Identifying and Quantifying the Cost of Uncoordinated Care:
Opportunities for Savings and Improved Outcomes

Mary Kay Owens, R.Ph., C.Ph.,
President, Southeastern Consultants, Inc.,
Clinical Associate Professor, University of Florida College of Pharmacy
Department of Pharmaceutical Outcomes and Policy

Southeastern Consultants, Inc. (SEC) performed comprehensive claims analyses on over 9 million Medicaid only enrolled patients and Medicaid/Medicare dually enrolled patients for five large states, which included utilization and expenditure analyses of drugs and medical services, a disease profile of the population, and the identification of access patterns indicative of uncoordinated care in a subset of the population. SEC examined drug and medical utilization and costs attributed to these extremely uncoordinated care patients in an effort to supply policy makers addressing health care reform at the state and federal levels with compelling new data as to the importance of improving the coordination of care. In addition, SEC conducted statistical-based, predictive modeling to estimate future expected costs and created matched comparison groups to further evaluate estimated program savings following a multiple intervention approach to better coordinated care using a patient-centered, primary care medical home model with enhanced health information technology applications and provider incentive payment models.

Using the claims data, patients were separated into Medicaid only, dual eligibles and long term care subgroups and screened for patterns of uncoordinated episodes of care and the absence of a medical and pharmacy home. Patterns identified included utilizing excessive numbers of prescriptions, therapeutically duplicative drugs, frequently changing drug therapies, using multiple prescribers and multiple pharmacies concurrently and in random patterns, accessing the ER frequently and/or for non-emergent care, and numerous other access patterns indicative of uncoordinated care. The vast majority of identified uncoordinated care patients had at least one chronic condition.

Analysis Findings

1. **For the Medicaid only enrolled group, patients exhibiting patterns of extreme uncoordinated care represent a small percentage of all patients (10%), yet account for a significant percentage of program costs (30%).**

   - Uncoordinated care patients represented less than 10% of patients yet accounted for an average of 46% of drug costs, 32% of medical costs, and 36% of total costs for the population. **(Figure 1)**

2. **For the Medicaid only enrolled group, extreme uncoordinated care patients have significant differences in all cost service components, including lab, outpatient, emergency room, pharmacy, practitioner, and hospital services.**

   - Uncoordinated care patients had average annual total costs of $15,100 Vs $3,116 for those with better coordinated care in the remaining population. **(Figure 2)**
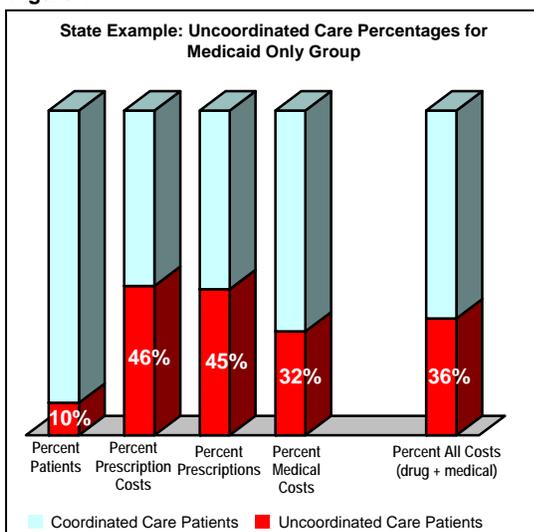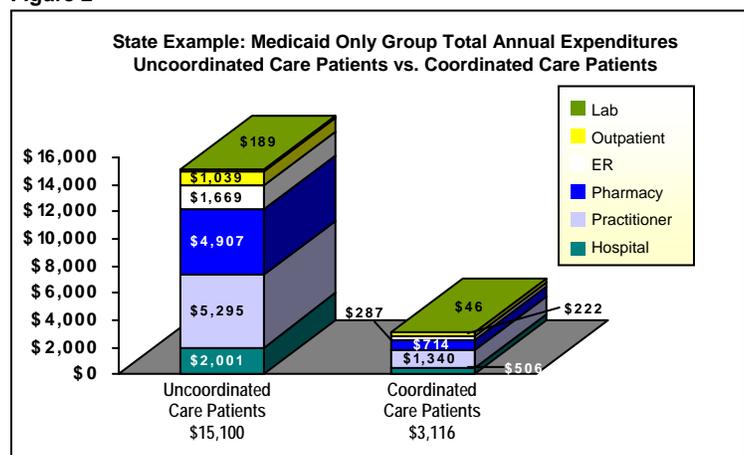
Figure 1

