

Moving to Evidence-Based Practice:
What Does It Mean and
How Will It Affect
Programs for Infants and
Toddlers?

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ZERO TO THREE Scientific Meeting
April 29, 2011
Washington, DC



Today we will talk about . . .

- Why we care about evidence-based practice
- What an evidence-based practice or program is
- Sources of information about evidence-based practices
- Factors to consider in adopting an EB practice
- Evidence-based practice for home visiting programs in tribal populations
- Issues in successfully implementing EB social programs
- Strategies for when there is little or no evidence base for the practices one wants to implement

Part 1. Why we care about evidence-based practice

Using evidence-based practice increases the likelihood that time and resources will be spent on what works rather than on what doesn't, and increases our chances of making a difference for infants and toddlers and their families.

By attending to evidence-based practice . . .

- Practitioners focus on experience that has been systematically studied and documented.
- Guidelines are established for using professional judgment
- Guidance is based on causal analysis rather than—or in addition to—information found in...
 - Opinion surveys
 - Practical and “real life” evidence
 - Personal experience
 - Data from various databases
 - Intuition
- But then....what **is** evidence-based practice?

Part 2. Exploring what an evidence-based practice or program is

- History in medicine
 - Physician judgment
 - Gap between clinical research and practice
 - Archie Cochran
 - Rising health care costs
- Introduction in OMB: PART, 2002
- US Department of Education: WWC, 2002
- USDHHS: HomVEE: 2009

Some definitions—medicine

“Evidence-based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research.” (Sacket et al., 1996)

Some definitions: public health

“Development, implementation, and evaluation of effective programs and policies in public health through application of principles of scientific reasoning, including systematic uses of data and information systems, and appropriate use of behavioral science theory and program planning models.” (Brownson et al., 2003)

Some definitions: learning disabilities

Decision-making process that integrates best available research evidence with family and professional wisdom and values. EB practice is a way of empowering professionals to integrate various sources of knowledge to make informed decisions that directly benefit children and families. Recognizes that knowledge can be represented in multiple forms. Research knowledge is a critical foundation, but there is a growing recognition that more emphasis should be given to professional wisdom—knowledge based on experiential learning, situated in practice, and influenced by personal and professional beliefs, as well as values of families and communities served in early childhood programs. (NCLD, 2011)

Some definitions: early childhood practice

“A decision-making process that integrates the best available research evidence with family and professional wisdom and values.”

Buyse, V., & Wesley, P.W. (Eds.). *Evidence-Based Practice in the Early Childhood Field*. Washington, DC: ZERO TO THREE, 2006.

How definitions differ

- Continuum from total judgment based on personal experience of the professional to a process that combines research evidence with professional judgment
- Next, we focus on sources of the research evidence that professionals can draw on.
- Will not consider use of evidence in clinical practice.

Part 3. Where to look for information on evidence-based practices

- Cochran Collaboration (health care)
- Campbell Collaboration (social sciences)
- **ED/IES What Works Clearinghouse**
- **RAND Corporation's Promising Practices Network**
- **Coalition for Evidence-Based Policy**
- **Home Visiting Evidence of Effectiveness (HomVEE) Project**
- Center on the Social and Emotional Foundations of Learning

Where to look, continued

- National Registry of Evidence-Based Practices and Programs (SAMHSA)
- Edutopia
- OMB: Program Assessment Rating Tool
- Accreditation Criteria and Standards of NAEYC
- Early Head Start Research to Practice Guidance (ACF)
- National Governors' Association's Center for Best Practices
- Cayuga County's (NY) Partnership for Results

How these sources differ

- Domains they cover (e.g., education, health care, home visiting)
- What they consider “evidence” to be
- The criteria they use for judging a practice to be acceptable
- The categories they put practices into
- Process for reviewing and synthesizing the evidence

Exercise A: What does your HPN review panel need to know about EERF?

1. About the parents, children, and home visitors who participated in the studies?
2. About the research methods used in the studies?
3. About the outcomes the studies examined and ways the studies obtained information about those outcomes?

