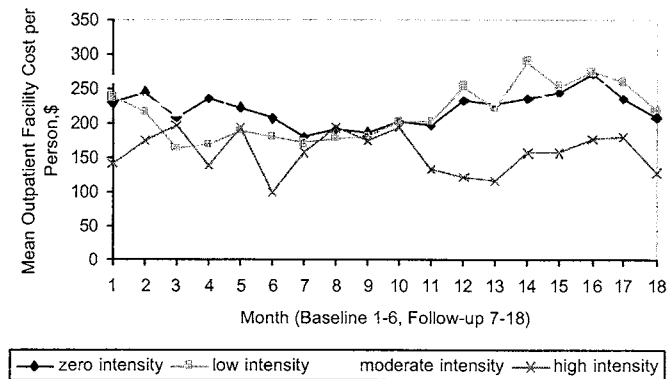
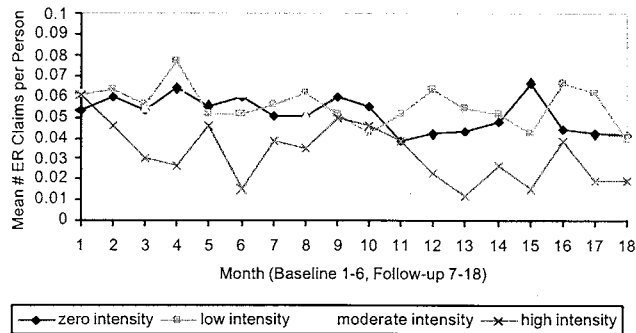
After adjusting for age & gender, the significant intervention (PCM) by time interaction ($p < 0.05$) indicates that PCM was associated with a significant decrease in percent of patients using high-risk medications (from 34.8% to 26.5%) compared with no PCM (from 25.9% to 25.2%).

4. Prescription drug and overall Medicaid utilization and charges did not increase:

- a. After nine months there was **no difference in number of active medications** or Medicaid pharmacy charges between PCM eligible patients who received the service and those who did not.
- b. After nine months there was **no difference in Medicaid institutional or medical charges** between PCM eligible patients who received the service and those who did not, *even after including the amount paid (\$94,170) for PCM services.*

5. The PCM program can be extremely effective if obstacles to success can be minimized:

- a. High intensity pharmacies were able to greatly increase medication safety and reduce emergency room and outpatient facility utilization:
 - 1. There was a greater improvement in medication safety for patients of pharmacies that adopted the new service most intensively.
 - 2. There was a **significant decrease in emergency room and outpatient facility utilization** among patients of pharmacies that adopted the new service most intensively.



- b. Some pharmacists were more successful in completing all PCM functions and included more patients in the program. It is assumed that these **pharmacists overcame challenges and obstacles** that daunted other pharmacists.
 - 34% were high or moderate intensity
 - 40% were low intensity
 - 26% were zero intensity

(intensity score determined by percent of assigned patients receiving service and completeness of service)
- c. Uptake of the service by patients and pharmacists exceeded what is expected for early adoption of an innovative program and exceeds the frequently cited 15% to 25% adoption rate that is required for a “critical mass” and subsequent full-scale take-off of adoption. (see for example Everett M. Rogers "Diffusion of Innovations" (4th ed) New York: The Free Press, 1995)
- d. **Patients and physicians** presented a challenge as did integrating PCM in a dispensing system.
 - Patients did not schedule or missed appointments.
 - No support staff for scheduling and record-keeping.
 - Physicians frequently did not respond to recommendations even after repeated faxing, may not have had systems in place.
- e. **Attitudes** of surveyed physicians and pharmacists were generally positive.

RECOMMENDATIONS

1. The Iowa DHS, Colleges of Pharmacy and Iowa Pharmacy Association should develop and deliver pharmacist training to address the identified obstacles and to involve more pharmacists in the delivery of these services.
2. The Iowa DHS and professional societies should facilitate development and maturation of pharmacist-physician care teams by actively fostering training and dialogue.
3. Medical societies and colleges and the Iowa DHS should develop and implement training programs for physicians about the potential crisis of high-risk medication use among patients eligible for PCM and about specific mechanisms for integrating PCM services in their practices.
4. The Iowa DHS should maintain the eligibility screening process but increase its flexibility so that not only the DHS but also individual physicians and pharmacists may identify patients in need of PCM services.
5. The Iowa DHS should notify all PCM-eligible patients about their eligibility and inform them about how to obtain these services.

CONCLUSIONS

1. High-risk medication use among Medicaid patients taking four or more medications is a public health issue of significant import.
2. In a relatively short period of time, the PCM program has achieved numerous successes.
3. It is anticipated that if the program can be maintained and nurtured into maturity, greater collegiality among providers will develop and improvements in longer-term health outcomes will be achieved.