State Example: Uncoordinated Care Percentages for Medicaid Only Group

Figure 2

State Example: Medicaid Only Group Total Annual Expenditures Uncoordinated Care Patients vs. Coordinated Care Patients

3. **For the subset of elderly (Pre-Medicare) patients aged 55-64 years old, those exhibiting patterns of extreme uncoordinated care represented about 28% of patients, yet accounted for a very large percentage of costs (52%).**

   - Uncoordinated care patients represented 28% of patients in that age group yet accounted for an astounding 71% of drug costs, 44% of medical costs, and 52% of total costs for that population. **(Figure 3)**

Figure 3

State Example: Uncoordinated Care Percentages for Elderly, Pre-Medicare Group (Ages 55-64)
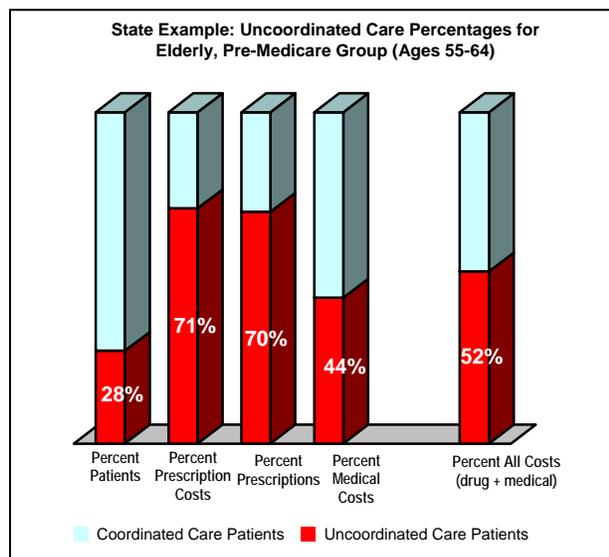
National Cost Savings Estimates

SEC analyses support average overall savings estimates of approximately 9% of the total direct medical and drug costs incurred per year.

The subset of the population with the most savings opportunities are those that are receiving extremely fragmented care and are accessing the system in a very inefficient and uncoordinated manner which in turn creates unnecessary costs and compromises quality of care for the entire system. These patients account for a disproportionate share of costs which averages approximately 30% of total plan costs. Based on multiple analyses completed, an average of 35% of the costs contributed by patients with extremely uncoordinated care should be avoidable with improved efforts of care integration, enhanced and targeted interventions, and coordination of care between providers. SEC extrapolated projected savings for the entire U.S. healthcare system by using National Health Expenditure (NHE) data for annual total health expenditure projections for the periods 2010 through 2018. The categories of NHE spending that were used mirrored the cost service categories used by SEC in the state level data and included direct care expenditures for hospital, professional, home health care, and medical products including drugs and excluded expenditures for administrative, nursing home care, structures and investments.

The projected annual savings were calculated using the NHE 2009 released data for the period 2010 through 2018. The total NHE annual projected expenditures were multiplied by a factor of 0.3 to obtain the total NHE annual expenditures attributed by patients with extreme uncoordinated care and then that total annual amount was multiplied by a factor of 0.35 to obtain the annual estimated savings to be achieved by reducing the excessive costs due to uncoordinated care. A phase in savings factor of 0.25, 0.50 and 0.75 was applied in each of the first 3 years (2010-2012) to allow for implementation of a program to identify and target these uncoordinated care patients and create the processes, procedures and financial incentives needed by plans and providers to cooperatively achieve the savings objectives.

