



11-17-2014

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Yvonne Mai

University of the Pacific, ymai@pacific.edu

Rajul A. Patel

University of the Pacific, rpatel@pacific.edu

Suzanne M. Galal

University of the Pacific, sgalal@pacific.edu

Sian M. Carr-Lopez

University of the Pacific, slopez@pacific.edu

Joseph A. Woelfel

University of the Pacific, jwoelfel@pacific.edu

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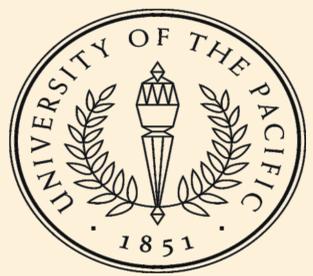
Mai, Yvonne; Patel, Rajul A.; Galal, Suzanne M.; Carr-Lopez, Sian M.; and Woelfel, Joseph A., "Healthcare Provider Utilization and Patient Outcomes: The Call for Enhanced Coordinated Care for Medicare Beneficiaries" (2014). *School of Pharmacy and Health Sciences Faculty Presentations*. 121.

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Healthcare provider utilization and patient outcomes: The call for enhanced coordinated care for Medicare beneficiaries

Yvonne Mai, PharmD¹, Rajul A. Patel, PharmD, PhD¹, Suzanne M. Galal, PharmD¹, Sian M. Carr-Lopez, PharmD¹, Joseph A. Woelfel, PhD, RPh¹
¹Thomas J. Long School of Pharmacy and Health Sciences, University of the Pacific, Stockton, CA



ABSTRACT

Background: The use of complementary and alternative medicine (CAM) and other non-physician health care providers (dentists, optometrists, etc.) has steadily increased in the United States; however, the associated outcomes reported in the Medicare beneficiary population are limited.

Objective: To evaluate the utilization of different healthcare providers by Medicare beneficiaries and assess resultant beneficiary outcomes.

Methods: Fourteen outreach events targeting Medicare beneficiaries were conducted throughout Northern/Central California during the 2014 open enrollment period. Trained student pharmacists (working under licensed pharmacist supervision) provided beneficiaries with comprehensive medication therapy management (MTM) services. During each intervention, demographic, quality-of-life, health behavior and health provider/service utilization data were collected.

Results: Of 620 respondents, 525 (84%) and 84 (14%) reported using at least one non-physician healthcare professional or CAM provider, respectively. Beneficiaries who reported using non-physician healthcare providers were significantly ($p < 0.05$) more likely to indicate being 'very confident' in managing their chronic health conditions. The number of providers seen with prescriptive authority was positively correlated with the number of prescription medications taken ($r_s = 0.342$, $p < 0.001$). The total number of providers seen was positively correlated with the number of drug-related issues identified ($r_s = 0.179$, $p < 0.001$). Beneficiaries using acupuncturists were significantly ($p < 0.05$) less likely to report having chronic pain.

Conclusion: Many beneficiaries have multiple chronic conditions and increasingly utilize a variety of healthcare professionals. As such, bridging the communication chasm between these professionals can improve humanistic outcomes and minimize medication related issues of Medicare beneficiaries. Coordinated care, a key strategy for improving healthcare delivery under the Affordable Care Act, is a step in the right direction.

BACKGROUND

- Medicare beneficiaries, 85% of whom are seniors, have complex medical needs including the following:
 - On average take 5-6 medications/month
 - 50% have ≥ 3 chronic health conditions¹
- Beneficiaries frequently require care from multiple providers and are particularly vulnerable to challenges related to transitions of care between healthcare settings.²
- Poorly executed care transitions can result in negative patient outcomes (e.g., medication errors and polypharmacy).^{2,3}
- General practitioners may provide geriatricians with an incomplete or incorrect patient medication list; thereby increasing the risk of adverse drug events and drug interactions.⁴
- Although it is known that age and health care utilization are positively correlated, it remains unclear whether increased use of health services prevents morbidity or improves quality-of-life.⁵
- A steady increase of CAM providers and product use was observed between 2002-2007.⁶
 - CAM products have been found to have clinically significant interactions with prescription medications. Many of these interactions can be avoided.⁷
- Coordination of care is identified by the Institute of Medicine as a key strategy to improve the effectiveness, safety, and efficiency of the health care system.²
- The Patient Protection & Affordable Care Act (ACA) includes access to care coordination as a critical component to improving the quality and cost-effectiveness of health care.⁸

OBJECTIVE

To evaluate the utilization of different healthcare providers used by Medicare beneficiaries and assess resultant clinical and humanistic patient outcomes.

