# How and Where Physicians Learn

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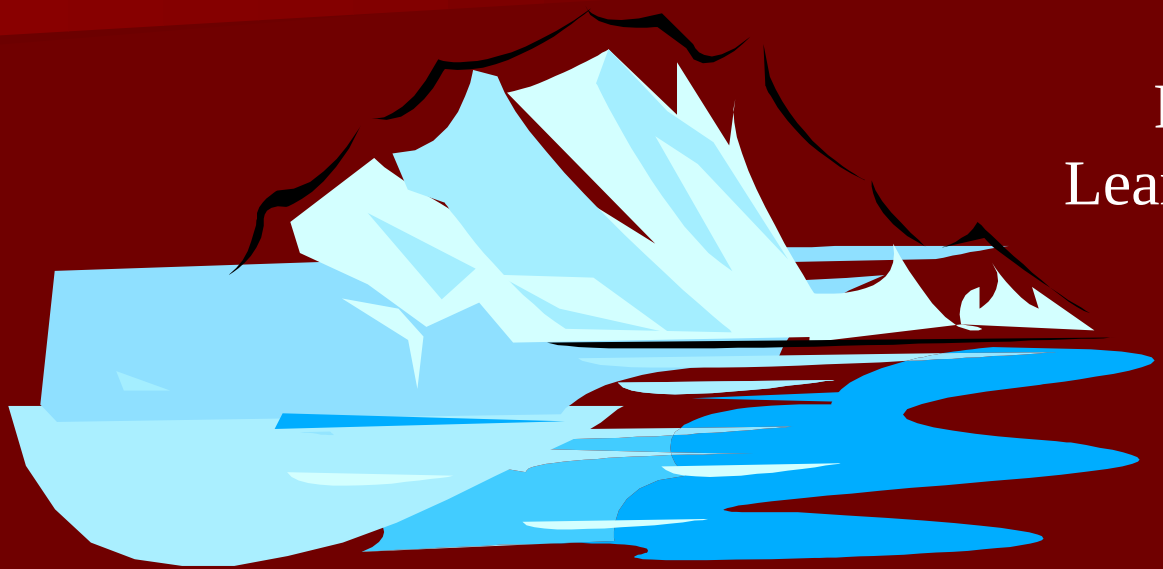
# Formal vs. Informal Learning



Formal Learning 20%

Informal Learning 80%

# Goal of CME

- The goal of CME is to positively affect patient outcome.
- There are two intermediate goals
  - To promote physician learning
  - To change physician behavior

# WORKSHEET #1
## INDIVIDUAL EXERCISE

Describe a recent learning experience:

- Why did you decide to learn?
- What was your goal?
- What resources did you use?
- How did you know you were finished?
- Describe what you learned

# Where Learning Occurs

- In the process of practice
  - "I discovered that if....then"
  - Comments from patients
  - Comments from team members
  - Comments from colleagues
- Difference in knowledge between young and older physicians.
  - Young have facts
  - Old have wisdom
    - Consult on stressed man.

