Thank you for joining The Guideline Advantage!

To access the audio portion:
Dial: (866) 832-6378
Conference ID: 20077130

We will be starting the presentation shortly.
Providers can use several different technology platforms.

Practices submit collective clinical data to Forward Health Group for The Guideline Advantage.

Data are processed, analyzed and provided back to the practice via a practice portal.

Performance is measured, professionals can set measureable goals and chart improvements in performance.
As a part of quality improvement, clinical data must be aggregated into a data warehouse to facilitate analysis and reporting.

Data Extract (Basic Model requires secure upload by customer)

Key activities include:
- Data Alignment
- Denominator Calculation
- Numerator Calculations
- Attribution
- Benchmarking

Technically speaking… how does it work?
Program Models

Basic Model
- Common Measure Set & Reporting Measure Set, with clinic & provider views and one-click access to patient lists
- Patient Lists with filtering options and action list functionality
- Demographic Information & detail patient views
- Comparison, Benchmarking & Historical Trending by clinic and provider

Premium Model
- An Additional Measure Set available as defined by the customer
- Views & filtering options for Teams
- Customer Driven Functionality, including demographic information displays, incentive program tracking, & non-clinical custom groupings
- Complete data advisory service, including comprehensive consultations and guidance in identifying data sources, mapping, data cleansing and alignment
- Fixed implementation fee and annual licenses
Advantages to Practices & Physicians

On-demand access to quality improvement data using a web-based tool
Available physician-level reporting

Clinic and system aggregation

Tools for creating action lists

Alignment with key national initiatives

National and State Benchmarking
Practice Network opportunities including virtual workshops and national recognition
The Guideline Advantage’s Measures

<table>
<thead>
<tr>
<th>Diabetes Mellitus</th>
<th>Preventive Care Screening</th>
<th>Cancer</th>
<th>Cardiovascular</th>
</tr>
</thead>
<tbody>
<tr>
<td>• HbA1c Control</td>
<td>• BMI Screening &amp; Follow-up</td>
<td>• Colorectal Cancer Screening</td>
<td>• Ischemic Vascular Disease: Aspirin Use &amp; Lipid panel</td>
</tr>
<tr>
<td>• LDL Control</td>
<td>• Influenza Vaccination</td>
<td>• Mammography Screening</td>
<td>• Hypertension: Blood Pressure Control</td>
</tr>
<tr>
<td>• High Blood Pressure Control</td>
<td>• Tobacco Use and Counseling</td>
<td>• Cervical Cancer Screening</td>
<td>• CAD: Lipid-lowering Therapy</td>
</tr>
<tr>
<td>• Annual nephropathy screening (urine albumin)</td>
<td>• Blood Pressure Screening</td>
<td></td>
<td>• CAD: Antiplatelet Therapy</td>
</tr>
<tr>
<td></td>
<td>• LDL Measurement</td>
<td></td>
<td>• CAD: Blood Pressure Control</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• CAD: Tobacco Use</td>
</tr>
</tbody>
</table>
Alignment with National Programs

Million Hearts Initiative
The Guideline Advantage reports on the “ABCS” measures of interest to Million Hearts
http://millionhearts.hhs.gov/index.html

Uniform Data System (UDS)
The program reports all adult UDS measures of interest to Community Health Centers and Federally Qualified Health Centers
Leading practices for effective participation

- Use existing EHR platform; don’t interrupt work flow to collect data; offer vendor or neutral program model
- Provide tools and resources (Webinars, CME programs, etc.) to help develop a culture of quality improvement
- Provide feedback and consult with practices on how to disseminate information
- Encourage focus on 1-2 areas only
- Direct practices to resources to support improvement
- Recognize and link to incentives

These are just a few of the best practices shared by the program.
Vision & Goal

**Vision**
To improve the health of all patients through widespread application of primary and secondary prevention guidelines in the United States through data collection, analysis, feedback and quality improvement in the ambulatory setting.

**Goal**
To improve the long-term compliance with the ACS, ADA and AHA/ACC guidelines, which in turn supports our shared organizational mission to prevent chronic diseases and to improve the lives of those living with the nation’s most prevalent chronic diseases.

