Welcome to CHA's Community Benefit Webinar:

Return on Investment for Community Benefit Activities

Nov. 16, 2010 | Noon – 1:30 p.m. ET

The webinar will start shortly. Thank you for joining us.

CHA
Catholic Health Association of the United States

A Passionate Voice for Compassionate Care

Reflection for Today's Event

To be a healer is to find God in those in need of healing. For the Christian, healing is a direct encounter with the divine. And that encounter, if genuine, necessarily causes personal transformation.

In the parable of the Good Samaritan, the priest and the Levite ignore God when they ignore the wounded man, and so their lives remain unchanged — they keep walking down the same path. The man the Good Samaritan finds bleeding on the side of the road is really the Lord. And in picking him up and binding his wounds, the Samaritan's life is changed. … So, although religious health care professionals may often want to understand themselves as "channels" for God's healing power, Christianity teaches that they would perhaps be better served if they understood themselves first and foremost as persons privileged to serve God by serving the sick.

From *A Balm for Gilead: Meditations on Spirituality and the Healing Arts* by Daniel P. Sulmasy, OFM, MD, Ph.D.

Your Presenter for Today's Program

Kathleen N. Gillespie, Ph.D. is associate professor of health management and policy and director of the masters of public health in health policy at the School of Public Health at Saint Louis University. A health economist, her research interests are economic evaluation, competency-based education, the measurement of health-related quality of life, and the utilization of health care services, especially by persons with diabetes. She is a co-author of the book Evidence-Based Public Health, and regularly teaches the economic evaluation component of a training seminar based on the book. Dr. Gillespie serves on the Scientific Review Committee of the International Health Economics Association and is a member of the American Society of Health Economists.

Return on Investment for Community Benefit Activities

Webinar Presentation for the Catholic Health Association

Kathleen N. Gillespie, PhD
Saint Louis University
School of Public Health

“An economist is a man who states the obvious in terms of the incomprehensible.”

Alfred A. Knopf

Why Examine Return On Investment (ROI)?

- If Community Benefit (CB) is to be good works without the expectation of financial return, why evaluate?
- Because there are many good works, not all equally efficacious.
- Must be good stewards of limited resources.

ROI in a business context

- Investing X dollars should yield X + r dollars
  - Can be written as X(1+r) dollars
  - r is the rate of return
- What is a good value for r?
  - Must be positive
  - Should be greater than the opportunity cost of capital, or what could be earned in the next best alternative

ROI with CB presents 2 problems

1. Benefits or costs of program go outside the business – therefore not captured by the business.
2. Benefits or costs not easily measureable in dollars – therefore not obvious how to calculate r.

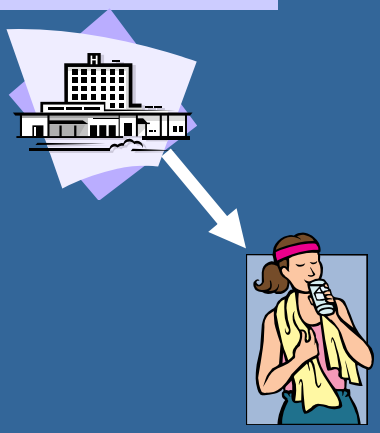
One or both problems may occur.

Problem 1 – benefits are outside the hospital

- If the market works well, then there are only 2 parties to each trade – a buyer and a seller – and they bear all the costs and reap all the benefits of the trade.

Problem 1, continued

- With CB, benefits and/or costs of program can accrue to other parties besides the hospital
- Should be the goal: improve the health of the population



Problem 2 – measurement issues

- How to measure some costs and benefits?
  - Side effects are costs
  - Volunteer time and labor
  - Health benefits
    - Improved health
    - Increased life expectancy
  - Intermediate health effects
    - Increased ability to work

Problem 2, continued

- Often difficult to tie outcomes precisely to the program
- Complex, interrelated effects
- Long time horizon for full effects

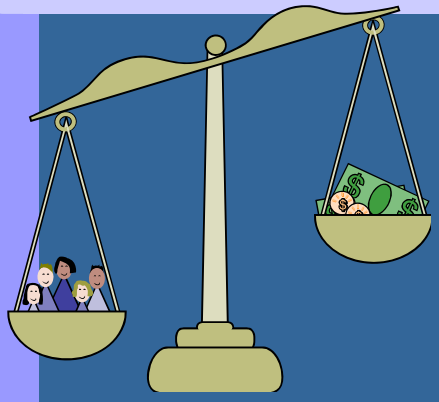
Economic Evaluation is the answer

- EE examines the costs and benefits of alternative programs to inform decisions about the allocation of scarce resources using an established set of economic tools.

