Curriculum Mapping

‘A visual representation of the curriculum as a sophisticated blend of educational strategies, course content, learning outcomes, educational experiences, assessment, the education environment and the individual students personal timetable and progress.’

R.M. HARDEN

Centre for Medical Education and Education Development Unit, Dundee, UK
Curriculum Maps

• help faculty, learners and others situate courses and learning experiences within the larger curriculum

• act as a “discussion starter” to promote dialogue about the program

• document curriculum and the inclusion of program learning outcomes (or other standards) for accrediting/credentialing groups

• identify opportunities in the program for learners to demonstrate learning outcomes at the required level
Curriculum Maps

• serve as a planning tool to identify the connections between curriculum components

• ensure that all program standards are developed within the program

• identify paths that learners can follow to meet graduation requirements

• provide an overview of the curriculum for the total program
Discussion Questions

• What are the benefits of curriculum mapping?
• What are schools using for roadmaps?
• Competencies
• Symptoms
• Clinical Conditions
• What are the challenges?
• What are the solutions to the challenges?
• Who are the key players in a curriculum mapping project?
Discussion Questions

• What resources do they need?
• How do you keep the process moving?
• How do you keep faculty/course directors involved post-mapping?
• How often do you repeat the process?
The US: The LCME

- ED-33: There must be integrated institutional responsibility for the overall design and implementation of a coherent and coordinated curriculum.
- ED-37: The faculty committee responsible for the curriculum must monitor the content provided in each discipline so that the medical school’s educational objectives will be achieved.
  - Is there a database?
  - How do you find gaps and unwanted redundancies?
  - Horizontal and vertical integration?
  - How do you find specific items, i.e. patient safety?
The Holy Grail (Administration):

• Are We Meeting Our Institutional Educational Goals and How Do We Know?
• The Vision: A Totally Mapped Curriculum
  – What we are teaching
  – When we are teaching it
  – Who is teaching it
  – How we are teaching it
  – How we are assessing it
  – Where is improvement needed
• Move to Competency Based Education
The Holy Grail (Student):

• Am I Meeting the Institutional Educational Goals and How Do I Know?

• The Vision: A Totally Mapped Curriculum
  – What am I learning
  – When am I learning (or expected to learn) it
  – Who is teaching it
  – How is it being taught
  – How will I be assessed / show competency that I have learned it
  – How is my performance and where do I need improvement?
The Tulane Journey

Populate CurrMit

Successful LCME Visit

CurrMit Goes Away: Look for New System

Students Develop Own Portal:
1. Course Resources at one site
2. Interactive Calendar with all course content/resources

ILIOS

TMedWeb

Curriculum Mapping System
Welcome

Hello, and welcome to TMedWeb. This site is the product of a partnership between Tulane University School of Medicine students, faculty and administrators with the mission of providing our student community a website that brings together various facets of medical school. We hope that you find your user experience to be both useful and pleasant. If you have suggestions, corrections or shout-outs, please send them our way at tmmedweb-at-tulane.edu. Thank you.

To get started:

Please choose your appropriate "view" by making a selection
from the "Home" menu (T1, T2...) above
Using ACGME Competencies as Framework


• Move from scheduling content by topic with interactive calendar using Ilios.
The Plan

• On-going Data Collection to Re-Populate System
  – Courses, sessions, objectives, methods
  – Linking these objectives to ACGME competencies
  – Method: Using ExamSoft (on-line exam) to match questions to objectives to USMLE content areas

• Next: Match Objectives to MeSH terms in Ilios
How Are We Doing This?

