

Remediation of Basic Science in Integrated Blocks

Giulia Bonaminio, PhD
Professor, Dept. of Family Medicine
Associate Dean for Medical Education
University of Kansas School of
Medicine

Jeannette Guerrasio, MD
Associate Professor of Medicine
Director of Remediation
University of Colorado School of
Medicine

Objectives

- Define remediation
- Understand the unique challenges of medical students
- Identify tools to improve your comfort and ability to provide remedial support
- Review remediation models at two institutions

Disclosures

Dr. Guerrasio
Book Royalties



Dr. Bonaminio
Nothing to disclose

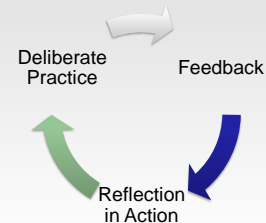
Remediation

- Students who require more than the standard curriculum to achieve academic success and sustained professional competency.

Model for Remediation



Remediation Strategy



Adapted from Hauer KE et al. Acad Med 2009; 84:1822-1832.

5

Objectives

- Define remediation
- **Understand the unique challenges of medical students**
- Identify tools to improve your comfort and ability to provide remedial support
- Review remediation models at two institutions

Underperforming Learners

WEAKNESSES

- Lack scaffolding to learning
- Don't learn from the hidden curriculum
- Trouble identifying feedback
- Can't actualize feedback

Mismatch

Teaching

1. Educational Task
2. Assumption of Framework
3. Unconscious/ Abstract Learning
4. Feedback Provided
5. Safe Learning Environment

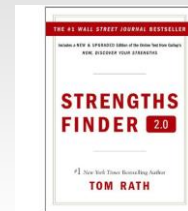
Learning

1. Learner's Competence
2. Absence of Framework
3. Need for Concrete Learning
4. Not Receiving Feedback
5. Fear of Ridicule

Underperforming Learners

STRENGTHS

- Are teachable
- Have foundational knowledge
- Great memorizers
- Learn from concrete rather than abstract



Proactive Response to Risk Factors

- Risk Factors for poor USMLE Step 1 performance (characteristics)
 - Clinical courses <75%
 - Lower MCAT total and verbal scores
 - Sat for the MCAT more times
 - Delays in USMLE Step 1
 - State and federal assistance
 - URM status
 - Age at matriculation (>30yo)

Proactive Response to Risk Factors

- Risk Factors for poor USMLE Step 1 performance (adjusted)
 - Clinical courses <75%
 - ~~Lower MCAT total and verbal scores~~
 - ~~Sat for the MCAT more times~~
 - ~~Delays in USMLE Step 1~~
 - ~~State and federal assistance~~
 - ~~URM status~~
 - Age at matriculation (>30yo)

Objectives

- Define remediation
- Understand the unique challenges of medical students
- **Identify tools to improve your comfort and ability to provide remedial support**
- Review remediation models at two institutions

Study Skills Course

- EdD: helps post bacc students identify risks through a learning survey
- Boot camp just prior to medical school
- At orientation:
 - Risk factors
 - Self assessment to recognize strengths and vulnerabilities
 - Seeking help early

Meeting with Course Directors

- Required for failures
- Recommended for borderline performance

Director Checklist

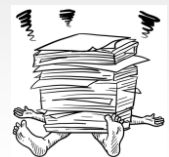
1. Meet face to face with each student
2. Review the exam in person with the student and discuss missed questions
3. If possible, probe/ identify holes in study approach or style with these questions

Director Checklist

4. Remind student: they received an email from Student Affairs
5. Document the discussion of these steps.
6. Schedule follow up appointment if appropriate

Key Struggles and Strategies

- “There is too much material to learn.”
 - Pre-read material
 - Focus on objectives
 - Know key concepts



Key Struggles and Strategies

- “I’m studying for hours, but I can’t seem to remember the material.”
 - Active learning
 - Practice recall
 - Understand rather than memorize

Key Struggles and Strategies

- “I am easily distracted”
 - Self care - sleep, meals, exercise
 - Best time of day
 - Active learning
 - Maintain focus better with questions than reading



Key Struggles and Strategies

- “Where should I study?”
 - Limited distraction
 - Take practice tests/questions in an environment that simulates the testing environment

Key Struggles and Strategies

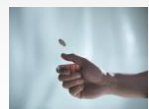
- “Should I do practice questions?”
 - Reinforce retention by applying the knowledge
 - Topics first, then random
 - How many?

