



# Comparative Effectiveness: A View from AHRQ

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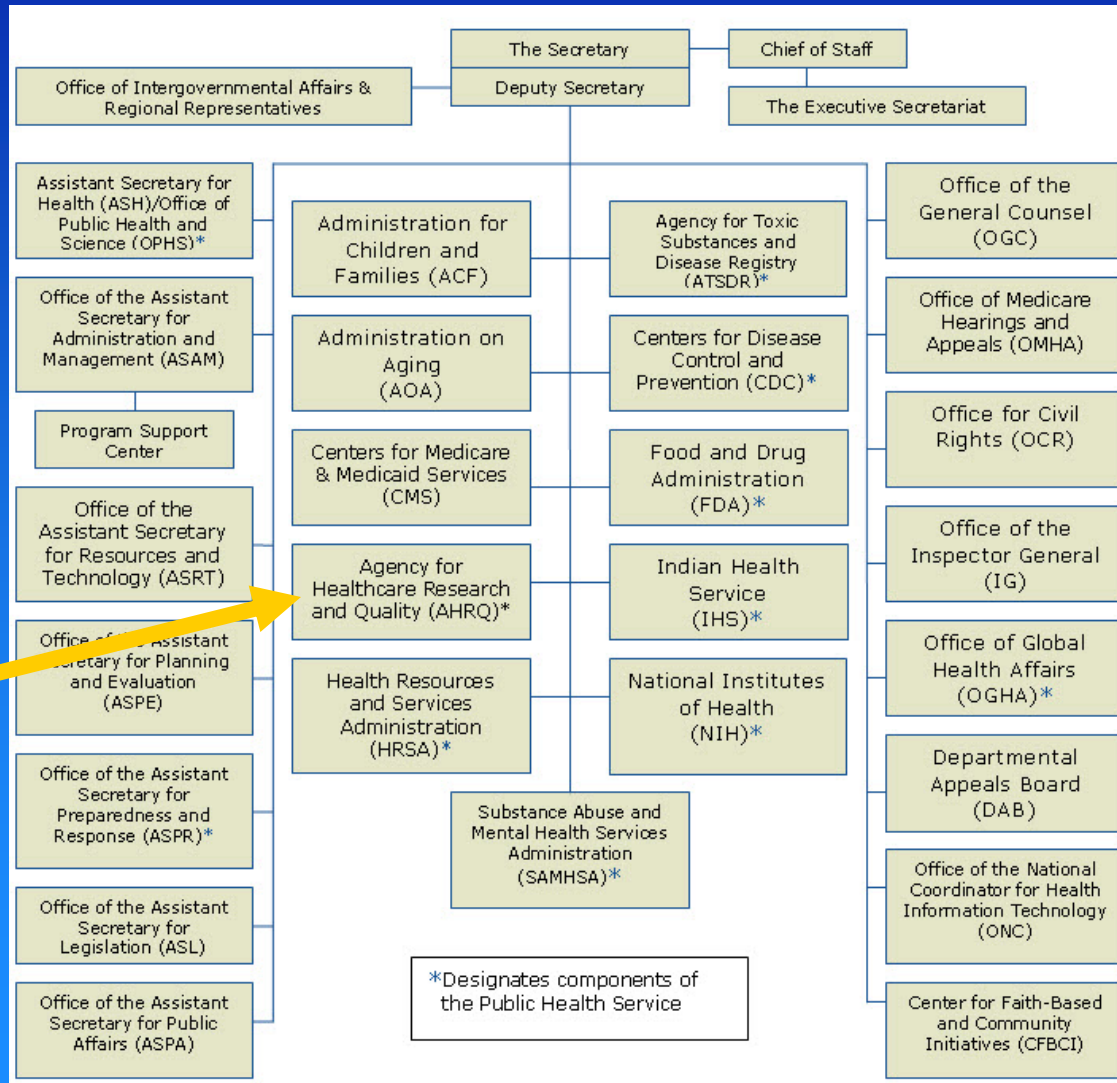
Jean Slutsky