# Where Learning Occurs (2)

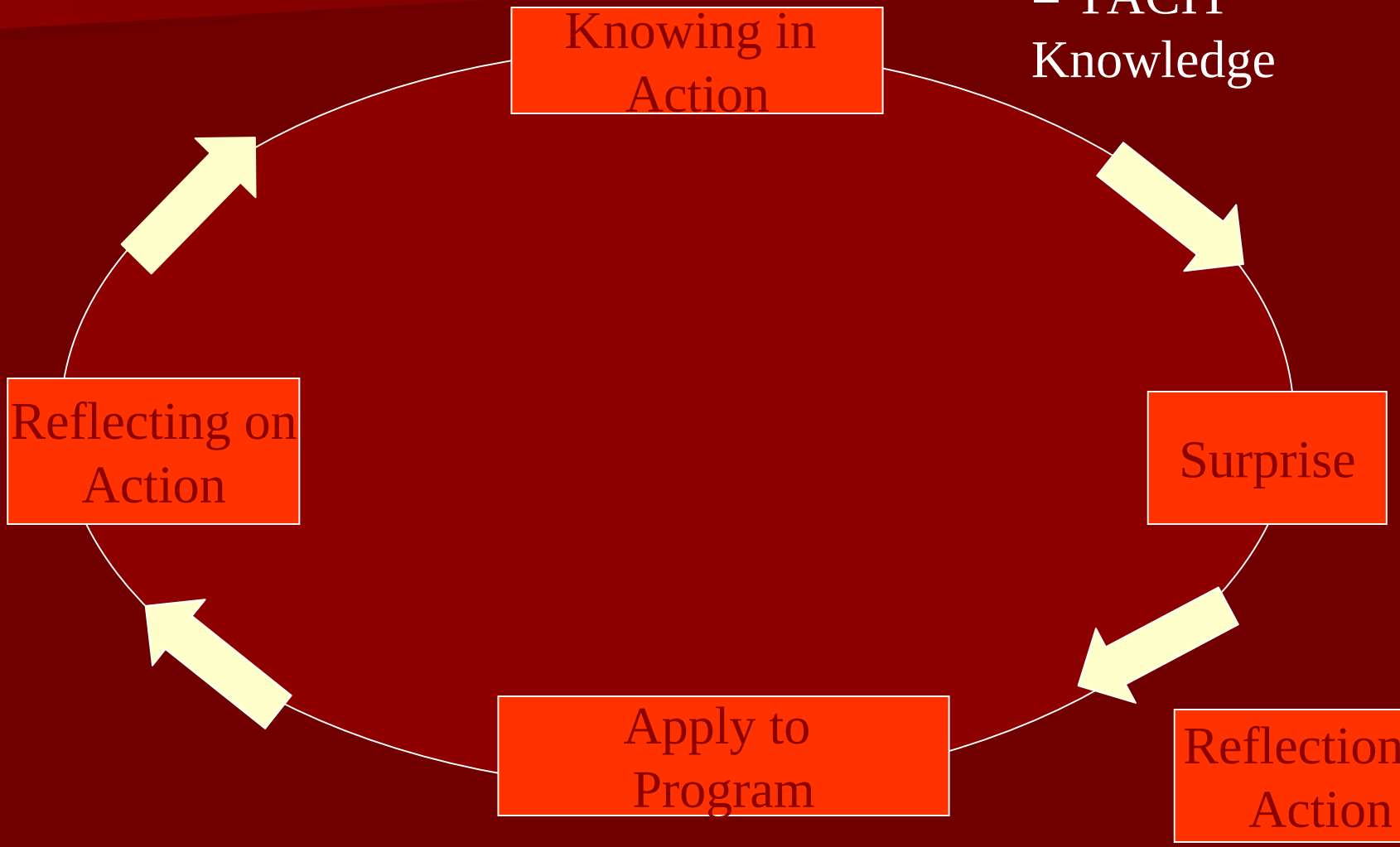
- In reflection on what has happened in practice.
  - Importance of curiosity
- In *reflection* on our own needs
  - We learn best if the material is salient.
    - It means something to us
    - It fits a need
    - It involves our emotions
    - It involves multiple sense organs

# Where Learning Occurs (3)

- In meeting our particular need
  - Reflection
  - Learning project
  - Reflection
  - Application
  - Refection
  - Incorporate into practice

# Schön's Cycle

= TACIT Knowledge



# Reflection

"...the means of transcending more usual patterns of thought to enable the taking of a critical stance or an overview."

Moon 1999

# Reflection

- Reflection itself is a mental process with purpose and/or outcome. It is applied in areas where the material is ill-structured or uncertain in that it has no obvious solutions, a mental process that seems to be related to thinking and to learning.

Moon 1999

# Adult Education: Knowles 1

- Adults learn best when they:
  - diagnose, plan, implement, evaluate own learning
  - learners are self directed
  - readiness for learning increases when there is a need to know
  - facilitator creates and maintains a supportive climate for learning
    - Mentor?

Knowles, 1980

# Adult Education: Knowles 2

- Life experience is the main learning resource.
- Adults learn better when they are internally motivated to learn.

Knowles, 1980

# Transformative Learning

- Deep change comes as a result of learning
- Learning as behavior change
- Critical reflection key to transformative learning

# Teaching Strategies for transformative learning

- Activating event
- Recognize underlying assumptions
- Critical self reflection
- Being open to alternative viewpoints
- Engaging in discourse
- Revising assumptions
- Acting on revisions

Cranton, 2002

# What level of learning do you want to achieve? Why?

- Noticing?
- Making sense?
- Making meaning?
- Working with meaning?
- Transformative learning?

