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

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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
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.
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

<table>
<thead>
<tr>
<th>Leadership</th>
<th>Leadership Development – Employee to Senior executive</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Practicum / on the job / recognition</td>
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<tr>
<td></td>
<td>Unprocessed Concentration</td>
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<tr>
<td>Specialist</td>
<td>Training in common</td>
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<td>Practicum / on the job / recognition</td>
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<td>Unprocessed Concentration</td>
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<td>Journey</td>
<td>Training in common</td>
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<td>Practicum / on the job / recognition</td>
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<td></td>
<td>Unprocessed Foundations</td>
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<tr>
<td>Entry</td>
<td>Training in common</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emerging Issues</th>
<th>Annual Updates</th>
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</table>
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 its application.
- Trainees are generally self-sufficient, educated, and motivated.
- Assessment based on Miller’s Pyramid.

<table>
<thead>
<tr>
<th>Elements</th>
<th>Time and process based</th>
<th>Competency based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational goal</td>
<td>Knowledge acquisition</td>
<td>Knowledge application</td>
</tr>
<tr>
<td>Responsible for content</td>
<td>Teacher</td>
<td>Teacher and learner</td>
</tr>
<tr>
<td>Assessment tool</td>
<td>Single subjective measure</td>
<td>Multiple objective measures</td>
</tr>
<tr>
<td>Assessment timing</td>
<td>Summative</td>
<td>Formative</td>
</tr>
<tr>
<td>Evaluation standard</td>
<td>Norm referenced</td>
<td>Criterion referenced</td>
</tr>
<tr>
<td>Program completion</td>
<td>Fixed time</td>
<td>Variable time</td>
</tr>
</tbody>
</table>

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

- 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.
- 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.
- Norm referenced refers to comparing learners to each other to determine grading criteria.
- 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.
<table>
<thead>
<tr>
<th><strong>Formation of Curriculum Development Committee</strong></th>
<th><strong>Methodology</strong></th>
<th><strong>Curriculum development activities</strong></th>
<th><strong>Output</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Safety and Standard Authority of India (FSSAI)</td>
<td>Recruitment and orientation of food safety team</td>
<td>Deciding on the number of sessions, session objectives, methodology, content development (theory), Development of teaching aids – PPTs, Case studies, Multiple choice questions</td>
<td>Food Handlers: Facilitator guides and handbooks on Level 1: Basic level Level 2: For Staff Level 3: For Supervision</td>
</tr>
<tr>
<td>Public Health Foundation of India (PHFI) Indian Institute of Public Health, Hyderabad</td>
<td>Situation Assessment by conducting field visits, interviewing key stakeholders</td>
<td>Inputs by various members of CDC, Examination of relevance to Indian context, Review by subject matter experts, Incorporating the necessary changes</td>
<td></td>
</tr>
<tr>
<td>Royal Society of Public Health (RSPH)</td>
<td>Desk Review to collect information on existing curriculum, duration of training, content of training, training resources available and target audience for training</td>
<td>Designing the Log Book with relevant forms and formats, developing the training handbooks and complimentary facilitator guides.</td>
<td></td>
</tr>
<tr>
<td>National Institute of Nutrition (NIN), Hyderabad</td>
<td>Consultation meetings with FSSAI team NIN, RSPH team Workshop for finalizing the curriculum</td>
<td>Legal inputs from legal firm, specific technical inputs from packaging industry and retail sector.</td>
<td></td>
</tr>
<tr>
<td>Institute of Preventive Medicine, Hyderabad</td>
<td>Determining the duration of training, schedule, trainee and trainer criterion, certification and accreditation regulators</td>
<td>Dissemination of the training curriculum and training materials from local bodies to food</td>
<td></td>
</tr>
<tr>
<td>Food Regulators from Andhra Pradesh, Maharashtra, Gujarat, Delhi, Haryana and Uttar Pradesh</td>
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Resident Doctors of Canada
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
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?
References