Key Struggles and Strategies

- “What do I do if I get a question wrong?”
 - Understand the question
 - Make any assumptions?
 - Identify the middle step
 - What would the question have to say...
 - Key point

Key Struggles and Strategies

- “I can narrow the answer down to 2 choices... and then I pick the wrong answer.”
 - Lacks specificity of knowledge



Key Struggles and Strategies

- “The grading histogram from the failed exam shows that I score poorly on all topics and sections.”
 - Needs to acquire better test taking skills.

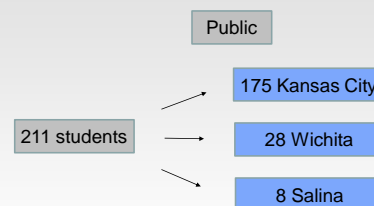
Key Struggles and Strategies

- “I would do better if I have enough time to finish the questions on the test.”
 - Have a consistent approach to answering questions
 - Practice larger blocks of questions
 - Learn to manage the clock during the exam

Objectives

- Define remediation
- Understand the unique challenges of medical students
- Identify tools to improve your comfort and ability to provide remedial support
- Review remediation models at two institutions

About Us – KU SOM



Legacy Curriculum

12 integrated foundational science modules

Phase I: Year One

Foundations of Medicine 8 weeks	Genetics and Neoplasia 4 weeks	Inflammation and Immunity 4 weeks	Cardiopulmonary 8 weeks	Renal and Endocrine 4 weeks	Gastro-intestinal Tract and Nutrition 4 weeks	Reproduction and Sexuality 4 weeks
------------------------------------	-----------------------------------	--------------------------------------	----------------------------	--------------------------------	--	---------------------------------------

Phase I: Year Two

Musculoskeletal and Soft Tissue 4 weeks	Brain and Behavior 8 weeks	Infectious and Parasitic Diseases 6 weeks	Blood and Lymph 4 weeks	Integration and Consolidation 8 weeks
--	-------------------------------	--	----------------------------	--

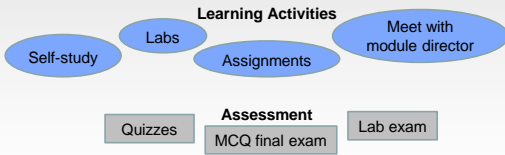
<http://www.kumc.edu/school-of-medicine/office-of-medical-education/curriculum/phase-i-curriculum.html>

Remediate a Course(s)

1 module week → 1 credit
Remediate (summer) → up to 8 credits

Remediate a Course(s)

Summer
 4-week module → 3-week summer course
 6-8 week module → 5-week summer course

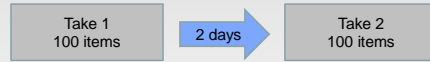


↓ Tuition



Two-Test System

Module MCQ exams



Test ~every 4 weeks

Items are not the same on the two exams

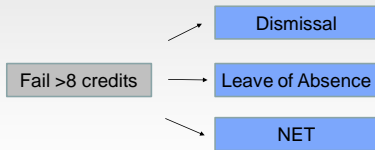
Must take at least one exam

Higher of the two scores used in final grade



Repeat the Year

Office of Student Affairs
 Academic and Professionalism Committee



Not Evaluated Track - NET

Office of Student Affairs

- Enrolled → "audit" remaining modules in fall and spring semesters
- Grade → Credit
- Must complete → all learning activities and assessments (min 60% on exams)
- Required → meet with Learning Specialist
- Required → meet with Psychologist
- Tuition → ↓



ACE Curriculum (July, 2017)

