

# What Methods Do Dental School Course Directors Use to Assess Students' Progress Toward Competency?

Selected Results of the 2008 Student Competency Assessment Survey

ADEA CCI Outcomes Assessment Task Force



## Assessing Progress Toward Competence



Development of competence is a continuum



Outcomes



How Can We "KNOW" they are ready?



## Agenda for this Presentation

- **Background – Outcomes Assessment TF**
- **Rationale & purpose of the study**
- **Survey methodology & sample**
- **Results:**
  - Bird's eye view of the results (big picture)
  - Primary assessments for each competency
  - Themes from written comments



## ADEA CCI Outcomes Assessment Task Force

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## Charges: ADEA CCI Outcome Assessment Task Force

- Determine methods currently used for assessment of dental students' performance & their progress toward competency.
- Prepare a white paper to share findings & recommend best practices in evaluation of readiness for entry-level general dentistry.
- Develop a template suggesting appropriate strategies for evaluation of the new ADEA predoctoral competencies.



## Purpose of This Survey

- Determine what assessment techniques dental school course directors are using to measure their students' progress toward entry-level professional competencies ....
- as defined by the ADEA "*Competencies for the New General Dentist*" (2008)
- Create baseline for longitudinal tracking



## What is Competency?

- "A competency is a complex behavior or ability essential for the general dentist to begin independent and unsupervised dental practice. Competency includes knowledge, experience, critical thinking, problem-solving, professionalism, ethical values and procedural skills. These components of competency become an integrated whole during the delivery of patient care."
- **ADEA; Competencies for the New General Dentist. (2008)**



## What is Competency?

- "Professional competence is the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values and reflection in daily practice for the benefit of the individuals and communities being served by the practitioner." (Epstein, 2002, JAMA)



## Agenda

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## Survey Methodology

- Online menu-driven survey with opportunities for write-in comments
- 21 questions -
  - 1- 5: respondent demographics
  - 6 - 12: respondents identified assessments for ADEA competencies from 19 options
  - 13 - 21: overall student assessment process
- Survey was piloted at 3 schools (n = 89)
- UTHSCSA IRB approval



## Data Collection

- Survey link sent to Deans for distribution to course directors
- 4 Distributions:
  - March 17
  - April 7
  - April 21: non-responding schools
  - May 5 - 12: personal contacts



## Respondents



Total response: 1,019 (925 usable)

Respondent profile:

- |                           |     |     |
|---------------------------|-----|-----|
| • Course directors        | 835 | 90% |
| • Academic Affairs Deans  | 49  | 5%  |
| • Other / cannot classify | 41  | 4%  |

52 of 56 U.S. dental schools responded (93%)

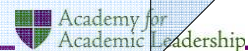
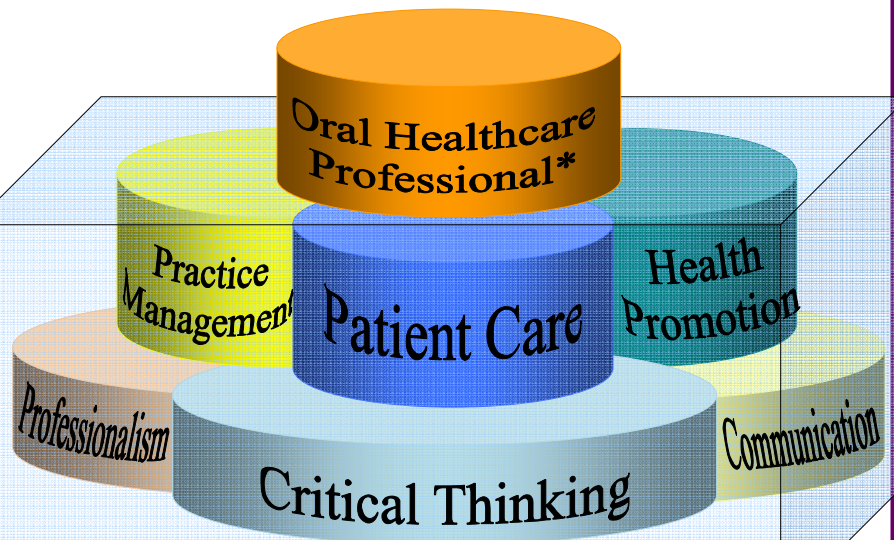
43% of estimated 2000 course directors at U.S. schools (42% of 4,768 full-time FTE)

## Handout

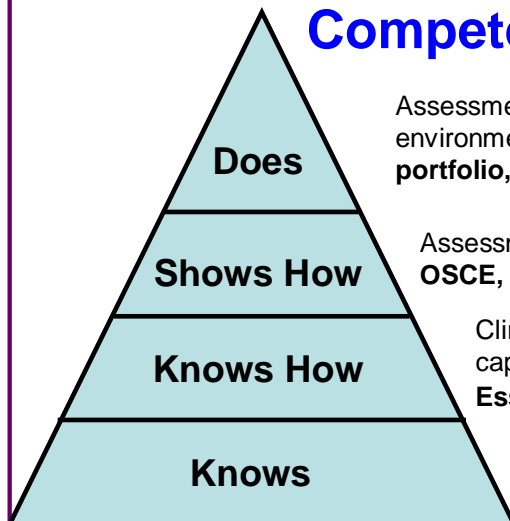
- ADEA 2008 Competencies for the New General Dentist
- Inventory of 17 assessment techniques included in the survey
- Most and least used assessments for each competency
- Checklist of competency assessment best practices recommended in literature
- Bibliography