Director, Center for Outcomes and Evidence

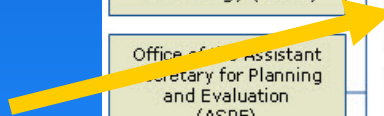
February 23, 2010



# AHRQ and HHS



**AHRQ**



# Life Expectancy at Birth

■	Country	Years	...	■	Country	Years
■	1 <u>Macau</u>	84.36	■	40 <u>Korea, South</u>	78.72	
■	2 <u>Andorra</u>	82.51	■	41 <u>European Union</u>	78.67	
■	3 <u>Japan</u>	82.12	■	42 <u>Puerto Rico</u>	78.53	
■	4 <u>Singapore</u>	81.98	■	43 <u>Bosnia-Herzegovina</u>	78.50	
■	5 <u>San Marino</u>	81.97	■	44 <u>Saint Helena</u>	78.44	
■	6 <u>Hong Kong</u>	81.86	■	45 <u>Cyprus</u>	78.33	
■	7 <u>Australia</u>	81.63	■	46 <u>Denmark</u>	78.30	
■	8 <u>Canada</u>	81.23	■	47 <u>Ireland</u>	78.24	
■	9 <u>France</u>	80.98	■	48 <u>Portugal</u>	78.21	
■	10 <u>Sweden</u>	80.86	■	49 <u>Wallis and Futuna</u>	78.20	
■	11 <u>Switzerland</u>	80.85	■	50 <u>United States</u>	78.11	
■	12 <u>Guernsey</u>	80.77	■	51 <u>Albania</u>	77.96	



# Comparing Evidence: Medical vs. Semiconductor Research

“When I was doing semiconductor device research, it was expected that I would compare my results with other people's previously published results and that I would comment on any differences. But it seemed to be different in medicine.

“Medical practitioners primarily tended to publish their own data; *they often didn't compare their data with the data of other practitioners, even in their own field, let alone with the results of other types of treatments for the same condition.*”

*Intel co-founder and prostate cancer patient Andy Grove  
Forbes 5/13/96*





# Comparative Effectiveness: AHRQ Effective Health Care Program

- Created in 2005, authorized by Section 1013 of the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) of 2003
- To improve the quality, effectiveness, and efficiency of health care delivered through Medicare, Medicaid, and S-CHIP programs by focusing on
  - What is known **now**
  - What research **gaps** are critical to fill
  - **Clinical effectiveness**





# Priority Conditions for the Effective Health Care Program

- Arthritis and non-traumatic joint disorders
- Cancer
- Cardiovascular disease, including stroke and hypertension
- Dementia, including Alzheimer Disease
- **Depression and other mental health disorders**
- **Developmental delays, attention-deficit hyperactivity disorder and autism**
- Diabetes Mellitus
- Functional limitations and disability
- Infectious diseases including HIV/AIDS
- Obesity
- Peptic ulcer disease and dyspepsia
- Pregnancy including pre-term birth
- Pulmonary disease/Asthma
- **Substance abuse**

# Input





# What Healthcare Decision Makers Need To Know

- *Can it work?*
- *Will it work?*
  - For this patient?
  - In this setting?
- *Is it worth it?*
  - Do benefits outweigh harms?
  - Do benefits justify costs?
  - Does it offer important advantages over existing alternatives?

*adapted from Brian Haynes  
ACP Journal Club*



# Questions for Setting Clinical Policy: A Systematic Process

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1. What is the outcome I care most about?
2. How good is the evidence that the interventions can improve those outcomes?
3. How sure am I that it will work in “real world”?
4. How do the potential benefits compare to possible harms and costs?
5. What constitutes “good enough” evidence?
6. What other considerations are relevant?

