PROFESSIONAL PRACTICE PARADIGMS IN EPIDEMIOLOGY & QUALITY PERFORMANCE IN HEALTH CARE

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OBJECTIVES OF THE SESSION

By the end of this session you should be able to:

1. Explain what is a profession and discuss whether epidemiology is a profession

2. Explain why Epidemiology can be used to improve management in health care?

3. Give examples of how Epidemiology can be used for effective management.
Profession

**Webster:** “A calling requiring specialized knowledge and often long and intensive academic preparation”.

**John Racy:** “A socially sanctioned activity whose primary object is the well-being of others above the professional’s personal gain.”
Key words

- Calling
- Specialized knowledge
- Academic preparation
- Socially sanctioned
- Well-being of others
- > (above) personal gain
Profession

More than a job → an identity

Examples:
Physicians  Dentists
Pharmacists  Nurses
Engineers  etc.

Public Health As a Profession
All of the above
+ mission
- Identity – lacks (organization)
Public Health as a Profession

Resources for Professional Practice

- People
- Information
- Goods

Activities in Professional Practice

- Generate
- Process
- Distribute

Resources
# Professional Practice

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Invariables in Public Health

- Interdisciplinary
  (Renaissance man)
- Force of change
  (Agent of change)
- Rewards are long term
  (Long incubation)
- Primary social concern
  (Part of social fabric)

(continued)
Invariables in Public Health

- Scientific base
  (Rational decision)
- Institutional practice
  (Organizational)
- Personal characteristics
  Team player
  Humility
  Perseverance
  Integrity
Continuums of Public Health

- Bureaucracy - Activism
- Scientific - Social Roles
- Atomistic - Ecological
- Short Range - Long Range
- Narrow Disciplinary - Multifocal Integrative
- Categorical - Comprehensive
PARADIGMS OF PUBLIC HEALTH
Why Paradigms in Education?

- Professional vs. liberal arts and research based models of education
- Not just the ability to perform tasks but a professional who is investigating problems, solving them, and developing programs that address the needs of the public. Such a professional needs some models to work with.
A Paradigm is

- Example
- Model
- Pattern
- Standard
- Archetype
- Exemplar
- Prototype
Examples of Paradigms in Public Health

- Problem Solving—An *overarching paradigm*

- Problem investigation—*Several models*
  - Epidemiologic
  - Systems Analysis
  - Biological-environmental etc.

- Project and Program Development

- Evaluation and Assessment
Competency Based Educational Planning

- **Competency**: The ability to perform an integrative task.
PARADIGM = METHOD (THEORY)

PARADIGM = MODEL (THEORY)

- Competency 1
- Competency 2
- Competency 3
- Competency 4
- Competency 5
- Competency 6
- Competency 7

Competency
Tasks/Performance

Skills
Knowledge
Attitude

1, 2, 3...
1, 2, 3...
1, 2, 3...
PARADIGMS OF PUBLIC HEALTH

Problem solving paradigm

1. Problem Definition
2. Measurement Issues
3. Assessment of Risks {Biologic, Behavioral, Environmental factors}
4. Prevention/Intervention Strategies
5. Ascertainment of resources {Policy & Priority Setting, Weighing competing alternatives}
6. Implementation/Evaluation
PARADIGMS OF PUBLIC HEALTH

Program Development

- Planning
- Programming
- Implementing
- Monitoring
- Evaluating
PARADIGMS OF PUBLIC HEALTH

Systems Analysis Paradigm

1. Structure
2. Process
3. Outcome {Outputs}
Marco Polo describes a bridge, stone by stone. “But which is the stone that supports the bridge?” Kubai Khan asks.

“The bridge is not supported by one stone or another,” Marco answers, “but by the line of the arch that they form”.

Kubai Khan remains silent, reflecting. Then he adds: “Why do you speak to me of the stones? It is only the arch that matters to me”.

Polo answers: “Without stones there is no arch”.

Invisible Cities by Italo Calvino
Epidemiological Paradigms

Process of Generating Information

- a. Clinical & biological data
- b. Descriptive studies
- c. Analytic methods
- d. Experimental models

Process of Inference

- Bias
- Confounding
- Causality - significance
STEPS IN THE EPIDEMIOLOGIC PROBLEM INVESTIGATION:

1. Define clearly (delineate) the problem—the outcome of interest.

2. List the various possible determinants of this problem.

3. Establish a process of monitoring this problem or outcome (the outliers).

4. Identify the possible determinants of the problem by one of two approaches:
   a. Comparing persons with the outcome to those without the outcome or problem.
   b. Assessing the occurrence of the outcome in subgroups with different characteristics.
5. Measure determinants independently from the assessment of outcome status.

6. Always consider alternative explanations to the problem including the interaction of more than one determinant in producing the outcome of concern.