• Collecting all session objectives
• Putting in format so they can be imported directly to Ilios
• Using Tulane’s new HEAL-X Curriculum
  – 15 PhD’s from BioMedical Sciences to begin a unique 3½ year curriculum beginning Jan ‘13
  – Focus on active learning in integrated curriculum
PhD to MD Curriculum:
HEAL-X: Health Education Adaptive Learning Experience

Dec  Jan 2013  Feb  March  April  May  June  July  Aug
31  7  14  21  28  4  11  18  25  4  11  18  25  1  8  15  22  29  6  13  20  27  3  10  17  24  1  8  15  22  29  5  12

PhD-MD 1st Class
Fundamental Basic and Clinical Science
mardi gras
Musculoskeletal System
Anatomy of thorax, abdomen and pelvis
Neuroscience and Behavioral science:
Cardiovascular System

Sept  Oct  Nov  Dec  Jan 2014  Feb  Mar
19  26  2  9  16  23  30  7  14  21  28  4  11  18  25  2  9  16  23  30  6  13  20  27  3  10  17  24  3  10  17  24  31

PhD-MD 1st Class
Pulmonary System
Renal System
Hematology and Oncology
Christmas Break
Endocrine and Reproductive Systems
Gastro-mardi gras
Intestinal System
Disease-Based Summary

April  May
7  14  21  28  5  12  19  26  4

USMLE STEP 1
Start of Clinical Rotations
Template for Objectives

• Module name, Course Director, Time Allotted, Disciplines,
• Topics 1, (Keywords 1): Neoplasia (Apoptosis)
• Topics 2, (Keywords 2): Genetics of (Oncogenes)
• Subtopics: (Cell Injury and Repair)
• Objectives (Organize and be able to discuss reversible cellular injury......)
Next Steps

1. All data entered with MeSH terms
2. Develop milestones and EPA’s
3. Evaluate ePortfolios
4. Competency Based Curriculum
The Big Picture

- Institutional Goals and Objectives
- Course/Discipline/Subject Objectives
- Presentation Objectives
  - Lecture, TBL, PBL, etc...
- How Do Objectives – Content – Assessment Fit Together and Can We Move These to Competencies?
Challenges

• Resistance to change
• Defining ACGME competencies and performance standards for each discipline
• Training of faculty/administrators
• Data entry (time consuming)
• Keeping the system current and ensuring that the system changes as the curriculum evolves
L’avenir de l’éducation médicale au Canada (AEMC):
Une vision collective pour les études médicales prédoctorales

An AFMC project
Committee on Accreditation of Canadian Medical Schools

Comité d’agrément des facultés de médecine du Canada
A faculty committee of a medical education program must be responsible for monitoring the curriculum, including the content taught in each discipline, so that the program's educational objectives will be achieved.
Curriculum Mapping Tools

• Home grown

• One45

• AAMC Currmit online database
Mapping Components

• Events
  Lecture, small groups, self study

• Objectives
  Knowledge, skills, behaviours, disciplines

• Assessment
  Methods, exams (questions)

• LCME ED-10 “Hot Topics”
Northern Ontario School of Medicine

objectives & outcomes

events

assessment

events

objectives & outcomes

questions

exams
Mapping Components

Medical Council of Canada Objectives

Identify attributes expected of medical graduates entering supervised and independent practice

Clinical Presentations

Given a patient with a **sore throat** and/or rhinorrhea, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan
Defining Competence Development Paths within a Competency-Cased Curriculum at Faculty of Medicine of Université de Montréal (UdeM).

A Boucher, LG Ste-Marie, N Fernandez, M Chaput, P Lebel, N Caire Fon, Université de Montréal, Faculté de médecine, Centre de pédagogie appliquée aux sciences de la santé (CPASS), Montréal, Canada.
Competency Analysis

Adapt definition/description to UdeM culture (language)
Transform vocabulary into concrete actions for clinicians
Simplify (redundancy - missing elements)

Title
Definition
Description
Capabilities (RCPSC: Key-competencies)
Manifestations (RCPSC: Enabling competencies)

Focus groups
Determining appropriate competency level during training

- Four points in time during training
- After pre-clerkship, end of clerkship, end of year 2 resident and end of residency
## Competency: Collaboration