# Comparative Effectiveness and the Recovery Act

- The American Recovery and Reinvestment Act of 2009 includes \$1.1 billion for comparative effectiveness research:
  - AHRQ: \$300 million
  - NIH: \$400 million (appropriated to AHRQ and transferred to NIH)
  - Office of the Secretary: \$400 million (allocated at the Secretary's discretion)



[www.hhs.gov/recovery](http://www.hhs.gov/recovery)



# AHRQ CER Conceptual Framework

Stakeholder Input & Involvement



Horizon Scanning

Research Training



Evidence Synthesis



Evidence Need Identification

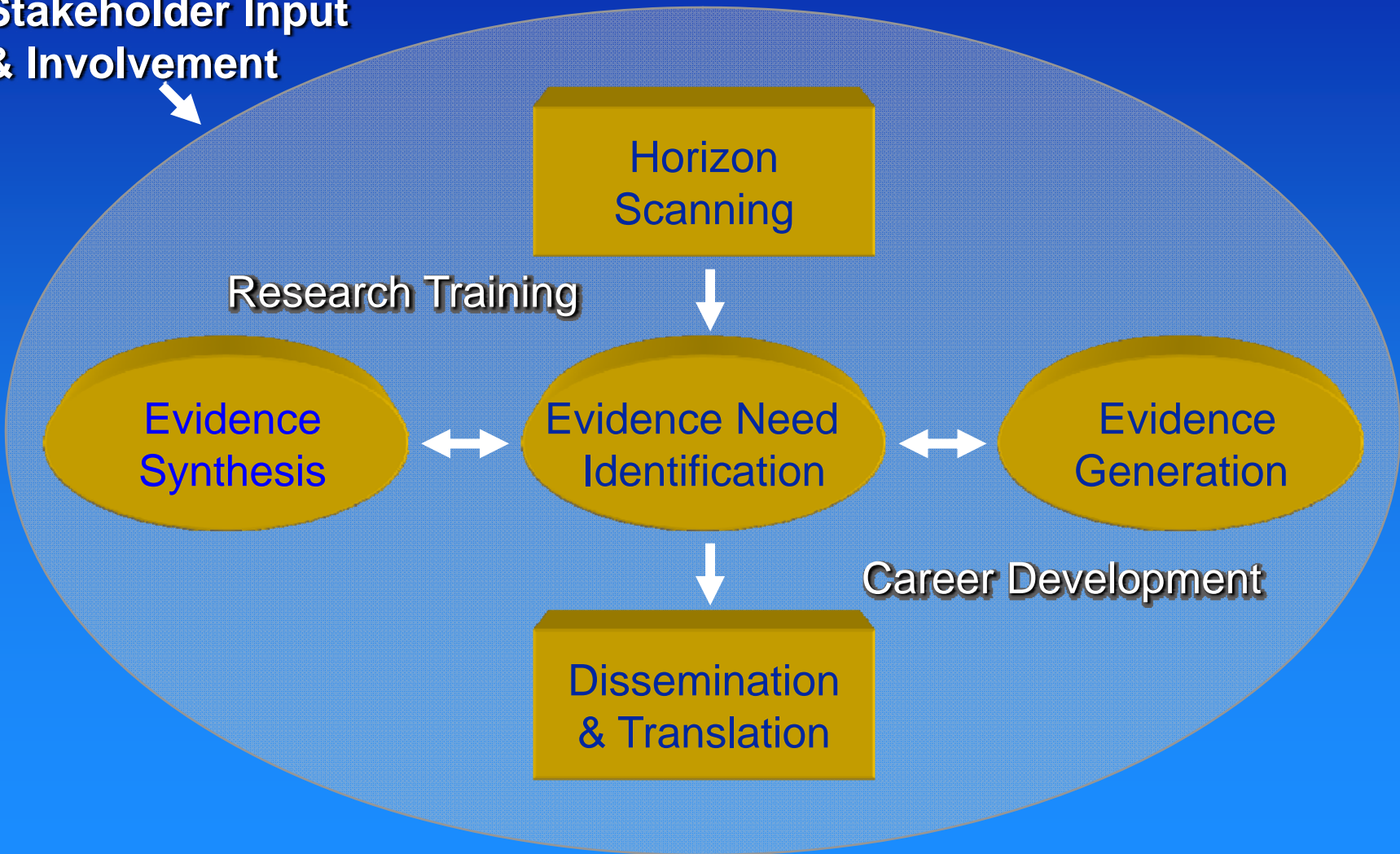


Evidence Generation



Dissemination & Translation

Career Development





# Core Infrastructure for CER at AHRQ

- 14 Evidence-based Practice Centers (EPCs)
- 14 Developing Evidence to Inform Decisions about Effectiveness (DEcIDE) Centers
- 14 Centers for Education and Research on Therapeutics (CERTs)
- John M. Eisenberg Center for Clinical Decisions and Communications Science
- 1 CER Horizon Scanning Center
- 1 Citizen's Forum on CER



# Core Infrastructure for CER at AHRQ

- On-going program announcement on CER
- Clinical and Health Outcomes Initiative in Comparative Effectiveness (CHOICE initiative – R01 - \$100 million)
- Prospective Outcome Systems using Patient-specific Electronic data to Compare Tests and therapies (PROSPECT Studies R01 - \$44 million)



# Core Infrastructure for CER at AHRQ

- Electronic Data Methods (EDM) Forum for Comparative Effectiveness Research (U13 - \$4 million)
- Innovative Adaptation and Dissemination of AHRQ Comparative Effectiveness Research Products (iADAPT - R18 - \$29.5 million)
- Mentored Clinical Scientists Comparative Effectiveness Development Award (K12 - \$15 million)
- Institutional National Research Service Award (NRSA) Postdoctoral Comparative Effectiveness Development Training Award (T32 - \$5 million)