The Guideline Advantage is based on the success of nearly 10 years experience in inpatient quality improvement and over 2 millions lives touched.
Patient Adherence

Richard M. Bergenstal, MD
Executive Director
International Diabetes Center
Minneapolis, MN
Disclosure Statement
Richard M. Bergenstal, MD

RMB has participated in clinical research, a scientific advisory board or served as a consultant for:

- Eli Lilly
- Novo Nordisk
- Sanofi
- Hygieia
- T1D Exchange (Helmsley Charitable Trust)
- Roche Diabetes Care
- J&J
- Abbott Diabetes Care
- Bayer Diabetes
- Medtronic Diabetes Care
- BMS
- Merck
- ResMed
- Takeda

RMB inherited Merck stock and is a volunteer of the ADA & JDRF

RMB’s employer, non-profit Park Nicollet Institute, contracts for his services and he receives no personal income from these contracts.
Adherence

“Drugs don’t work in patients who don’t take them”  
C. Everett Koop, MD
Terminology
Adherence vs. Compliance

• **Adherence** is generally defined as the extent to which a person takes medications as prescribed:
  – Implies active collaboration in treatment; agreement to recommendations for therapy

• **Compliance** suggests passive following of doctor’s orders

Osterberg, Lars and Blaschke, NEJM 353;5: 487-497
Medications Adherence
Why should we care?

• Medications may be the most important health care technology in preventing illness, disability, and death in the older population (Avorn, 1995)

• Older adults with chronic diseases benefit the most from taking medications - and risk the most from failing to take them properly

Are most people with diabetes reaching management goals?
The Triple Aim

The Health of a defined population

The Experience of the individual

Per capita Cost for the population

Patient-Centered
Achievement of Goals in U.S. Diabetes Care, 1999–2010

Mohammed K. Ali, M.B., Ch.B., M.B.A., Kai McKeever Bullard, M.P.H., Ph.D.,
Jinan B. Saaddine, M.D., M.P.H., Catherine C. Cowie, M.P.H., Ph.D.,
Giuseppina Imperatore, M.D., Ph.D., and Edward W. Gregg, Ph.D.

CONCLUSIONS
Although there were improvements in risk-factor control and adherence to preventive practices from 1999 to 2010, tobacco use remained high, and almost half of U.S. adults with diabetes did not meet the recommended goals for diabetes care.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycated hemoglobin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;9.0%</td>
<td>18.4</td>
<td>13.0</td>
<td>12.6</td>
</tr>
<tr>
<td>&lt;8.0%</td>
<td>67.4</td>
<td>78.0</td>
<td>79.1</td>
</tr>
<tr>
<td>&lt;7.0%</td>
<td>44.3</td>
<td>56.8</td>
<td>52.2</td>
</tr>
<tr>
<td>Blood pressure &lt;130/80 mm Hg</td>
<td>39.6</td>
<td>45.3</td>
<td>51.3</td>
</tr>
<tr>
<td>LDL cholesterol†</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;100 mm Hg</td>
<td>36.0</td>
<td>46.6</td>
<td>56.8</td>
</tr>
<tr>
<td>&lt;70 mm Hg for persons with CVD</td>
<td>15.9</td>
<td>23.2</td>
<td>27.5</td>
</tr>
<tr>
<td>Current smoker, self-reported or cotinine &gt;10 ng/ml</td>
<td>24.0</td>
<td>23.4</td>
<td>22.3</td>
</tr>
<tr>
<td>Glycated hemoglobin, blood-pressure, and LDL cholesterol targets and nonsmoking status achieved</td>
<td>4.6</td>
<td>9.5</td>
<td>14.3</td>
</tr>
</tbody>
</table>

Harvey W. Kaufman\textsuperscript{1*}, Amy J. Blatt\textsuperscript{2}, Xiaohua Huang\textsuperscript{2}, Mounier A. Odeh\textsuperscript{1}, H. Robert Superko\textsuperscript{3,4}

1 Quest Diagnostics, Madison, New Jersey, United States of America, 2 Quest Diagnostics, West Norriton, Pennsylvania, United States of America, 3 Celera (a Quest Diagnostics company), Alameda, California, United States of America, 4 Saint Joseph’s Hospital of Atlanta, Atlanta, Georgia, United States of America

Figure 1. Annual age-adjusted mean LDL-C levels for the total population, and by gender, 2001–2011. 95% confidence intervals (not shown) range from ±0.1 mg/dL to ±0.3 mg/dL for all groups.
Our Approach to Diabetes Care (Chronic Disease) is Changing!

• Systems of Care are changing
• Targets for Care are changing
• Algorithms for Care are changing
New Systems of Care are Emerging

Why?