### Capability 1: Take part in running a team

<table>
<thead>
<tr>
<th>I. Student end of 2nd year</th>
<th>II. Student end of clerkship</th>
<th>III. Resident end of junior residency</th>
<th>IV. Resident end of program</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Share tasks and responsibilities with other members of team</td>
<td>- Clarify his expectancies regarding his roles within a new team. Explain his roles to other professionals, patients and family</td>
<td>- Explain to clerks the specific roles of the members of the team</td>
<td>- Deal with other members of the team, their specific responsibilities and duties, taking into account the administrative and clinical context</td>
</tr>
<tr>
<td>- Accomplish tasks according to his level of responsibilities</td>
<td></td>
<td>- Help members of the team to accomplish their tasks</td>
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<tr>
<td>- Take responsibilities related to his role in the team</td>
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<tr>
<td>- Clarify his role and responsibilities with other persons in the team</td>
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</tr>
</tbody>
</table>

**andree.boucher@umontreal.ca**

**lg.ste-marie@umontreal.ca**
Thank You/ Merci

- Rachel Ellaway
- Christian Bourdy
- Andrée Boucher
- Melissa Forgie
- Tony Sanfilippo
- Sheila Pinchin
- Jay Rosenfield
- Martin Schreiber
- Katherine McConnell
- Don McKay
- Steve Pennell
- Marie Matte
- Ève-Reine Gagné
- Daniel Gladu
- Gary Tithecott
OUTLINE

Overview of medical education continuum in Singapore
Impetus for project
Leadership
Development of roadmap
Mapping Process/Timeline
Challenges/Solutions
Benefits/Outcomes
OVERVIEW OF MEDICAL EDUCATION CONTINUUM IN SINGAPORE
MEDICAL EDUCATION IN SINGAPORE

Competencies:
1. Sound medical knowledge
2. Quality patient care
3. Practice-based learning & improvement
4. Systems-based practice
5. Excellent interpersonal and communication skills
6. Professionalism

YLLSoM
LKCSoM
Duke-NUS SoM
MEDICAL EDUCATION AT YLLSOM AND LKCSOM

Competencies:
1. Sound medical knowledge
2. Quality patient care
3. Practice-based learning & improvement
4. Systems-based practice
5. Excellent interpersonal and communication skills
6. Professionalism

Pre-Med Sch Student

MBBS (5 yrs)

Clinical Training

Basic Medical Science

Student Internship

Internship Programme (1 yr)

BST (3 yrs)

AST (3 yrs)

Integrated < 6 yrs

Residency Programmes modeled after the US training system

Continuation of training and beyond

MCl, MPH

PhD entry

Specialist

Professionalism, Ethics, Law; Med & Soc, Information Literacy, Patient Safety
IMPETUS FOR PROJECT
DATA SOURCES SUGGESTING NEED FOR MAP

Changing healthcare needs in Singapore

Changing landscape in Singapore medical education
- Introduction of ACGME-I residency programs
- Two new medical schools

Site visits to clinical training sites

Program evaluation data
- GEQ results
- End of year feedback reports

Future WFME accreditation requirement
CONCLUSIONS FROM DATA SOURCES

Medical science content is front-loaded and excessive
Clinical training not standardized across hospitals
Increasing competition for limited resources

Gaps in Existing Curriculum
- Competencies other than patient care and medical knowledge under-represented
WHO OWNS WHAT IN THE CURRICULUM?

