Basic Medical Science Course Directors in Integrated Medical Curricula

October 4, 2012

Cynthia Standley, PhD
Professor, Basic Medical Sciences
Director, Faculty Development

Presenter Disclosure Information

I have no financial relationships with any commercial interest related to the content of this activity to disclose.

Objectives

- Discuss the creation of an integrated systems block curriculum from the perspective a basic medical scientist.
- Describe the challenges for a basic scientist in designing integrated courses.
- Identify resources that are helpful.
- Describe how subject matter can be chosen and prioritized.
- Provide specific strategies for educators to design or refine their own curriculum.

Scenario

As a Basic Science Course Director for discipline X, you have been asked to participate on a curriculum renewal workgroup. The charge to the workgroup is to review and revise the preclinical curriculum and design an integrated curriculum.

You are not sure what this entails.

Define: Integrated Curriculum

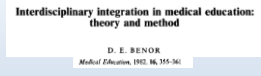
- **Integrative**
  - "…connecting skills and knowledge from multiple sources and experiences; applying theory to practice in various settings;"

    Huber, M. T., Hutchings, P., & Gale, R. (2005). *Integrative Learning for Liberal Education.* peerReview, Summer/Fall.
- **Integrated curriculum**
  - refers to a non-compartmentalized approach to basic science learning

    Smith SR *Med Health R I.* 2005 Aug;88(8):258-61.

There is No One Way To Integrate

Each medical school needs to select methods appropriate for its own goals, structure, and constraints.


Interdisciplinary integration in medical education: theory and method

D. E. BENOR

Medical Education, 1982, **16**, 355-361

How Will Integration Occur?

- Organ Systems
- Stages of Human Development
- Disease or Clinical Presentation
- Medical Competencies

