

Evidence Synthesis: Empowering Patients, Clinicians, and Policymakers to Make Informed Decisions

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Often, hundreds of studies are available in a given clinical area, such as diabetes or depression. Health practitioners and patients may find it challenging to choose the best diagnostic or treatment options. Insurers making coverage decisions may have questions regarding what services are most effective. Policymakers seeking to issue clinical practice guidelines and to make other decisions may need assistance weighing the evidence to determine the value of various options for patients, clinicians, and insurers. This brief describes RTI International's extensive experience conducting evidence syntheses to help patients, clinicians, and policymakers make more informed decisions.

Synthesizing Evidence Makes a Difference in Clinical Practice and in People's Lives

Evidence syntheses produced by the RTI International–University of North Carolina Evidence-based Practice Center (RTI-UNC EPC) have shaped clinical practice, policy, and research since 1997. The EPC creates evidence syntheses (also known as systematic reviews) of drugs, psychological and behavioral therapies, devices, and systems interventions on a wide variety of clinical and health care delivery topics.

Our EPC evidence syntheses have broad audiences: patients and their caregivers, health care providers, insurers, employers, professional societies, advocacy groups, and policymakers. These groups use EPC syntheses to support decision guides for patients and clinicians, clinical practice guidelines, coverage decisions, policy initiatives, and future research directions.

The RTI-UNC EPC supports the U.S. Preventive Services Task Force (USPSTF). The USPSTF makes recommendations for primary care clinicians about the

effectiveness of numerous preventive clinical services, such as screening, behavioral counseling, and preventive interventions. Under the Affordable Care Act, “A” or “B” recommendations, which indicate that the USPSTF recommends the service, must be covered at no cost to patients.¹ As a result, EPC syntheses, which form the scientific basis of the USPSTF's recommendations, carry significant policy weight.

Frequently, our evidence syntheses uncover gaps in the evidence. When these gaps surround important clinical decisions, they create opportunities for new areas of research and practice. For example, patient decision aids build on gaps identified by evidence syntheses. Patient decision aids help patients and their clinicians to discuss and weigh relative benefits and harms from screening or treatment options so that patients can participate in their health care plan through shared decision-making.² Similarly, funders can use gaps identified by evidence syntheses to create new streams of research that produce patient-centered results.³

Our high-quality evidence syntheses improve care for patients:

- Our EPC's landmark review of routine episiotomy in delivery⁴ received international exposure. Routine episiotomy—which involves a surgical cut in the perineum just before vaginal delivery for all women, regardless of individual need—was thought to avert uncontrolled tears of the perineum. We found no evidence of benefit but did find evidence of harm through rectal injury and pain during sexual intercourse. Our findings led the American College of Obstetrics and Gynecology to revise its guidelines.⁵ These revisions cascaded into changes in medical education and training for new obstetricians. As a result of these changes, episiotomy rates have decreased in the past decade, from 17.3% in 2006 (95% CI, 17.2%–17.4%) to 11.6% in 2012 (95% CI, 11.5%–11.7%) in one study.⁶
- Our review of gestational weight gain^{7,8} factored heavily in National Academy of Medicine (formerly Institute of Medicine) guidelines on weight gain during pregnancy; these guidelines influence the advice that obstetricians and midwives give prospective mothers on safe weight gain ranges during pregnancy.⁹
- Our EPC's reviews on screening for childhood depression¹⁰ helped support the USPSTF's recommendation to screen for depression in adolescents.¹¹ Screening for depression is an essential first step to addressing suicide risk. In the context of steady increases over the past 15 years in rates of suicide among adolescents and young adults,¹² the EPC's work in this area can contribute solutions to this critical national concern.
- Our widely cited review on antidepressants for major depressive disorders¹³ has been a basis for practice guidelines issued by the American College of Physicians.¹⁴ These guidelines now acknowledge that all second-generation antidepressants for the treatment of acute phase major depressive disorder have similar effectiveness and that cognitive behavioral therapy is a viable first-line option for the treatment of depression in adults.
- Binge-eating disorder was recently recognized as a distinct eating disorder in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5).¹⁵ Our recent review on the management of binge-eating disorder provides a timely and thorough summary of the evidence for clinicians seeking additional information on treatments for this disorder.¹⁶ Based on the review and guidance from the study team, the federal Agency for Healthcare Research and Quality developed decision aids to help prepare clinicians¹⁷ and adult patients¹⁸ to talk about the benefits and harms of various treatment options, which include psychotherapy and medications.

A Rigorous Process Is Essential to Ensure Accurate Results

Recognizing the high stakes of applying findings from EPC syntheses, we maintain rigorous quality processes to ensure accuracy, consistency, transparency, and reliability across multiple concurrent reviews. Specifically, the EPC follows national and international standards endorsed by the National Academy of Medicine, the Cochrane Collaboration, the USPSTF, and the Agency for Healthcare Research and Quality in conducting evidence syntheses. The process entails several critical elements designed to ensure high-quality products:

- Vet investigators for financial and nonfinancial conflicts of interest to ensure a well-balanced and unbiased review team.
- Develop a protocol for each review in consultation with methodologists and clinical and content experts, and post it for review and public comment.
- Conduct searches in multiple databases and gray literature sources, and manually search references from key publications.
- Develop and test forms for scanning titles and abstracts from searches, reviewing full texts of studies, assessing the risk that individual studies may be biased, and abstracting relevant data from studies.
- Conduct two independent reviews of titles and abstracts, full-text articles, and risk of bias for each included study, with a third person adjudicating for conflicts at the full-text and risk-of-bias assessment stages.
- Assess the degree of confidence in the strength of the body of evidence dually and independently with third-person adjudication for conflicts. Because strength of evidence grades represent the final assessment of a body of evidence in an evidence synthesis and can drive changes in clinical and policy recommendations, they carry weight and require transparency. We routinely provide rationale for strength of evidence judgments.
- Post draft reports for public comment, and distribute them widely for peer review.
- Revise draft reports to account for peer and public feedback, ensure timely publication of final reports, and create publicly released documents explaining our response to feedback.
- Disseminate and translate findings through multiple venues, including peer-reviewed publications, conference presentations, materials for continuing medical education, clinical practice guidelines, and media interviews.

Informing the State of the Science

Systematic reviews continue to evolve to keep pace with significant advances in theory and methods. Our EPC has contributed to these methods for decades, including having led efforts to assemble an early version of a procedure guide for the USPSTF.¹⁹ This procedure guide has been cited more than 1,000 times and continues to influence methods today. We also led several efforts over the past two decades to study and create guidance on methods to assess the strength of a given body of evidence.²⁰⁻²⁷ We led efforts for the EPC program sponsored by the Agency for Healthcare Research and Quality to create practical guidance¹² and tools to assess the risk that individual studies might be biased.^{28, 29} We were also instrumental in developing guidance on assessing and managing non-financial conflicts of interest for systematic reviewers.³⁰ We are involved in ongoing efforts to generate guidance on the conduct and reporting of systematic reviews of complex interventions and are among early adopters of the qualitative comparative analysis method in evidence syntheses.^{31, 32}

Evidence Syntheses: A Tool for Decision-Making

Our evidence syntheses provide clinicians and policymakers with reliable, unbiased answers to key questions that help inform both clinical treatment and policy decisions regarding treatment guidelines and insurance coverage. Future topics for evidence syntheses include reviews on child maltreatment interventions, screening for intimate partner violence, and vitamin D supplementation.

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