Public Program Savings Estimates

SEC used the above methods and data sources from NHE to estimate the annual public program savings (Medicaid and Medicare). **The public program savings were calculated to be $133.5 billion on average per year for each year in the period 2010-2018.**

Total Public and Private Plan Program Savings

SEC used the above methods and data sources to also extrapolate the total national savings for both public and private health care spending. **The average savings for both public and private spending combined were calculated to be $240.1 billion on average per year for each year in the period 2010-2018.**
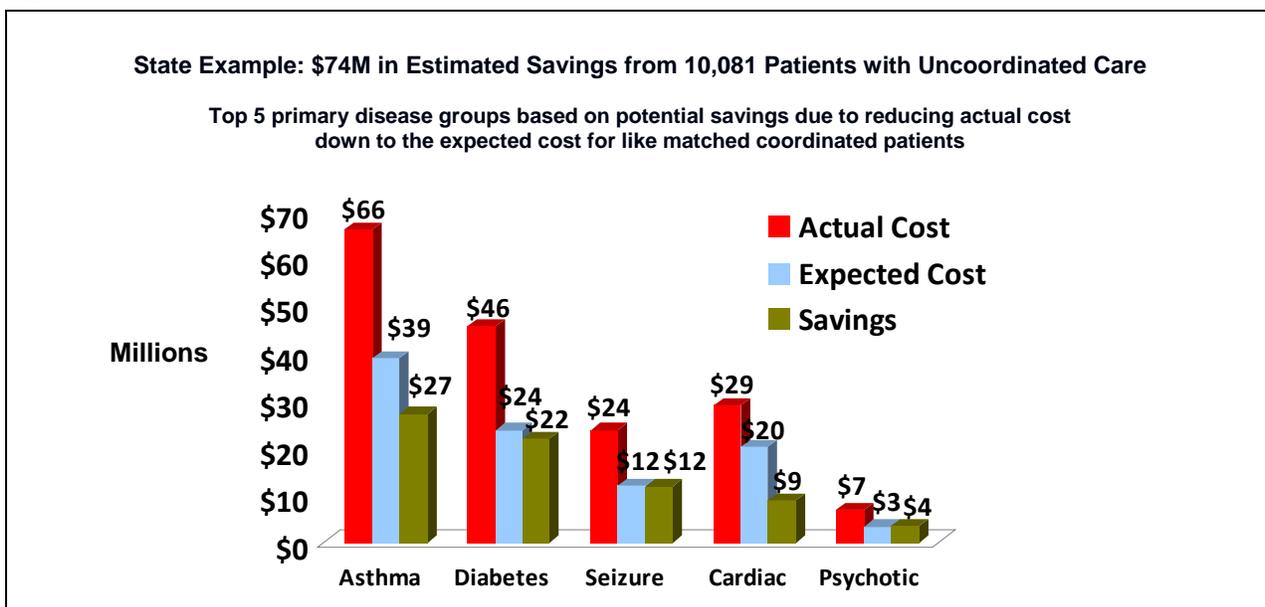
Methods

Various methods have been tested for calculating and estimating potential cost savings from better coordination of care. SEC has performed multiple regression analyses to test specific variables for their independent contribution to the overall cost. These included variables such as age, gender, severity of illness, number and type of chronic conditions. Other variables studied included numbers of prescribers, treating providers, dispensing pharmacies, and number and type of prescriptions utilized. Surprisingly, the variables that seem to be predictors of higher than expected total cost and thus are markers for identifying patients with the greatest savings opportunities were those that were correlated with episodes of uncoordinated care and treatment.

Variables with high significance included using excessive numbers of prescriptions, high numbers of different prescribing and treating physicians, utilizing a high number of different pharmacies, accessing the ER frequently and/or for non-emergent care, all of which contribute to unnecessary costs due to resulting usage of therapeutically duplicative drugs, inappropriate drug usage, drug compliance problems, frequently changing drug therapies, excessive and duplicative lab and diagnostic tests, excessive office visits and excessive and inappropriate utilization of all types of services.

In addition, SEC also created matched comparison groups with thousands of patients matched by age, gender, severity of illness scores, primary disease, and major co-morbid conditions to further evaluate the cost savings potential for patients that are extremely uncoordinated in their care and treatment when compared to like patients that are receiving better coordinated care. The results of these matched comparisons indicate there is significant potential savings available in the system if patients are provided more consistent and coordinated care from their providers.