Why EE?

- Evidence-based practice requires knowing
  - Does it work?
  - At what cost?
- EE starts after efficacy has been determined.
- Want to promote interventions that work at a reasonable cost, i.e. that provide "*good value for the money*".
- Also want to talk to the finance people.

Need to Weigh Costs and Benefits



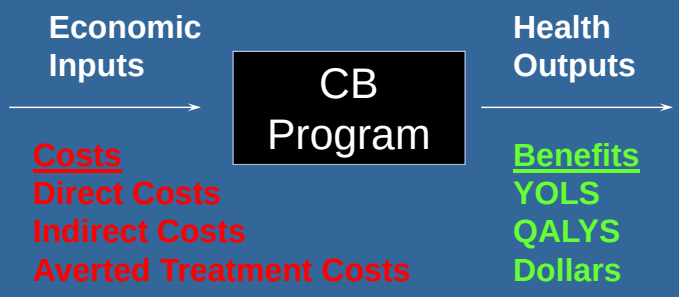
- A scale can compare apples and oranges because both are measured by weight
- EE provides the scale – an agreed upon way to measure health benefits and costs

Types of Economic Evaluation

- **Cost-benefit (CBA)**
- **Cost-utility (CUA)**
- **Cost-effectiveness (CEA**
- **Cost-minimization**

The number and types of programs that can be compared declines as we move down this list.

Components of Economic Evaluation in CB



Always compare a new program to some alternative.

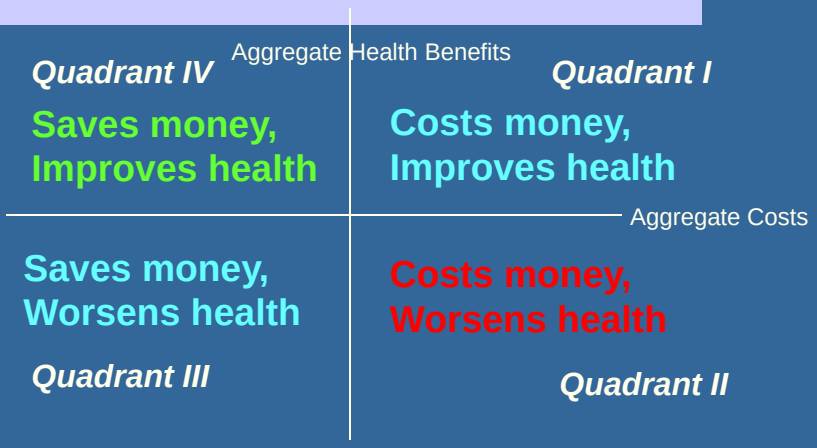
The Product of an EE

$$\text{EE ratio} = \frac{\text{Incremental Costs}}{\text{Incremental Benefits}}$$

The EE Ratio

- The EE ratio is often called the Incremental Cost Effectiveness Ratio, or ICER
- Emphasizes that we are comparing 2 or more interventions

Possible Outcomes of an EE



Stop Smoking Example

- After considering your community and its public health problems, your organization has identified smoking as a problem you can address.
- Two interventions are being considered; only one can be done.
  - **Multicomponent interventions that include patient telephone support**
  - **Healthcare provider reminder system**

