

Safety Promoting Behaviors: An Innovative and Feasible Method to Determine the Effectiveness of a Pharmacy Benefit Management Program

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Presenter Disclosures

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Medicare and the Funds

- UMWA Health and Retirement Funds (The Funds) Demonstration Project
 - Part B Capitation (1990)
 - Part A Risk Sharing (1997)
 - Prescription Drug Subsidy (2001)
 - Prescription Drug Care Coordination Program (RxCCP or *MineRx* Program)
 - Evaluation





Prescription Drug Care Coordination Program (RxCCP or *MineRx* Program)

- Purpose:
“To help physicians caring for Funds beneficiaries advance the quality and effectiveness of drug therapy for frail elderly patients who receive their health care in a fee-for-service environment.”





MineRx Program

- Physician-centered program
- Educate physicians about high-risk drugs in elderly patients
- Drugs aren't "good" or "bad" but have risks and benefits
- Only the physician can decide on the appropriate treatment.
- Intervention group: physicians in 8 counties in SW PA

MineRx Program


- Targeted Drug and Drug Patterns List and Handbook
 - Twenty-six Target Drug and Drug Patterns (e.g., Dementia with warfarin, furosemide > 40 mg, etc)
 - Handbook provides suggestions for doctors on ways to handle each Target Drug and Drug Pattern
 - Change prescription
 - Patient/caregiver education
 - Increase clinical monitoring
 - Patient Medication Lists for each Funds beneficiary in participating practice

UMWA Health and Retirement Funds
Patient Medication List (PML) with Target Drug Patterns (TDP)



John Doe, MD
443 BERRY
123 Main Street
Anytown, PA 15000

The PML details all medications paid for by the Funds for your patients during the period indicated. The entries in the TDP column call attention to PML entries that match items included on the TDP list. Medications are listed by brand or generic, as dispensed by the pharmacist. The quantity is indicated in the bar and the days supply by the length of the bar. A yellow bar indicates the presence of a TDP. A red asterisk refers to prescriptions that were unbillable by dispensing pharmacies.



Covering Prescriptions Filled During the Period:
06/01/2009 through 06/30/2009

PATIENT INFORMATION	NAME	AGE	SEX	RACE	Total Number of Unique Drugs		Target Drug Pattern (TDP)
					#	%	
DETHAZOL 100	JOHN, JOHN	68	Gender: M		10	100%	
LEVOPTAL 4000					10	100%	
AMOXICILIN 500 200MG					10	100%	
PRIVILEGE 100 100					10	100%	
WARY 500 500MG 100					10	100%	
WARY 500 500MG 100					10	100%	
COMPTON 100					10	100%	
VALIANT 1000					10	100%	
NORVISO 100					10	100%	
COUSIN 1000					10	100%	
FURIOSEMIDE 40MG					10	100%	
FURIOSEMIDE 40MG					10	100%	
COMPTON 100					10	100%	
SALICYLIC ACID 325MG 100					10	100%	
LUNAR 100					10	100%	
TRIAZOLAM 0.25					10	100%	
COUSIN 1000					10	100%	

Specific Aims

- I. Assess overall program effectiveness
- II. Assess potentially attributable outcomes
- III. Assess program cost effectiveness
- IV. Identify lessons learned and policy implications
- V. Assess implications for Medicare fee-for service Part D



Evaluation Goal 1

- Assess effectiveness of MineRx Program
 - Increase in Safety Promoting Behaviors (SPB)
 - Changes in prescribing
 - Increased patient education
 - Increased clinical monitoring
 - Identified process measures associated with each Target Drug and Drug Pattern for each Safety Promoting Behavior



Methods – Claims Analysis



- Goals
 - Develop valid method to measure Program impact
 - Incorporate clinical complexity as grounding philosophy
 - Recognize evolving Program implementation
- Defined Safety Promoting Behaviors
 - Clinical processes (strategies) that might be followed once a patient has been identified as having a Target Drug and Drug Pattern
- Constructed comparison groups: West Virginia/Alabama, National
- Safety Promoting Behaviors for Program versus comparison populations
 - Method to measure Program impact
 - Allow for phased implementation



