Using Evidence to Improve Clinical Care: AHRQ Effective Health Care Program

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Kansas Pharmacists Association
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Disclosures

- The presenter for this activity has no relevant financial relationships

- This activity has received no commercial support or sponsorship
Learning Objectives

- Explain the mission of the Agency for Healthcare Research and Quality (AHRQ)

- Discuss the purpose of AHRQ’s Effective Health Care and how these resources help providers

- Describe the Effective Health Care Program resources available for pharmacists, pharmacy technicians and patients
What is the purpose of the Agency for Healthcare Research and Quality’s Effective Health Care Program?

- To pursue research to substantiate the effectiveness all medications used in the United States.
- To conduct comparative effectiveness research and translate the findings for consumers and clinicians throughout the country.
- To fund research to determine what’s most effective in health care quality.
- All of the above.
What is comparative effectiveness research?

- A type of research that compares the benefits and harms of different interventions and strategies to prevent, diagnose, treat and monitor health conditions.
- Research that compares only the cost of drugs, medical devices, tests, surgeries or health care delivery methods.
- Research that compares only the effectiveness of health care treatment options.
- Research that measures only the negative outcomes of treatment options.
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Discuss AHRQ and the Effective Health Care Program

Discuss AHRQ’s Effective Health Care Program National Partnership Network

Explain AHRQ’s partnership with Kansas Pharmacists Association and free evidence-based resources available to members
Agency for Healthcare Research and Quality (AHRQ)

Mission: To produce evidence to make health care safer, higher quality, more accessible, and more affordable for all Americans and to work within the U.S. Department of Health and Human Services (HHS) and with other partners to make sure that the evidence is understood and used.

AHRQ Director
Richard Kronick, Ph.D.
AHRQ’s Effective Health Care (EHC) Program

- Provides current, unbiased evidence on clinical effectiveness of health care interventions
- Focuses on patient-centered outcomes
- Helps consumers, providers, and policy-makers make informed choices
- Does **not** make treatment recommendations
- Long-term goal: Improve health care quality and patient health outcomes through informed decisionmaking by patients, providers and policymakers
What is Comparative Effectiveness Research (CER)?

- Comparative effectiveness research — a type of patient-centered outcomes research — compares drugs, medical devices, tests, surgeries, or ways to deliver health care, so that patients and their families can make more informed choices.

- Findings are descriptive, not prescriptive, and are intended as tools for informed decision making, not recommendations.

- Findings highlight current evidence about effectiveness, risks, and side effects.
Priority Conditions of the EHC Program

- Arthritis and non-traumatic joint disorders
- Cancer
- Cardiovascular disease, including stroke and hypertension
- Dementia, including Alzheimer’s disease
- Depression and other mental health disorders
- Developmental delays, ADHD, and autism
- Diabetes mellitus
- Functional limitations and disability
- Infectious diseases including HIV/AIDS
- Obesity
- Peptic ulcer disease and dyspepsia
- Pregnancy including pre-term birth
- Substance abuse
AHRQ research shows that patients most want to receive information about their treatment options directly from their health care professional.

Comparative effectiveness research is valuable because it reviews alternative treatment options and presents them in an unbiased manner.

When both clinicians and consumers know and discuss the options, the result is often better care.
EHC Program Resources Support Clinical Practice

**Consumer Summary**
- English
- Spanish

**Tools and Resources**
- CME/CE
- Slide Library
- Research Reviews

**Clinician Summary**

**Decision Aids**

www.effectivehealthcare.ahrq.gov
AHRQ Products To Support the Work of Pharmacists

- Research summaries for clinicians
- Research summaries for consumers
- CME/CE activities
- Faculty slide library
Comparing Medications for Adults With Type 2 Diabetes

Focus of Research for Clinicians
A systematic review of 166 clinical studies published between January 1966 and April 2010 examined the comparative effectiveness, benefits, and adverse effects of available monotherapy and two-drug combinations of medications for adults with type 2 diabetes. (see list on page 3). The review did not cover treatment of type 1 diabetes or gestational diabetes nor does it review evidence regarding the effectiveness of diet, exercise, and weight loss. The full report, listing all studies, is available at http://www.effectivehealthcare.ahrq.gov/diabetesnedcfr.htm. This summary, based on the full report of research evidence, is provided to inform discussions with patients of options and to assist in decision-making along with consideration of patient values and preferences. However, reviews of evidence should not be construed to represent clinical recommendations or guidelines.

