Current Innovations in Post-Graduate Dental Education

2016 ADEA Annual Session
Monday, March 14th

Tobias E. Rodriguez, PhD
Vice President, AAL
What do you see as the biggest challenges to post-graduate dental education?
History in graduate dental education

- **1910-1942**: Schools were organized via Flexner and Gies Reports, with four year curricula focused on scientific knowledge.

- **1940-1965**: Dental specialties were organized into two-four year curricula.

- **1960-1990**: Included recognition for one-year residency programs for general dentistry.

Timeline in advanced dental education

- **2008**: Joint Commission on National Dental Examinations (JCNDE) decided to move NBDE to pass/fail

- **2009**: ADEA/Future of Advanced Dental Education Admissions (FADEA) initiated

- **2012**:
  - NBDE Scores stopped being released
  - ADEA Postdoctoral Application Support Service (ADEA PASS℠)

- **2016**:  
  - National Board of Medical Examiners® (NBME®) Comprehensive Basic Science Examination (CBSE)  
  - ADAT begins
Survey of students on NBDE pass/fail grading

- 2012 survey, presented in 2014 (n=1843)

- Respondents felt the move to pass/fail grading decreased their chances of getting into a specialty residency by a margin of 3:1

- 80% wanted another objective measure to differentiate themselves to specialty program directors
Requirements most commonly used in medical residency programs

1. Grades in required clerkships

2. Scores for United States Medical Licensing Examination (USMLE) - Step 1

3. Grades in senior electives in specialty

4. Grades per number of honors courses

5. Scores for USMLE Step 2 Clinical Knowledge (CK)

Green, M. Acad Med. 2009 Mar;84(3):362-7
Qualities desired of dental residents

1. Team player
2. Assumes responsibility
3. Integrity
4. Interpersonal/communication skills
5. Reliability
Structure of the ADAT

ADAT

Critical Thinking

Professional Ethics & Patient Management

Biomedical Sciences

Clinical Sciences

Data and Research Interpretation
ADAT question details

<table>
<thead>
<tr>
<th>Critical Thinking</th>
<th>Number of Items per Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Sciences</td>
<td>80</td>
</tr>
<tr>
<td>Clinical Sciences</td>
<td>60</td>
</tr>
<tr>
<td>Data and Research Interpretation</td>
<td>30</td>
</tr>
<tr>
<td>Professional Ethics and Patient Management</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>TOTAL 200</td>
</tr>
</tbody>
</table>
ADAT testing schedule

<table>
<thead>
<tr>
<th>ADAT Testing Schedule (Pilot)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tutorial</strong></td>
<td>15 minutes</td>
</tr>
<tr>
<td>Session One- 110 items</td>
<td></td>
</tr>
<tr>
<td>Biomedical Sciences</td>
<td>1 hour, 50 minutes</td>
</tr>
<tr>
<td>Data and Research Interpretation</td>
<td></td>
</tr>
<tr>
<td><strong>Scheduled Break</strong></td>
<td>30 minutes</td>
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<tr>
<td>Session Two – 90 items</td>
<td></td>
</tr>
<tr>
<td>Clinical Sciences</td>
<td>1 hour, 30 minutes</td>
</tr>
<tr>
<td>Professional Ethics and Patient Management</td>
<td></td>
</tr>
<tr>
<td><strong>Post-exam survey</strong></td>
<td>15 minutes</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4 hours, 20 minutes</td>
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</tbody>
</table>

ADA, 2015
ADAT specifics

- Will be overseen by the ADA Committee on Dental Education (CDEL)

- Scores will range from 200-800

- Expected mean is 500, standard deviation is 100

- Scores will not be given immediately and only be reported to selected schools

ADA, 2015
## Graduate Enrollment by Gender, 1983-2012

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>%</th>
<th>Women</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983-84</td>
<td>3,241</td>
<td>83</td>
<td>684</td>
<td>17</td>
</tr>
<tr>
<td>1990-91</td>
<td>3,318</td>
<td>75</td>
<td>1,096</td>
<td>25</td>
</tr>
<tr>
<td>1995-96</td>
<td>3,250</td>
<td>70</td>
<td>1,383</td>
<td>30</td>
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<tr>
<td>2003-04</td>
<td>3,475</td>
<td>65</td>
<td>1,864</td>
<td>35</td>
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<tr>
<td>2007-08</td>
<td>3,526</td>
<td>61</td>
<td>2,222</td>
<td>39</td>
</tr>
<tr>
<td>2008-09</td>
<td>3,577</td>
<td>61</td>
<td>2,287</td>
<td>39</td>
</tr>
<tr>
<td>2009-10</td>
<td>3,717</td>
<td>61</td>
<td>2,378</td>
<td>39</td>
</tr>
<tr>
<td>2010-11</td>
<td>3,713</td>
<td>60</td>
<td>2,504</td>
<td>40</td>
</tr>
<tr>
<td>2011-12</td>
<td>3,758</td>
<td>59</td>
<td>2,578</td>
<td>41</td>
</tr>
</tbody>
</table>