7. Assess the information value of the observation.
EPIDEMIOLOGY AS AN INFORMATION SCIENCE

DATA-INFORMATION FOR DECISION MAKING

ETIOLOGY

EVALUATION

EFFICACY

EFFECTIVENESS

EFFICIENCY
PROGRAM DEVELOPMENT CONTINUUM:

PLANNING
PROGRAMMING
IMPLEMENTING
MONITORING
EVALUATION
IS EPIDEMIOLOGY RELEVANT TO ALL FIVE STAGES?

- PLANNING
- PROGRAMMING
- IMPLEMENTING
- MONITORING
- EVALUATION
Management Competencies in Health Care:

1. Policy analysis and strategic planning.
3. Assessment, assurance and improvement of quality.
5. Political analysis.
Management Competencies in Health Care:

6. Developing and managing a budget.
8. Managing personnel.
10. Coordinating and catalyzing team activity.
11. Dispute resolution, negotiation, and conflict management.
What are some principles for quality management in industry?
THE DEMING ROUTE TO QUALITY AND PRODUCTIVITY 1

- The need for constancy and consistency of purpose
- Adopting a philosophy that higher quality costs less not more
- Eliminating the need for inspection by building quality into the product in the first place
- Continuous improvement of the system of production and service
THE DEMING ROUTE TO QUALITY AND PRODUCTIVITY 2

- Driving out fear to encourage effectiveness and pride of workmanship.
- Instituting management by leadership rather than by directives.
- Developing a vigorous program of education and self-improvement.
- Making transformation everybody’s job.
MALCOLM BALDRIDGE NATIONAL QUALITY AWARD. HEALTH CARE PILOT CRITERIA 1995
(US Department of Commerce. Technology Administration. Gaithersburg,

Core values and concepts that include:

- Patient-focused quality and value.
- Leadership.
- Continuous improvement & organizational learning.
- Employee/health care staff participation and development.
- Management by fact.
- Results orientation.
- Community health and public responsibilities.
- Partnership development.
- Design development.
- Long-range view of the future.
- Fast response.
Differences in Concepts of Quality:

**INDUSTRIAL VS. HEALTH CARE MODELS:**

Health care has a more complex set of responsibilities toward the individual and society. (Donabedian) -

1. Need to act on behalf of the patients and consumers
2. Importance of engaging individual consumers and society in the management process.
Differences in Concepts of Quality:

INDUSTRIAL VS. HEALTH CARE MODELS:

- 3. Responsibility for social welfare in addition to individual welfare.
- 4. Improvements in quality cost more (diminishing returns in health following further increases in care).
- 5. Tremendous variability that health care professionals have to deal with. No standardized solutions. Uncertainty is pervasive.
THE CHALLENGE FOR EPIDEMIOLOGY IN QUALITY OF CARE

1. Identify the problems - define - monitor
2. Use of appropriate measurement instruments.
3. Investigate using the comparative method. Try to measure from within the system.
4. Look for alternative explanations - confounding and interaction.
6. Communicate and explain.
HOW CAN EPIDEMIOLOGY ASSIST IN ACHIEVING BETTER PERFORMANCE IN MANAGEMENT FUNCTIONS?
ATTRIBUTES IN EPIDEMIOLOGY IN MANAGEMENT

- Epidemiology is an information science.
- Epidemiology generates data that is used for decision making.
- Epidemiology provides a structured approach for making inferences and decisions.
- Continuous reassessment of existing knowledge and solutions (Continuous Quality Improvement).
- A philosophy as well as an approach in affecting health care organizations towards improved quality.
ATTRIBUTES IN EPIDEMIOLOGY IN MANAGEMENT

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DISCIPLINE OF OPERATION AND THOUGHT
Attributes that epidemiology provides and that are important for effective management of health services:

1. Information systems for continuous surveillance and monitoring of outcomes.

2. Well tested methods of investigation of health problems.

3. A process of inferences in making decisions from the available data information.
4. A rigorous method of assessing the validity and reliability of data.

5. Well defined ideology and goals directed at prevention of health problems that is consistent across time, and place.

6. A continuous reassessment of knowledge. There are no fixed answers in epidemiology. Truth is constantly rediscovered.
Challenges for Epidemiology and Health Services Management-1

- Two concerns: Outcome (quality) and Cost
- Value = Outcome / Cost
- What can be done to increase the value of health care?
  - Manpower training
  - New systems of assessment
  - Integration of epidemiology in management
Challenges for Epidemiology and Health Services Management-2

- **Manpower training**
  - A new cadre of epidemiologists
  - Translating epidemiologic findings on efficacy
  - Epidemiology to a broader group of professionals
Challenges for Epidemiology and Health Services Management

- **New systems of assessment**
  - Matching treatment to the patient – placebo
  - Incorporate case based and other methods as part of information systems for decision making

- **Integration of epidemiology in management**
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