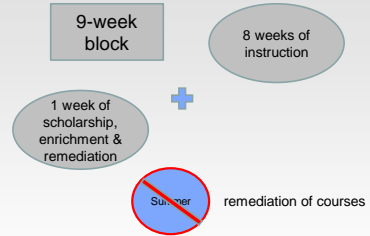
9 integrated foundational blocks

July	Block 1 3 weeks	Block 2 9 weeks	Block 3 9 weeks	WINTER BREAK	Block 4 9 weeks	Block 5 9 weeks	SUMMER BREAK 10 wks
	Intro to Doctoring	Molecular and Cellular Medicine	Genetics, Infection, and Immunology		Respiration and Circulation	GI and Renal	
July	Block 6 9 weeks	Block 7 9 weeks	Block 8 9 weeks	WINTER BREAK	Block 9 9 weeks	Block 10 9 weeks	SUMMER BREAK 10 wks
	Muscles and Movement	Brain, Mind and Behavior	Reprod, Growth, and Sexuality		Reprod, Growth, and Sexuality	Medicine (Capstone)	

<http://www.kumc.edu/school-of-medicine/education/ace-curriculum/the-curriculum.html>



ACE Curriculum



In-line remediation → Week 9



ACE Remediation

Block MCQ exams

Week 2, 4, 6, 8
50 item exams



SER Week 9
50 item exams

Items \neq on the two exams

Retake up to 3 of the 4 exams

Fail all 4 exams → fail block



ACE Remediation

Block MCQ exams

Week 2, 4, 6, 8
50 item exams



SER Week 9
50 item exams

Retake up to 3 of the 4 exams

Retake up to 2 exams this SER week

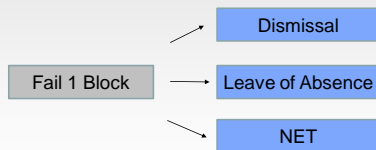
Retake 3rd exam the following SER week

Highest possible exam score → 70%



ACE Repeat the Year

Office of Student Affairs
Academic and Professionalism Committee



Outcomes

Entering classes 2006-2013

1411 students

7%
remediated
at least 1
module

4%
repeated
the year

Repeat < Remediate < Regular

MCAT Sum, Undergrad GPA (Science and Cumulative)

Repeat, Remediate < Regular

Phase I GPA, Phase II GPA

Step 1 Score and Passing %

Step 2 CK Score and Passing %



Outcomes

Entering classes 2006-2011

Graduated in 4 years

Repeat (0%) < Remediate (65%), Regular (94%)

Graduated in 5 years

Repeat (33%) < Remediate (93%), Regular (98%)

Graduated in 6 years

Repeat (49%) < Remediate (96%), Regular (98%)



U. CO Case Example

- Weekly Meeting:
 - Student Affairs Deans
 - Educational Psychologist
 - Remediation Specialist
 - Support Staff
 - Director of Student Affairs
 - Administrator
- Identification of students with failing and borderline test scores

U. CO Case Example

- “Maria”
 - MS1, has failed the first two exams of the Blood and Lymph course.
 - Reviewing past performance
 - Failed anatomy and completed remediation over the winter break
 - Was offered a tutor
 - MCAT scores low
 - Less rigorous undergraduate college
 - Learned English at age 8

U. CO Case Example

- Available resources:
 - Meeting with the course director
 - Peer tutoring
 - QUAR groups
 - Meetings with Educational Psychologist or Remediation Specialist
 - Mental health evaluation and support
 - Neuropsychiatric testing (\$)

U. CO Case Example

- Maria reveals that she has become depressed and anxious
 - Meets with a psychiatrist
 - Meets with the educational psychologist
 - Reviews areas of weakness (studying and test taking)
 - Better understands expectations
 - Implements strategies for improvement
 - Reviews subsequent test performance, identifying new strategies for learning

U. CO Case Example

- Maria exam performances slowly begins to rise
 - No longer failing tests
 - Now is consistently out of the “danger zone”
 - Establishes a study plan for the summer between 1st and 2nd year
 - Continues to work with educational psychologist through 2nd year
 - Joins a QUAR group
 - Takes a CBSSA practice exam taken in December of 2nd year

Thank You

- Carol Lay, EdD
- Traci Yamashita, MS
- Gretchen Guiton, PhD
- Shanta Zimmer, MD
- Eva Aagaard, MD
- Tony Paolo, PhD
- Mark Meyer, MD
- Joe Fontes, PhD