

Pharmacists and the Health Care Puzzle

Improving Medication Use and Reducing Health Care Costs



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In the United States, it is puzzling that we spend 53% more per person on health care than any other industrialized nation, yet our patients don't fare any better.¹ Pharmacists can help to solve this health care puzzle by reducing overall health care costs and improving patient care *at the same time*.

Annual savings attributable to pharmacists include:

- **\$3.5 billion** in hospital costs by coordinating medications from multiple prescribers.²
- More than **\$1,600** in direct health care costs per patient at a pharmacist-run anticoagulation clinic, compared with usual medical care.³
- **\$1,200** to **\$1,872** per patient in direct health care costs for patients with diabetes enrolled in the Asheville Project for up to 5 years.⁴
- **\$918** per patient in direct health care costs for patients with diabetes enrolled in the Patient Self-Management Program for Diabetes for 1 year.⁵
- **\$1,230** per patient in indirect costs for those with asthma. Direct cost savings averaged **\$725** per patient.⁶

MEDICATION ADHERENCE is the degree to which patients take medications prescribed by their health care team.

Quality of care, including patient adherence to appropriate medications, was improved in all studies. All employer-funded programs saw improvements in worker productivity and reductions in sick days.

Medicare Payment Advisory Commission

“Involving pharmacists in patient care has resulted in reduced drug errors and associated morbidities, improved patient outcomes, and reduced costs.”⁷

The Burden of Chronic Disease

Chronic disease:

- Includes generally incurable conditions such as asthma, diabetes, cardiovascular disease, and high blood pressure.
- Often can be prevented or managed with appropriate lifestyle modifications and medications.
- Causes **7** out of **10** deaths in the United States.
- Can cause disability and reduce quality of life.
- Affects **45%** of the population—**133 million** Americans—and the numbers are growing at dramatic rates.⁸

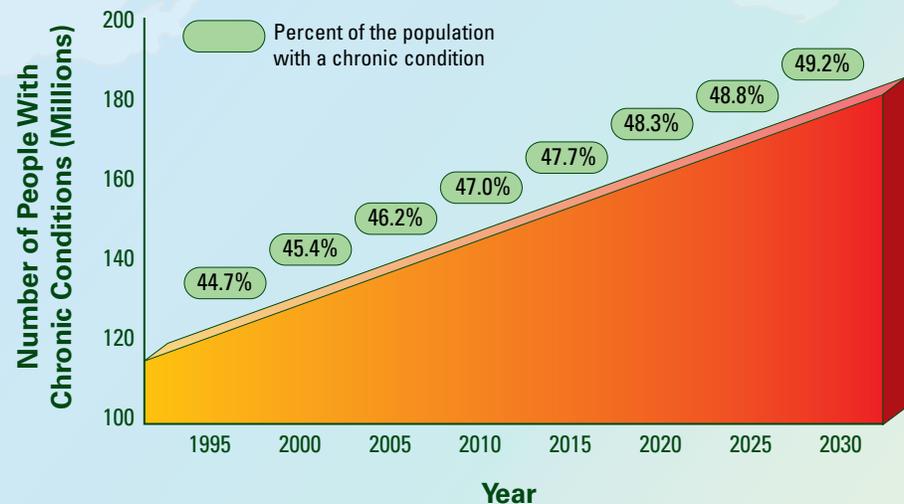
Chronic disease consumes vast health care resources, including:

- **81%** of all hospital admissions.
- **91%** of prescriptions filled.
- **76%** of physician visits.

The costs associated with such interventions are staggering:

- Health care currently consumes **26%** of all federal spending and continues to grow annually.⁹
- In 2005, more than **75%** of the country's **\$2 trillion** health care budget went toward the treatment of chronic disease⁸:
 - Over **96¢** of each Medicare dollar.
 - Over **83¢** of each Medicaid dollar.

The Number of People With Chronic Conditions Is Rapidly Increasing



Source: Reference 8.



How Do Pharmacists Improve Care and Reduce Costs?

By Supporting Medication Adherence and Improving the Use of Medications

Medications improve treatment and reduce costs of chronic disease, but only when used correctly. All too often, medications cause preventable drug-related problems. Costs associated with drug-related problems in the United States exceeded the cost of drugs themselves¹⁰:

- **\$177 billion** were spent in 2000 to treat problems caused by legal drugs.
- Many of these costs can be prevented.