- Reimbursement
- P4P – Quality Measures
- Pt. Experience
- Cost of Care
Pioneer ACO Initiative
Mixed Results in Health Pilot Plan

Program Members Raise Quality of Care but Struggle to Lower Costs

By MELINDA BECK

Lowering health-care costs is tougher than improving the quality of care, according to first-year results from a key pilot program under the federal health law.
Systems of Care are Changing

Population Health

Personalized Care
Patient Centered Care

- Patient
- Improved Outcomes
- Standards of Care
- Provider
- Educator CDE
- Appropriate Therapy
- Behavior Change

Big Data: A Revolution That Will Transform How We Live, Work, and Think
Our Approach to Diabetes Care (Chronic Disease) is Changing!

- Systems of Care are changing
- Targets for Care are changing
- Algorithms for Care are changing
ANTI-HYPERGLYCEMIC THERAPY

• Glycemic targets

- HbA1c < 7.0% (mean PG ~150-160 mg/dl [8.3-8.9 mmol/l])
- Pre-prandial PG 70 to <130 mg/dl (7.2 mmol/l)
- Post-prandial PG <180 mg/dl (10.0 mmol/l)

- Individualization is key:
  - Tighter targets (6.0 - 6.5%) - younger, healthier
  - Looser targets (7.5 - 8.0%+) - older, comorbidities, hypoglycemia prone, etc.

- Avoidance of hypoglycemia
Most Intensive

6.0%

Less Intensive

7.0%

Least Intensive

8.0%

Psychosocioeconomic Considerations

Highly Motivated, Adherent, Knowledgeable, Excellent Self-Care Capacities, & Comprehensive Support Systems

Less motivated, Non-adherent, Limited insight, Poor Self-Care Capacities, & Weak Support Systems

Hypoglycemia Risk

Low

Moderate

High

Patient Age

40 45 50 55 60 65 70 75

Disease Duration

5 10 15 20

Other Comorbidities

None Few/Mild Multiple/Severe

Established Vascular Complications

None Early Micro Cardiovascular Advanced Micro
Our Approach to Diabetes Care (Chronic Disease) is Changing!

• Systems of Care are changing
• Targets for Care are changing
• Algorithms for Care are changing
**Healthy eating, weight control, increased physical activity**

**Initial drug monotherapy**
- **Efficacy (↓ HbA1c)**
- Hypoglycemia
- Weight
- Side effects
- Costs

**Two drug combinations***
- **Efficacy (↓ HbA1c)**
- Hypoglycemia
- Weight
- Major side effect(s)
- Costs

---

<table>
<thead>
<tr>
<th>Combination</th>
<th>Sulfonylurea†</th>
<th>Thiazolidinedione</th>
<th>DPP-4 Inhibitor</th>
<th>GLP-1 receptor agonist</th>
<th>Insulin (usually basal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacy (↓ HbA1c)</td>
<td>high</td>
<td>high</td>
<td>intermediate</td>
<td>high</td>
<td>highest</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>moderate risk</td>
<td>low risk</td>
<td>low risk</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td>Weight gain</td>
<td>high</td>
<td>gain</td>
<td>neutral</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td>Major side effect(s)</td>
<td>hypoglycemia†</td>
<td>edema, HF, fx's†</td>
<td>rare‡</td>
<td>GI†</td>
<td>hypoglycemia†</td>
</tr>
</tbody>
</table>

*If needed to reach individualized HbA1c target after ~3 months, proceed to 2-drug combination (order not meant to denote any specific preference):*

---

<table>
<thead>
<tr>
<th>Combination</th>
<th>Metformin +</th>
<th>Metformin +</th>
<th>Metformin +</th>
<th>Metformin +</th>
<th>Metformin +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacy (↓ HbA1c)</td>
<td>high</td>
<td>low risk</td>
<td>intermediate</td>
<td>high</td>
<td>highest</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>low</td>
<td>neutral</td>
<td>low risk</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td>Weight gain</td>
<td>neutral</td>
<td>loss</td>
<td>high</td>
<td>gain</td>
<td>high</td>
</tr>
<tr>
<td>Major side effect(s)</td>
<td>GI / lactic acidosis</td>
<td>edema</td>
<td>rare‡</td>
<td>GI†</td>
<td>hypoglycemia†</td>
</tr>
</tbody>
</table>

