Medication Adherence: Effectiveness of Physician Alerts to Resolve Potential Gaps in Pharmacotherapy

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Poor medication adherence is frequently the cause of preventable hospitalizations and patient illness. Costs to the US healthcare system resulting from nonadherence have been estimated to exceed a staggering $100 billion annually.1 Inpatient clinical decision support systems provide physicians with real-time information to improve clinical practice.2

Typically, outpatient practices do not have access to real-time feedback and patient information. This fact, coupled with the fractured healthcare system, leads to incomplete information and has created an opportunity for pharmacy benefit managers (PBMs) to provide clinically valid feedback to assist physician decision-making.

In a recent commentary, Shrank and colleagues stated that PBMs have “a unique opportunity to promote health and generate value in the healthcare system.”3 To realize this value, CVS Caremark supports numerous outreach efforts to improve adherence to essential therapies. Consensus clinical guidelines recommend standards of pharmacotherapy care for different conditions. PBMs can operationalize these guidelines and identify patients who may benefit from treatment additions.

This present study evaluated changes in care after a fax-based messaging intervention delivered to physicians with a recommendation to add:

1. An osteoporosis-preventive agent for women with long-term glucocorticosteroid use4
2. An angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) for adults with diabetes
3. A lipid-lowering agent for individuals with diabetes aged ≥30 years.5

A total of 337 employers and health plans representing 5,508,559 individuals, participated in a program that delivered a fax alert to a provider when pharmacy claims indicated the absence of a recommended therapy. From January 1, 2009, to March 30, 2009, a total of 78,768 alerts were sent to providers regarding osteoporosis (n = 1763), ACE/ARB (n = 22,915), and dyslipidemia (n = 54,090).

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Through September 30, 2009, therapy addition rates (“gap closure rate”) occurring within 90 days of the intervention were compared with a control group selected from employers and health plans that did not implement the program.

Adjusted odds ratios were derived by logistic regression, with adjustment for age, sex, previous medication use, and out-of-pocket participant cost-sharing.

Analysis showed that gap closure rates were higher for cases than for the controls:

- 23.5% versus 15.1% for osteoporosis (Figure 1)
- 13.2% versus 7.7% for ACE/ARB (Figure 2)
- 13.6% versus 9.1% for dyslipidemia (Figure 3).

The odds ratios for the addition of therapy by day 90 were significant (P <.001) for each intervention—osteoporosis (1.62), ACE/ARB (1.88), and dyslipidemia (1.46).
Older age and higher risk scores (Pharmacy Risk Group score) were significant predictors of adding the concomitant therapy, whereas member cost-sharing was not significant.

**Conclusion**

Fax alerts to providers were an effective mechanism for communicating potential gaps in pharmacotherapy and enhance medication adherence. In 3 months, these 3 fax alerts resulted in a total of 3842 individuals implementing pharmacotherapy in accordance with evidence-based medicine. Future research should focus on the subsequent adherence and the medical value of additive therapy.

**References**