METHODS

- 1029 Medicare beneficiaries seen at outreach events
- 659 individuals were provided MTM services
- 626 beneficiaries answered questions regarding the use of healthcare services
- Fourteen community health fairs targeting Medicare beneficiaries were held in cities across central/northern California during the 2014 Medicare open enrollment period.
 - Trained student pharmacists, under supervision of licensed pharmacists, offered Medication Therapy Management (MTM) services to all beneficiaries.
 - Demographic, quality-of-life, medication use, health behavior, and health provider/service utilization data were collected (Table 1).

STATISTICAL ANALYSIS

- Descriptive statistics were reported on beneficiary demographic and healthcare service/provider use (Table 1).
- The Chi-Square test was used to examine the relationship between use of healthcare providers and self-rating of health status over the past four weeks, confidence in managing chronic health conditions, and smoking status.
- The Mann-Whitney test was used to examine the relationship between the number of medication related problems (MRPs) identified and non-prescription medication use as a function of health care provider utilization.
- Spearman's correlation was used to determine the association between health provider use and number of medications prescribed.
- Alpha was set a priori to 0.05.
- Statistics were performed via IBM SPSS Statistics 21 (IBM, Armonk, NY).

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Table 1: Patient Demographics

	Value (%)
Sex, No. (%) (n=503)	
Female	318 (63.0%)
Male	185 (37.0%)
Age, No. (%) (n= 573)	
<65	34 (5.9%)
65-74	267 (46.6%)
75-84	185 (32.3%)
85+	87 (15.2%)
Mean (SD)	75.0 (9.4)
Race, No. (%) (n= 617)	
White	342 (55.4%)
Non-white	275 (44.6%)
Hispanic, No. (%) (n=575)	
Yes	54 (9.4%)
No	520 (90.6%)
Healthcare Provider Use in Past Year	
Physician No. (%) (n=626)	
Physician seen in the past year	608 (97.1%)
Routine visits in past year, median	4.0
Alternate Provider, No. (%) (n=622)	
Dentist	429 (69.0%)
Optometrist	423 (67.8%)
Physical Therapist	122 (19.8%)
Psychologist	35 (5.7%)
Complementary and Alternative Medicine Provider, No (%) (n=621)	
Chiropractor	65 (10.4%)
Acupuncturist	28 (4.5%)
Other	2 (0.3%)
Total Providers Used, Median	4.0
Prescription Medications Used, Median	4.0
Severe Drug Related Issues Requiring Prescriber Contact, No. (%) (n=368)	100 (27.2%)
Self-Reported Health Status, No. (%) (n=626)	
Excellent	79 (12.6%)
Very Good	141 (22.5%)
Good	244 (39.0%)
Fair	122 (19.5%)
Poor	40 (6.4%)
Confidence in Managing Chronic Health Conditions, No. (%) (n=610)	
Very	450 (73.8%)
Somewhat	134 (22.0%)
Not at all	26 (4.3%)

RESULTS

- The number of providers seen with prescriptive authority positively correlated with the number of prescription medications taken ($r_s = 0.342$, $p < 0.001$).
- The total number of providers seen was positively correlated with the number of MRPs identified ($r_s = 0.179$, $p < 0.001$).
- The number of health care providers seen was significantly higher in those with fair/poor health compared to excellent/very good/good health ($p < 0.01$).

Figure 1. MRPs that were associated with the use of a significantly greater number of providers

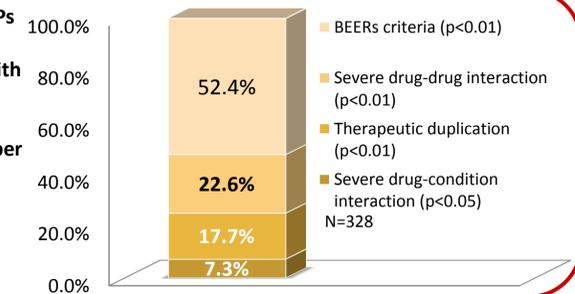


Figure 2.