†If needed to reach individualized HbA1c target after ~3 months, proceed to 3-drug combination (order not meant to denote any specific preference):*
Healthy eating, weight control, increased physical activity

If needed to reach individualized HbA1c target after ~3 months, proceed to 2-drug combination (order not meant to denote any specific preference):

<table>
<thead>
<tr>
<th>Metformin +</th>
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<th>Metformin +</th>
<th>Metformin +</th>
<th>Metformin +</th>
</tr>
</thead>
<tbody>
<tr>
<td>SU</td>
<td>TZD</td>
<td>DPP4</td>
<td>GLP1</td>
<td>Basal Insulin</td>
</tr>
<tr>
<td>Sulfonylurea</td>
<td>Thiazolidinedione</td>
<td>DPP-4 Inhibitor</td>
<td>GLP-1 receptor agonist</td>
<td>insulin (usually variable)</td>
</tr>
</tbody>
</table>

If needed to reach individualized HbA1c target after ~3 months, proceed to 3-drug combination (order not meant to denote any specific preference):

Efficacy (↓ HbA1c)       
Hypoglycemia         
Weight               
Major side effect(s)   
Costs                

Initial drug monotherapy
- Efficacy (↓ HbA1c)
- Hypoglycemia
- Weight
- Side effects
- Costs

Two drug combinations*
- Efficacy (↓ HbA1c)
- Hypoglycemia
- Weight
- Major side effect(s)
- Costs
Adherence Statistics

• What happens after a prescription is written?
  - 12% don’t fill new prescriptions
  - 12% don’t take medication after prescription filled
  - 29% stop taking medication before completing course of therapy
  - 22% take less of medication than prescribed

Source: AHA
International Diabetes Center: Patient-Centered Team Care

- Patient
- Provider
- Educator CDE

- Improved Outcomes
- Standards of Care
- Appropriate Therapy
- Behavior Change

TM
Patient Self-management of Chronic Disease in Primary Care

Thomas Bodenheimer, MD
Kate Lorig, RN, DrPH
Halsted Holman, MD
Kevin Grumbach, MD

Patients with chronic conditions make day-to-day decisions about—self-manage—their illnesses. This reality introduces a new chronic disease paradigm: the patient-professional partnership, involving collaborative care and self-management education. Self-management education complements traditional patient education in supporting patients to live the best possible quality of life with their chronic condition. Whereas traditional patient education offers information and technical skills, self-management education teaches problem-solving skills. A central concept in self-management is self-efficacy—confidence to carry out a behavior necessary to reach a desired goal. Self-efficacy is enhanced when patients succeed in solving patient-identified problems. Evidence from controlled clinical trials suggests that (1) programs teaching self-management skills are more effective than information-only patient education in improving clinical outcomes.
Traditional Care vs Collaborative Care

In traditional care, medical professionals may blame patients for their shortcomings. They may say things about patients like: “He’s noncompliant with his pills” or “She refuses to check her blood sugars.” In collaborative care (Table 1), when physicians accept the validity of patient-defined problems, the concepts of compliance and adherence—based on physician identification of problems and patients failing to solve physician-defined problems—no longer apply.
Traditional Care vs Collaborative Care

For a diabetic patient, avoiding a terrifying hypoglycemic reaction today may have a higher priority than tight glycemic control to prevent renal disease 15 years from now. Hypoglycemia, not future renal disease, is the patient’s view of the problem. For some patients, the treatment (diet, swallowing pills, going to physicians), rather than the disease, is the main problem. “Noncompliance,” appearing irrational to the professional, may be a rational choice from the patient’s viewpoint.10
A Systematic Review of Adherence With Medications for Diabetes

JOYCE A. CRAMER

OBJECTIVE — The purpose of this study was to determine the extent to which patients omit doses of medications prescribed for diabetes.

RESEARCH DESIGN AND METHODS — A literature search (1966–2003) was performed to identify reports with quantitative data on adherence with oral hypoglycemic agents (OHAs) and insulin and correlations between adherence rates and glycemic control. Adequate documentation of adherence was found in 15 retrospective studies of OHA prescription refill rates, 5 prospective electronic monitoring OHA studies, and 3 retrospective insulin studies.

RESULTS — Retrospective analyses showed that adherence to OHA therapy ranged from 36 to 93% in patients remaining on treatment for 6–24 months. Prospective electronic monitoring studies documented that patients took 67–85% of OHA doses as prescribed. Electronic monitoring identified poor compliers for interventions that improved adherence (61–79%; P < 0.05). Young patients filled prescriptions for one-third of prescribed insulin doses. Insulin adherence among patients with type 2 diabetes was 62–64%.

