Program: Evidence-Based Disease Prevention: Medication Management

Organization: Partners in Care Foundation, Burbank, CA

Project Title: A Community Based Medication Management Intervention

Project Period: September 30, 2003 TO September 29, 2006

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Evidence Base

The Vanderbilt University Medication Management Model has been shown to prevent medication-related adverse events such as falls, and provides both healthy and frail community-dwelling clients with medication review services. The program was designed to improve the use of medications among elderly home patients with chronic conditions by identifying and eliminating medication errors.

Original Research Evidence

The intervention is adapted from a medication management study published in 2002 by Vanderbilt University researchers S. Meredith, P.H. Feldman, D. Frey, L. Giammarco, K. Hall, K. Arnold, N.J. Brown and W.A. Ray.

The objective of the study was to test the efficacy of a medication management program in home health agencies. Four main medication problems were addressed: unnecessary therapeutic duplication, cardiovascular medication problem, use of psychotropic drugs in patients with possible adverse psychomotor or adrenergic effects, and use of nonsteroidal anti-inflammatory drugs (NSAIDs) in patients at high risk of peptic ulcer complications.

Participants included Medicare beneficiaries, age 65 and older, who were clients of the home health agencies between October 1996 and September 1998. They each had at least one of the identified medication problems, and were projected to be with the home health agency for at least 4 weeks. The study included an intervention group of 130 participants who received the medication improvement program, and a control group of 129 people who received usual care.

Results of the study showed medication improvement of 50% in the intervention group and 38% in the control group. This effect was strongest for therapeutic duplication, which showed 71% improvement for the intervention group and 24% for the control group.

Adaptation of Model

Whereas the original research focused the program in home health agencies, Partners in Care will adapt this program to the community setting by implementing the intervention in two types of sites: a Medicaid Waiver program and a LA City AAA care management program.

Upon the recommendation of NCOA advisors to assure the fidelity of the original model, there is a revision in the original proposal and workplan that proposed delivering the intervention directly to seniors receiving services in senior center sites administered by the City Department of Aging. However, since a core part of the evidence-based model was the pharmacist working with home health "care managers", ie the home health care team, the NCOA consultants suggested revisiting this issue.

After productive planning meetings with the director and senior staff of the City DOA/AAA, the plan is being revised to consider a large city-wide care management program targeting frail elders who are enrolled in the Emergency Alert Response System (EARS). The timeline is being modified to have the planning phase, including exploring the feasibility of a computerized screening, in Year 1, training and piloting by month 1 or 2 of Year 2, and full implementation of the model in Year 2.

Project's Overall Design

Partners in Care will conduct a medication management project for seniors receiving a continuum of community-based social service programs in Los Angeles. The goal of the intervention is to identify, prevent, and resolve medication errors among seniors identified as "high risk."

The objectives are:

- To implement the intervention in at least 2 Medicaid Waiver programs and a City AAA care management program;
- To evaluate the outcomes of the intervention, which includes assessment recommendations and follow-up by a pharmacist;
- To disseminate findings through a medication management website.

The intervention is a structured medication review for high-risk participants, conducted by a consultant pharmacist or pharmacy intern. Core components include screening, assessment, consultation, and follow-up. The program uses guidelines established by an expert panel for resolving three high-risk medication problems: unnecessary therapeutic duplication, cardiovascular medication problems, and use of psychotropic drugs in patients with a reported recent fall or confusion.

Target Population

During the first year, two Medicaid Waiver sites for low-income frail elderly (called Multi-Purpose Senior Services Programs (MSSP) in California) will be targeted.

Additionally program implementation is being considered for high-risk seniors receiving City AAA care management services through the Emergency Response System (EARS). Each of these programs primarily serves low-income, minority elders.

Anticipated Outcomes

Results of screening medication errors will show:

- Number and types of errors detected
- The types of recommendations by the pharmacists
- Outcomes of the recommendations

The project will also produce a tested community-based model for medication management that is effective and is reasonable in cost to implement in the Aging Services Network.