Source: American Dental Association, Survey Center, Surveys of Advanced Dental Education
The lack of metrics for applicants is significantly impacting graduate dental education.
Current innovations in graduate education

Kelton Stewart, D.D.S., M.S.
Director of Orthodontics
*Indiana University School of Dentistry*

Shreekrishna Akilesh, D.M.D., M.P.H.
Associate Director of Pediatric Dentistry
*NYU Lutheran | NYU Langone Health*
Post-Graduate Education Admissions: Challenges, Innovations, & Changes

Kelton T. Stewart DDS, MS
Graduate Program Director
Indiana University School of Dentistry,
Department of Orthodontic & Oral Facial Genetics
Lecture Objectives

- Attendees of the lecture will be able to:
  - Discuss current recruitment challenges facing many graduate programs
    - Orthodontic residency program perspective
  - Describe evolving methods used to identify and recruit qualified applicants
  - Analyze the potential impact of the ADAT in post-graduate education
Speaker Disclaimer

- Joint Commission on Dental Examination (JCNDE)
  - Compensated member of the NBDE Part II Orthodontic-Pediatric Test Construction Committee (2012-present)

- I have no other proprietary, financial, or other personal interest of any nature or kind in any product, service, or company that will be discussed or considered during my presentation.
CURRENT CHALLENGES IN THE POST-GRADUATE ADMISSIONS ENVIRONMENT
Current Challenges

- Institution/agency student performance reporting shift
- Match vs. Non-match Programs
- Program/position levels
- Program marketability
Student Performance Reporting Shift

- JCNDE eliminated NBDE scores in 2012
- Increasing number of dental schools utilizing “P/F” reporting concept

Results:
- Positive: Assessment paradigm shift among many post-graduate programs
- Negative: Decreased certain student’s attractiveness to some residency programs
MATCH vs. Non-MATCH Programs

- MATCH participation
  - Decided at the program level
  - No mandates to require all programs to participate
  - No penalty for non-participation
    - 29% of programs are Non-Match (n=21)

- Results
  - Created “interesting” inter-institution relationships
  - Loss of qualified applicants
    - Unwilling to take the “MATCH risk”
  - Questionable recruitment tactics by MATCH schools
  - Confusion of applicants

To Match or not to Match, that is my question...

To Match or not to Match, that is my question...
Program/Position Levels

- 73 orthodontic programs (AA0 2016)
  - US, Puerto Rico, Canada

- Increasing number of programs

- Semi-stagnant application pool
  - Fewer applicants for each position
Available Orthodontic Residency Positions

<table>
<thead>
<tr>
<th>YEAR</th>
<th>POSITIONS</th>
<th>PROGRAMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>274</td>
<td>53</td>
</tr>
<tr>
<td>2013</td>
<td>278</td>
<td>56</td>
</tr>
<tr>
<td>2014</td>
<td>256</td>
<td>54</td>
</tr>
<tr>
<td>2015</td>
<td>270</td>
<td>56</td>
</tr>
<tr>
<td>2016</td>
<td>261</td>
<td>54</td>
</tr>
<tr>
<td>5-Year Average</td>
<td>268</td>
<td>55</td>
</tr>
</tbody>
</table>

*MATCH participating schools only*  
(National Matching Service)
Total Number of Orthodontic Residency Applicants

<table>
<thead>
<tr>
<th>YEAR</th>
<th>APPLICANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>480</td>
</tr>
<tr>
<td>2013</td>
<td>481</td>
</tr>
<tr>
<td>2014</td>
<td>466</td>
</tr>
<tr>
<td>2015</td>
<td>514</td>
</tr>
<tr>
<td>2016</td>
<td>494</td>
</tr>
<tr>
<td>5-Year Average</td>
<td>487</td>
</tr>
</tbody>
</table>

*MATCH participating schools only*
(National Matching Service 2016)

- In 2016, orthodontics had decreases in both the number of positions it offered and in the size of its applicant pool.
## Program Marketability

<table>
<thead>
<tr>
<th>TUITION VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDIAN</td>
</tr>
<tr>
<td>LOW</td>
</tr>
<tr>
<td>HIGH</td>
</tr>
<tr>
<td>INDIANA</td>
</tr>
</tbody>
</table>

*Based on In-state tuition values only*

*Data courtesy of the American Association of Orthodontists (AAO)*

### Drawbacks

- Dated facility
- Less competitive tuition
  - Especially for non-Indiana residents
...there is nothing new under the sun.
IU Orthodontics
Operational Approach