**Attention  
Dog Guardians**

Pick up after your  
dogs. Thank you.

**Attention Dogs**


Grrrrr, bark, woof.  
Good dog.

District of North Vancouver.  
Bylaw 5981-11(i)



# Educating Clinicians

- Concise
- Actionable
- Paired with consumer guides
- Convey level of uncertainty/certainty of findings



*Clinician's Guide*

**Confidence Scale**  
The confidence ratings in this guide are derived from a systematic review of the literature. The level of confidence is based on the

## CHOOSING NON-OPIOID ANALGESICS FOR Osteoarthritis

This guide summarizes clinical evidence on the effectiveness and safety of non-opioid analgesics for osteoarthritis. It covers most available over-the-counter (OTC) medications and prescription non-steroidal anti-inflammatory drugs (NSAIDs). The reviewed drugs are listed on the back page. This guide does not address non-pharmacologic therapies such as diet, exercise, acupuncture, or surgical interventions.

**Clinical Issue**  
The American Academy on Joint Pain has identified osteoarthritis as a chronic condition associated with significant pain that can assist in maintaining mobility and quality of life. Among the available prescription and over-the-counter treatments for osteoarthritis are:

- acetaminophen
- celecoxib
- diclofenac
- ibuprofen
- naproxen
- topical salicylates, and topical NSAIDs).



*A Summary for Clinicians and Policymakers*

## Off-Label Use of ATYPICAL ANTIPSYCHOTIC DRUGS

ATYPICAL ANTIPSYCHOTICS are used primarily for schizophrenia and bipolar mania. They are also prescribed "off-label" for symptoms like agitation, anxiety, psychotic episodes, and obsessive behaviors. These drugs can cause serious side effects. Evaluating research about how well atypical antipsychotics work for off-label conditions can help you weigh the benefits and risks of these drugs. The chart on the back page gives information on dosage and price.

