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Learning from others: Why we need not reinvent the wheel implementing CBME in Canada

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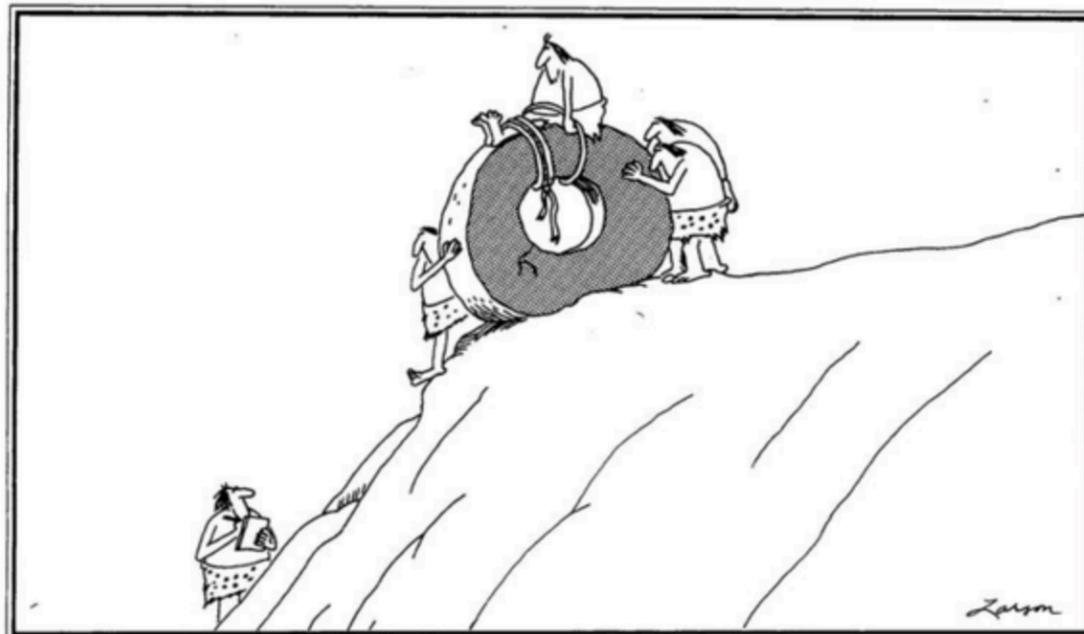
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Disclosure

- ▶ We do not have any relevant financial relationships with commercial interests that pertain to the content of this presentation.

Why look outside of medicine?

- ▶ Are medical competency strategies particularly unique?
 - ▶ High Risk
 - ▶ Broad competencies
- ▶ What are their shared traits?
 - ▶ Competency based
 - ▶ Shared means of assessment and teaching



Early experiments in transportation

How to search the Grey literature

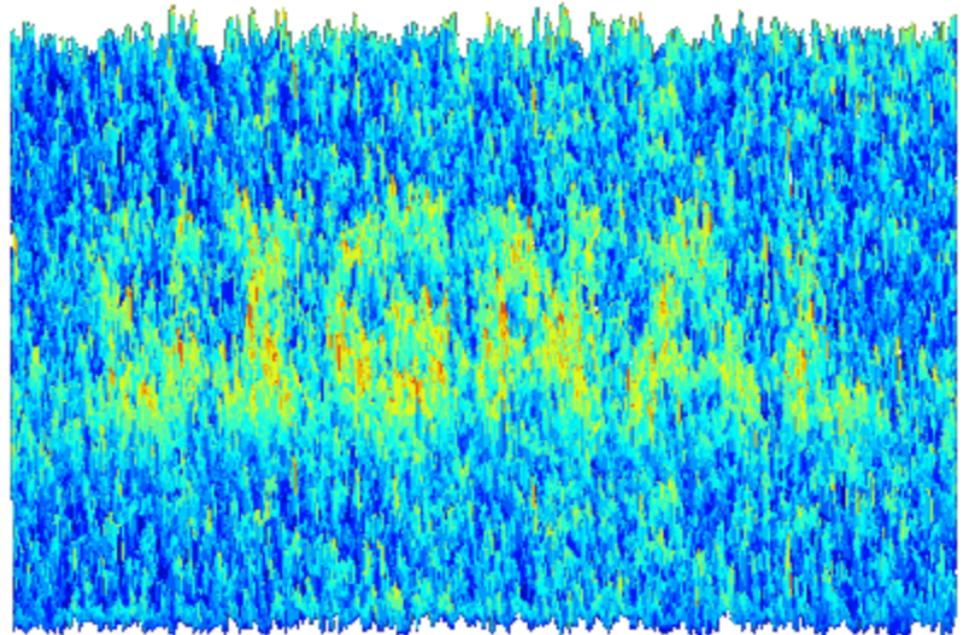
- ▶ Grey literature consists of articles that are typically not found within peer-reviewed articles and journals.
- ▶ Typically this search is labor intensive and requires strict vetting of articles.
- ▶ Search engines typically must be broad engines, such as Google.
 - ▶ Google Scholar and Pubmed are typically too narrow.