- Multi-stage review process:
  1. Program Director applicant review
  2. Admissions Committee review
  3. Pre-interview applicant review
     - Interviewees selected and ranked
  4. Departmental interview process
     - Faculty, residents, staff
  5. Post-interview applicant review
     - Program applicant ranking list finalized
Life Without NBDE Scores

- Facilitated a more holistic evaluation of **ALL** applicants

- GRE as a numerical differentiator
  - GRE Components
    - Quantitative
    - Verbal
    - Analytical

- Pros
  - Valid instrument
  - Reasonable cost ($205, $27 per score recipient)
  - Analytical component correlates well with student’s “writing ability”

- Cons
  - Non-dental focus
Desired Applicant Attributes

IU Ortho Resident

Coachable
Passion for Profession
Research Experience
Leadership Abilities
Scholastic Success
Perseverance
Hardworking
Operational Innovation

- Change in applicant evaluation mentality
  - More active (similar to “athletic recruiting”)
    - Meetings: ADEA, AAO, ADA, AADR
  - Increased interaction with potential applicants
    - Timely electronic correspondence
      - Not delegated to department admin
    - Investment in their professional success
      - Good for profession, even if they don’t select my program
Operational Innovation

- Orthodontic Continuing Education (C.E.) Program
  - 1 year duration (July-July)
  - Enhance orthodontic knowledge among general dentists
  - Non-traditional applicants

- Established informal externship program
  - 1-2 day visitation
  - January-June
THE ADVANCED DENTAL ADMISSION TEST (ADAT)
ADAT ARRIVAL

- Computerized examination created to aid graduate programs in assessing potential residents’ knowledge
  - 200 items
  - 2 Major Sections
  - Pilot exams (May/Aug 2016)

(American Dental Association 2015)
Impact of ADAT

- ADAT’s overall impact on the post-graduate admissions process is still unknown
  - Still fine tuning the distribution and relevance of the exam content (Professional Ethics & Patient Management)
# ADAT Impact on IU Orthodontic Program

<table>
<thead>
<tr>
<th>Who do you invite for an interview?</th>
<th>Applicant Y</th>
<th>Applicant Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>3.91</td>
<td>N/A</td>
</tr>
<tr>
<td>Rank</td>
<td>7 of 104</td>
<td>N/A</td>
</tr>
<tr>
<td>NBDE</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>PPI</td>
<td>4.25</td>
<td>4.5</td>
</tr>
<tr>
<td>Personal Statement</td>
<td>✔✔</td>
<td>✔✔</td>
</tr>
<tr>
<td>Shadowing</td>
<td>40 hours</td>
<td>45 hours</td>
</tr>
<tr>
<td>Research</td>
<td>1 Poster presentation 1 Publication</td>
<td>2 Poster presentations 1 Publication</td>
</tr>
<tr>
<td>ADAT Score</td>
<td>85</td>
<td>93</td>
</tr>
</tbody>
</table>
Closing Thoughts

- **Critical** and **consistent** assessment of admissions process is invaluable

- Avoid “procedural **relapse** and **stagnation**” with the introduction of the ADAT

- **Holistic** assessment approach ➔ residents of increased **potential** and **diversity**
  - “Diamonds in the rough”
THANK YOU FOR YOUR ATTENTION

SPECIAL THANKS TO THE FOLLOWING SUPPORTERS:

AAL

ADA®

National Matching Services Inc.

American Association of Orthodontists
Resident Selection: Methods & Outcomes

Shreekrishna Akilesh DMD MPH
Associate Director, Pediatric Dentistry (Arizona)
Advanced Education in Pediatric Dentistry
Who We Are

- Partners with NYU Langone Medical Center (2015)
- 450 bed hospital Level 1 Trauma Center
- Largest hospital-based Federally Qualified Health Center in the US (1968)
- Culturally diverse patient populations
- Community-based teaching health care system
- Runs the NYC School Health Program (44 schools/40,000 visits/yr)
Breaking Boundaries

- Over 40 years, NYU Lutheran has pioneered “dental institution without walls”
- Established one-, two- and three-year dental residency training programs
- 24 contiguous states, HI, AL, and the Caribbean
- Stayed true to its mission of ensuring access and equity in oral health care for all underserved communities around the globe
- We launched our first dental residency program in 1974 and have been growing ever since!
Academic Programs

- General Practice
- AEGD
- Periodontics
- Orthodontics
- Dental Anesthesia
- Dental Public
- Endodontics
- Pediatric Dentistry
- Orofacial Pain
## Academic Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Positions</th>
<th>Training Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Practice</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>AEGD</td>
<td>267</td>
<td>340</td>
</tr>
<tr>
<td>Periodontics</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Orthodontics</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Dental Anesthesia</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Dental Public</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Endodontics</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Pediatric Dentistry</td>
<td>58</td>
<td>13</td>
</tr>
<tr>
<td>Orofacial Pain</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>380</strong></td>
<td><strong>374</strong></td>
</tr>
</tbody>
</table>
The Situation

