Competency Based Education for the Health Professions: Through the Looking Glass

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Disruptive Innovation

• Process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors.

http://www.claytonchristensen.com/key-concepts/
Certainly an innovation--

- Putting new ideas into practice or using existing ideas in new ways
  - (Melnyk & Davidson, 2009)

**Recommendations:**
- System Redesign
- Creating a Continuum of Education, Training, and Practice
- Implement a Robust Program of Assessment
- Enabling Technologies
- Outcomes Evaluation
Competency-Based Education

Teaching (process) vs Learning (outcome)
In Health Professions Education

- Promise to employers and public
  - Graduates are capable
  - Graduates will deliver quality safe patient care
  - They are vs they should be

- Accreditation starting to move from monitoring of process (content/time) to monitoring of outcomes

Competency Frameworks in Medicine

**ACGME (US)**
- Patient care
- Medical knowledge
- Practice based learning and improvement
- Interpersonal and communication skills
- Professionalism
- Systems-based practice
Milestones

- Developmental roadmap for each competency
- Benchmarks for
  - Progression of knowledge, skills, attitudes
  - Expectations, assessment and feedback
- Pediatric version with UME, GME, & MOC milestones

(Adapted from AAMC, 2014)
Risk of Reductionism

- Individual competencies
  - Do not add up to practice
  - Do not ensure integration and application
  - Do not capture outcome of caring for patients

- Objective assessment of competencies
  - Measuring what is easy vs what is relevant
  - Capabilities may not translate across contexts

Determining Competence
Competence

• Drives safely during bad weather, avoids accidents, no traffic tickets

*Competence entails more than the possession of knowledge, skills and attitudes; it requires the ability to apply these in the clinical environment to achieve optimal results.*

ten Cate et al., *Medical Teacher* 2010

Current Approach

• Define competencies
  • Knows traffic rules
  • Can accelerate and brake smoothly
  • Can approach intersection and turn left

• Ensure competent drivers
  • Pass driver’s education classes
  • Pass driver’s license test (written + driving)
Criteria for Choosing a Nurse

- Years of training?
- Passed all written exams?
- Grades and scores on skills exams?
- Follows protocols and guidelines?
- Can care for patients/manage cases in best way possible?

(Adapted from AAMC, 2014)
What If we...

- Identify important clinical activities
- Concrete professional activities
- Allows deliberate “decisions of entrustment”
- Portfolio of mastered EPAs documents full competence

**Professional Activity**

Entrustable Professional Activities

*Is a unit of professional practice that can be entrusted to a sufficiently competent learner or professional*

ten Cate et al. *Medical Teacher* 2015

- Framework for working with competencies
- Grounded in everyday workplace tasks
Examples from Medicine

**GME**
- Manage care of patients with chronic disease (internal medicine)
- Care for a well newborn (pediatrics)
- Care of complicated pregnancy (obstetrics/gynecology)

**UME**
- Gather a history and perform a physical examination
- Recommend and interpret common diagnostic and screening tests
- Recognize a patient requiring urgent or emergent care and initiate evaluation and management

Elaborated EPA Description

1. EPA title
2. Specifications and limitations
3. Most relevant competency domains
4. Required knowledge, skills, attitudes
5. Sources of information to assess progress (basis of formal entrustment)
6. Levels of entrustment/supervision at which level of training (implications of entrustment)
7. Expiration date (optional)

ten Cate et al. Medical Teacher 2015
Why All the Excitement?

Reason #1

Holistic Approach to Competencies
Reason #2

*Links Supervision/Entrustment to Assessment*

Assessment using EPA Framework

- Aligns with supervision decisions faculty already make every day

- Results in meaningful advancement in learner responsibility
### Entrustment/ Supervision Scales

<table>
<thead>
<tr>
<th>GME Enterrustment Scale</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not allowed to practice EPA</td>
</tr>
<tr>
<td>2</td>
<td>Allowed to practice under proactive full supervision</td>
</tr>
<tr>
<td>3</td>
<td>Allowed to practice under reactive supervision</td>
</tr>
<tr>
<td>4</td>
<td>Allowed to practice EPA unsupervised</td>
</tr>
<tr>
<td>5</td>
<td>Allowed to supervise others in practice of EPA</td>
</tr>
</tbody>
</table>

ten Cate et al. *Medical Teacher* 2010

### Adjustment for UME

<table>
<thead>
<tr>
<th>GME Scale</th>
<th>UME Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1a. Not allowed to observe 1b. Allowed to observe</td>
</tr>
<tr>
<td>2</td>
<td>2a. As coactivity with supervisor 2b. With supervisor in room ready to step in as needed</td>
</tr>
<tr>
<td>3</td>
<td>3a. With supervisor immediately available, all findings double checked 3b. With supervisor immediately available, key findings double checked 3c. With supervisor distantly available, findings reviewed</td>
</tr>
</tbody>
</table>