Background Information
The management of hyperglycemia is an important focus of treatment to achieve improved macrovascular and microvascular outcomes in patients with type 2 diabetes. Tightening blood glucose levels often requires several strategies, including weight loss if needed, dietary control, increased physical activity, and antidiabetic medications. Treatment regimens include single drugs and combinations of drugs from different classes. Choosing among the available medications requires consideration of benefits, adverse effects, mechanism of action, and cost. In 2007, the Agency for Healthcare Research and Quality published its first systematic review on the comparative effectiveness of oral medications for type 2 diabetes. The 2011 update includes newer medications and two-drug combinations.

Conclusion
Evidence on the comparative effectiveness of antidiabetic medications for long-term macrovascular and microvascular outcomes is limited. However, evidence is available on intermediate outcomes. Many antidiabetic medications given as monotherapy work equally well to lower blood glucose. Two-drug combinations decrease hemoglobin A1c (HbA1c) further. Most agents (except metformin [MET] and glucagon-like peptide-1 [GLP-1] receptor agonists) are associated with increases in weight. The risk of mild to moderate hyperglycemia varies—it is highest for second-generation sulfonylureas (SU) and is increased for some two-drug combinations over monotherapy. MET may cause gastrointestinal (GI) upset. A United States Food and Drug Administration (FDA) warning indicates that thiazolidinediones (TZDZ) are associated with increased risks for heart failure, cardiovascular events, hip and nonhip fractures, and other risks in some patients. Tables 1, 2, and 3 summarize evidence about benefits, adverse events, and long-term benefits.

Gaps in Knowledge
American Diabetes Association; European Association for the Study of Diabetes

Strength of Evidence
Page: 3
There are consistent results from good-quality evidence. Further research is very unlikely to change the conclusions.

Confidence Levels

Reviewing the Clinician Summary
Reviewing the Clinician Summary

Average Wholesale Prices for Diabetes Medicines (Continued from previous page)

<table>
<thead>
<tr>
<th>Drug Type</th>
<th>Generic</th>
<th>Brand</th>
<th>Dose</th>
<th>Price for 1-Month Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipeptidyl Peptidase-4 (DPP-4) Inhibitors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sitagliptin</td>
<td>Januvia*</td>
<td></td>
<td>100 mg once a day</td>
<td>NA</td>
</tr>
<tr>
<td>Saxagliptin</td>
<td>Onglyza*</td>
<td></td>
<td>2.5 mg: 5 mg once a day</td>
<td>NA</td>
</tr>
<tr>
<td>Glucagon-Like Peptide-1 (GLP-1) Receptor Agonists</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exenatide</td>
<td>Byetta*</td>
<td></td>
<td>Injection of 5 mg twice a day</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Injection of 10 mg twice a day</td>
<td>NA</td>
</tr>
<tr>
<td>Liuxigludide</td>
<td>Victoza*</td>
<td></td>
<td>Injection of 0.6 mg once a day</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Injection of 1.2 mg once a day</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Injection of 1.8 mg once a day</td>
<td>NA</td>
</tr>
</tbody>
</table>

These prices are the Federal median price for generic medicines and the average wholesale price for brand name medicines rounded to the next $5. These prices come from Red Book: Pharmacy’s Fundamental Reference, 2011 Edition.

XE/SL = extended release  NA = not available as a generic

What To Discuss With Your Patients

- Establishing a goal for HbA1c and strategies to help achieve that goal, including weight loss, exercise, and consistent use of medication.
- Strategies to increase adherence, including creating a medication schedule, addressing the costs of medications, and reporting adverse effects in a timely manner.
- The need for regular glucose testing and routine blood tests for HbA1c.
- What side effects to expect from the chosen medicines, and when to contact you if side effects occur.

Ordering Information

For electronic copies of Medicines for Type 2 Diabetes: A Review of the Research for Adults, this clinician summary, and the full systematic review, visit www.effectivehealthcare.ahrq.gov/diabetesmeds.cfm. To order free print copies, call the AHRQ Publications Clearinghouse at 800-358-9298.

Source

The information in this summary is based on Oral Diabetes Medications for Adults With Type 2 Diabetes: An Update, Comparative Effectiveness Review No. 27, prepared by the Johns Hopkins University Evidence-based Practice Center under Contract No. 290-02-0018 for the Agency for Healthcare Research and Quality, March 2011. AHRQ Publication No. 11-EHC018-EF. Available at: www.effectivehealthcare.ahrq.gov/diabetesmeds.cfm. This summary was prepared by the Center for Clinical Decisions and Communication Science at Baylor College of Medicine, Houston, TX.