Methods – Claims Analysis

Link Safety Promoting Behaviors with Program implementation

- Separately for both comparison groups
- Outcome: Specific Safety Promoting Behaviors within 2 quarters of Target Drug and Drug Pattern
- Independent variables
 - Main effect: time after Program implementation
 - Time (quarters)
 - Group (Program vs. comparison)
 - Covariates: age, sex, co-morbidity
- Overall comparison aggregated across all Target Drug and Drug Patterns
- Multiple comparisons for individual Target Drug and Drug Patterns






Patient Characteristics

Table 1. Patient Characteristics by Time Period and Study Group

	Baseline				Follow-up		
	Quarter 1, 2001 - Quarter 2, 2003		Quarter 3, 2004 - Quarter 4, 2006				
	Intervention	Comparison		Intervention	Comparison		
	National [†]	AL/WVA [‡]		National [†]	AL/WVA [‡]		
N	8,531	11,610	3,987	9,301	9,919	3,410	
Age, mean years	78.6	76 [§]	80 [§]	77.5	75 [§]	78 [§]	
Female, %	70.1	70.3	74.6 [§]	69.0	70.7 [§]	75.1 [§]	
Charlson Score, mean [¶]	2.7	3.3 [§]	3.3 [§]	2.5	3.1 [§]	2.9 [§]	
No. Targeted Drug Pattern Matches	1.8	1.9 [§]	2.3 [§]	3.4	3.1 [§]	3.5	
No. Hospital Days	3.1	5.3 [§]	6.0 [§]	8.6	7.7 [§]	8.2	

[†]Random national sample of 12,000 Funds beneficiaries
[‡]Funds beneficiaries managed in delivery network similar to intervention
[§]Co-morbidity index (range 0-15), higher scores indicate greater disease burden
[¶]p < 0.001 for comparison with intervention group






Warfarin Related SPBs

Table 2. Odds Ratios (95% Confidence Intervals) for Safety Promoting Behaviors (SPBs) Following Warfarin-related Targeted Drug Patterns (TDPs), 2001 – 2006

	Warfarin TDP Group [†]		TDP 11	
	Intervention vs. National [‡]	Intervention vs. AL/WVA [§]	Intervention vs. National [‡]	Intervention vs. AL/WVA [§]
Female	0.97 (0.88 - 1.08)	0.89 (0.79 - 1.01)	0.89 (0.79 - 1.01)	0.75 (0.61 - 0.92)
Age	0.99 (0.99 - 1.00)	0.99 (0.99 - 1.00)	0.99 (0.99 - 1.00)	1.00 (0.99 - 1.02)
Charlson Score [¶]	1.02 (1.00 - 1.04)	1.02 (1.01 - 1.04)	1.02 (1.01 - 1.04)	1.00 (0.96 - 1.03)
Group (intervention vs. comparison)	0.75 (0.67 - 0.84)	0.63 (0.55 - 0.73)	0.63 (0.55 - 0.73)	0.56 (0.45 - 0.7)
Time (quarters)	0.98 (0.97 - 0.99)	0.97 (0.96 - 0.99)	0.97 (0.96 - 0.99)	0.94 (0.92 - 0.96)
Group-time ^{††}	1.04 (1.01 - 1.06)	1.04 (1.01 - 1.07)	1.04 (1.01 - 1.07)	1.13 (1.07 - 1.18)

[†]TDPs 11 - 19
[‡]Random national sample of 12,000 Funds beneficiaries
[§]Funds beneficiaries managed in delivery network similar to intervention
[¶]Co-morbidity index (range 0-15), higher scores indicate greater disease burden
^{††}Reflects intervention effect; p-values for all group-time variables were < 0.001.

Limitations

- Looked at multiple Target Drug and Drug Patterns, but only found significant results for one
- May have under-identified Safety Promoting Behaviors, due to the nature of claims data
- Limited by available claims and pharmacy data in the adjustment for patient characteristics, but were able to account for age, sex, and general co-morbidity profile



Conclusions – Claims and Medical Record Analysis

- Program may be having an impact on physician behavior, as indicated by change in warfarin-NSAID Safety Promoting Behaviors
- Many clinical actions contained in the Safety Promoting Behaviors algorithms may be captured from medical record review.
- Early implementation of the *MineRx* Program was associated with improved patient safety with more appropriate management of patients exposed to warfarin and NSAIDs



Discussion: MineRx Program and Features of Quality MTM Programs

- Patient-centered approach
- Interdisciplinary, team-based approach
- Communication
- Population and individual patient perspective
- Flexibility for broad application
- Evidence-based medicine
- Promotion of MTM services