- **Estimated cost savings for a Medicaid only matched comparison group of 10,081 uncoordinated care patients matched to 37,873 coordinated care patients by age, gender, primary disease, primary co-morbid disease and severity score (CCI) is $74M (43% of the total actual cost of $172M) or $7,340 per patient annual savings. (Figure 4)**

Figure 4

State Example: $74M in Estimated Savings from 10,081 Patients with Uncoordinated Care

Top 5 primary disease groups based on potential savings due to reducing actual cost down to the expected cost for like matched coordinated patients

Recommended Strategies for Improving the Coordination of Care

Conduct baseline analysis

Private and commercial health plans should conduct a baseline claims analysis to identify patterns of uncoordinated episodes of care using defined criteria driven algorithms, create a disease profile of the entire population, and examine drug/medical utilization and cost components to risk stratify and characterize uncoordinated care patients by the specific contributing factors identified, such as therapeutic duplication, diagnostic service duplication, narcotic usage, ER frequency and types of visits, multiple treating providers, multiple prescribers, and multiple pharmacies providing care. Additional activities of the baseline analysis include mapping identified patients into geographic regions and to existing care providers to assist with planning and implementation of care coordination activities.

Evaluate and retool existing systems and programs

Plans should periodically evaluate and modify current technology, system edits, existing utilization review program criteria, and existing disease and care management programs to assess the efficiency and effectiveness of these programs and systems. Current utilization review programs, care management and audit/investigative programs are often not well coordinated with each other in terms of common criteria applied, procedures for referrals and follow-up, and a shared focus and intervention strategy specifically for an identified subset of patients that will generate the greatest return on investment.

Target and expand existing intervention programs for identified patients to improve care coordination

- Implement patient-centered "medical and pharmacy home" programs with focused and enhanced care management and medication therapy management programs
- Enhanced on-line utilization edits and real time claims monitoring systems for providers
- Disease and care management program interventions specifically for targeted uncoordinated care patients
- Patient education/incentive programs to improve compliance with treatment plans and coordination goals
- Emergency room diversion programs to redirect access to primary care providers

Integrate technologies to improve efficiency and patient outcomes

Technologies that are currently being implemented in many plans, such as electronic health information exchange systems, e-prescribing, and other web-based provider monitoring and communication tools, offer the best return on investment for patient and provider monitoring of service utilization, costs, and quality of care. Patients that are identified in the claims analysis as receiving uncoordinated care should be prioritized to receive focused interventions and their providers could be prioritized to receive allocations of new technologies and resources first, as part of a plan-wide effort or in regional pilot programs to expand medical and pharmacy home models of integrated care.

Develop new provider delivery and payment models

There must be a concerted effort to engage providers to be active participants in assisting patients with achieving coordinated care via new models such as medical and pharmacy homes. Engage stakeholders, such as hospitals, physician groups, pharmacists, patient advocates, and others to design care delivery and reimbursement models that create incentives for providers to assume enhanced patient management activities in a multidisciplinary team approach. Initially, resources should be focused on the identified, targeted uncoordinated care patients. Providers should be adequately compensated and encouraged to perform these added responsibilities, such as through increased care management fees, shared savings arrangements, medication therapy management fees, receiving enhanced practice management technology tools, pay for performance, and other appropriate incentives.

Conclusion

The findings from these comprehensive claims analyses provide compelling evidence that effective cost avoidance measures are readily available and should be implemented within existing state, federal and commercial program structures. Healthcare reform efforts must recognize and address the problem and significant costs of uncoordinated care if there are going to be "real" and "meaningful" changes to the healthcare delivery and payment

systems. Public and private health plans can reduce unnecessary expenditures due to uncoordinated care, preserving valuable resources without reducing appropriate access to care or needed services. These preserved resources can also be used for funding expansion programs for the uninsured and underinsured populations and improving the quality of healthcare for all citizens.

Mary Kay Owens is president and principal consultant for Southeastern Consultants, Inc. (SEC). She is a pharmacist and Clinical Associate Professor at the University of Florida College of Pharmacy, Department of Pharmaceutical Outcomes and Policy. mowens@sec-rx.com