The two big Cs: (1) Cochran Collaboration (1993)

- Medical field
- Systematic literature reviews
 - Strict rules for setting search parameters
 - Unit of analysis is the study, not individual reports
- Risk of bias is key factor
- Statistical meta-analysis (weighted average of effects)
- Rules for interpreting results and drawing conclusions

Review of continuum of research designs¹

- Randomized controlled trials (RCTs)
 - Delayed services randomized design
- Quasi-experimental designs (QEDs)
 - Matched comparison group design
 - Regression discontinuity (RD) design
 - Proxy pretest design
 - Virtual comparison group design
- Nonexperimental designs
 - Single group, pretest-posttest design
 - Single group, posttest-only design
 - Repeated single group, posttest-only design

¹Love (#1 on reading list, pp. 16-17)

Cochran bias analysis: 5 types of bias

- Selection bias: true random assignment vs. method of allocation to treatment condition allowed investigators or participants to foresee assignment
- Performance bias: treatment blinded or not
- Detection bias: blinding of outcome assessment
- Attrition bias: completeness of sample with outcome data
- Reporting bias: selective reporting

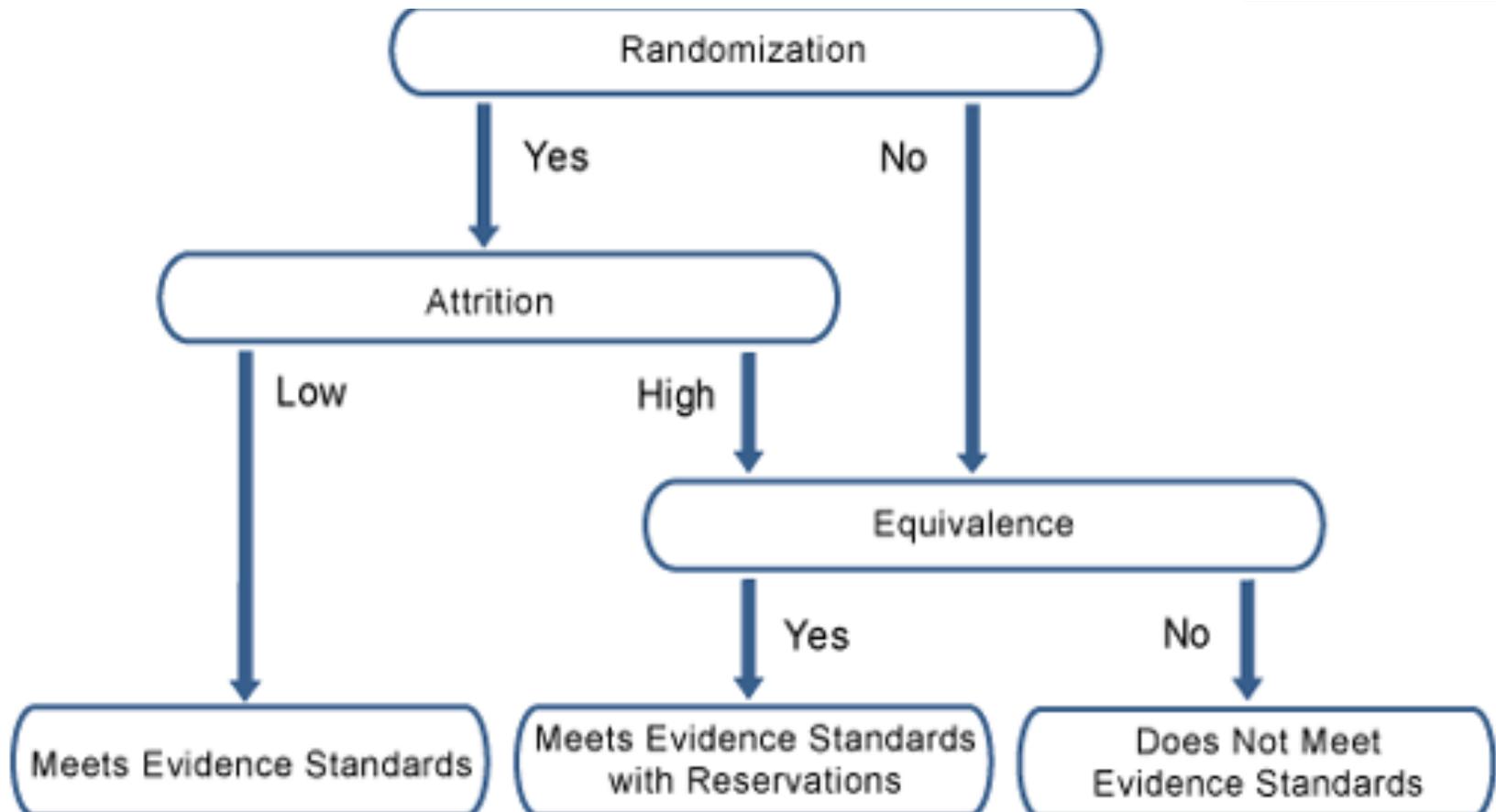
Campbell Collaboration, founded 2000

- Named in honor of Donald T. Campbell (1916-1996)
- Education, crime and justice, social welfare
- Includes systematic search for unpublished reports, to avoid publication bias
- International in scope
- Two independent reviewers
- Review is then peer-reviewed

What Works Clearinghouse (U.S. Department of Education)

- 2 independent reviewers document study design, outcomes, samples, attrition, analysis methods
- Classifies each study as:
 - Meets evidence standards
 - Meets evidence standards with reservations
 - Does not meet evidence standards
- Next slide: flow chart showing contribution of 3 factors to study's rating—design, group equivalence, and sample attrition

WWC: factors contributing to study ratings¹



¹What Works Clearinghouse Handbook (#2 on reading list, p. 2)

Some key reasons for failing to meet WWC evidence standards

- Outcome measures are not reliable or valid
- Outcomes are overaligned with the intervention (esoteric)
- Intervention and comparison groups not equivalent at baseline
- Overall attrition rate is too high
- Attrition rate across groups differs too much
- Intervention was not implemented as designed

RAND's Promising Practices Network¹

- 3 categories of programs
 - Proven
 - Promising
 - Not Listed on Site
- Criteria to be “proven”
 - Directly impact one of the PPN indicators
 - Change at least one outcome by 20%, .25 or more standard deviation, i.e., effect size (ES)