Using their medication expertise, pharmacists can²:

- Support medication adherence.
- Eliminate medication duplication.
- Reduce drug interactions.
- Save **\$3.5 billion** in annual hospital costs alone.

Studies Demonstrate That Pharmacists Improve Treatment Outcomes

When pharmacists provide medication therapy management (MTM) services, they identify existing or potential drug therapy problems and work to resolve or prevent them.

In one study, MTM provided by a pharmacist resulted in¹¹:

- **5,780** drug therapy problems resolved for 2,524 patients.
- **18%** of resolved issues involved adherence.
- Physicians overwhelmingly agreed with the pharmacists' recommendations—**94.2%** of the time.

MTM Services Are Expanding

- Medication therapy management (MTM) is a partnership of the pharmacist, the patient or their caregiver, and other health professionals that promotes the safe and effective use of medications and helps patients achieve the targeted outcomes from medication therapy.
- At least 2.8 million face-to-face MTM service encounters occurred between 2004 and 2006.¹²
- According to the Centers for Medicare and Medicaid Services, MTM provided by a pharmacist will “become a cornerstone of the Medicare Prescription Drug Benefit.”¹³

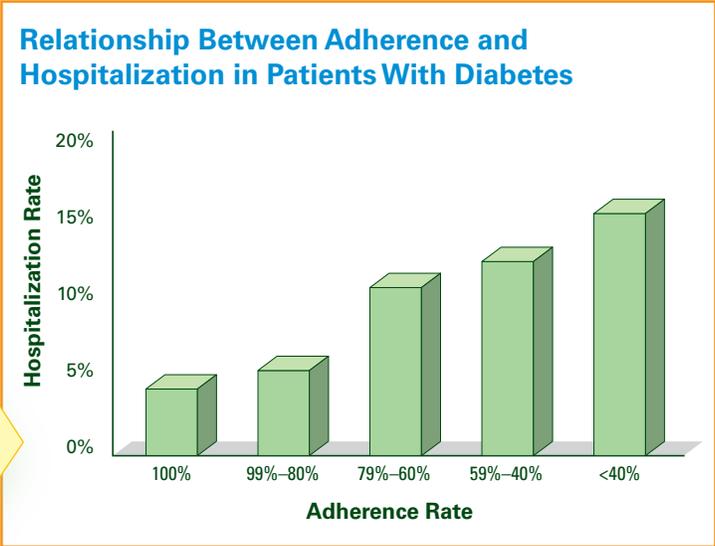
18% of resolved issues involved adherence.

Pharmacists Improve Adherence to Medication

The costs of not using drugs are substantial.

Poor adherence to medications increases overall health care costs because patients get sicker faster, requiring more interventions. *Nonadherence* causes approximately **125,000** deaths each year, and costs at least **\$75.6 billion** annually.¹⁴

Decreased adherence increases hospitalizations and their associated costs.



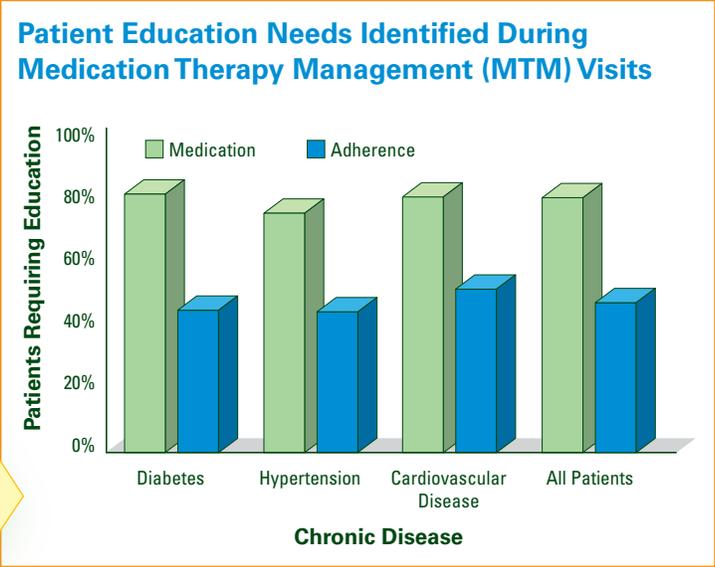
Source: Reference 15.

Pharmacists often identify a need for improved adherence or additional medication to optimize therapy.

In one study of 150 patients receiving MTM services¹⁶:

- **25.9%** had problems with adherence.
- **22%** needed additional medication.

