

Evidence-Based Public Health

A Knowledge to Practice Program



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Learning Objectives

By the end of this tutorial, you will:

- Be able to describe evidence-based public health
- Understand the role of evidence-based practice and research in public health
- Have the skills to analyze a research article
- Be able to apply the information to public health interventions

Outline

Throughout this tutorial, you will cover the following topics:

- Importance of evidence-based public health
- Breaking down a research article
- Taking research and applying it to practice

So what is evidence-based public health?

Evidence-based public health is defined as “the



development,

implementation,

and evaluation

of effective programs and policies in public health through application of principles of scientific reasoning.”



Evidence-based practice can also be referred to as “best evidence.” This emphasizes:

Quality

- Not quantity

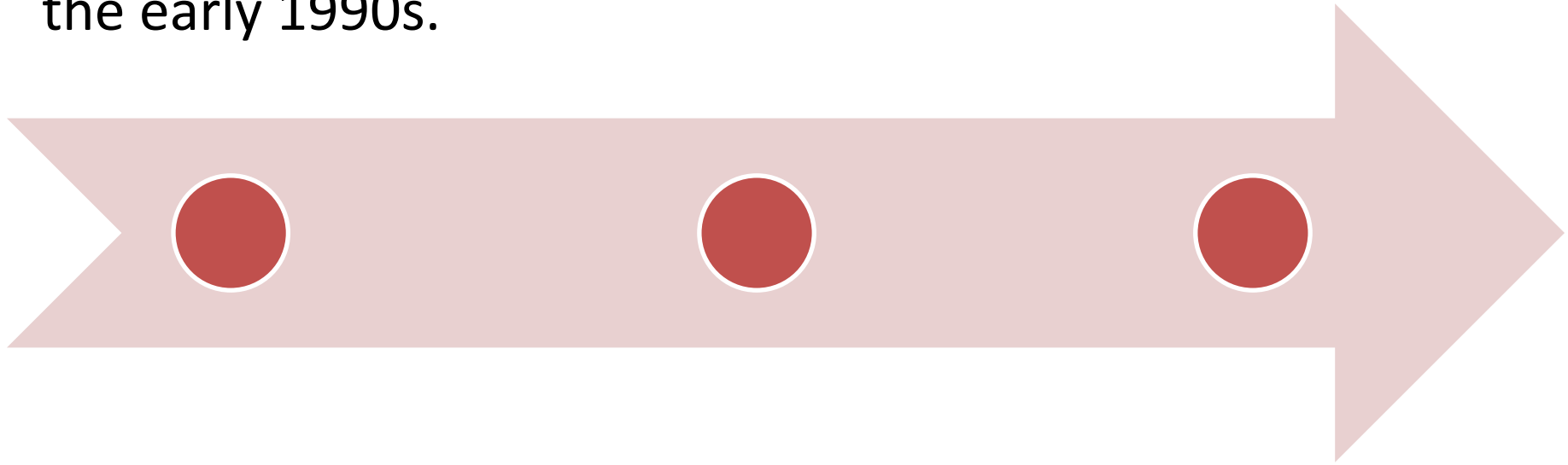
The *best* information

- Not the *most* information

**But where did this concept even
come from?**



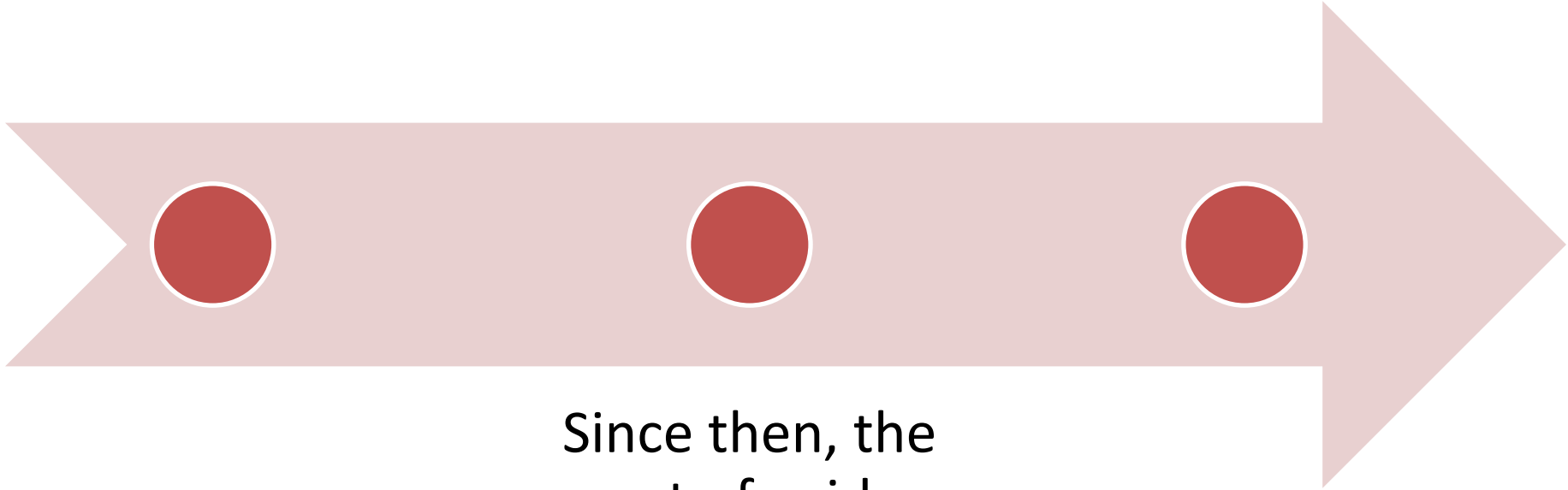
The term
evidence-based
was first used
in medicine in
the early 1990s.