**ATYPICAL ANTIPSYCHOTICS**  
Atypical antipsychotics are a newer class of antipsychotic drugs. Compared with the older, "typical," antipsychotic drugs, such as haloperidol (Haldol®) and chlorpromazine (Thorazine®), atypicals are thought to cause fewer serious or long-term side effects. The atypical antipsychotic drugs reviewed are:

- Aripiprazole (Abilify®)
- Olanzapine (Zyprexa®)
- Quetiapine (Seroquel®)
- Risperidone (Risperdal®)
- Ziprasidone (Geodon®)

**OFF-LABEL USE**  
"Off-label" refers to using a drug for conditions not listed on the Food and Drug Administration (FDA) label of approved uses. Drugs are commonly prescribed off-label when approved drugs cannot be used or do not work. Off-label uses may be supported by clinical evidence. This guide covers the off-label use of atypicals for these six conditions:

- Dementia-related behavioral problems
- Depression
- Obsessive-compulsive disorder (OCD)
- Post-traumatic stress disorder (PTSD)
- Personality disorders
- Tourette's syndrome in children and adolescents

**SOURCE**  
The source material for this summary is a systematic review of over 100 research publications. The review, *Effectiveness and Comparative Effectiveness of Off-Label Use of Atypical Antipsychotics* (2007), was prepared by the Southern California RAND Evidence-based Practice Center. The Agency for Healthcare Research and Quality (AHRQ) funded the systematic review and this guide. The guide was developed using feedback from clinicians and policymakers who reviewed preliminary drafts.

**BOTTOM LINE**  
There is no strong evidence that atypical antipsychotics work for any off-label conditions, but there is some medium level evidence about their effectiveness for three off-label conditions and about harms.

- Olanzapine (Zyprexa®) does not reduce depression for people who have not responded to serotonin reuptake inhibitors (SRIs). This applies to olanzapine (Zyprexa®) used alone or in combination with an SRI.  
LEVEL OF CONFIDENCE ●●○
- Adding risperidone (Risperdal®) or quetiapine (Seroquel®) to an SRI helps people with obsessive-compulsive disorder who have not responded to standard SRI treatment.  
LEVEL OF CONFIDENCE ●●○
- Quetiapine (Seroquel®), olanzapine (Zyprexa®), and risperidone (Risperdal®) reduce agitation and behavioral disturbances for people with dementia.  
LEVEL OF CONFIDENCE ●●○
- Atypical antipsychotics increase the risk of death for elderly people with dementia.  
LEVEL OF CONFIDENCE ●●○
- Risperidone (Risperdal®) and olanzapine (Zyprexa®) increase the risk of stroke for elderly people with dementia.  
LEVEL OF CONFIDENCE ●●○

**CONFIDENCE SCALE**  
The confidence ratings are derived from a systematic review of the literature. The level of confidence is based on the overall quantity and quality of clinical data.

- High: There are strong benefits from good quality studies.
- Medium: There are moderate benefits from good quality studies.
- Low: There are weak benefits, or mixed evidence on benefit.
- Low: There are very few studies, or mixed evidence on benefit.



# Emerging Methods in Comparative Effectiveness, EBM & Safety

October 2007 • Vol. 45 • No. 10 • MDLCCB-ISSN 0025-7079  
SUPPLEMENT 2

## MEDICAL CARE

Office of the Assistant Secretary for Health Policy and Law

Effective Health Care

### Registries for Evaluating Patient Outcomes: A User's Guide

**Methods Reference Guide for Effectiveness and Comparative Effectiveness Reviews**

Agency for Healthcare Research and Quality, *Methods Reference Guide for Effectiveness and Comparative Effectiveness Reviews, Version 1.0* [Draft posted Oct. 2007], Rockville, MD. Available at: [http://effectivehealthcare.ahrq.gov/repFiles/2007\\_10DraftMethodsGuide.pdf](http://effectivehealthcare.ahrq.gov/repFiles/2007_10DraftMethodsGuide.pdf)