Patients require education about their medications and the importance of adherence.



Source: Reference 17.

Journal of the American Medical Association

“Given the pervasive and morbid effects of medication nonadherence, health care professionals, health systems, third-party payers, governmental agencies, and policy makers are all stakeholders in promoting greater emphasis on medication adherence.”¹⁸



The Value of Pharmacists in Managing Diabetes Is Clear

The Heavy Burden of Diabetes¹⁹

- Risk of heart disease and stroke increased twofold to fourfold.
- A leading cause of amputations, new blindness among adults, and kidney failure.
- **20.8 million** people with diabetes in the United States—7.0% of the population.
- **\$132 billion** in total costs:
 - **\$92 billion** direct health care costs.
 - **\$40 billion** indirect costs (disability, work loss, premature mortality).

Adherence to appropriate treatment can greatly reduce these costs and risks.

Pharmacists Improve Treatment of Diabetes and Reduce Overall Health Care Costs

In the Asheville Project, employers paid pharmacists to *support adherence* by providing ongoing education, training, assessment, monitoring, follow-up, and referral as needed for patients with diabetes.

After 7 to 9 months²⁰:

- Overall health care costs decreased **16%**.
- **37%** of patients decreased their A1c* concentration at least 1%.
- Percentage of patients with A1c <7% increased from **42%** to **57%**.

16% decrease in overall health care costs.

*A1c is the measure of blood glucose used to evaluate diabetes management. Normal A1c is 4% to 6%. The goal for patients with diabetes is generally <7%.

Medical costs decreased by **\$1,200** to **\$1,872** per patient each year.

After up to 5 years⁴:

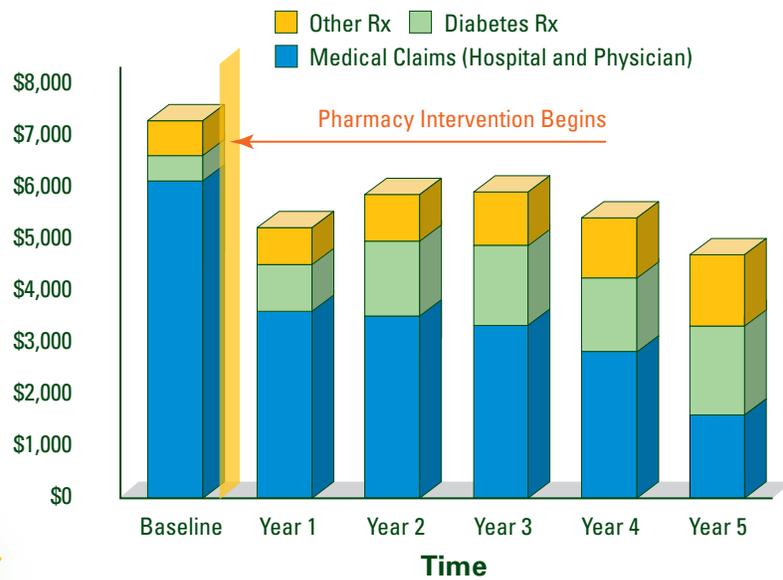
- Total mean direct medical costs decreased by **\$1,200** to **\$1,872** per patient each year.
- Costs for prescription medications used increased, but were offset by savings from fewer hospitalizations, emergency department visits, and physician visits.

Not only did patients benefit, but employers reaped substantial benefits.

- Increased worker productivity—estimated by one employer to have a value of **\$18,000** per year.

Even after paying for the pharmacists to provide these services, the net cost was lower.

Total Medical Claims Decreased While Prescription Costs Increased



Source: Reference 4.

An Expansion of the Asheville Project to Other Settings Found Similar Results

In the Patient Self-Management Program for Diabetes, similar interventions by a pharmacist resulted in clinical and economic benefits.

Results after 1 year included⁵:

- Significant improvements in blood glucose, cholesterol, and blood pressure results.
- **\$918** per patient reduction in health care costs from projected expenditures.

Institute of Medicine

“Because of the immense variety and complexity of medications now available, it is impossible for nurses and doctors to keep up with all of the information required for safe medication use. The pharmacist has become an essential resource...and thus access to his or her expertise must be possible at all times.”²¹



Pharmacist Interventions That Improve Adherence Produce Better Outcomes

Pharmacist adherence interventions more than double the number of patients who achieve their treatment goals for blood pressure and cholesterol.

