Do people who are adherent to their medications have fewer Unhealthy Days?

Tristan Cordier, MPH; S. Lane Slabaugh, PharmD, MBA; Peinnie Young, PharmD; Eric Havens, MA; Vipin Gopal, PhD; Todd Prewitt, MD

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Outline

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Measurement of Unhealthy Days

• Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?
• Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?

Humana’s goal is to help make the communities we serve 20% healthier by 2020.

The CDC’s Healthy Days Measure will track the status of our member’s health and well-being.

Healthy Days Measure

• Validated health-related quality of life instrument developed by the U.S. Center for Disease Control and Prevention
• 4 survey questions assessing physically and mentally unhealthy days

Reducing the number of unhealthy days is directly related to improved health outcomes from our efforts.

Medication Adherence

Type 2 Diabetes

• Improved glycemic control; decreased mortality, hospitalizations, and costs

Hypertension

• Decreased cardiovascular hospitalizations and mortality

Dyslipidemia

• Improved lipid levels; decreased cardiovascular events and all-cause mortality

Few studies have examined the relationship between medication adherence and health-related quality of life (HRQOL)
Objective:
To examine the relationship between mentally and physically unhealthy days and adherence to three classes of maintenance medications.

Methods

- **Study design:** Cross-sectional survey
- **Data sources:**
  - Administrative insurance claims data from Humana Inc.
  - Medical and pharmacy claims and enrollment data
  - Voice Activated Technology (VAT) survey data
    - Administered via phone, computer-operated
    - Data collection November 24 to December 24, 2014
    - 166,000+ respondents across the United States
    - Included 2 Healthy Days questions
    - Weighted to standardize the respondent profile to that of the entire plan population as of September 30, 2014

Inclusion Criteria

- Continuous medical and pharmacy insurance enrollment in 2013 and 2014
- ≥65 years of age on January 1, 2013
- Healthy Days VAT survey respondent in 2014
- Filled at least 2 prescriptions for 1 of 3 medication classes in both years
  - Oral diabetes medication
  - Angiotensin converting enzyme inhibitor OR angiotensin receptor blocker
  - Statin
- **Index date** = date of 1st prescription in the calendar year

Measuring Medication Adherence

- **Medication adherence:**
  - **PDC =** Count of days covered by medication divided by total days eligible from index date to end of the year
  - Adherence defined as proportion of days covered (PDC) ≥80%

In a case, a 53-year-old diabetic has 11 refills, 30 tablets each. The total days prescribed medication = 330. Total days from index date to end of the year = 350. No gaps between last pill from previous refill and first pill from subsequent refill. The PDC = 330/350 or 94%.

- Calculated for 2013 and 2014, individually
- 2 prescriptions required in each year
- Prescription refills are a proxy for medication consumption

Results
Unhealthy Days over 2013-2014, Regardless of Medication Adherence

There were approximately 7 physically unhealthy days and 4 mentally unhealthy days reported for all individuals studied over two years.

Differences in Unhealthy Days: Adherent vs. Non-adherent

In adjusted analyses, individuals adherent to medications in both 2013 and 2014 had significantly fewer unhealthy days than those non-adherent in both years.

Limitations

- While PDC indicates medication availability for a period of time, it does not equate to medication consumption.
- Healthy Days survey data are subject to response and recall bias.
- Weighting may not fully account for differences between responders and non-responders in the population.
- Results were subject to limitations inherent in all claims databases, such as coding errors, missing and miscoded data, and fixed variables.
- The cross-sectional design of this study limits us from inferring any temporal or causal relationship between the variables.
- This study utilized data from a population of older individuals insured by a single health plan and geographically concentrated in the southern US, and may not be generalizable to other populations.

Differences in Unhealthy Days: Adherent vs. Non-adherent by Years

There was a trend towards greater reductions in unhealthy days when individuals were adherent more recently and over the longer term.

2014 Projected Unhealthy Days

Extrapolation of 2014 sample data to 2015 population numbers projects that non-adherent in 2015 is associated with the most unhealthy days; however, people taking oral diabetes medications may have a higher burden of unhealthy days per non-adherent person.

After adjusting for confounders, adherence to maintenance medications over 2 years was associated with improved physical and mental quality of life.

Consistent adherence was optimal: physically unhealthy days were significantly lower only when the individual was adherent in both 2013 and 2014.

Strategies to improve medication adherence to three therapeutic classes may help reduce unhealthy days, especially for patients on oral diabetes medications.

Tristan Cordier, MPH
Manager, Clinical Analytics
tcordier1@humana.com
www.Humana.com/Research