Chen et al. *Academic Medicine* 2015
Reason #3

*Highlights Consequences of Assessment*

**Entrustment Decisions**

- Places patient safety front and center
- Takes into account trustworthiness
- Looks forwards instead of backwards
Readiness for Entrustment

- Based on
  - Knowledge and skill
  - Conscientiousness/consistency
  - Truthfulness/benevolence
  - Knowing one’s limits/willingness to ask for help

- Ability
- Reliability
- Integrity
- Humility


Caroline, David, & Amy

- David
  - expected knowledge/skill
  - identifies gaps
  - asks questions

- Amy
  - impressive knowledge/skill
  - does not ask for help
  - did not report key finding
Future Performance

“How big is the risk of this learner performing seriously below standard in a future case?”

Schuwirth & van der Vleuten, 2006

![Performance Chart](chart.png)

True Purpose of CBE

Deliver practitioners who are capable of

- coping with
- providing safe quality care in the context of unpredictable requirements of practice at any time during practice

(Adapted from ten Cate, 2018)
CBE – Where are We?

Competency-Based Time Variable (CBTV) Education

• Learners progress by demonstrating competencies
• Assessment/feedback allow coached progression
• Educational experiences are tailored to needs of the learner

• Time is not a proxy for competence but a resource
  • Allows attention to areas of need or interest
  • Allows goal acquisition with variable progression
Can It Be Done? Examples from Medicine

- Netherlands
  - Variable entry and length of residency training
  - Critical care EPAs and anesthesia residency training
- Canada
  - Family medicine residency program in CBE model
  - All GME programs to become competency based time variable
- AAMC UME/GME pilot in pediatrics
  - Transition to residency based on entrustment for 13 EPAs
  - U of Minnesota and U of Utah advanced students at variable times

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KU School of Nursing’s Innovative Clinical Design

NEW Essentials Accent the Baccalaureate Generalist Nurse

- The new Essentials of Baccalaureate Education for Professional Nursing Practice have reformed the guidelines for educating baccalaureate generalist nurses. (1) Essential of Nursing requires 628 hours of learning to move safely without the use of a baccalaureate degree.
  - Patient safety:
  - Knowledge of, assessment and intervention of, care, and
  - Knowledge of a nurse.
- The new Essentials also emphasize evidence-based practice, patient-centered care, quality improvement, safety, information technology, teamwork, and collaboration.

Competency-based Clinical Model

- The Kansas University School of Nursing changed its clinical model to reflect a competency-based approach. This means that the graduates will have demonstrated competency within the practice experience.
- For each clinical course, students will be assessed for demonstrating competency in each area of our Clinical Development Model (Fig. 1).
- Eight major areas of competence are defined in this model. So far, these major areas of competence are the same as those identified by the Framework’s evidence-based practice. These major areas include patient safety, information technology, teamwork, and collaboration. The model environment is the Kansas University School of Nursing model for student-based practice and professional roles.
- This model begins its junior nursing students (JN) in the fall of 2011.

Implementing the Clinical Development Model

- The clinical model will be implemented with students participating in ongoing patient care (OPC) in floor-based clinics and units.
- The student-centered care (SCC) is when the students will be assigned the care of patients on the unit in order to complete their competencies.
- The Perceptual Learning Activities (PLA) will provide the student experience in order to complete the learning opportunities. The systems regarding best clinical practices will be implemented in the learning environment. The PLA are designed to keep students engaged in applying the learning outcomes and improving their decision-making abilities. The activities may be interdisciplinary, involving patient, planning nursing actions, or planning patient-centered care in a specific setting.
- The curriculum is designed to improve evidence-based practice.

Figure 1: KU SON Clinical Development Model
Seven years later:

26 pages

What about Nursing EPAs?

- Baccalaureate, Masters, Doctoral
- Matching with other practice disciplines
- 10-20 (ten Cate)
- Delphi process
- Align with Essentials
How could the **Time Variable component** become more meaningful?
What does Competency-Based Nursing Education 2.0 look like?

Evidence from Learning Science:

- A data infrastructure to identify students who are at risk of failure
- Block scheduling
- Learning cohorts who take courses together
- Structured curricular pathways
- Academic and life coaches
- Frequent diagnostic testing and performance based assessments

Recommendations:

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- Enabling Technologies
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References


• KU School of Nursing’s Innovative Clinical Design. (2011). University of Kansas


• ten Cate, O., Snell, L., Carraccio, C. (2010). Medical competence: the interplay between individual ability and the health care environment. Medical Teacher, 32:669-675.

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