Effectiveness and Comparative Effectiveness Reviews, systematic reviews of existing research on the effectiveness, comparative effectiveness, and comparative harms of different health care interventions, are intended to provide relevant evidence to inform real-world health care decisions for patients, providers, and policymakers. In an effort to improve the transparency, consistency, and scientific rigor of the work of the Effective Health Care Program, through a collaborative effort, the Agency for Healthcare Research and Quality (AHRQ), the Scientific Resource Center, and the Evidence-based Practice Centers (EPCs) have developed a Methods Guide for the conduct of Comparative Effectiveness Reviews. We intend that these documents will serve as a resource for our EPCs as well as for other investigators interested in conducting Comparative Effectiveness Reviews.

The first draft of the Methods Guide was posted for public comment for 8 weeks in late 2007. In response to requests from investigators and others interested in Comparative Effectiveness Review methods, we have reposted the original chapters of the draft manual below. As these chapters are revised in response to public and peer review comment, they will replace the previous draft chapter and be posted below. It is anticipated that these papers will also be published as a series in the *Journal of Clinical Epidemiology* in 2008. As further empiric evidence develops and our understanding of better methods improves, we anticipate that there will be subsequent updates and additional chapters to this Methods Guide and that it will continue to be a living document. Comments and suggestions on the Methods Guide and the Effective Health Care Program can be made at [www.effectivehealthcare.ahrq.gov](http://www.effectivehealthcare.ahrq.gov).

- Variation in methods among systematic reviews undercuts transparency
- Poorly done new research can be misleading
- Methods must continue to evolve and not remain stagnant
- AHRQ has and will continue to make investments in improving methods, esp. in understanding clinical heterogeneity.

## In summary

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- **Words of wisdom:** *“In theory, there is no difference between theory and practice. In practice, there is.” – Yogi Berra*
- Is the same true of benefit-risk assessment and comparative effectiveness?

Context and perspective will be key....

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**CAUTION**

**THIS SIGN HAS  
SHARP EDGES**

**DO NOT TOUCH THE EDGES OF THIS SIGN**



**ALSO, THE BRIDGE IS OUT AHEAD**

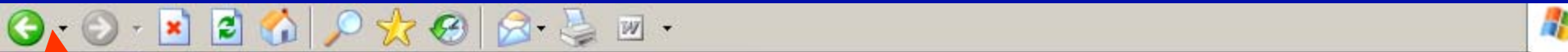


**DO NOT TOUCH THE EDGES OF THIS SIGN**



**ALSO, THE BRIDGE IS OUT AHEAD**





# Effective Health Care Program

Helping You Make Better Treatment Choices

Search Effective Health Care

- Home
- Guides for Patients and Consumers
- Guides for Clinicians
- Research for Policy Makers, Researchers, and Others
- Search for Guides, Reviews, and Reports
- Submit a Suggestion for Research
- Research Comments
- Submit Scientific Information Packets
- Press Releases
- Newsletter
- What is Comparative Effectiveness Research
- What is the Effective Health Care Program
- Who is Involved in the Effective Health Care Program

## Choosing Pre-mixed Insulin Analogues for Type 2 Diabetes

Which one is best for you or your patients? Consumer and clinician guides are available.

[More Info >](#)



<http://effectivehealthcare.ahrq.gov>

### Available for Comment

Draft Document  
Sept. 22-Oct. 19, 2009  
[Methods Guide for Effectiveness and Comparative Effectiveness Reviews](#)

Key Questions

### The Effective Health Care Web Site has a New Design

The Effective Health Care Web site has been redesigned and customized to improve your experience. Some of the new features include:

- Easier searching for reports by date, condition, audience, or

### Product Announcements

Sept. 18, 2009  
[Effectiveness of Screening and Treatment of C. difficile Infections](#)

- Tags: [Effectiveness of Screening and Treatment of C. difficile Infections](#)