 - At least 1 outcome with substantial ES is statistically significant at $p < .05$
 - Design uses convincing comparison group (RCT or QED)
 - Sample size > 30
 - Program evaluation documentation is publicly available

¹Promising Practices Network (#4 on reading list)

RAND's Promising Practices Network

- Reviews programs targeting four broad outcome areas (with example programs):
 - Healthy and safe children (Incredible Years, Nurse Family Partnership)
 - Children ready for school (EHS, Newborn Individualized Developmental Care and Assessment Program, NIDCAP)
 - Children succeeding in school (Big Brothers Big Sisters, New Hope)
 - Strong families (Multisystemic Therapy, Nurse Family Partnership)

Coalition for Evidence-Based Policy (2008)

- Established Top-Tier Evidence initiative to assist Congress and executive branch to identify social program models meeting top tier evidence standard set out in recent legislative provisions: “well-designed randomized controlled trials [showing] sizeable, sustained effects on important outcomes,” conducted in typical community settings, producing sizeable, sustained benefits to participants.
- Evidence of effectiveness cannot be considered definitive without being confirmed by well-conducted randomized controlled trials, “even if based on the next strongest designs.”

¹Coalition for Evidence-Based Policy (#5 on reading list)

CEBP's checklist of RCT to assess validity of evidence (examples)

- RA at appropriate level (groups, individuals)
- Adequate sample size
- Groups began equivalent and remained equivalent
- Valid outcome measures of practical or policy importance (not just intermediate outcomes)
- Effects lasted long enough to be meaningful
- Report includes size of effects, their statistical significance, whether effect size is of policy or practical importance
- All outcomes reported, not selective ones

CEBP's concern with confidence about replication

- Effectiveness demonstrated through well-conducted RCTs in more than one site
- Studies conducted in real-world community settings and conditions like those where it would normally be implemented
- No strong countervailing evidence

Examples of programs meeting CEBP top tier of evidence

- Nurse-Family Partnership
- Carrera Adolescent Pregnancy Prevention Program
- Career Academies
- Success for All in grades K-2

Home Visiting Evidence of Effectiveness Project (HomVEE)¹

- Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program
- 75% of funds for evidence-based programs
- ACF-OPRE/Mathematica conducted transparent review, see website: <http://homvee.acf.hhs.gov>
- Programs must serve pregnant women or families with children 0-5
- Assessed effectiveness in achieving at least 2 of 8 outcome domains . . .