Ministry of Education
Ministry of Health
House Officer Training Comm
ACGME-I
Sponsoring Institutions
Undergraduate Steering Committee
Undergraduate Curriculum Committee
Phase Committees
Faculty Assessment Committee
University Heads of Departments

Hospital Heads of Departments
University Education Directors
Hospital Education Directors
Module Leaders
Lecturers
ROADMAP
STEPS TO CREATING THE MAP
WHAT NEEDED TO BE DONE

Template created for ‘structured learning activities’ documentation

Entrustable Professional Activities (EPAs) template created for clinical rotations
  - EPAs as ‘roadmap’ for clinical training that can then be aligned to residency needs (separate talk)

Standardized vocabulary defined for key anchor points in the map

Established a Task Force to:
  - Define Outcomes – “End-Product”; and
  - Rationalize Curriculum

Provided continuing impetus to get the work done...
PROCESS FOR MAPPING
MAPPING PROCESS

• Departments to document existing learning objectives / outcomes for structured learning activities and EPAs
• Multiple presentations, workshops, emails, meetings
• Deanery to do the first cut of the learning objectives based on what’s available in LMS. Teachers to confirm the data population.
• Deanery to provide IT system (database) to house materials for report generation
## TASKS AND TIMELINES

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Timeline</th>
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</thead>
<tbody>
<tr>
<td>Meet with heads to communicate plan</td>
<td>May 2012</td>
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<tr>
<td>HODs to document curriculum</td>
<td>May – Nov 2012</td>
</tr>
<tr>
<td>Appoint Task Force</td>
<td>May – Jun 2012</td>
</tr>
<tr>
<td>Task Force to consult data sources to define ideal graduate</td>
<td>Aug – Dec 2012</td>
</tr>
<tr>
<td>Task Force to work with Depts to develop recommendations to rationalize curriculum</td>
<td>Jan – Oct 2013</td>
</tr>
<tr>
<td>Task Force to make recommendations to Steering Committee</td>
<td>Nov 2013</td>
</tr>
<tr>
<td>Steering Committee to decide on recommendations and Departments to restructure</td>
<td>Dec – Jul 2013</td>
</tr>
<tr>
<td>Implement changes</td>
<td>Aug 2014</td>
</tr>
</tbody>
</table>
CHALLENGES/SOLUTIONS
ALL BOILS DOWN TO ‘COMMUNICATION’...

• Previous attempts using wiki
• Hierarchical society and leaving the decisions to the ‘bosses’
• Administrator vs. Acad Staff
• Legacy system, start-up challenges
• Culture of silos
• Serial communication and single-point failure
...AND KOTTER’S* 8 STEPS TO TRANSFORMING YOUR ORGANIZATION

Establish a sense of urgency
Form a powerful guiding coalition
Create a vision
Communicate the vision
Empower others to act on the vision
Plan for and create short-term wins
Consolidate improvements and produce more change
Institutionalize new approaches

BENEFITS AND OUTCOMES
THE ACT OF MAPPING LEADS TO...

• Refocusing faculty on bigger picture and how their piece fits in
  • Reminder of the larger education community
• Flushing out hidden agenda and festering emotions
• Skilling up of academic staff in specifying learning outcomes
  • Brings into sharp relief when there is obvious misalignment
  • Where does mapping end and reform/improvement begin?
• ...a map!
  • Enables curriculum management, strategic steering, rationalization and reform
Mapping Medical Education Curricula: Experience in Europe

Ronald M Harden
OBE MD FRCP(Glas) FRCS(Ed) FRCPC
Professor of Medical Education (University of Dundee)
General Secretary (AMEE)
Education Guide
no. 21

Curriculum Mapping: A Tool for Transparent and Authentic Teaching and Learning

R M Harden

An International Association for Medical Education
Outcome Based
Interprofessional
Assessment FOR Learning
New Learning Technologies
Mobility
Quality Assurance
Student-centred
Distributed Learning
The Continuum

CURRICULUM MAPPING

amee
AN INTERNATIONAL ASSOCIATION FOR MEDICAL EDUCATION
Curriculum Mapping

Good News!