"I climb all this way, and you tell me *THAT'S* the meaning of life?!"

How to find the signal in the noise

- ▶ Focused search engine with relevant use of keywords.
 - ▶ Librarians are an excellent resource.
- ▶ Abstract review
- ▶ Full text review



What fields have CBD type training?

- ▶ Agriculture
- ▶ Nursing
- ▶ Food Inspection
- ▶ Education
- ▶ Aviation

Resource 1: “Competency-Based Learning or Personalize Learning”

- ▶ US Department of Education
- ▶ Extensive list of examples of CBD implementation in American learning institutions on the state and district levels.
 - ▶ Hyperlinked
 - ▶ Summaries
- ▶ Example New Hampshire HS
 - ▶ Specific Course Level Competencies
 - ▶ Clarification of competencies with grading rules
- ▶ Example New Hampshire HS
 - ▶ *Follow the Child* Campaign
 - ▶ Individualized learning tracks
 - ▶ Students as active learners
 - ▶ Time Flexible
 - ▶ Specific Course Level Competencies
 - ▶ Clarification of competencies with grading rules

Resource 2: “Safe Food Canada: The Learning Partnership”

- ▶ Government of Canada Website
- ▶ Highly complicated curriculum
- ▶ Very convoluted means of progression
- ▶ Archived article
 - ▶ Chance of failure

Annex A

Template for a Competency-Based Curriculum Framework

Leadership	Leadership Development – Employee to Senior executive			Emerging Issues	Annual Updates
Specialist	Practicum / on the job / recognition				
	Unprocessed Concentration	Manufactured Concentration	Retail Concentration		
	Training in common				
Journey	Practicum / on the job / recognition				
	Unprocessed Concentration	Manufactured Concentration	Retail Concentration		
	Training in common				
Entry	Practicum / on the job / recognition				
	Unprocessed Foundations	Manufactured Foundations	Retail Foundations		
	Training in common				

Resource 3: “Design and Implementation of a Competency-Based Transfusion Medicine Training Program in Canada”

- ▶ Transitioned from a Competency/Time model to a pure CB curriculum.
- ▶ Review describes this process and the its application.
- ▶ Trainees are generally self sufficient, educated, and motivated.
- ▶ Assessment based on Miller’s Pyramid.

Table 1

Comparison of elements of time- and process-based vs competency-based educational model

Elements	Educational model	
	Time and process based	Competency based
Educational goal	Knowledge acquisition	Knowledge application
Responsible for content	Teacher	Teacher and learner
Assessment tool	Single subjective measure	Multiple objective measures
Assessment timing	Summative ^a	Formative ^b
Evaluation standard	Norm referenced ^c	Criterion referenced ^d
Program completion	Fixed time	Variable time

Adapted from Carraccio et al [2] and Weinberger et al [10].

^a Summative refers to feedback given at the end of a rotation or at the end of a training program. A certification examination provides summative feedback.

^b Formative refers to feedback that is provided within the context of the learning experience, for example, mid-rotation or during a clinic, as opposed to at the completion of a rotation, or of a program.

^c Norm referenced refers to comparing learners to each other to determine grading criteria.

^d Criteria referenced refers to use of a set criteria or standard in determining grading.