Resource for Patients

Medicines for Type 2 Diabetes, A Review of the Research for Adults is a companion to this clinician summary. It can help people talk to their health care professionals about medications for type 2 diabetes. It provides information about:
- Types of diabetes medications.
- The benefits and risks of medications.
- Costs of medications.

AHRQ Pub. No: 11-EHC018-EF June 2011
Consumer Summaries

- Most clinician summaries have an accompanying consumer piece
  - Supports conversation between patients and health care providers
  - Helps lead to shared decisions about the best treatment
- Summaries are available in multiple formats
- English and Spanish
Consumer Summaries

OVERVIEW

Is This Information Right for Me?

Yes, if:
- Your doctor or health care provider has told you that you have type 2 diabetes and have high blood sugar.
- Your doctor or health care provider recommends that you take medicine to help lower or control your blood sugar.

No, if:
- You are younger than 18 years old.
- You have a different kind of diabetes called type 1 diabetes.
- You are pregnant and have a different kind of diabetes called gestational diabetes.

What is covered in this research summary?
This summary covers the research on the benefits and possible side effects of medicines to lower or control your blood sugar. It will help you talk with your doctor or other health care professional to decide which medicines are best for you.

Where does the information come from?
The information in this summary comes from a review of many studies about type 2 diabetes medicines. The review was conducted by an independent research center in 2007 and again in 2011. Read the full report at www.effectivehealthcare.ahrq.gov/diabetesmeds.cfm.

Understanding Your Condition

What is type 2 diabetes?
- Insulin is a hormone, or chemical, made by the body. It is needed to change food into energy.
- Type 2 diabetes means that your body cannot make enough insulin or that the cells in your body do not use insulin well. This causes blood sugar to get too high.

Why treat type 2 diabetes?
- If your blood sugar level stays high for a long time, you may have a greater chance of a heart attack, a stroke, kidney damage, or blindness. You may also need to have a toe, foot, or leg removed because of poor blood flow.
- Keeping your blood sugar at a good level might lower your chance of having these problems.

How is type 2 diabetes treated?
- The first step in controlling your blood sugar is to eat a balanced diet and be more active. Even small changes in exercise can make a big difference.
- Many people also need medicine to help keep their blood sugar under control.
OVERVIEW

**How do I know the amount of sugar in my blood?**

There are two common tests for blood sugar. They can help you and your doctor check how well your blood sugar is under control.

**Finger stick**

One test is a finger (or forearm) stick that you can do yourself. This test is done one or more times a day. You can do it in the morning before you eat (fasting) or at other times of the day, like after a meal. This test tells what your blood sugar level is at that moment in time. The fasting number should be between 80 and 150. After a meal, the target is usually less than 180.

**Blood test**

The other test is a blood test called hemoglobin (Hb) A1C. This test is done at your doctor’s office or at a lab a few times a year. The A1C test shows your average blood sugar level over the past 2 to 3 months. Usually, the goal is for your A1C to be around 7. This means that your finger-stick blood sugar level has been in the “good” range over the past 2 to 3 months. If the A1C level is higher than this, changing your medicine might help.

**Understanding Your Options**

**Are all diabetes medicines the same?**

There are many types of diabetes medicines. Each type works in a different way to control blood sugar.

**How well can medicines lower my blood sugar?**

All the medicines in this summary lower blood sugar. The lab test for blood sugar level (A1C) is the best way to tell how well the medicines work.

- Most diabetes medicines can lower your A1C by about 1 point. This means that if you start with an A1C level of 8, taking one of these medicines could bring it down to 7.
- Combining two kinds of diabetes medicines can lower blood sugar more than taking just one kind. Most combinations of medicines can bring it down about 1 extra point. This means if you start with an A1C level of 9 and can bring it down to 8 with one kind of medicine, you might be able to lower it to 7 by adding a second medicine.
- There is not as much research on some drugs: nateglinide (Starlix®), exenatide (Byetta®), and sitagliptin (Januvia®). This means that we do not know as much about how these drugs compare with other diabetes medicines.
IMPORTANT QUESTIONS

How often will I need to take these medicines?
- Some diabetes medicines are taken once a day. Others need to be taken more often or with meals.
- No matter which medicines you need, follow the directions for each of them.
- Keep taking your medicines until your doctor tells you to stop. Not taking the medicines, or only taking them for a short time, will NOT help you lower or control your blood sugar.
- Check your blood sugar every day with your glucose monitor, and get your A1C blood tests when your doctor schedules them.