Bad News!
19% Schools Completed a Map
55% Process of Building a Map
16% Planning a Map
10% Not a Priority
Curriculum Mapping
A View from the GMC

Professor Peter McCrorie
Head of the Centre for Medical and Healthcare Education
St George’s, University of London
GMC Visitor (HYMS, Liverpool, UCL, Leicester, Cambridge)
Summary

- The GMC uses a curriculum map for a range of purposes
- This includes:
  - a course outline
  - a search tool
  - check spiralling of the curriculum
  - check omissions and excesses
  - check institution adhering to Tomorrow’s Doctors
Quality Assurance of Basic Medical Education

Report on Barts and The London School of Medicine and Dentistry

Queen Mary, University of London

November 2009
We are satisfied that the school’s curricular learning outcomes are mapped to *Tomorrow’s Doctors* appropriately. The development of an online curriculum map, COMPAS, enables staff and students to search for module, session, system and then outcomes.

We look forward to seeing this develop further in the academic year 2009/10 and the school must update the GMC on this in the next annual return.
Curriculum Mapping
Year 1
Introducing the fundamentals for clinical practice

Year 1 is the beginning of an exciting journey which will take you from novice to graduate, ready to embark on your professional medical career. The first year aims to provide a stimulating introduction to the core professional themes which run throughout the curriculum, as well as the biomedical scientific principles which underpin clinical practice. These form the foundation of your undergraduate teaching and the later years will continually build on requirements of the course.

IDEALS (Innovation, Development, Enterprise, Leadership & Safety)

The aim of this course is to develop and prepare students for the role of providers and leaders of healthcare. The first year of the unit will provide an introduction to the NHS, its history, structure and funding, as well as an introduction to the idea of ‘professionalism’ and what it means to be a Doctor. Healthcare delivery will be explored comparing public and private sector healthcare. Students will also have the opportunity to consider their own learning needs and how to make the most of their potential as a student at Leeds. Year 1 will include a short course to develop competence in basic. Find more

<table>
<thead>
<tr>
<th>C to C (Campus to Clinic)</th>
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</thead>
<tbody>
<tr>
<td>Introduction to Medical Science (IMS)</td>
</tr>
<tr>
<td>Core Body Systems (CBS)</td>
</tr>
<tr>
<td>Nutrition &amp; Energy (N&amp;E)</td>
</tr>
<tr>
<td>Individuals &amp; Populations (I&amp;P)</td>
</tr>
</tbody>
</table>

www.medicine.leeds.ac.uk/curriculum
IDEALS : Innovation, Development, Enterprise, Leadership and Safety

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Unit Syllabus

Patient Safety
Professionalism
Leadership & Management
Enterprise, Creativity, Health & Communities
Lifecycle
Learning & Teaching Skills
NHS Business "Understanding the Service"
CPD & Careers

www.medicine.leeds.ac.uk/curriculum
Unit Assessment

Completion of Passport Non graded pass

Tomorrow's Doctors themes:

The doctor as a scholar and a scientist (click to expand)
The doctor as a practitioner (click to expand)
The doctor as a professional (click to expand)
The doctor as a practitioner (click to expand)

Communicate effectively with patients and colleagues in a medical context.

- Communicate clearly, sensitively and effectively with patients, their relatives or other carers, and colleagues from the medical and other professions, by listening, sharing and responding.
- Communicate clearly, sensitively and effectively with individuals and groups regardless of their age, social, cultural or ethnic backgrounds or their disabilities, including when English is not the patient’s first language.
- Communicate by spoken, written and electronic methods (including medical records), and be aware of other methods of communication used by patients. The graduate should appreciate the significance of non-verbal communication in the medical consultation.
- Communicate appropriately in difficult circumstances, such as when breaking bad news, and when discussing sensitive issues, such as alcohol consumption, smoking or obesity.
- Communicate appropriately with difficult or violent patients.
- Communicate appropriately with people with mental illness.
- Communicate appropriately with vulnerable patients.
- Communicate effectively in various roles, for example, as patient advocate, teacher, manager or improvement leader.