Adapted from Goldman and Shroth, Acad. Med. 2012;87:729-734

7

Historical Perspective at UA COM

University of Arizona College of Medicine–Tucson: 1967

Discipline-Based

Phoenix campus site for clinical rotations: 1992

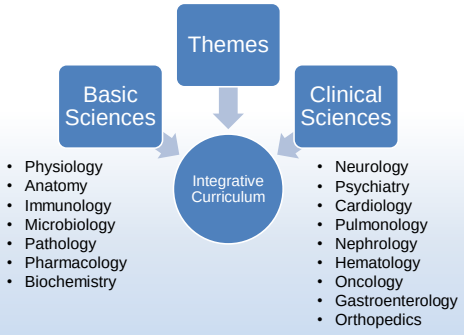
Curriculum Renewal: Began in 2003

Integrated Curriculum

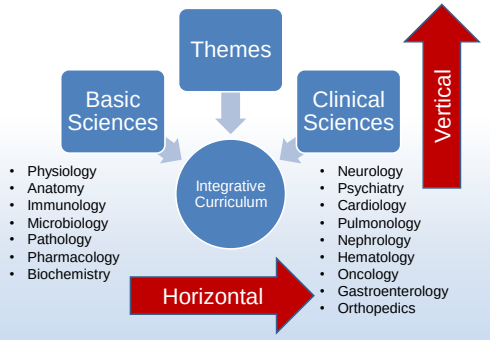
Implemented in Tucson: AY 2006

Year 1 Implemented in Phoenix: AY 2007

8

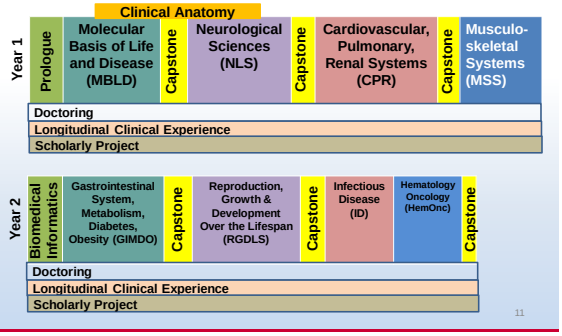


9



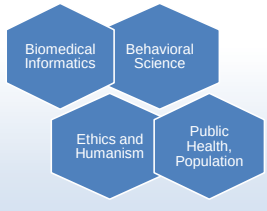
10

Overview of Preclinical Block Curriculum



11

Longitudinal Themes



12

Weekly Structure

Example from the CPR Block

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 am	CBI open	Electrical Activity of the Heart (BMS)	EKG Interpretation (CS)	Cardiac Development (BMS)	CBI close
10:00am		Cardiac Structure and Imaging (BMS, CS)		Physiology Lab: EKG	
11:00am	Impact of Cardiovascular Disease in the US		Antiarrhythmic Drugs (BMS)		Cardiac Contraction (BMS)
Noon	Lunch				
1:00pm	Integration of ANS Concepts with CPR (BMS,CS)	LCE Group 1	LCE Group 2	LCE Group 3	ECGs and Pharmacological Pairings (TBL)
2:00pm	Electrical Activity of the Heart (BMS)				
3:00pm					
4:00pm					
5:00pm					

13

Getting Started:

Develop a list of key topics

List of Topics

What is Relevant to the Practice of Medicine

14

Seek A Clinical Co-Director!

- Surround yourself with bright people!
- Start building a team
  - Heads of other disciplines
- Librarian
  - Aware of the curriculum and notify you of pertinent information

15

Resources

- National Guidelines
  1. AAMC Medical School Objectives Project
     https://www.aamc.org/initiatives/msop/
  2. USMLE Step 1 content outline
     http://www.usmle.org/step-1/
  3. Discipline-based societies (American Physiology Society)

16

Resources

- Textbooks – Scrutinize and compare table of contents

FIRST AID FOR THE BASIC SCIENCES

- Utilize curriculum sharing with other schools

17

Get Clinician Input

- Circulate your list to practicing clinicians
  - Seek out a resourceful person in the administration unit who can identify clinicians in the area
- Continue to modify your list

18

At the Same Time, You Should be:

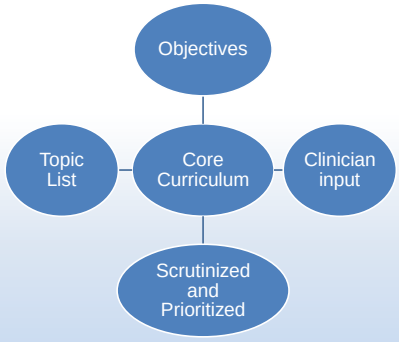
- Writing objectives, goals and/or outcomes
- Choosing textbook or other resources
- Drafting a syllabus

19

Choosing Subject Matter and Prioritizing

- Director is not necessarily expert at all content
  - Seek clinical input
  - Ask for recommendations
  - Audits of disciplines
- As you bring in good teachers, get their input on additional content
- Doesn't all have to go in preclinical years

20



21

Scheduled Meetings

- Theme directors meeting
- Block, Course, Theme Subcommittee meeting
- Curriculum Committee meeting – final approval

22

Preparing for Class Sessions

Teaching Format	Teaching Methods	Use of Technology
Large Group	Interactive Lecture Team Learning	Audience Response System
Small Group	PBL Case-based	Videos
Independent Learning	Podcast Voice-over PPT Online module	Camtasia Embedded test Hyperlinks
Simulation	High-fidelity Low-fidelity Computer-based	SimMan Online Module

23

Orienting Clinicians to Teach in the First Two Years

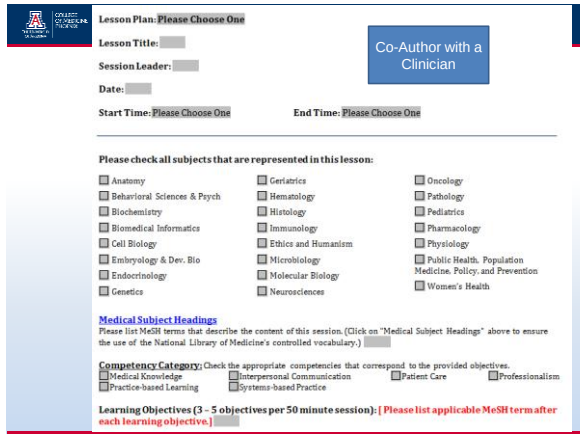
- Clinicians teach differently than basic scientists
  - Teach from a practice-based perspective
- Role model the competencies
- Provide faculty development

24

Orienting Clinicians

- Introductory letter denoting
  - Where students are in the curriculum
  - What they've been taught already
  - Number of slides expected
  - Time frame of session
- Can't cover every clinical entity
  - 3-5 learning objectives based on common occurrences
  - Be proactive and provide objectives!