Where can I get more information about type 2 diabetes?
For more information about diabetes, visit the Medline Plus Website: www.nlm.nih.gov/medlineplus/diabetes.html.

Ask Your Doctor
Talk with your doctor or health care provider about the information in this research summary.
1. Why are you choosing this diabetes medicine instead of the other medicines?
2. Will this medicine make me feel bad, gain weight, feel different, or cause changes to my body?
3. What is my current A1C number, and what would you like it to be?
4. How often should I check my blood sugar and at what times?
5. How will this medicine affect my daily activities, like working, sleeping, or taking care of my family?

Write other questions here:
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

Write the answers here:
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
Accessing the Summaries

http://effectivehealthcare.ahrq.gov

Tools and Resources for Clinicians (CME/CE, Slides, etc.)

Research Summaries for Consumers/Clinicians
CER and the Role of the Pharmacist

- Understand study design and methods used in comparative effectiveness research
- Understand differences between efficacy and effectiveness studies and their strengths and weaknesses
- Monitor literature for results of comparative effectiveness studies
- Integrate evidence from these studies with existing knowledge base relevant to patient and system-level decision making
Comparative effectiveness research is relevant to all stakeholders in health care
- Physicians, pharmacists, health care provider organizations, pharmaceutical manufacturers, employers, insurers, government agencies

Clinical teams can keep abreast of the latest studies regarding best clinical practices by using the clinician guides, continuing education modules, and other resources

Benefits managers can incorporate the research reports into their data reviews to inform their benefits decisions
For More Information

See “Comparative effectiveness research: Relevance and applications to pharmacy,” published in the July 15, 2009 issue of the American Journal of Health-System Pharmacy.

Comparative effectiveness research: Relevance and applications to pharmacy

GLEN T. SCHUMOCK AND A. SIMON PICKARD

Purpose. An overview of the emerging field of comparative effectiveness research (CER) and its relevance to pharmacists and pharmacy-based decision-makers is provided.

Summary. The U.S. government is investing over $1 billion on CER over the next two years. This investment is part driven by the recognition that, despite having the highest per capita health care expenditures in the world, the United States does not always perform well on measures of health compared with other countries. There also is increased awareness of the limited information provided by results of traditional randomized clinical trials to inform decisions about therapeutic alternatives as applied in actual practice. Comparative effectiveness studies have two important principal components: (1) the comparison of two or more agents or interventions that are considered true therapeutic alternatives and (2) the examination of effects (outcomes) in actual practice. Comparative effectiveness studies differ from traditional efficacy studies in several ways, including the research question addressed, comparison groups, patient population, setting, outcomes measured, and validity. Studies that are within the scope of CER can be categorized as primary comparative effectiveness studies or secondary comparative effectiveness studies. CER also can be used to compare medical devices, procedures, health services, or any competing intervention.

Conclusion. Comparative effectiveness research is an emerging area of research relevant to many areas of health care, especially pharmacotherapy. The knowledge gained from CER is important to pharmacists when applying drug information and making decisions related to drug therapy.

Index terms: Clinical studies; Control; quality; Decision-making; Methodology; Outcomes; Pharmacists; Pharmacy; Quality assurance; Research

Am J Health-Syst Pharm. 2009;66:2-10

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Application in Pharmacy Settings

- Highmark, Inc. provided information on insulin analogues to its Pharmaceutical and Therapeutics (P&T) Committee as a result of participating in an AHRQ Insulin Analogues Web conference in February 2009.

- Highmark was one of 171 participants in the Insulin Analogue Web conference, which was targeted to pharmacists and pharmacy decisionmakers who make treatment and formulary decisions for patients with type 2 diabetes. The Web conference provided high-quality research to participating pharmacists and pharmacy decisionmakers to support informed health care decisions.

http://www.ahrq.gov/about/casestudies/compeff/ce2010d.htm
Professional Organizations

- Three major nationally recognized pharmacy organizations feature Web links to AHRQ's Effective Health Care Program on their respective Web sites.
- This partnership means that members of these organizations, such as:
  - American Association of Colleges of Pharmacy (AACP),
  - American College of Clinical Pharmacy (ACCP), and
  - Academy of Managed Care Pharmacy (AMCP).
- Will have direct access to the comparative effectiveness research and publications developed by AHRQ's Effective Health Care Program to improve pharmacy practice, including students, practicing pharmacists, and teaching faculty.