The goal of evidence-based medicine was to understand:

- The evidence of the practice
- The reliability of the evidence
- The strength of the evidence

This concept allows medical evidence to shape day-to-day clinical discussions.



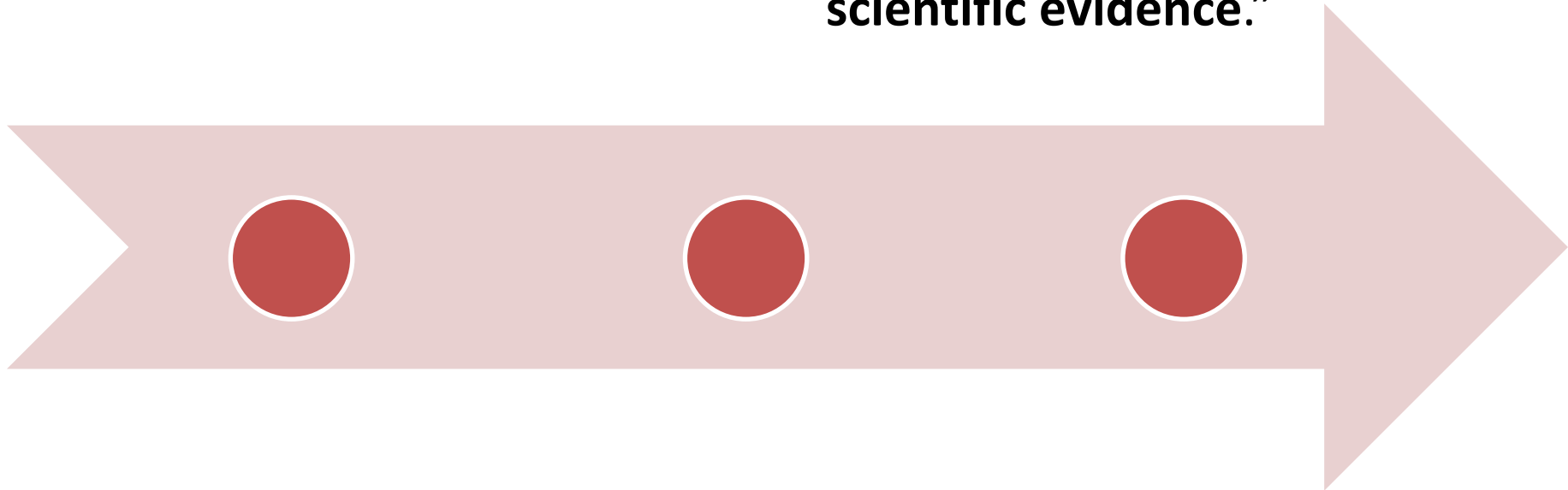
Since then, the
concept of evidence-
based practice has
been adapted by
other fields, including
public health.

Evidence-based
public health allows:

- New programs to be created based on the evidence from effective practices
- Prevention of programs based on ineffective practices



Moving forward, “it is important in decision-making, policy development, and the establishment of new programs to improve public health that these initiatives be supported by **scientific evidence.**”



**Well, what counts as scientific
evidence?**

Evidence can
include:

Data and
Information Systems

Behavior Theories

Program Planning
Models

Why is it important to use an evidence-based method?