## 2008 ADEA Competencies for General Dentist



## Miller's Pyramid of Competence



Assessment in high fidelity work environment (OTJ): **SPs, observation, portfolio, CPEX, clinical 3 Jump, 360**

Assessment in controlled situations: **OSCE, sim labs, 3 Jump, Gateways**

Clinical context tests; assess capacity for conceptual application  
**Essays, oral exams, case MCQ**

Tests of factual recognition  
**MCQ, reports**

Miller GE. Acad Med. 1990; 65: 563-567



## Bird's Eye View

<b>ADEA Competency</b>	<b>Method Reports</b>	<b>% Total Reports</b>	<b>% Attempted Assessment</b>
Critical Thinking	2795	19%	90%
Professionalism	1826	13%	64%
Communication/Interpersonal	1698	11%	59%
Health Promotion	1820	13%	61%
Practice Mgmt & Informatics	1534	10%	46%
Assessment, Dx & TxP	2427	17%	79%
Establish & Main Oral Health	2474	17%	78%



## What Assessment Methods are Used?

### Most Frequent – All Competencies Combined

Method	Reports	%
Case-based MCQ	2328	16%
Context-free MCQ	1746	12%
Daily evaluations in clinic	1744	12%
Clinical competency examinations	1603	11%
Technical skill evaluations in labs	1166	08%
Student self-assessment	1018	07%
	<b>9605</b>	<b>66%</b>

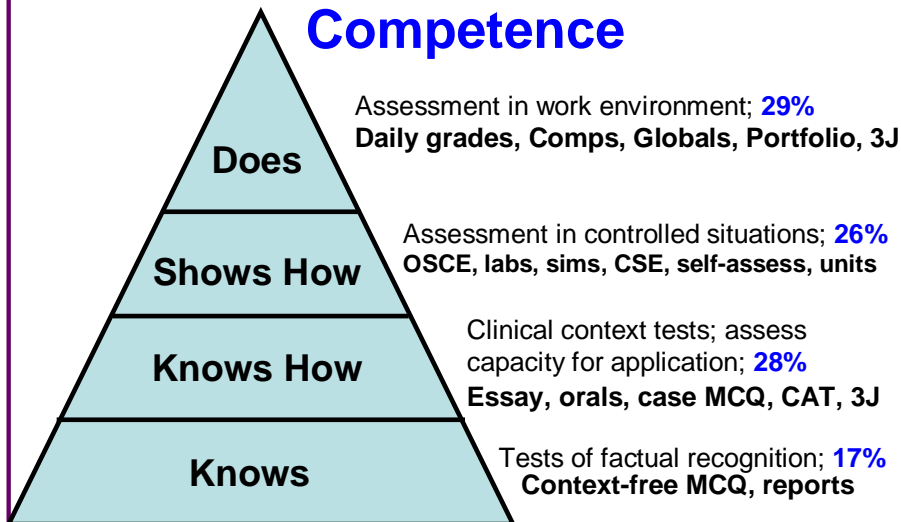
### Infrequently Used - All Competencies Combined

Method	Reports	%
Essays	553	04%
Oral (verbal) exams	548	04%
Global (long-term) evals in clinic	537	04%
Procedural units (requirements)	508	03%
Research projects & reports	507	03%
Computer-based simulations	435	03%
OSCEs	428	03%
	<b>3516</b>	<b>24%</b>

## Rarely Used – All Competencies Combined

Method	Reports	%
Have competency, but no method	339	02%
Critical appraisal (EBP)	326	02%
Other: mostly clinical 3J – Dx / TxP	250	02%
Chart-stimulated evaluation	237	02%
Portfolios	148	01%
Triple Jump	124	01%
	<b>1434</b>	<b>10%</b>

## Miller's Pyramid of Competence



How does your school make a comprehensive, overall, assessment of students' readiness for graduation / entry to practice?

Pass all courses, get all requirements, complete all rotations, pass all comps, etc	<b>67%</b>
Complete senior year satisfactorily in group practice with consistent core of faculty (e.g., in-school internship)	<b>7%</b>
Srs must pass a series of competency exams that are "gatekeeper" assessments	<b>7%</b>
Departments certify students are competent in their disciplines	<b>4%</b>
I don't know	<b>15%</b>



Is your competency assessment process "requirement-driven"?