Use of physicians in the past year and associated outcomes with the number of physician visits annually

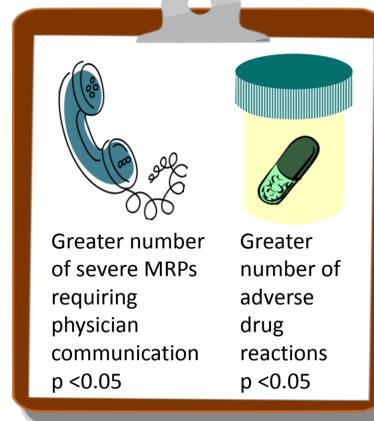
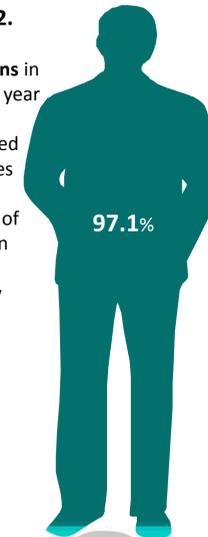


Figure 3.

Use of alternate providers in the past year and associated outcomes

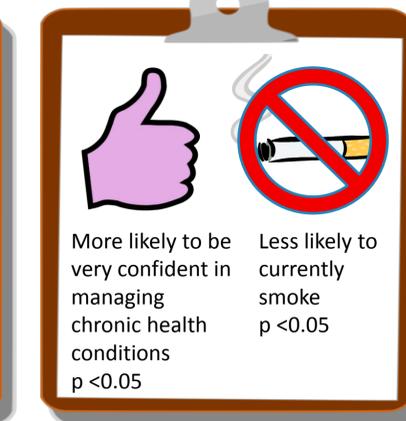
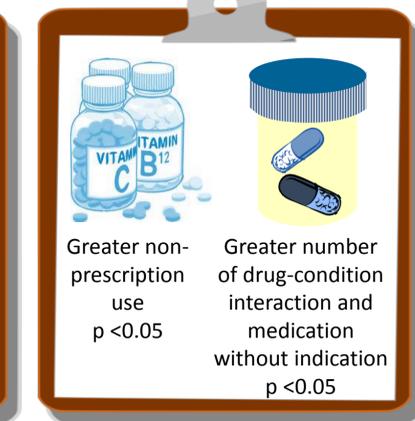
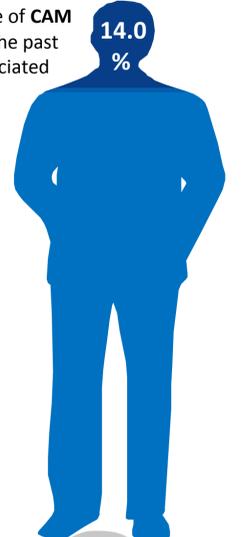


Figure 4. Use of CAM providers in the past year and associated outcomes



CONCLUSIONS

- A variety of health care providers were used by ambulatory Medicare beneficiaries with 84.0% and 14.0% using at least one alternate or CAM provider, respectively, in 2013.
- Increased use of multiple providers was associated with a greater number of MRPs and medication burden. Pharmacists can effectively provide medication reconciliation services to build an accurate medication list, optimize drug use, and limit MRPs.
- Beneficiaries seeing a CAM provider used more non-prescription products, were more likely to have a drug-condition interaction, and be prescribed a medication(s) without an indication.
- Use of alternate health care providers was associated with improved humanistic outcomes including increased confidence in managing their chronic health care conditions and a lower reported rate of smoking.
- Greater use of health care providers in beneficiaries with worse reported health status may indicate that they may be seeking help from additional providers to address unmet health needs.
- It is imperative to implement strategies that improve coordination of care in order to minimize medication related problems and improve outcomes as Medicare beneficiaries increasingly use an array of health care providers.