# Model of Change

- Precontemplation
- Contemplation
- Preparation for action
- Recent change
- Maintenance of change

Prochaska, 1984

# Precede Model

- Predisposing factors
- Precipitating factors
- Change
- Reinforcing factors

# Perspectives on Teaching 1

1. Transmission
   - learner a vessel to be filled by authoritative teacher.
2. Developmental
   - increasingly complex abilities of problem solving.
   - Constructivist: construct own understanding

Pratt, 2002

# Perspectives on Teaching 2

3 Apprenticeship perspective
- workplace learning; relevance
- revealed competence
- identity development

4 Nurturing perspective
- Learning involves the heart
- encouragement, humane

# Perspectives on Teaching 3

5 Social Reform
  – Work toward a set of ideals and teaching is to that purpose

# Changing Patient Outcome

- There are a number of ways to change patient outcome
  - Regulate
  - Reward
  - Educate

# Classic CME

- Single Meeting
- Presenter determined
- Lecture format
- No evaluation

It is understandable that this from of education would be ineffective in changing physician behavior and patient outcome.

# Current CME Planning Cycle

- Needs assessment
- Program goals
- Program planning
- Program delivery
- Program evaluation
- Needs assessment

# Does CME Work?
*(Davis, 1995)*

- Literature search: 1975-1994
- Criteria:
  - RTC's assessing physician performance or patient outcome.
  - Used educational interventions such as
    - Educational materials
    - Formal CME activities
    - Outreach visits
    - Opinion leaders

Davis, JAMA, 1995

# Does CME Work? (cont)

*(Davis, 1995)*

- Opinion leaders
- Patient mediated strategies
- Audit with feedback
- Reminders.

Davis, JAMA, 1995

# Does CME Work? (cont)
*(Davis, 1995)*

- Findings:
  - 99 trials/ 160 interventions
  - 2/3 showed improvement in 1 or more outcome
  - 70% showed change in Physician performance
  - 48% of health care outcomes were positive

# Does CME Work? (cont)

*(Davis, 1995)*

- Effective
  - Reminders
  - Patient mediated interventions
  - Outreach visits
  - Opinion leaders
  - Multifaceted activities
- Less effective
  - Audit with feedback
  - Formal CME conferences
  - Educational materials

Davis, JAMA, 1995

# Impact of Formal CME *(Davis, 1999)*

- Findings:
  - Interactive and mixed educational interventions had a significant effect on practice.

# Problem

Classic forms of CME do not work well at

- Changing physician behavior
- Changing patient outcome

So: How do we design programs that will change physician behavior &/or change patient outcome?

# Commitment to Change
*(Mazmanian, 1997)*

- More changes occur in practice if at the end of the CME event learners take time to reflect on their own practice and commit to change.

# Nontraditional Ways of Influencing Physicians

- Educational Influentials
- Academic Detailing
- Repeat hits
- Reminders
- Patient mediated approaches
- Commitment to change

# How do Physicians Learn?

- Talking to colleagues
- reading
- rounds/departmental based learning
- Formal CME courses

- learning from practice>learning from courses

Obviously event based CME is only part of the process of physician change. The term Continuing Professional Development is more appropriate for describing approaches to physician learning.

# How Physicians Learn (1)

- Theory 1:  (Fox et al)
  - Three stages:
    - assessing needs
    - Developing competence
    - Implementing new skills

# How Physicians Learn(2)
*(Campbell et al, 1999)*

- Theory 2: (Slotnick et al)
  - Four stages
  - Stage 0
    - Scanning
      - General sense of awareness of practice needs from reading, rounds, colleagues etc
      - Practice surprises
      - Physician reviews of practice
      - Feedback on care

# How Physicians Learn(4)
*(Campbell et al, 1999)*

- Stage 1: Problem Evaluation
  - Evaluate problem
  - Determine whether now is the time to learn
    - Is this really a problem for me?
    - Is there a likely solution to the problem?
    - Are the resources available to assist me?
    - Am I ready to make the changes to my practice as a consequence of learning?

# How Physicians Learn (6)
*(Campbell et al, 1999)*

- Learning Outcomes from Stage 1
  - Questions that arise directly from patient care are much more likely to result in change to practice.

# How Physicians Learn (7)
*(Campbell et al, 1999)*

- Stage 2: Learning required skills and knowledge:
  - Learning outcomes:
    - Number and quality of resources used. (selection)
    - Conclusions reached by physicians
  - Competencies
    - Accessing and appraising information sources
    - Critical appraisal skills

# How Physicians Learn (9)
*(Campbell et al, 1999)*

- Stage 3: Introduction of new learning into practice.
  - "knowing-in-action"
  - Learning outcomes:
    - Implementation plan
    - Decreased tendency to be surprised.
  - Movement from conscious competence to unconscious competence.