**Educating Physicians: A Call for Reform**

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The Ohio State University
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**Flexner’s Legacy**

- High standards for admission
  - College degree with science requirements
- Expanded science-based curriculum
  - Two years basic sciences
  - Two years clinical experience
- University/teaching hospital

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**Starling-Ohio Medical College, Columbus**

- 220 students, admitted from high school
- Fees: $27,500
- “The school has a large plant. Laboratories adequately equipped for routine instruction...There is no evidence anywhere of original activity or interest...The school controls two hospitals. Neither hospital is built, organized, or equipped with the necessities of teaching in view.”
  – December, 1909

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**1910: Flexner’s Observations**

- Great variability
- Lax admissions standards
- Passive learning, anemic curricula, poor facilities
- Faculty of practitioners
- No accreditation, certification or residency training

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**Medical Education Then and Now**

1910
- Dissecting Room, medical students and professor

2010
- Multi-disciplinary lab with media support

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The Carnegie Research Team

Four Recommendations

- **Standardization and individualization**
  - Set performance outcomes and allow flexibility in learning
- **Integration**
  - Connect formal and experiential knowledge
- **Habits of inquiry and improvement**
  - Focus on excellence
- **Identity formation**
  - Develop professional values and dispositions

2012 Ohio State University Curriculum

- **Lead serve inspire**
- **Curriculum for Tomorrow's Medicine**
  - Learning for life
  - Formation of a professional identity
  - Personalized learning for standardized results

2010 Carnegie Study

- Part of 5 profession study
- Included 14 site visits
- Based on research in the learning sciences and medical education

Standardization Refocused

Mapping Educational Processes: 1910

<table>
<thead>
<tr>
<th>Course</th>
<th>Western Reserve</th>
<th>NYU</th>
<th>U-AB</th>
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<td>OB/GYN</td>
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Mapping Competencies, Milestones & Tools: 2010
Standardization and Milestones

- Competency-based progression, milestones and merit-based advancement
- Entrustable professional activities

Entrustable Professional Activities

Recommendations for the Future

- Standardization and individualization
  - Set outcomes and allow flexibility in learning
- Integration
  - Connect knowledge and experience
- Habits of inquiry and improvement
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- Identity formation
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Individualize Learning Process

- Build on learner’s prior experience and expertise
- Progressively advance learner responsibilities as milestones attained
  - Individualized learning plans
- Increase educational flexibility and develop alternate tracks
  - Pathways to Discovery

Integration

- Connect knowledge and experience
- Engage in multiple forms of reasoning
  - Analytical reasoning
  - Pattern recognition
  - Creative and adaptive reasoning
- Involve in multiple physician roles
Examples of Integration

- Early clinical immersion
- Longitudinal integrated experience
- Interprofessional teams and patient centered medical homes

Habits of Inquiry & Improvement

- Develop habits of learning and innovation
  - Metacognition and adaptive expertise
- Advance expertise through deliberate practice & feedback
  - Experts vs experienced non-experts
- Participate in communities of inquiry and improvement

Current UCSF Curriculum

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
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<td>Integrated Science Courses</td>
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Proposed Curriculum

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<th>Year 2</th>
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Inquiry and Improvement

“How can we improve our transitions of care?”

Recommendations for the Future

- Standardization and individualization
  - Set outcomes and allow flexibility in learning
- Integration
  - Connect knowledge and experience
- Habits of inquiry and improvement
  - Focus on excellence
- Identity formation
  - Develop professional values and dispositions

Examples: Inquiry/Improvement

- Engage in service learning in quality, safety, interdisciplinary teamwork, and advocacy with training and support
- Access information, identify best practices and develop practical reasoning
Recommendations for the Future

- Standardization and individualization
  - Set outcomes and allow flexibility in learning
- Integration
  - Connect knowledge and experience
- Habits of inquiry and improvement
  - Focus on excellence
- **Identity formation**
  - Develop professional values and dispositions

Summary

1. Standardize on outcomes and individualize the learning process
2. Integrate knowledge and clinical experience
3. Develop habits of inquiry and improvement
4. Focus on professional identity formation

Professional Identity Formation

- **Formation**
  - Process of taking on identity
  - Commitment to values, dispositions and aspirations
- **Learned through**
  - Participation in a community of practice
  - Observation of role models, interactions
  - Coaching, instruction, assessment and feedback

Strategies for Formation

- Create positive learning environments
- Utilize appreciative inquiry
- Incorporate ratings of respect

References