CONCLUSIONS — This review confirms that many patients for whom diabetes medication was prescribed were poor compliers with treatment, including both OHAs and insulin. However, electronic monitoring systems were useful in improving adherence for individual patients. Similar electronic monitoring systems for insulin administration could help healthcare providers determine patients needing additional support.

Diabetes Care 27:1218–1224, 2004
One-in-four (28%) were poor adherers to their diabetes medicines. In multivariate analyses, predictors of poor medication adherence were: believing you have diabetes only when your sugar is high (OR = 7.4; 2–27.2), saying there was no need to take medicine when the glucose was normal (OR = 3.5; 0.9–13.7), worrying about side-effects of diabetes medicines (OR = 3.3; 1.3–8.7), lack of self-confidence in controlling diabetes (OR = 2.8; 1.1–7.1), and feeling medicines are hard to take (OR = 14.0; 4.4–44.6).
Seventy-seven subjects (mean A1c, 10.4%; mean duration of DM, 7 years) were studied. The most common adherence challenges included paying for medications (34%), remembering doses (31%), reading prescription labels (21%), and obtaining refills (21%). Taking more than 2 doses of DM medication daily ($\beta = .78$, $SE = 0.32$, $P = .02$) and difficulty reading the DM medication prescription label ($\beta = .76$, $SE = 0.37$, $P = .04$) were significantly associated with higher hemoglobin A1c.
Predictors of adherence to diabetes medications: the role of disease and medication beliefs

Devin M. Mann · Diego Ponieman · Howard Leventhal · Ethan A. Halm

“Patient Beliefs about Meds Predict Adherence to Meds”

Table 3  Multivariate predictors of poor medication adherence

<table>
<thead>
<tr>
<th>Belief</th>
<th>OR</th>
<th>SE</th>
<th>C.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have diabetes only when sugar high</td>
<td>7.5</td>
<td>5.0</td>
<td>2.0–27.2</td>
</tr>
<tr>
<td>Not need to take medications when sugar is normal</td>
<td>3.6</td>
<td>2.5</td>
<td>0.9–13.7</td>
</tr>
<tr>
<td>Worried about side-effects</td>
<td>3.4</td>
<td>1.7</td>
<td>1.3–8.7</td>
</tr>
<tr>
<td>Low confidence in controlling diabetes</td>
<td>2.7</td>
<td>1.3</td>
<td>1.1–7.1</td>
</tr>
<tr>
<td>Medicines are hard to take</td>
<td>14.3</td>
<td>8.4</td>
<td>4.4–44.6</td>
</tr>
</tbody>
</table>
Patient and Physician Factors Associated With Adherence to Diabetes Medications

![Graph showing the relationship between shared decision making and medication adherence with different levels of social support.](image-url)
Interventions to Improve Adherence to Self-administered Medications for Chronic Diseases in the United States

A Systematic Review

Meera Viswanathan, PhD; Carol E. Golin, MD; Christine D. Jones, MD, MS; Mahima Ashok, PhD; Susan J. Blalock, MPH, PhD; Roberta C.M. Wines, MPH; Emmanuel J.L. Coker-Schwimmer, MPH; David L. Rosen, MD, PhD; Priyanka Sista, BA; and Kathleen N. Lohr, PhD

Background: Suboptimum medication adherence is common in the United States and leads to serious negative health consequences but may respond to intervention.

Purpose: To assess the comparative effectiveness of patient, provider, systems, and policy interventions that aim to improve medication adherence for chronic health conditions in the United States.

Data Sources: Eligible peer-reviewed publications from MEDLINE and the Cochrane Library indexed through 4 June 2012 and additional studies from reference lists and technical experts.

Study Selection: Randomized, controlled trials of patient, provider, or systems interventions to improve adherence to long-term medications and nonrandomized studies of policy interventions to improve medication adherence.

Data Extraction: Two investigators independently selected, extracted data from, and rated the risk of bias of relevant studies.

