

Basic Medical Science Course Directors in Integrated Medical Curricula October 4, 2012

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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 <u>integrated curriculum</u>.

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



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











Overview of Preclinical Block Curriculum



I A I A	Biomedical Informatics	Gastrointestinal System, Metabolism, Diabetes, Obesity (GIMDO)	Capstone	Reproduction, Growth & Development Over the Lifespan (RGDLS)	Capstone	Infectious Disease (ID)	Hematology Oncology (HemOnc)	Capstone
	Doct	octoring						
Longitudinal Clinical Experience								
Scholarly Project								









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		Physiology	
11:00am	Impact of Cardiovascular Disease in the US	and Imaging (BMS, CS)	Antiarrhythmic Drugs (BMS)	Lab: EKĞ	Cardiac Contraction (BMS)
Noon		_	Lunch		_
1:00pm	Integration of ANS Concepts with CPR (BMS,CS)				ECGs and Pharmacological
2:00pm	Electrical Activity of the Heart (BMS)	LCE Group 1	LCE Group 2	LCE Group 3	Pairings (TBL)
3:00pm	3:00pm				
4:00pm					
5:00pm					



Getting Started:

Develop a list of key topics

List of Topics

What is Relevant to the Practice of Medicine



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



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)



Resources

 Textbooks – Scrutinize and compare table of contents



• Utilize curriculum sharing with other schools



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



At the Same Time, You Should be:

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



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







Scheduled Meetings

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



Preparing for Class Sessions

Teaching Format	Teaching Methods T	Use of echnology
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



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



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!

	College of Medicine Phoenix	Les
of Arizona		Loc

Lesson Plan: Please Choose One

Lesson Title:

Session Leader:

Date:

Start Time: Please Choose One

Co-Author with a Clinician

End Time: Please Choose One

Please check all subjects that are represented in this lesson:

Anatomy	Geriatrics	Oncology	
Behavioral Sciences & Psych	Hematology	Pathology	
Biochemistry	Histology	Pediatrics	
Biomedical Informatics	Immunology	Pharmacology	
Cell Biology	Ethics and Humanism	Physiology	
🔲 Embryology & Dev. Bio	Microbiology	Public Health, Population	
Endocrinology	Molecular Biology	Medicine, Policy, and Prevention	
Genetics	Neurosciences	Women's Health	

Medical Subject Headings

Please list MeSH terms that describe the content of this session. (Click on "Medical Subject Headings" above to ensure the use of the National Library of Medicine's controlled vocabulary.)

Competency Category: C	heck the appropriate competencies that co	rrespond to the provided	d objectives.
Medical Knowledge	Interpersonal Communication	Patient Care	Professionalism
Practice-based Learning	Systems-based Practice		

Learning Objectives (3 – 5 objectives per 50 minute session): [Please list applicable MeSH term after each learning objective.]





College of Medicine

Health Sciences Library

Curriculum Management

System

WebMail

THE UNIVERSITY ARIZONA

College of Medicine

Neurological Sciences 2015

Announcements : Manage

Announcements for Everybody

Academic Calendar 12/13 (Updated: 12/18/11 8:00 AM)

Change Campus Case-Based Instruction October 10, 2011 Tucson Phoenix (current) Today Next Day 🕪 🗰 Prev Day Search ArizonaMed Surveys 9:00 AM - 9:50 AM ASU C240 (Fife, Standley) Search Term No surveys are available at this time • Academic Year 2012-2013 -• Campus Independent Learning Phoenix -Search ト No ILMs are available at this time for this CBI 1 block or rotation.



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

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



Planning Methods of Assessment

- Integrative Assessment
- Formative \rightarrow Summative
- Every session has associated "Thought Questions"
- Summative exams (USMLE-style multiple choice) scheduled 3-4 weeks
- Exam Review Teams –

Basic Scientist Clinician Theme



Scale and Timeline

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



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



Maintaining Relationships

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



- 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



- 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



- 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



- 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



- 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



Outcomes





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



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.