The doctor as a professional (click to expand)
MBBS Electronic Curriculum Map (ECM)

From 2012/2013 onwards MBBS Year 1 and 2 students should now use the UCL Online Timetable to access personalised timetables.

www.ucl.ac.uk/timetable

Sign in with your UCL username and password to view your personal timetable. Events update as and when they change so check the timetable regularly as there may be changes to rooms, days or times.

If your UCL username and password is working on other systems, e.g. PORTICO or your UCL e-mail account, but you cannot sign in to the personal timetable, report this problem via email to timetable-help@ucl.ac.uk.

If you do not have a UCL username, you are unsure of the password, or it has expired, contact the IS Helpdesk. See their website at http://www.ucl.ac.uk/is/helpdesk/ or email them at helpdesk@ucl.ac.uk.

http://ucl.ac.uk/medicalschool/staff-students/course-information/ecm
The right time, the right place
See what is being taught, when, where and by whom across UCL

Get started Personal Department Degree programme Custom

Choose a timetable
See your personal timetable or find out when and where things are being taught by department or subject area, by degree programme or select modules and create a custom timetable.

Calendar subscription for timetables now available. Click here for more information.

What's in the timetable
All undergraduate timetabled teaching
Selected Masters Programmes
http://ucl.ac.uk/medicalschool/staff-students/course-information/ecm

The right time, the right place

See what is being taught, when, where and by whom across UCL

Get started  Personal  Department  Degree programme  Custom

Your personal timetable

See your weekly timetable
Switch between week, year and term views at a click
Events updated as and when they change

Check the timetable regularly, there may be changes to rooms, days or times.

Students
Modules appear in your timetable the day after you select them in Portico

Lecturers and teaching staff
Modules taught by multiple people may result in extra or missing events in your timetable (click here for more information)
## COMMON TIMETABLE

### Module Timetable

**INTRODUCTION TO HUMAN ANATOMY**  
**ANAT1003**

<table>
<thead>
<tr>
<th></th>
<th>9:00</th>
<th>10:00</th>
<th>11:00</th>
<th>12:00</th>
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<tr>
<td><strong>MON</strong></td>
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</tbody>
</table>
| **TUE** | **ANAT1003** | Introduction to Human Anatomy  
**DALE, Leslie** (Dr)  
Medical Sciences 131 A V Mill LT  
10 GROUP A | **ANAT1003** | Introduction to Human Anatomy  
**DALE, Leslie** (Dr)  
Medical Sciences 131 A V Mill LT  
10 GROUP B |       |       |       |       |       |       |       |       |       |       |
| **WED** |       |       |       |       |       |       |       |       |       |       |
| **THU** |       |       |       |       |       |       |       |       |       |       |
| **FRI** | **ANAT1003** | Introduction to Human Anatomy  
**EVANS, Susan** (Prof)  
Medical Sciences 131 A V Mill LT  
10 GROUP A | **ANAT1003** | Introduction to Human Anatomy  
**EVANS, Susan** (Prof)  
Medical Sciences 131 A V Mill LT  
10 GROUP A |       |       |       |       |       |       |       |       |       |       |

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[http://ucl.ac.uk/medicalschool/staff-students/course-information/ecm](http://ucl.ac.uk/medicalschool/staff-students/course-information/ecm)
### Curriculum Map: Block View

<table>
<thead>
<tr>
<th>Block no.</th>
<th>Module</th>
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<tbody>
<tr>
<td>1</td>
<td>Foundations of medicine</td>
</tr>
<tr>
<td>2</td>
<td>Circulation and respiration</td>
</tr>
<tr>
<td>3</td>
<td>Nutrition, digestion and metabolism</td>
</tr>
<tr>
<td>4</td>
<td>Haematological and immune system</td>
</tr>
<tr>
<td>5</td>
<td>Musculo-skeletal and nervous system</td>
</tr>
<tr>
<td>6</td>
<td>Psychological health</td>
</tr>
<tr>
<td>8</td>
<td>Reproduction and control</td>
</tr>
<tr>
<td>9</td>
<td>Disease processes and skin</td>
</tr>
<tr>
<td>10</td>
<td>Excretion and homeostasis</td>
</tr>
<tr>
<td>11</td>
<td>Reproductive and child health</td>
</tr>
</tbody>
</table>
Block Outcomes

CURRICULUM MAP

Display curriculum by Block

[ Re-set listing ]

Block no.