Grocery Store Example

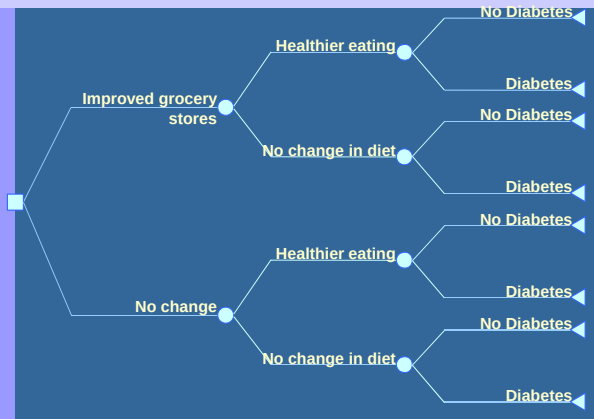
- Your hospital is located in a “food desert”
- You will work to improve access to healthier foods
  - Build/subsidize a new grocery store?
  - Community gardens?
  - Refrigerated cases in small local stores?

Identify the Project

- Intervention
- Time frame
- Costs
- Benefits

- A decision tree is helpful.

Grocery Store Decision Tree



Measuring Costs

- All economic evaluation methods require listing and measurement of costs.
- One tricky point.
  - Mathematically, a benefit can be a **negative** cost, and a cost can be a **negative** benefit.
- General idea: all items falling on the health system are costs, positive or negative.

Types of Costs

- Direct (or program) costs
- Indirect costs
- Averted treatment costs (a negative cost)

Direct Costs

All costs of the intervention

- Labor
- Supplies
- Rent
- Utilities
- Costs of treating side effects of the intervention, if any
- Usually readily available from accounting system

Indirect Costs

Also called spillover costs.

- Time and travel costs to participants.
- Costs to parties outside controlling program or agency.
- Averted productivity losses (a negative cost)?
- Cost of treatment during gained life expectancy ?

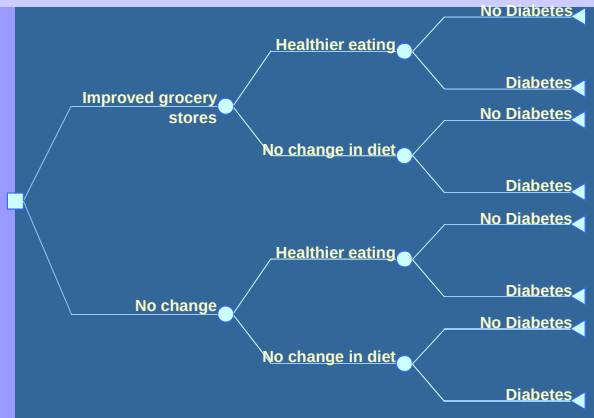
Averted Productivity Losses

- The present value of future wages gained.
  - The intervention increases the worker's longevity and/or reduces disability.
- Used in cost-benefit analyses.
- Not included in cost-utility analyses.
  - Double counting of the benefit.
    - One reason quality of life improves is because of increased ability to work.
  - But often important for stakeholders.

Averted Treatment Costs

- The averted costs *to society* of treating persons for the disease are subtracted from total costs.
  - If averted costs all accrue to hospital, is it CB?
- Included in the cost side because they impact the health care budget.
  - A negative cost, not a benefit.
- For how long and for what conditions are often difficult questions.

Grocery Stores and Averted Treatment Costs



Why diabetes? Could include other conditions

What is timeframe?

National or local data for costs of treating diabetes?

Measuring Benefits

- Benefits can be measured in many ways
- Different units of measurement
  - Dollars
  - Years of life saved
  - Quality adjusted years of life gained
  - Specific health outcome
- Different time frames for the outcome
  - Intermediate outcome
  - Final health outcomes

How to Put it Together?

- Have costs and benefits, how to put them together?
- Depends on the type of EE.

Definition
Cost-benefit Analysis

- Cost-benefit analysis values both the costs and benefits of a program, project, or treatment in monetary terms.
- Closest to business ROI analysis.
- Result of analysis
  - The net benefit of the project (e.g. benefits minus costs, or $12,000) OR
  - The ratio of costs divided by benefits (e.g. ½).

Cost-benefit Analysis

- Gold Standard for EE.
- Allows for economic comparison of widely disparate publicly funded programs in such areas as health, education, and the environment.
- Problem: valuing health and lives in monetary terms.