Blood pressure study: Pharmacist intervention compared with control group.

- 81% of patients in pharmacist intervention group achieved blood pressure goal versus 30% of control group.²²

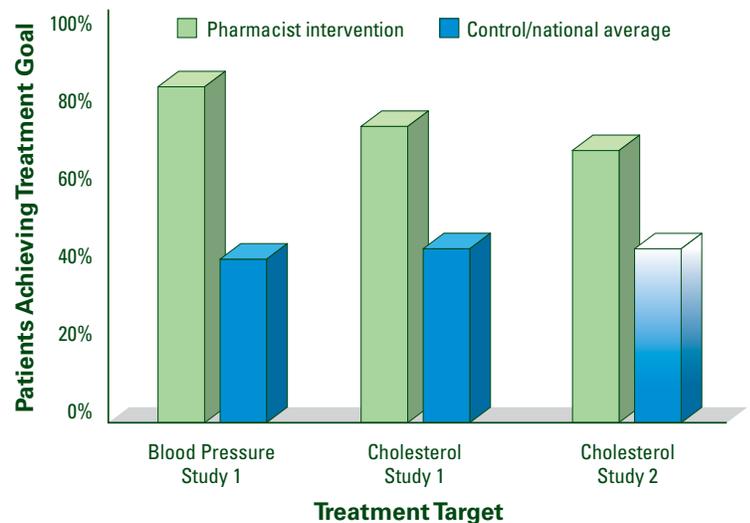
Cholesterol study 1: Pharmacist intervention group compared with baseline.

- 69% of patients in pharmacist intervention group achieved cholesterol goal after 6 months, versus 33% at baseline.²³

Cholesterol study 2: Pharmacy-based demonstration project compared with national data.

- 62.5% of patients reached their treatment goal.²⁴
- National averages for the percentage of patients who achieved their treatment goals are 8% to 34%.²⁴

Pharmacists Adherence Interventions Improve Treatment Outcomes



Source: References 22–24.

Adherence Interventions With a Pharmacist Are More Effective Than Other Strategies

Another study of over 13,000 patients taking medication to treat their cholesterol found that phone calls from a national call center and postcards stressing the importance of taking the medication *had no effect on patient adherence*.²⁵

Pharmacists Improve Management of Cardiovascular Disease

Adherence in Patients With Hypertension (High Blood Pressure) and Dyslipidemia (High Cholesterol)

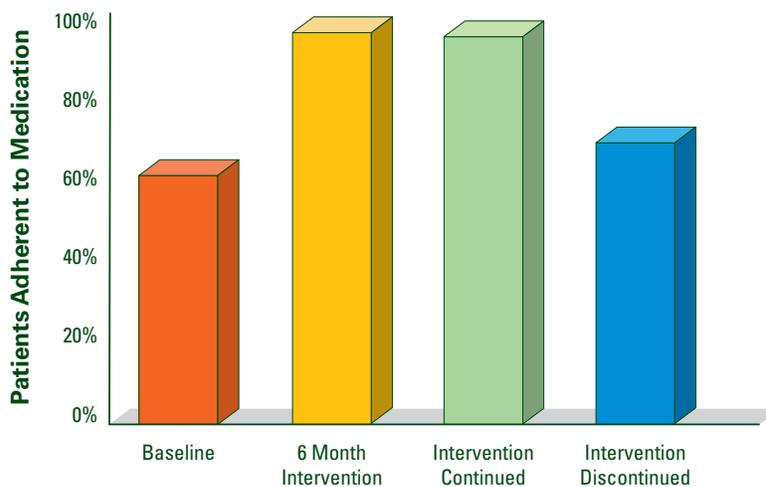
For 6 months, pharmacists provided a comprehensive, individualized intervention to improve adherence to 200 patients at least 65 years of age¹⁸:

- Adherence rates increased from 61% to 96%.
- Blood pressure and cholesterol control were significantly improved.

Then, half of patients remained in the pharmacy care program, half returned to usual care:

- Only those with continued individualized interactions with the pharmacist maintained their high adherence rate.

Pharmacist Intervention Leads to Continued Adherence



Source: Reference 18.