Data Synthesis: The evidence was synthesized separately for each clinical condition; within each condition, the type of intervention was synthesized. Two reviewers graded the strength of evidence by using established criteria. From 4124 eligible abstracts, 62 trials of patient-, provider-, or systems-level interventions evaluated 18 types of interventions; another 4 observational studies and 1 trial of policy interventions evaluated the effect of reduced medication copayments or improved prescription drug coverage. Clinical conditions amenable to multiple approaches to improving adherence include hypertension, heart failure, depression, and asthma. Interventions that improve adherence across multiple clinical conditions include policy interventions to reduce copayments or improve prescription drug coverage, systems interventions to offer case management, and patient-level educational interventions with behavioral support.

Limitations: Studies were limited to adults with chronic conditions (excluding HIV, AIDS, severe mental illness, and substance abuse) in the United States. Clinical and methodological heterogeneity hindered quantitative data pooling.

Conclusion: Reduced out-of-pocket expenses, case management, and patient education with behavioral support all improved medication adherence for more than 1 condition. Evidence is limited on whether these approaches are broadly applicable or affect long-term medication adherence and health outcomes.

Primary Funding Source: Agency for Healthcare Research and Quality.


For author affiliations, see end of text.

This article was published at www.annals.org on 11 September 2012.
Interventions to Improve Adherence to Self-administered Medications for Chronic Diseases in the United States

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Conclusion: Reduced out-of-pocket expenses, case management, and patient education with behavioral support all improved medication adherence for more than 1 condition. Evidence is limited on whether these approaches are broadly applicable or affect long-term medication adherence and health outcomes.
Rethinking Adherence

John F. Steiner, MD, MPH

Effective interventions require recognition that adherence is a set of interacting behaviors influenced by individual, social, and environmental forces; adherence interventions must be broadly based,
# Rethinking Adherence

John F. Steiner, MD, MPH


## Table. Yearly Adherence Schedule for a Patient With Well-Controlled Hypertension, Diabetes, and Hyperlipidemia*

<table>
<thead>
<tr>
<th>Adherence Behavior</th>
<th>Frequency</th>
<th>Behaviors per Year, n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-sodium diet</td>
<td>365 d, 3 meals per day</td>
<td>1095</td>
</tr>
<tr>
<td>Saturated fat restriction</td>
<td>365 d, 3 meals per day</td>
<td>1095</td>
</tr>
<tr>
<td>Request pharmacy refill of 2 antihypertensive drugs (3-mo supply)</td>
<td>2 medications, 4 refills per year</td>
<td>8</td>
</tr>
<tr>
<td>Request pharmacy refill of 2 oral hypoglycemic drugs (3-mo supply)</td>
<td>2 medications, 4 refills per year</td>
<td>8</td>
</tr>
<tr>
<td>Request pharmacy refill of 1 lipid-lowering drug (3-mo supply)</td>
<td>1 medication, 4 refills per year</td>
<td>4</td>
</tr>
<tr>
<td>Consume 2 antihypertensive medications per day</td>
<td>365 d, 2 medications, 1 to 2 doses per day</td>
<td>730 to 1460</td>
</tr>
<tr>
<td>Consume 2 oral hypoglycemic medications</td>
<td>365 d, 2 medications, 1 to 2 doses per day</td>
<td>730 to 1460</td>
</tr>
<tr>
<td>Consume a lipid-lowering medication</td>
<td>365 d, 1 medication, 1 evening dose per day</td>
<td>365</td>
</tr>
<tr>
<td>Consume low-dose aspirin</td>
<td>365 d, 1 medication, 1 dose per day</td>
<td>365</td>
</tr>
<tr>
<td>Self-monitoring of fasting blood glucose level</td>
<td>Variable</td>
<td>–</td>
</tr>
<tr>
<td>Self-monitoring of blood pressure</td>
<td>Variable</td>
<td>–</td>
</tr>
<tr>
<td>Engage in 150 min of moderate physical activity per week</td>
<td>52 wk, 3 to 4 episodes of exercise per week</td>
<td>156 to 208</td>
</tr>
<tr>
<td>Call or e-mail office nurse or clinical pharmacist to report blood glucose and blood pressure readings</td>
<td>Variable</td>
<td>–</td>
</tr>
<tr>
<td>Attend primary care office visits</td>
<td>Every 3 to 4 mo</td>
<td>3 to 4</td>
</tr>
<tr>
<td>Laboratory testing (e.g., serum creatinine, hemoglobin A₁c, urine for microalbumin, and fasting cholesterol)</td>
<td>1 to 2 times per year, depending on test</td>
<td>2</td>
</tr>
<tr>
<td>Ophthalmologic examination</td>
<td>Yearly</td>
<td>1</td>
</tr>
<tr>
<td>Influenza vaccination</td>
<td>Yearly, autumn</td>
<td>1</td>
</tr>
</tbody>
</table>