Excretion and homeostasis

Now here are the Outcomes for this Block:

- Perform an abdominal system examination
- Describe the attributes of an effective screening programme
- Describe the anatomy and embryology of the renal and urinary tract
- Describe the role of the kidney in regulating fluid and electrolyte balance and pH
- Describe the role of the kidney in regulating blood pressure
- Describe the physiology of micturition
Course Outcomes: TD2009

1. Apply to medical practice biomedical scientific principles, method and knowledge relating to: anatomy, biochemistry, cell biology, genetics, immunology, microbiology, molecular biology, nutrition, pathology, pharmacology and physiology

2. Apply psychological principles, method and knowledge to medical practice

3. Apply social science principles, method and knowledge to medical practice

4. Apply to medical practice the principles, method and knowledge of population health and the improvement of health and health care

5. Apply scientific method and approaches to medical research

6. Carry out a consultation with a patient

7. Diagnose and manage clinical presentations

8. Communicate effectively with patients and colleagues in a medical context
Search on Outcomes
<table>
<thead>
<tr>
<th>Format</th>
<th>Title</th>
<th>Type</th>
<th>(i)</th>
<th>Tutors</th>
<th>Preview</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conducting System of the Heart</td>
<td>Resource</td>
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<tr>
<td></td>
<td>Events of the Cardiac Cycle (Wigger’s Diagram)</td>
<td>Resource</td>
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<td>El Latido Cardiaco (The Heart Valves)</td>
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<td></td>
<td>The Heartbeat</td>
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<td></td>
<td>Cardiac Cycle</td>
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<td></td>
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<td>Resource</td>
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<td></td>
<td>Electrical Signals and Blood Flow in the Heart</td>
<td>Resource</td>
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<td>Conduction System and Blood Flow through the Heart</td>
<td>Resource</td>
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<td>Cardiac Impulse (Electrical Impulse)</td>
<td>Resource</td>
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<td>Cardiac Cycle Blood Flow</td>
<td>Resource</td>
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<td></td>
<td>Ventricular Contraction in Cardiac Cycle - self assessment question</td>
<td>Question &amp; Test</td>
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<td></td>
<td>Ventricular Contraction in Cardiac Cycle - self assessment question</td>
<td>Resource</td>
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</tbody>
</table>
Conducting system of the heart

1. Overview

- Superior vena cava
- Left atrium
- Interventricular septum
- Right atrium
Curriculum Mapping

Dimensions of Map

(Timetable, Courses, Learning Outcomes, Learning Opportunities, and Assessment)
Few reports on curriculum mapping or research studies into mapping exist in the medical education literature.

Timothy G. Willett, *Medical Education* 2008: 42: 786-793
Ten questions to ask when planning a curriculum

1. Vision
2. Learning outcomes
3. Content
4. Organisation of content
5. Educational strategies
6. Teaching methods
7. Assessment
8. Communication about the curriculum
9. Educational environment
10. Management
2300 Abstracts

Only 3 Curriculum Mapping!

• Saudi Arabia
• Canada
• Singapore

NONE from Europe!
Why not more research and development in curriculum mapping?