Heart disease is the leading killer of Americans. High blood pressure and cholesterol increase the risk for heart disease.^{26,27}

Journal of the American Medical Association
“A pharmacy care program led to increases in medication adherence, medication persistence, and clinically meaningful improvements. Discontinuation of the program was associated with decreased medication adherence and persistence.”¹⁸

Many Other Pharmacist Services Can Reduce Costs and Improve Care

Pharmacists Improve Adherence to Antidepressant Therapy

Depression affects more than **20 million** adults annually²⁸:

- Almost one-third of veterans from Afghanistan and Iraq are affected by depression.
- Total cost of depression estimated to be **\$83.1 billion** in 2000.²⁹

Depression can respond to treatment, but patients often stop taking medication too early:

- **40% to 50%** of patients stop taking antidepressants too soon (within the first 3 months).³⁰ This rate is known to be particularly difficult to improve.

Pharmacists who provide medication therapy management (MTM) services do significantly improve adherence rates in patients with depression.

- Percentage of patients continuing antidepressant therapy beyond 3 months was **76%** in the pharmacist intervention group versus **51%** in the control group.³¹

Pharmacist-Run Anticoagulation Clinics Improve Outcomes in Patients at Risk for Blood Clots

Blood clots (also called thromboembolic events) cause^{32,33}:

- **250,000** hospitalizations per year.
- Average cost of almost **\$15,000** per event.
- Death occurs in **6% to 12%** of patients within 1 month of diagnosis.

Anticoagulation can prevent blood clots. Compared with usual medical care, a pharmacist-run anticoagulation clinic produced³:

- Over **\$1,600** average savings per patient per year.
- **80%** reduction in development of blood clots.
- **73%** reduction in hospitalization and emergency department visits.
- **77%** reduction in significant bleeding events.
- Greater than **50%** reduction in fatal bleeding events.

National Business Coalition on Health

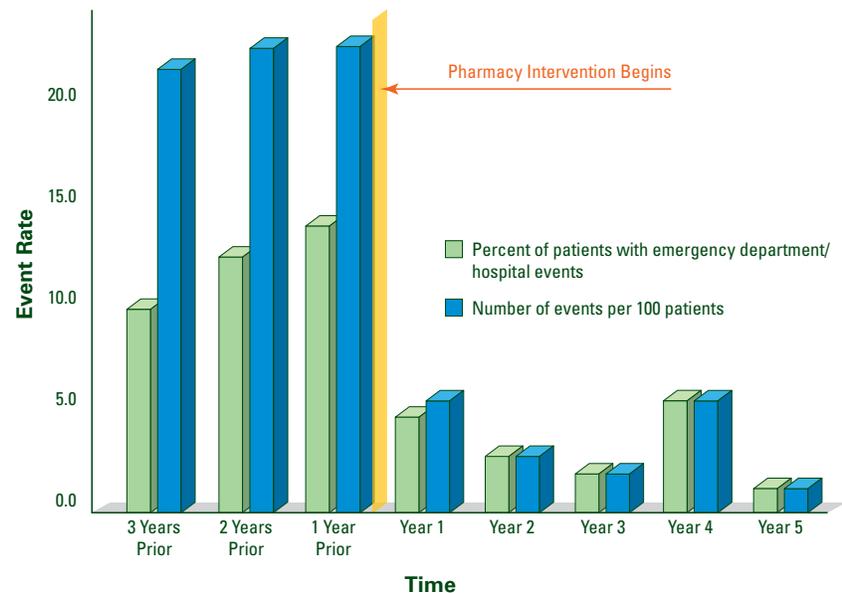
“Investing in employees’ well-being on the front end, rather than paying expenses for chronic illness after the fact, has been proven to show significant cost savings for employers and improved health for employees and their families.”³⁴

Pharmacist Interventions That Support Medication Adherence Are Good for Employers

When pharmacists provided education and long-term medication therapy management (MTM) services to patients with asthma⁶:

- Missed/nonproductive workdays decreased from 10.8 days to 2.6 days per year.
- Direct cost savings averaged \$725 per patient per year.
- Indirect cost savings averaged \$1,230 per patient per year.
- All measures of asthma control improved.
- Improvements were sustained for 5 years.
- Emergency department visits decreased from 9.9% to 1.3%.

Asthma Care Events (Emergency Department and Hospitalization) Per Patient Per Year versus Projected Totals



Source: Reference 6.

Conclusion

When pharmacists provide patient education and improve medication use, patients are healthier and overall health care costs are reduced. By expanding the use of pharmacists' expertise in the treatment of chronic diseases, monetary savings and patient care improvements can help solve many challenges facing the U.S. health care system.

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