CBA and the Examples

- Could be used for smoking cessation
  - Good data on treatment costs
  - Ignores improved quality of life
  - Have to value extra life years in dollars
    - Could use averted productivity losses as a minimal estimate
- Could be used for grocery stores
  - Identifying related conditions difficult
  - Few studies to rely on
  - Would be a minimal estimate

CBA and CB

- Often the first thought for evaluating CB activities
- Especially those aimed at preventing treatable medical conditions, or changing site of treatment
  - e.g. prevent emergency room visits – can use internal hospital data to value ER visits
- Usually a minimal estimate – ignores quality of life issues

Definition
Cost-effectiveness Analysis

- Cost-effectiveness analysis measures the benefits of a program in naturally occurring health units, such as lives saved.
- Example of a study result: $10,000 per life saved.

Cost-effectiveness Analysis

- CEA formerly most common form of EE conducted in health arena.
- Limited in its ability to report outcomes.
  - Often, there are multiple outcomes.
- Limited in its ability to compare interventions.

CEA and Three Projects Example

- A nursing program for newborns and their parents costs $50,000 per year and serves 50 infants with high-risk conditions
- A screening program that visits local malls and community centers costs $15,000 and provides information to about 5,000 persons
- A vaccination program costs $100,000 and provides vaccinations to 20,000 area children

CEA and Three Projects Example

- **Nurses for infants**
- **Cost-effectiveness ratio is $50,000/50 infants or $1,000 per infant**

- **Screening program**
- **Cost-effectiveness ratio is $15,000/5000 or $3 per attendee**

- **Vaccination program**
- **Cost-effectiveness ratio is $100,000 /20,000 or $5 per child**

CEA and the Other Examples

- Could be used with smoking cessation
  - Quitters
  - Years of life saved
- Could be used with grocery stores
  - Cases of diabetes avoided?
  - Years of life saved?
- Omits morbidity changes for both
- Limits comparability to other projects

CEA and CB

- If a community needs assessment has been done and one problem identified, then CEA is often appropriate
  - e.g. have identified smoking cessation as the goal. Then cost per quitter is a useful metric to compare multiple smoking interventions.

Definition
Cost-utility Analysis

- Cost-utility analysis compares the costs of different programs, projects, or treatments with their outcomes measured in "utility based units" which are related to a person's health related quality of life.
- Example of a study result: $10,000 per quality-adjusted life year, or $10,000/QALY.

Cost-utility Analysis

- Becoming the most common form of analysis.
- Widely used in Britain and Canada.
- Allows comparison of many projects with health-related outcomes.
- Often called cost-effectiveness analysis; closely related.

Cost-utility Outcomes

- Outputs are measured in terms of a preference-based outcome measure.
  - Quality Adjusted Life Years (QALYS): the number of years at full health that would be valued equivalently to a given number of years of life experienced with a disease or disability.
  - Other measures are available, this is the most common.

CUA Formula

Cost - utility ratio = $\frac{\text{(direct costs + indirect costs - averted treatment costs)}}{\text{Quality adjusted life years}}$

Output of CUA is 'cost per QALY'

Stop Smoking Example Using CUA

- Multicomponent interventions that include patient telephone support
- Suppose this would cost $150,000 and yield 1,000 quality-adjusted life years

- Healthcare provider reminder system
- Suppose this would cost $200,000 and yield 2,000 quality-adjusted life years

ICER for B vs. A = $50,000 / 1000 QALYs or $50 / QALY

Grocery Store Example Using CUA

- Estimates of QALYs with and without diabetes are available
- Outcome would be $xxx per QALY gained

How Do I Know If It's Cost-Effective?

- Are we almost there yet?
- Once I have the ratio, how do I know if it's too high, too low, or just right?

Is It Worth It?