1. Not an easy task
2. Time consuming
3. Lack of available tools
4. Requirements of schools vary
5. Curriculum is a dynamic, evolving process
6. Collaboration required
Mapping Medical Education Curricula: Experience in Europe

Rewarding and Necessary
Progress Has Been Made
Need for Collaboration & Research

Ronald M Harden
OBE MD FRCP(Glas) FRCS(Ed) FRCPC
Professor of Medical Education (University of Dundee)
General Secretary (AMEE)
Mapping Curricula with the Curriculum Inventory

Terri Cameron
Director of Curriculum Management
Association of American Medical Colleges
MedAPS: Suite of Services

Provide AAMC member medical schools with the tools necessary to assess, maintain and fulfill accreditation standards and promote continuous quality improvement.

Curriculum Inventory & Reports
(Replacing CurrMIT)

ASSET
(Accreditation Standards Self-Evaluation Tool)

ASSET Dashboard

www.aamc.org/medaps

2012 AAMC Annual Meeting
Curriculum Inventory & Reports

- Streamline and simplify curriculum data collection and exchange utilizing internationally adopted standards

- Provide graphical interpretations of aggregate and historical curriculum-related data (includes LCME A/Q Part II data)

- Serve as the source for benchmarking and educational research in medical education

www.aamc.org/medaps
Standardized Vocabulary

- Use local terms for institutional data entry and reporting; match to standardized vocabulary for upload to CIR for aggregate reporting
  - Instructional Methods
  - Assessment Methods
  - Resources

- Keywords
  - UMLS
    - UMLS ‘synonyms’ appended to keyword list
    - Can search using UMLS terms or free text

www.aamc.org/medaps
Competency Reference List for Healthcare Professions

- Compared/mapped healthcare profession competency sets to create a set of ‘core’ competencies for aggregate reporting in MedAPS and MedEdPORTAL
  - ACGME
    - Including RRCs
  - CanMEDS
  - Scottish Doctor
  - Tomorrow’s Doctors
  - Healthcare Professions

www.aamc.org/medaps
Competency Reference List for Healthcare Professions

- Match local competencies to Competency Reference List for aggregate reporting
  - Competencies being mapped across curriculum
  - Instructional methods used to teach competencies
  - Assessment methods used to assess achievement of competencies
  - Content areas in which competencies are taught

www.aamc.org/medaps
Of those offering interprofessional education experiences in required sessions (n=102), Percentage of U.S. Medical Schools Indicating Relevance of Various “General Goals” of Interprofessional Education Experiences*

<table>
<thead>
<tr>
<th>Goal</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teach Specific Content Areas In the Basic Science Disciplines</td>
<td>38</td>
<td>35.3%</td>
</tr>
<tr>
<td>Teach Specific Content Areas In the Humanities/Ethics/Law</td>
<td>38</td>
<td>37.3%</td>
</tr>
<tr>
<td>Teach Specific Content Related to Functioning In Teams or Team</td>
<td>80</td>
<td>78.4%</td>
</tr>
<tr>
<td>Teach Specific Content Areas In Clinical and Interdisciplinary Areas</td>
<td>71</td>
<td>69.6%</td>
</tr>
<tr>
<td>Practice Specific Clinical Skills for a Health Care Team</td>
<td>67</td>
<td>65.7%</td>
</tr>
<tr>
<td>Familiarize Medical Students with the Roles of Other Health</td>
<td>84</td>
<td>82.4%</td>
</tr>
</tbody>
</table>

N = 134 U.S. Medical Schools
Source: LCME Annual Questionnaire Part II, 2012
AAMC Curriculum Reports: www.aamc.org/curriculumreports

* Schools were provided with a list of “General Goals” from which to choose. An “Other” option was not included. A single school may be represented in multiple categories.
Discussion Questions

• What are the benefits of curriculum mapping?
• What are schools using for roadmaps?
• Competencies
• Symptoms
• Clinical Conditions
• What are the challenges?
• What are the solutions to the challenges?
• Who are the key players in a curriculum mapping project?
Discussion Questions

• What resources do they need?
• How do you keep the process moving?
• How do you keep faculty/course directors involved post-mapping?
• How often do you repeat the process?