http://www.ahrq.gov/about/casestudies/compeff/ce2010c.htm
Retail Settings

- In October 2012, AHRQ launched a national retail communications effort targeted at almost 2,000 grocery stores across the United States.
- The initiative featured:
  * In-store public service announcements driving shoppers to pharmacy
  * Free consumer summaries, including American College of Cardiology co-branded self-monitoring blood pressure
  * 582,000 summaries were distributed
The National Partnership Network

What is the partnership network?
- Organizations across the US supporting CER
- Help create awareness of CER and resources in patient and professional communities
- Committed to improving quality of health through informed decision making

What types of organizations are partners?
- Professional associations
- Health care providers/clinicians
- Patient-focused organizations
- Priority populations
The National Partnership Network

Benefits of partnership

- Opportunities to connect with groundbreaking, comprehensive efforts to improve comparative effectiveness research
- Free evidence-based resources for your members
- Access to AHRQ Effective Health Care Program updates with the latest research news
National Pharmacy Partners

- Academy of Managed Care Pharmacy
- American Association of Colleges of Pharmacy
- American College of Clinical Pharmacy
- American Society of Consultant Pharmacists
- American Society of Health-System Pharmacists
- National Community Pharmacists Association
- National Pharmaceutical Association
- Student National Pharmacy Association
- Auburn University—Harrison School of Pharmacy
- Campbell University—College of Pharmacy & Health Sciences
- Drake University—College of Pharmacy and Health Sciences
- Harding University College of Pharmacy
- Husson University School of Pharmacy
- Johns Hopkins Medicine—Department of Pharmacy
- Lake Erie College of Osteopathic Medicine—LECOM School of Pharmacy
- Shenandoah University—Bernard J. Dunn School of Pharmacy
- Touro College of Pharmacy—New York
- University of Arizona—College of Pharmacy
- University of Charleston—School of Pharmacy
- University of Cincinnati—James L. Winkle School of Pharmacy
- University of Connecticut—School of Pharmacy
- University of Findlay—College of Pharmacy
- University of Illinois at Chicago—College of Pharmacy
- University of Kentucky—College of Pharmacy
- University of Mississippi—School of Pharmacy
- University of Rhode Island—College of Pharmacy
- University of Texas at Austin—College of Pharmacy
- University of the Sciences—Philadelphia College of Pharmacy
- University of Washington—School of Pharmacy
- Virginia Commonwealth University—School of Pharmacy
- Washington State University—College of Pharmacy
Ways to Participate

- **Share** resources with colleagues and patients
  - Use slides, summaries and other materials
  - Make continuing education modules available
  - Feature the Effective Health Care Program and existing and new products on your organization’s Web site, social media channels, or newsletters
  - Sign up for the EHC Program email list

- **Contribute** to the research process
  - Shape future research by contributing ideas, or commenting on research in progress
Accessing Free Resources

- To access resources and products online, go to www.effectivehealthcare.ahrq.gov
- To order FREE printed copies (including bulk quantities) of EHC Program reports and summaries, call the AHRQ Publications Clearinghouse at 1-800-358-9295 or email ahrqpubs@ahrq.hhs.gov with the titles (or publication numbers) and quantities you want to order. Use reference code C-02.
- Comment on upcoming studies in progress and white papers: http://www.effectivehealthcare.ahrq.gov/index.cfm/research-available-for-comment/
- To receive regular research updates: https://subscriptions.ahrq.gov/accounts/USAHRQ/subscriber/new?
How to Contact AHRQ’s EHC Program

- For more information:
- Contact:

EHC_Outreach@ahrq.hhs.gov
QUESTIONS
What is the Agency for Healthcare Research and Quality’s mission?

- To develop quality and safety standards for health care for all Americans.
- To conduct research on quality to share with hospitals in the U.S.
- To improve the quality, safety, efficiency and effectiveness of health care for all Americans.
- To provide best research practices among U.S. academic hospitals.
How do the resources of the AHRQ Effective Health Care Program assist pharmacists, pharmacy technicians and patients?

- The resources summarize research findings for patients, pharmacists and pharmacy technicians to improve the quality of making health care treatment decisions.
- The resources provide up-to-date comparisons of the costs of different treatment options.
- The resources identify ways to improve health care effectiveness.
- The EHC Program resources make treatment recommendations.
What is comparative effectiveness research?

- Research that compares health care quality across key indicators.
- A type of research that measures the effectiveness of various treatment options.
- A type of research that compares health care costs.
- A type of research that compares the benefits and harms of different interventions and strategies to prevent, diagnose, treat and monitor health conditions.