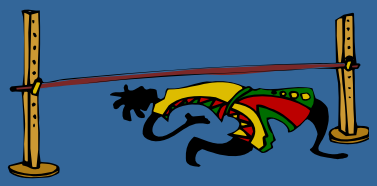
- Results can be used internally or externally
  - To rank programs internally
  - To argue for external support
- Intermediate results, such as productivity gains, can be highlighted for some stakeholders

Using Results Internally

- For internal use
  - Rank options from lowest to highest ratio.
  - Start spending on lowest ratio, move on until the money is exhausted
  - What have we spent before?

Using Results Externally

- The ICER is compared to a threshold value
- Suggested U.S. threshold is $50,000 to $100,000 per QALY at minimum



Web Resources

- http://www.thecommunityguide.org/index.html The Community Guide, which includes systematic reviews of EEs for recommended activities.
- http://www.tufts-nemc.org/cearegistry/ The Cost Effectiveness Analysis Registry at Tufts – New England Medical Center. Includes EE results and QALY estimates for numerous conditions.

Web Resources

- http://www3.interscience.wiley.com/cgi-bin/mrwhome/106568753/HOME The Cochrane library, a reliable source of information on the effects of interventions in health care. Economic evaluations are available at
- http://www.mrw.interscience.wiley.com/cochrane/cochrane_cleed_articles_fs.html or by clicking from the web site above.

Web Resources

- http://www.york.ac.uk/inst/crd/ The Centre for Reviews and Dissemination at the University of York. Includes several searchable databases; of particular interest is the NHS Economic Evaluation Database (NHS EED), which provides article summaries, similar to the Community Guide.
- http://www.nice.org.uk The National Institute for Clinical Excellence. A more general database (the prior website is reachable through this site, for example) it includes RSS feed capabilities.

Contact information

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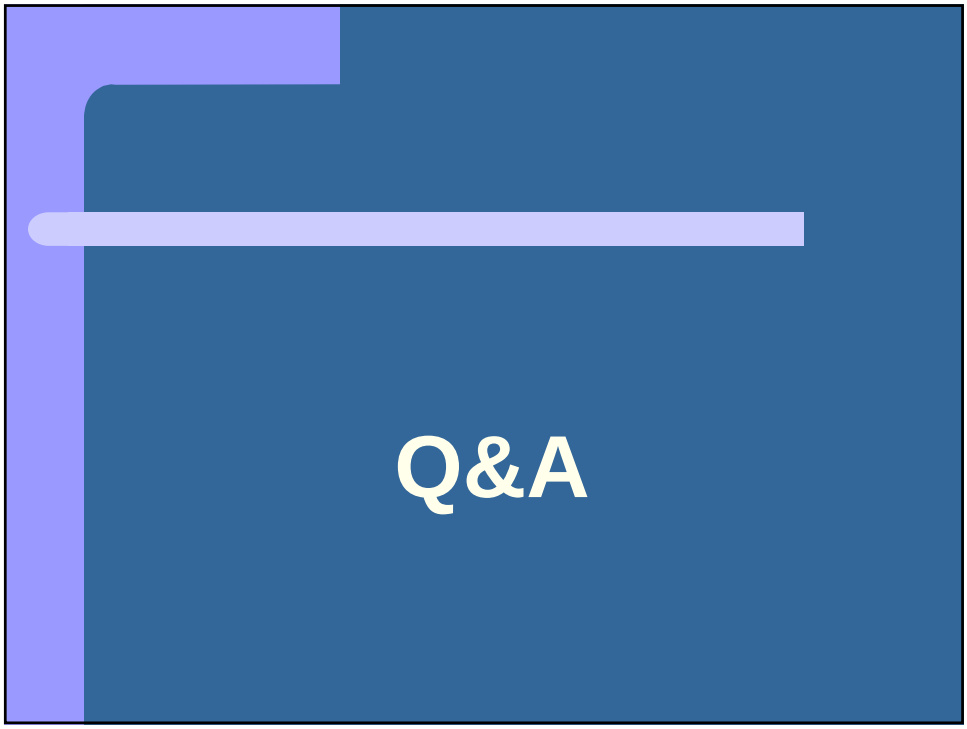
“It is our choices … that show what we truly are, far more than our abilities.”

J.K. Rowling, *Harry Potter and The Chamber of Secrets*, 1999


Q&A