¹Paulsell et al. (#6 on reading list)

Home VEE outcome areas (domains)

- Child health
- Maternal health
- Child development and school readiness
- Family economic self-sufficiency
- Linkages and referrals
- Positive parenting practices
- Reductions in child maltreatment
- Reductions in juvenile delinquency, family violence, and crime

HomVEE rated the quality of studies

3 levels, based on ability of study to provide credible evidence of program model's impact

- **High:** well-implemented RCTs, SCDs, or RDs
- **Moderate:** well-implemented QEDs or RCTs, SCDs, or RDs with some problems
- **Low:** did not meet standards for high or moderate

DHHS criteria for evidence of effectiveness

- At least 1 study rated high or moderate has impacts in 2 domains
- At least 2 studies rated high or moderate study have 1 or more impacts in same domain
- Impacts must be either:
 - Found for the full sample, or
 - If in subgroups only, replicated in 2 or more studies
- If evidence is from RCTs only
 - At least 1 impact was sustained for at least 1 year
 - At least 1 impact was reported in peer-reviewed journal

Seven home visiting models that met DHHS criteria

- Early Head Start home visiting
- Family Check-Up
- Healthy Families America (HFA)
- Healthy Steps
- Home Instruction for Parents of Preschool Youngsters (HIPPY)
- Nurse Family Partnership (NFP)
- Parents as Teachers (PAT)

Discussion—before talking about implementing EB practices

Reminder of what we've covered so far:

- Definitions of evidence-based practice
- Types of research designs
- Systems for reviewing evidence on effectiveness of educational and social programs
 - What Works Clearinghouse
 - Promising Practices Network
 - Coalition for Evidence-Based Policy
 - Home Visiting Evidence of Effectiveness
- Any thoughts on the criteria each of these uses?

Part 4: Implementing evidence-based practice

- Issues we will cover:
 - How generalizable or transportable is the practice that is declared to be evidence based?
 - Can effective practices be implemented widely?
 - Under what circumstances can an EB program be implemented elsewhere?
 - To what extent can an EB practice be adapted for new circumstances and still be the practice that the evidence applies to?
- Example: evidence-based home visiting in tribal settings

Exercise B: What does NRC need to know when taking EERF to scale?

1. About EHS communities and families?
2. About key features of the EERF program?
3. About resources needed to help achieve successful wide-scale implementation?



Issues in going to scale

- “Despite the research community’s ability to identify promising programs, there is almost no evidence that it is possible to take such programs to scale in a way that maintains their effectiveness.”¹
- Perry Preschool
- Follow Through
- There’s a lot more going on in families’ lives than the programs.

¹Granger (#7 on reading list, p. 29)

Steps to help ensure successful implementation¹

1. Select an “appropriate” EB intervention
2. Identify resources that can help you implement successfully
3. Identify what’s most important about the intervention to adhere to
4. Monitor implementation
5. Take corrective action as needed during implementation

¹Gorman-Smith (#9 on reading list)

Six “drivers” of effective implementation of EB practices¹

- Staff selection and recruitment
- Pre-service and in-service training
- Coaching, mentoring, and supervision
- Facilitative administration
- System-level partnerships
- Decision-support data systems

¹Collins & Metz (#8 on reading list)

Focus on 4 crucial components of “facilitative administration”¹

- Leadership
- Staff support
- Data-driven decision making
- Organizational culture and climate

¹Collins & Metz (#8 on reading list)

Our ultimate goal: implementing effective programs with fidelity¹

Fidelity = Extent to which intervention is implemented as intended by its designers, not only that its components are actually implemented but implemented properly

- Structural aspects, e.g., reaching target population, delivering appropriate dosage, etc. with appropriate methods and staffing
- Dynamic aspects, e.g., delivering appropriate provider-participant interactions

¹Daro (#11 on reading list)