- Competitive post-doctoral programs sites
- NBDE Part I no longer reports numerical scores
- Lack of standardized methods to assess applicants
- NBDE Part I and II results are reported as pass/fail
- Dental schools often have a pass/fail curriculum
- PASS application is the primary information source
Our Challenges

- No quantitative measures of assessment
- High volume of applications
- Numerous requests for externships or “visits”
- Vary widely by age and experience
- PPIs and letters of recommendation lack depth
- Many sites with differing needs
Our Uniqueness

- Non-traditional “classroom” connects all sites:
  - Video-teleconferencing for weekly courses
  - Asynchronous modules (SAKAI)

- Web portal:
  - Resident production
  - Network of Faculty & Residents
  - “Dashboard” of clinical procedures
  - Periodic evaluations
  - Portfolios for reflections, research, and professional materials
Their Challenges

- Pass/Fail lumps together high and low achievers
- “Drive to Distinguish” becomes a necessity
- Disproportionate focus on interview
- NYU-Lutheran’s site info may not be easily accessible
- Applicants may lack a true understanding of overall program structure
- Concept of “virtual” didactics may be difficult to grasp
Our Ideal Candidate

- **Experience:**
  - Real world/Life
  - Professional/Career
  - Academic/Educational

- **Attributes:**
  - Effective Communicator
  - Self-motivated “Life-long Learner”
  - Service oriented
Operational approach

- PASS applications reviewed by:
  - Program Director
  - Site Associate Directors
  - Attending Faculty

- Interview list determined by:
  - Academic experiences
  - Extracurricular experiences
  - Externships
  - Recommendations (written & verbal)
  - Assessment of “fit” by PD and ADs
Information Gathering

- Increased interaction with Residents & Faculty:
  - Interview day vs. Formal interview
  - Dental school sponsored rotations
  - 1-5 day externships by request
  - Past residents of the NYU-Lutheran system
Interview Logistics

- 11 sites with non-overlapping dates
- Each NYU-Lutheran Site Receives:
  - Unique applicants
  - Applicants who applied to other NYU-Lutheran sites
- Interviews for each site are conducted on-site
- Each site uses standardized interview scoring:
  - 20 categories
  - Each is given a score from 1 to 5
  - Score tally is used to determine site rank list
Interview Methodology

- Interview:
  - Panel Format: 1 interview/candidate ~30 mins
  - Program Director
  - Site Associate Director
  - Health Center Dental Director(s)
  - Attending Faculty
  - Chief Resident (PGY-2)

- Essay question on Interview Day
  - 30 minutes to complete task
  - Different question for every candidate
Interview Scoring

- Letters of Recommendation
- Academic Potential
- Practice Potential
- Clinical Potential
- Intellectual Skills
- Personality/Character
- Professionalism/Presentation
- Enjoy Working with Candidate
- Maturity
- Empathy
- Written/Verbal Communication
- Demonstrates Good Judgment
- Leadership Potential
- Community Service Experience
- Work Ethic
- Teachability
- Reliability
- Respect for Time/People
- Team Player
**Novel Methodologies**

- Each site ranks candidates following interviews
- Interview feedback between NYU-Lutheran sites
- Site Associate Directors
  - “Vets” ranked candidates
  - Create tentative rank list
- Program Director approves each site’s rank list
- Final rank list for each site is submitted to MATCH
### Class of 2016-2018

- Rank lists vary in length by site
- Correlations exist program wide:
  - Candidates often on multiple rank lists within the program
  - Position may vary due to determination of “fit” at each site
ADAT

- New testing instrument
- Provides a numerical score
- Pilot tests in May/Aug 2016
- Optional for the 2016 application cycle
Outcomes

- NYU-Lutheran Program requires taking the ABPD's Qualifying Exam (QE)

- Encourage all graduates to become board certified

- AAPD In-Service Exam:
  - Required of CODA accredited programs
  - Given to incoming PGY1s and graduating PGY2s
  - AAPD outgoing in-service exam scores correlate with increased pass rates of the QE

- High ADAT scores may correlate with higher incoming AAPD in-service exam scores
### Outcomes

<table>
<thead>
<tr>
<th>Year</th>
<th>NYU-Lutheran</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QE</td>
<td>93.6%</td>
<td>85%</td>
</tr>
<tr>
<td>OCE</td>
<td>74.3%</td>
<td>70%</td>
</tr>
</tbody>
</table>
Conclusion

- NYU-Lutheran Program Sites are as diverse as their applicant pool
- Interview methods allow for consistency with the application review process
- ADAT score will be another measure of performance for applicants
- Long-term data will reveal correlations with desired academic and program outcomes
Questions