*The patient is a 67-year-old man treated with metformin and a sulfonylurea for diabetes, an angiotensin-converting enzyme inhibitor and a second agent for hypertension, and simvastatin for hyperlipidemia. All risk factors are controlled to guideline recommendations.*
Rethinking Adherence

John F. Steiner, MD, MPH

Delivered systems and clinicians will be more effective in achieving the adherence goals of the Medicare 5-star program if they recognize that adherence is not a single behavior, that it is not a label that should be applied to a person, and that it cannot be improved solely by front-line clinicians or by any single type of intervention. This important goal can be achieved only with comprehensive understanding of the problem of adherence and coordinated action.
Thinking Outside the Pillbox: A System-wide Approach to Improving Patient Medication Adherence for Chronic Disease

Publication Date: August 12, 2009

In its new research brief, "Thinking Outside the Pillbox," NEHI addresses the root causes of poor patient medication adherence - a significant contributor to overall health care waste - and offers promising solutions to improve adherence, particularly among chronic disease patients.

☐ One-Pager
☐ Full Report
☐ Expert Roundtable Highlights

On January 18, 2011, we changed the name of our organization to NEHI. All publications issued prior to that date contain our previous name, New England Healthcare Institute.
Figure 1. Three Pillars of Improved Adherence

- Improve Drug Regimen
  - Follow up
  - Make/Recommend changes; share information with MD
  - Conduct comprehensive medication review
  - Understand patient experiences and preferences
  - Create accurate medication use profile

- Reduce Cost Barriers
  - VBID
  - Formulary compliance
  - Generics
  - Prescription Assistance Programs

- Address Patient Behavior
  - Follow up
  - Engage patients in the care process
  - Address patient preferences, limitations and priorities
  - Educate patients about their condition, how and why to take medications

- Appropriate Medication Use

Source: Avalere Health, NEHI Analysis
Self-Measured Blood Pressure Monitoring in the Management of Hypertension
A Systematic Review and Meta-analysis
Katrin Uhlig, MD, MS; Kamal Patel, MPH, MBA; Stanley Ip, MD; Georgios D. Kitsios, MD, MS, PhD; and Ethan M. Balk, MD, MPH

Conclusion: Self-measured BP monitoring with or without additional support lowers BP compared with usual care, but the BP effect beyond 12 months and long-term benefits remain uncertain. Additional support enhances the BP-lowering effect.

Original Investigation
Effect of Home Blood Pressure Telemonitoring and Pharmacist Management on Blood Pressure Control
A Cluster Randomized Clinical Trial
Karen L. Margolis, MD, MPH; Stephen E. Asche, MA; Anna R. Bergdall, MPH; Steven P. Dehmer, PhD; Sarah E. Groen, PharmD; Holly M. Kacirnas, PharmD; Tessa J. Kerby, MPH; Krissa J. Klotzle, PharmD; Michael V. Maciosek, PhD; Ryan D. Michels, PharmD; Patrick J. O'Connor, MD, MPH; Rachel A. Pritchard, BA; Jaime L. Sekenski, BS; JoAnn M. Sperl-Hillen, MD; Nicole K. Trower, BA

CONCLUSIONS AND RELEVANCE  Home BP telemonitoring and pharmacist case management achieved better BP control compared with usual care during 12 months of intervention that persisted during 6 months of postintervention follow-up.
Improving medication adherence in diabetes type 2 patients through Real Time Medication Monitoring: a Randomised Controlled Trial to evaluate the effect of monitoring patients’ medication use combined with short message service (SMS) reminders

Marcia Vervloet¹*, Liset van Dijk¹, Jacqueline Santen-Reestman², Bas van Vlijmen², Marcel L Bouvy³, Dinny H de Bakker¹,⁴
The Seven Steps of Adherence

• Elicit patient’s knowledge, feelings about the regimen
• Emphasize the value of the regimen
• Collaborate with the patient and simplify regimen to their needs
• Use a medication-taking system
• Obtain help from family/friends
• Follow up on goals
• Reinforce desirable behaviors
Questions?

Type question into the Q&A tab at the top of your screen.

Additional questions email laura.jansky@heart.org

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