Resource 4: “Challenges in Developing Competency Based Training Curriculum for Food Safety Regulators in India”

- ▶ Goals were to Identify competencies, develop a CB training curriculum, and develop training materials to train the workforce.
- ▶ Five training modules were developed.
- ▶ Major challenge is implementation and resources for implementation.
- ▶ Curriculum Design:
 - ▶ In-depth review of syllabus and assessment.
 - ▶ Review of international materials with a dedicated research team.
 - ▶ Multiple workshops and group meetings to assemble the final curriculum.

Resource 4 (cont.)

<u>Formation of Curriculum Development Committee</u>	<u>Methodology</u>	<u>Curriculum development activities</u>	<u>Output</u>
Food Safety and Standard Authority of India (FSSAI)	Recruitment and orientation of food safety team	Deciding on the number of sessions, session objectives, methodology, content development (theory), Development of teaching aids – PPTs, Case studies, Multiple choice questions	Food Handlers : Facilitator guides and handbooks on Level 1: Basic level Level 2: For Staff Level 3: For Supervision
Public Health Foundation of India (PHFI) Indian Institute of Public Health, Hyderabad	Situation Assessment by conducting field visits, interviewing key stakeholders	Inputs by various members of CDC, Examination of relevance to Indian context, Review by subject matter experts, Incorporating the necessary changes	Food Safety officers - Facilitator Guide & Handbook on Module I – Food science and Technology Module II – Food Safety Management systems Module III – Food Safety Legislations Module IV – Enforcement of food safety legislation Module V – Administrative functions Food Safety officers – Log Book
Royal Society of Public Health (RSPH)	Desk Review to collect information on existing curriculum, duration of training, content of training, training resources available and target audience for training	Designing the Log Book with relevant forms and formats, developing the training handbooks and complimentary facilitator guides.	Designated Officers Handbook and Facilitator Guide (15 days)
National Institute of Nutrition (NIN), Hyderabad	Consultation meetings with FSSAI team NIN, RSPH team Workshop for finalizing the curriculum	Legal inputs from legal firm, specific technical inputs from packaging industry and retail sector.	
Institute of Preventive Medicine, Hyderabad	Determining the duration of training, schedule, trainee and trainer criterion, certification and accreditation regulators	Dissemination of the training curriculum and training materials from local bodies to food	
Food Regulators from Andhra Pradesh, Maharashtra, Gujarat, Delhi, Haryana and Uttar Pradesh			

Resource 5: “Veterans Affairs Interprofessional Nurse Practitioner Residency in Primary Care: A Competency-Based Program”

- ▶ Development of an assessment tool for NP’s to show effectiveness and competence in essential interprofessional team based care:
 - ▶ Ability to assess
 - ▶ Diagnosis
 - ▶ Treatment
 - ▶ Management of common acute and chronic conditions
 - ▶ Patient centered care
 - ▶ Leadership
 - ▶ Performance Improvement
 - ▶ Population Health
- ▶ Tool:
 - ▶ EPA based
 - ▶ Entrustment Likert
 - ▶ Observer->Supervisor
 - ▶ Qualitative Open Ended Questions
- ▶ Curriculum:
 - ▶ Workplace/Experiential
 - ▶ Didactic sessions
 - ▶ Self Evaluation and Mentor Evaluations

How do these fields relate to medicine?

- ▶ Transfer - near/far
- ▶ Assessment Models
- ▶ Continuing Education Models
- ▶ Curriculum planning

So What?

- ▶ Why do we care?
- ▶ Why is this relevant?
- ▶ What can we learn?

Workshop and Panel Discussion

Workshop and Panel Discussion

- ▶ What do you think are two examples of “best practice” of competency-based education in your experience?

Workshop and Panel Discussion

- ▶ What are two examples of “Worst Practice” of competency-based education in your experience?
 - ▶ Judgment Free Zone please!

Workshop and Panel Discussion

- ▶ Moving forward, what fields outside of medicine do you feel are particularly rich for application towards CBME?
- ▶ What are the untapped resources?

Workshop and Panel Discussion

- ▶ Is CBD better for more advanced learners?
 - ▶ What does this mean?

Workshop and Panel Discussion

- ▶ What can we learn from the grey literature about curriculum design when planning for CBME?

Workshop and Panel Discussion

- ▶ What can we learn about assessment from outside fields when considering CBME?

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