25



7

Cross-Referencing Material

Myositis, Osteomyelitis, Joint Infections

Type	Interactive Lecture
Date	All Groups: Feb 7, 09:00 - 10:15 (Room:ASU C103)
Lecturer(s)	Rai, Mandeep
Professional Attire:	No

Objectives

Every student should be able to:

Recognize the causes and clinical manifestations of acute and chronic osteomyelitis (MK)
Explain the diagnostic and laboratory tests and treatment for osteomyelitis (MK PC)
Recognize the causes and clinical manifestations of common infectious muscle disorders (MK)
Recognize the causes and clinical manifestations of joint infections (MK)
Explain the diagnostic and laboratory tests and treatment of joint infections (MK PC)

Activities

Reference material: MSS Fischione- Structure Of Musculoskeletal Tissues 4-26-2011; Zack- Anatomy and Function of Joints 4-26-2011; Ladha- Myopathies 5-18-2011

Materials

LP: Myositis, Osteomyelitis, Joint Infections (WordProcessingDoc -- Required Material)
PPT: Osteomyelitis, Myositis, and Joint Infections (PowerPoint -- Required Material)

28

Planning Methods of Assessment

- Integrative Assessment
- Formative → Summative
- Every session has associated "Thought Questions"
- Summative exams (USMLE-style multiple choice) scheduled 3-4 weeks
- Exam Review Teams → Basic Scientist / Clinician / Theme

29

Scale and Timeline

- Enlist a partner
- Time to complete
  - A year is optimal!
- First time launch: sit in on every session

30

Curriculum Evaluation

- Curriculum work group formed to review performance:
  - Taking into account
    - Exam statistics
    - Student evaluations
    - Block director self study
    - Student focus group meeting
- Recommendations approved by curriculum committee for improvement the following year

31

Maintaining Relationships

- Provide feedback
  - Not only from student evaluations, but on exam question editing and results

32

Challenges and Resolutions

- Stubborn resistance
  - Be willing to change the paradigm
  - Be willing to compromise
- Cover material in less time
  - Provide means for self-study
- Scheduling
  - Flexibility vs firmness
    - Need both

33

Challenges and Resolutions

- Do you need the expert in the field?
  - Engage primary care physicians
- Receiving materials late
  - Establish expectations and deadlines clearly and early
  - May have to send several reminders to get materials on time

34

Challenges and Resolutions

- No shows
  - Develop a teaching contingency plan
- Clinician turn-over
  - Keep a file of contacts
- Too many cameos - Work toward consistency
  - Encourage participation in more than 1 session
  - Continue to engage the good teachers

35

Challenges and Resolutions

- Sequencing
  - Many different ways; continue to refine
- Choosing an appropriate reference textbook
  - Many are discipline based
- Exam question writing
  - Training clinicians and other faculty to write USMLE style questions

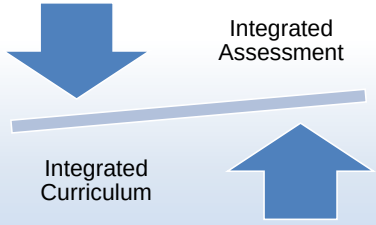
36

Challenges and Resolutions

- Uncomfortable faculty
  - Teaching outside their comfort zone
  - Build relationships
- Communication between disciplines
  - Encourage discussion of topics in the context of health and disease
- Tracking content
  - Build a curriculum management system

37

Outcomes



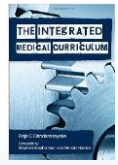
38

Summary

- Allow plenty of time
- Engage many people
- Utilize all available resources
- Link objectives, content, teaching methods to optimize learning
- Create integrative assessments
- Continue to develop and refine
- Always be open to new ideas

39

Additional Resources



Perspective: **Deconstructing Integration: A Framework for the Rational Application of Integration as a Guiding Curricular Strategy**

Ellen Goldman, EdD, and W. Scott Schroth, MD, MPH

Acad Med. 2012;87:729–734.

Provides an organizational framework for curricular integration from the program level to the course level to the session level.

The integration ladder: a tool for curriculum planning and evaluation

Ronald M Harden *Medical Education 2000;34:551–557*

Provides a framework based on degree of integration presented over a continuum.

40