Typical criteria for sites implementing EB models¹

- Site readiness to take on the task
- Compliance with staff qualifications and training requirements for home visitors, supervisors, etc.
- Capacity to identify and enroll participants
- Plan to monitor ongoing implementation and provide quality control
- Ability to comply with model's data collection requirements

¹Daro (#11 on reading list)

Summary of concerns about going to scale

- Quality and rigor of the research evidence as systematically reviewed (by WWC, HomVEE, and so forth)
- Relevance of the evidence to the populations and settings where you'll be implementing practices
- Importance of the practice(s) about which there is evidence
- Clarity and detail of the research findings
- Social validity—how acceptable and practical the practice is



Part 5. Implementing home visiting models in tribal communities¹

- Literature shows continuum of practice, from:
 - Maintaining basic content of program but making minor adjustments in peripheral components to make program more appropriate for new community

To

- Rejecting standard models in favor of developing, in conjunction with the target population, services that build upon the cultural traditions and knowledge of the community

¹Del Grosso et al. (#10 on reading list)

Home VEE project review of 16 studies

- **None** of the home visiting program models included in this review met DHHS criteria for an evidence-based early childhood home visiting service delivery model.
- Therefore, no information on the program models' effectiveness in tribal settings is possible.
- However, a number of lessons about adapting or developing culturally relevant home visiting program models emerged.

Lessons from experiences of tribal communities

- Tribal leaders can play an important role in adapting the model to be culturally appropriate.
- Programs employed staff from within the community, or found culturally competent nontribal staff.
- Programs built on cultural strengths and customs of their communities, for example:
 - Integrating traditional crafts, food, music
 - Developing curriculum based on tribal legends and delivered with traditional storytelling approach

Tribal perspectives on EB practice

- Some critics have expressed concern about the dominance of scientific epistemologies
- And a perceived devaluation of native ways of knowing
- Others about a lack of adequate research on tribal models
- Which appears to devalue native ways of healing
- Efforts to ensure quality in tribal programs require sensitivity to tribal history
- And flexibility in implementation

Some examples from substance abuse

- Motivational interviewing was not developed for tribal communities
- But it has become very popular
- And efforts to adapt training materials have often underscored what is shared, e.g., rolling with resistance
- We've had similar experiences with cognitive-behavioral approaches to trauma
- And work to address historical trauma draws in multiple ways on psychoanalytic approaches

A way forward for tribes and EB practice

- We have to recognize that a lack of evidence for tribal approaches is not an index of promise.
- There are multiple connections between tribal approaches and other therapeutic models.
- At the same time, there is important wisdom from tribes that may also be useful in expanding approaches (e.g., the importance of spirituality, social connection).
- The challenge, in the current funding environment, is to make convincing connections to what is known to work.
- And to position the program to collect evidence on what we still need/want to know.

Discussion: Implementing evidence-based practices

- Factors to consider in adopting/ implementing evidence-based practice
- Evidence-based home visiting in tribal populations

Part 6. Coping with inadequate or nonexistent evidence—in the face of strong need for programs

- Tiered funding approach
 - Top tier: largest grants awarded to “proven” approaches
 - Other grants to interventions supported by moderate or preliminary evidence—*on the condition* that they will then be rigorously evaluated
- What strategies make sense?

Strategies when evidence is sparse or nonexistent

- Consider adapting proven practices that are similar to what you want
- Then adapt “what works” for your circumstances
- Use professional judgment combined with what is known from research (see slides 6-9)
- Collect your own data on how it’s working
 - Monitoring
 - Ongoing assessments
- Work towards continuous improvement

Discussion

The role of evidence-based practice in
ZERO TO THREE's work:
Practitioners' perspectives

Why we want to reduce the role of chance and adopt proven programs¹

“But how do we fashion the future? Who can say how
Except in the minds of those who will call it Now?
The children. The children. And how does your garden grow?
With waving hands—oh, rarely in a row—
And flowering faces. And brambles, that we can no longer allow.
Who were many people coming together
Cannot become one people falling apart.

Who dreamed for every child an even chance
Cannot let luck alone turn doorknobs or not.”



¹From Miller Williams, “Of History and Hope,” read at the 2nd inauguration of President Bill Clinton, 1997.