Option	Course Directors	ADAA
<b>Yes</b> – for the most part it is	<b>29%</b>	<b>27%</b>
<b>It's a mixture</b> ; in some depts "YES" and "NO" in other departments	<b>43%</b>	<b>50%</b>
<b>No</b> – competency assessment is not requirement-driven in any area	<b>21%</b>	<b>23%</b>
Don't know	<b>7%</b>	<b>-0-</b>



## Are Students Assigned to Clinical Group Practices & When?

	Course Directors	ADAA
Yes – all four years	12%	33%
Yes – Soph, Jr & Sr yrs	13%	19%
Yes – Jr & Sr yrs only	25%	19%
Yes – Jr year only	1%	-0-
Yes – Sr year only	8%	3%
No – don't have group practices	21%	26%
Don't know	20%	-0-

## Does Your School Employ “Gateway” Competency Exams that are “Must Pass” to Advance / Graduate?

	Course Directors	ADAA
Yes – end of freshman yr	0%	0%
Yes – end of sophomore yr	6%	11%
Yes – end of Junior yr	4%	7%
Yes – end of several yrs	22%	22%
No gateway exams for any year	25%	57%
Don't know	43%	3%

## How is Your Mock Board Used For Student Assessment?

	Course Directors	ADAA
Mock board is mandatory but not graded; feedback is provided	<b>17%</b>	<b>21%</b>
Mock board is voluntary & not graded; feedback provided	<b>5%</b>	<b>12%</b>
Mock board performance is part of senior year evaluation	<b>9%</b>	<b>4%</b>
Seniors must pass mock board to graduate	<b>33%</b>	<b>59%</b>
Don't know enough to answer	<b>36%</b>	<b>4%</b>



## What is Your Level of Confidence That Your School Makes Accurate Decisions about Students' Readiness to Function as A Beginning General Dentists after Graduation?

	Course Directors	ADAA
I have high confidence	<b>44%</b>	<b>70%</b>
I am somewhat confident	<b>41%</b>	<b>30%</b>
I have low confidence	<b>4%</b>	<b>-0-</b>
I am not confident at all	<b>1%</b>	<b>-0-</b>
Don't have enough information to answer	<b>10%</b>	<b>-0-</b>



## Approx 700 Written Comments

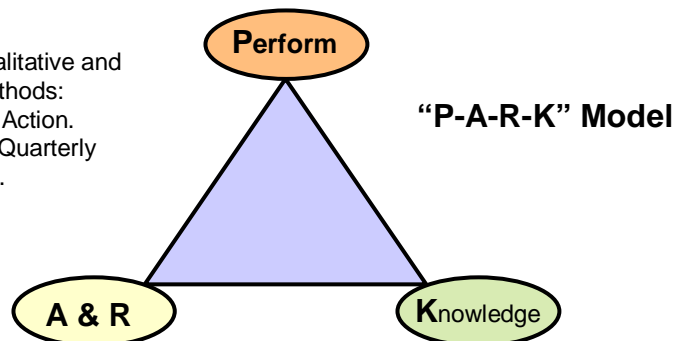
- Recognition that some competencies are assessed too much & others are not adequately assessed (low hanging fruit; numbers game)
- What is general dentistry? Time & requirements define student & faculty concept.
- Efforts to diversify assessments; pride
- How to achieve “wholistic” big picture appraisal of students’ overall competency?
- I know “my piece of the pie” but don’t see big picture; assessments lack coordination



## Faculty See Value of Multiple Measures

- Evaluations based on multiple data sources are more accurate than single-source measures

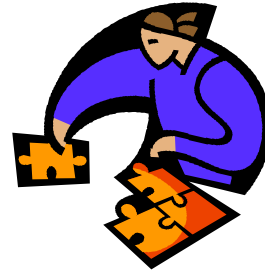
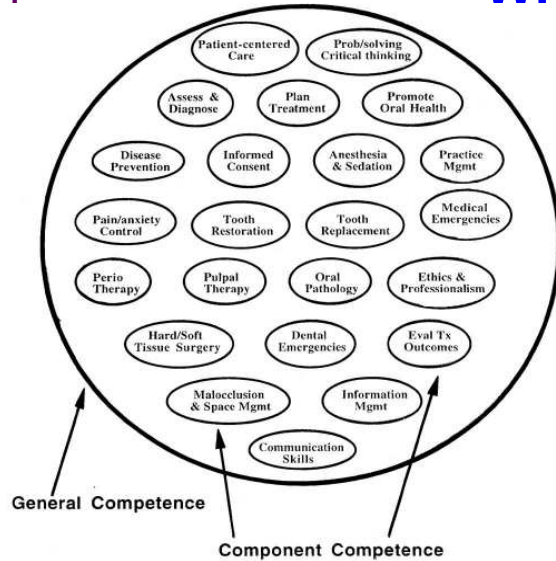
Jick. Mixing Qualitative and Quantitative Methods: Triangulation in Action. Admin Science Quarterly 1979;24:602-11.



Action Appraisal & Reflection



## Desire to Evaluate “Whole Package”



**Dental Education**  
Mostly assess individual  
components of  
competency



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## Discussion Questions

- Do these data reflect your school's approach to assessment of students' progress toward competency?
- How well does your school do with “whole package” assessment?
- If you could make one enhancement in your schools' approach to competency assessment, what would it be?



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