Decisions are made based on scientific evidence and effective practices

Information about what works and doesn't work is up-to-date and reliable

Time is being used most efficiently and productively

When is it important to use a best-evidence approach?

Decision Making

- When it's important to have scientific evidence to support decision making

Evaluation

- When evaluating the effectiveness and cost benefits of health programs

Programs and Policies

- When implementing new health programs or establishing new policies

Grant Writing

- When conducting literature reviews for grant projects



Now that you understand what evidence-based public health is, let's apply it to real-world work.



First, let's review some definitions.

Validity

- Something is valid if it actually measures or detects what it was designed to measure

Research Design

- A plan for collecting and using data so that desired information can be collected and so that a hypothesis can be tested properly

**Now let's practice breaking down a
research article.**

We'll use these questions as a guide:

Step 1

- What are the results?

Step 2

- Are the results valid?

Step 3

- How do I apply this information to my work?

Step 1: What are the results?



This is the results section of the journal article:

A Randomized Controlled Community-Based Trial to Improve Breastfeeding Rates Among Urban Low-Income Mothers

Table 3 shows the breastfeeding rates at a time period in total and by group. In comparing the intervention with the usual care group, 66.7% of the intervention group vs. 56.9% reported any breastfeeding at 6 weeks postpartum ($p=0.05$). In the intervention group, the rate of breastfeeding at 12 weeks postpartum was higher than in the usual care group (49.4% vs. 40.6%), a non-significant difference. Rates at 24 weeks postpartum were almost identical, 29.2% vs. 28.1%.

Table 4 displays the results from multiple logistic regression analyses for comparing breastfeeding rates at 6, 12, and 24 weeks postpartum between the two groups after adjusting for baseline factors associated with enhanced breastfeeding rates in the literature (maternal age, race, education, parity, and breastfeeding experience). At six weeks postpartum, the odds of breastfeeding in the intervention group were 1.72 times greater than those for mothers in the usual care group ($p<.05$). At 12 weeks, the odds of breastfeeding were in the intervention group were 1.58 times greater than those for mothers in the usual care group ($p=.05$). The differences were not statistically significant in comparing the two groups at 12 or 24 weeks postpartum.

Now try answering the following questions based on the article:

1. What are the overall results of this study?

2. Can a cause-and-effect relationship be concluded between the data and the results?

Here are some possible answers:

1. What are the overall results of this study?

- Answer: There was an increase in breastfeeding in the intervention group, however, after 6 weeks, the increase was not significant.

2. Can a cause-and-effect relationship be concluded between the data and the results?

- Answer: No, we cannot say that this program would always cause breastfeeding rates to increase.

Step 2: Are the results valid?

It is important to know that not all evidence is equal. The results from different studies may be stronger depending on the research design.

In order to determine if the results are valid, ask yourself these questions:

1. Was the public health question clearly addressed?

2. Was the study design strong?

3. Have other researchers found similar results?

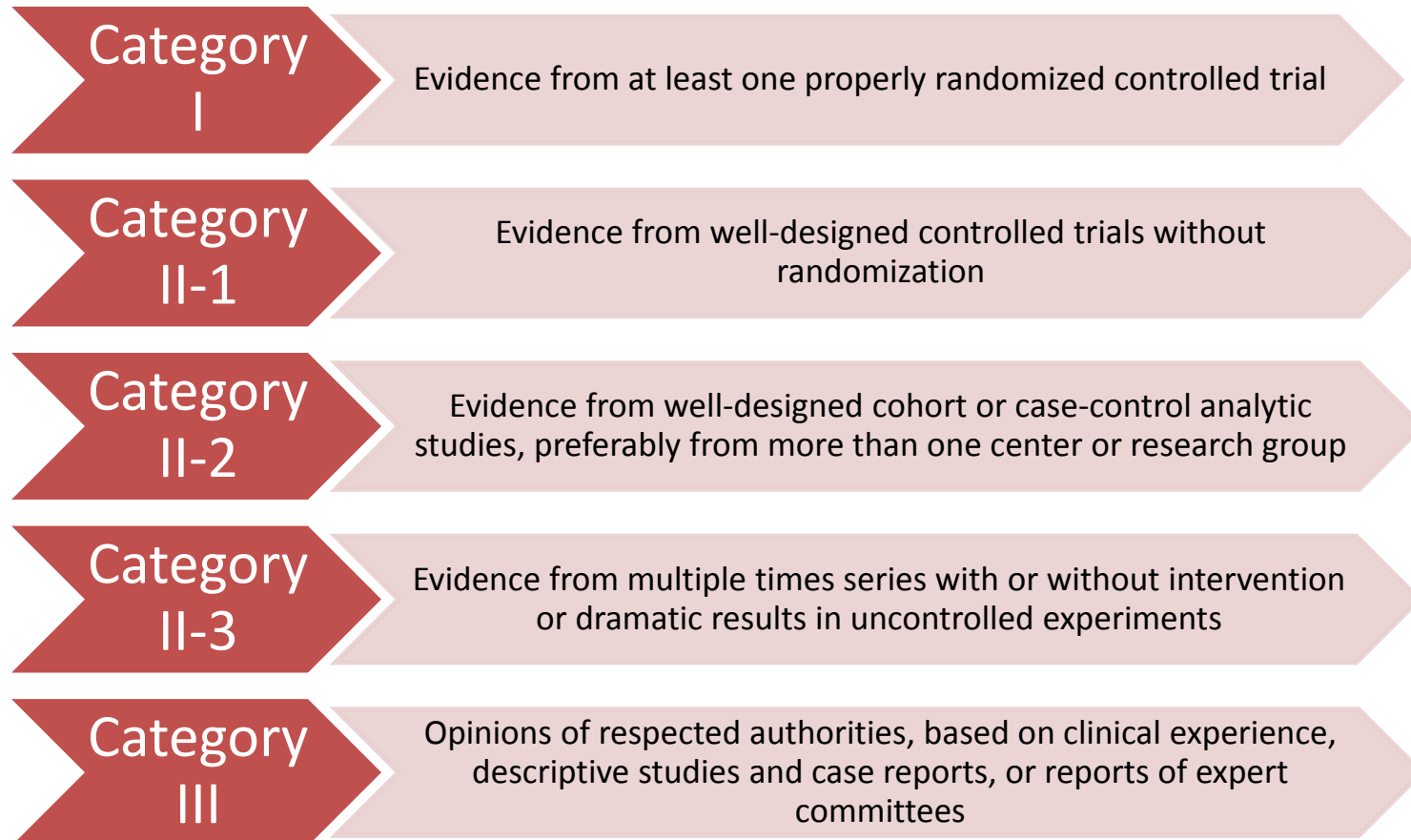


This is the “Evidence Pyramid.”

The higher up the pyramid a research design is, the stronger the results are.



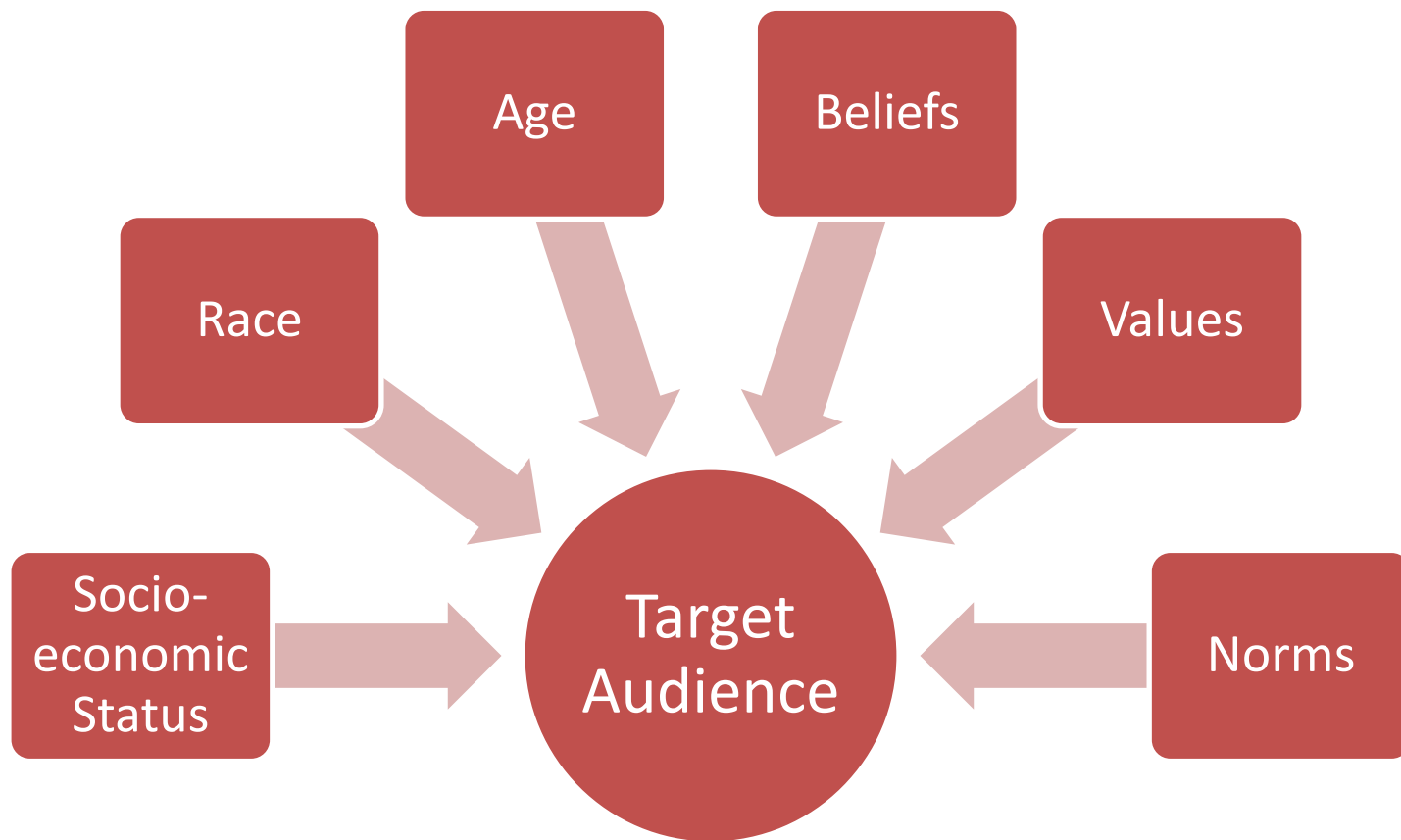
You can also use these categories to determine the validity of the evidence:



**Step 3: How do I apply this
information to my work?**



Start by asking yourself how similar the population in the research is to the population in your target audience. Consider things like:



If they are alike, you might be able to assume that there would be similar results in your community if you implemented the same intervention.

In addition to looking at the similarities between populations, you should also ask yourself:

- Was every important outcome considered?
- Are the benefits still worthwhile when considering the costs and risks?



**Keep in mind that you must repeat
this process with multiple articles
before coming to a conclusion about
an intervention.**

Once you've looked at multiple articles and decided that the results are valid and that the population studied is representative of your target population, you can use the findings in:

Patient Education

Community Awareness

Grant Writing

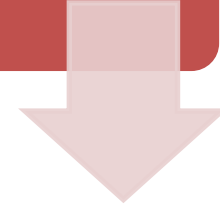
Program Planning



**Creating or modifying programs
using your findings has the
potential to make them more
*efficient and successful.***

Now let's look at an example of how a breastfeeding intervention was planned using evidence from previous research.


First, research showed that what happens in the hospital has a powerful and lasting effect on how long mothers breastfeed.



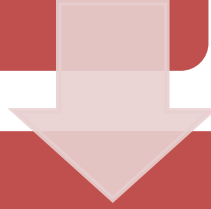
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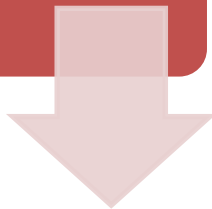
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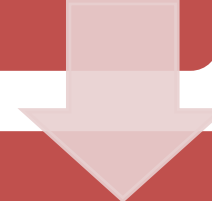





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This research led to the World Health Organization and UNICEF launching the Baby-Friendly Hospital Initiative (BFHI), which contains a series of ten evidence-based steps that hospitals can use to help moms and babies breastfeed successfully.

**Baby-Friendly USA and The Gift are
examples of evidence-based
programs.**



Baby-Friendly USA, Inc.

- This is the accrediting body for the Baby-Friendly Hospital Initiative in the United States.

The Gift

- Louisiana has adapted the ten evidence-based steps from the BFHI into their own program to promote evidence-based practice in hospitals.

Evidence-based programs can also be used to educate patients. Watch this video from the Breastfeeding Coalition of Oregon and the Massachusetts Breastfeeding Coalition to see how they apply evidence to education.

http://www.youtube.com/watch?v=N9KptD3t110&feature=player_embedded



Did you notice how the video:

Illustrates birth at a baby-friendly hospital verses a typical hospital .

Better educates pregnant women about what “baby-friendly” means and why the Baby-Friendly Hospital Initiative exists.

Utilizes evidence from research and puts it into practice.

- Ex. Breastfeeding
- Ex. Skin-to-skin contact

Conclusion

- Basing practices and programs on evidence allows them to be the most effective, successful, and efficient
- Research articles provide one type of evidence to inform interventions and programs
- Needs of individuals and communities should be taken into consideration when applying research to practice

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