Evaluation Design

The Impact Evaluation will look at the following participant outcomes: number of clients screened, number and type of medication errors identified, type of recommendations made by the pharmacist, and the outcomes of those recommendations. Self-reported health status will also be evaluated at baseline and at periodic intervals.

The Process Evaluation will monitor outcomes to ensure that the intervention was implemented in accordance with the stated plan. Any problems or difficulties in adapting the intervention will be identified as “lessons learned”. An advisory group will meet quarterly to monitor the success of the implementation.

The complete evaluation plan is attached.

Partnerships

- Partners in Care Foundation will be responsible for the day-to-day management of the project including coordinating outreach, scheduling, planning and delivery of services, data tracking, training oversight of students, and financial management.
- LA City Area Agency on Aging (AAA) will work with Partners in Care to expand medications screening and management in a care management program at this time anticipated to be the Emergency Alert Response(EARS)
- LA County AAA will assist in project planning and diffusion strategies.
- Healthcare partners include two geriatricians who will provide medical review of guidelines and procedures, in addition to providing linkage to healthcare providers when needed.

- Kate Wilber, PhD, Associate Professor of Gerontology at the Andrus School of Gerontology, University of Southern California (USC), will serve as the evaluator for this program.
- The University of Southern California School of Pharmacy will provide consultation and PharmD interns for the program.
- The Multi-Purpose Senior Services Program in California, a Medicaid-Waiver program for low income frail elderly, will serve as a type of site for the intervention
- A Care management program of the City of Los Angeles Department of Aging (DOA) will serve as another type of site for the intervention as described above.

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Evaluation Plan:

The goal of the Evaluation is to assess the process and outcomes of translating previous evidence-based research into practice in two different settings:

1. The MSSP Program and
2. Los Angeles City AAA care management program (TBD)

To carry out the evaluation, the evaluators will:

- Attend periodic MSSP staff meetings to track fidelity of the intervention to the original model and to learn about implementation progress, problems, and solutions.
- Review measures with the intervention team to ensure fidelity to the evidence-based model including identifying secondary data to be used for baseline and follow-up client assessments.
- Create databases in Excel and SPSS for data storage and analysis.
- Manage data including receiving encrypted data from Partners in Care Foundation, entering, cleaning and monitoring and analysis.
- Attend quarterly meetings with project team to assess progress and identify changes, recommendations, and outcomes.
- Monitor process outcomes of Advisory Group meetings (i.e. decision-making processes, outcomes of decisions made, variations from the stated plan, lessons learned).
- Finalize process and outcome measures, and cost-analysis with National Resource Center.
- Participate in National Resource Center cross-site evaluation activities, including data management and quality control
- Provide interim reports and a final report
- Attend grantees annual meeting

Measures:

A. Screening
   1) Proportion of those who were actually screened using Vanderbilt and Beers criteria
      a. Identify any differences between those who were screened and not screened
      b. Reasons for not being screened

B. Intervention
    1) Of those screened, track medication errors identified
        c. What proportion and type are actual errors versus false positives
        d. Of actual errors identified catalog recommendation made
            i. If no recommendation, identify why (qualitative)
C. Follow-up
    1) Based on reassessment of meds at 6-month follow-up, for those who had interventions recommended, measure change in medications regimen
        e. For those with no change, why was change not made?

Primary Outcomes of Data Analysis:

1. Proportion of people screened who had a medication error
2. What proportion and types of medication errors were true errors as opposed to false positives
3. Measure change in medication regimen after recommendations
    a. What proportion with identified errors changed their medication regimens as a result

Secondary Outcomes of Data Analysis (pending available data)

1. Decrease in falls
2. Decrease in emergency room visits
3. Decrease in hospitalizations (admits)
4. Decrease in skilled nursing facility admissions
5. Improved mental status, i.e. confusion