Joint Commission Update and Progress on the Integrated National Board Dental Examination (INBDE)

Dr. David M Waldschmidt

National Dental Examiners’ Advisory Forum (NDEAF)
April 11, 2016
Overview

- JCNDE background and policy updates
- Test administration
- Research and development
- The Integrated National Board Dental Examination (INBDE)
- Q & A
Mission Statement of the JCNDE

“The JCNDE develops and conducts highly reliable, state of the art cognitive examinations that assist regulatory agencies in making valid decisions regarding licensure of oral health care professionals, develops and implements policy for the orderly, secure, and fair administration of its examinations, and is a leader and resource in assessment for the oral health care profession.”
The JCNDE oversees the following examinations:

- National Board Dental Examination Part I (NBDE Part I)
- National Board Dental Examination Part II (NBDE Part II)
- National Board Dental Hygiene Examination (NBDHE)
- Integrated National Board Dental Examination (INBDE)
  - Designed to replace NBDE Parts I and II
  - Currently under development
<table>
<thead>
<tr>
<th>Organization</th>
<th>Appointees</th>
</tr>
</thead>
</table>
| AADB (6)     | Luis J Fujimoto, DMD, JCNDE Chair  
               Dale R Chamberlain, DDS  
               Patricia Ann Parker, DMD  
               David W Perkins, DMD  
               William F Robinson, DDS  
               Leonard P Weiss, DDS |
| ADA (3)      | Cheryl Haley, DDS  
               Lisa Heinrich-Null, DDS  
               Rhett L Murray, DDS |
| ADEA (3)     | Marc E Levitan, DDS, JCNDE Vice Chair  
               Frank W Licari, DDS, MPH, MBA  
               Nader Nadershahi, DDS, MBA, EdD |
| ADHA (1)     | Melissa Gail Efurd, RDH, Ed.D |
| ASDA (1)     | Greg P. Shank, BS |
| Public (1)   | Issie L. Shelton-Jenkins, JD, LLM |
| Liaisons & Observers | Alvin W. Stevens, DMD (ADA Board Liaison)  
                       Jordan J Telin, BS (ASDA Observer)  
                       Liaisons and observers do not participate in voting |
Department of Testing Services (DTS)

DTS develops and implements admission and licensure testing for:

- Joint Commission on National Dental Examinations (JCNDE)
  - NBDE Part I
  - NBDE Part II
  - NBDHE
  - INBDE
- Council on Dental Education and Licensure (CDEL)
  - Dental Admission Test (DAT)
  - Advanced Dental Admission Test (ADAT)
- Outside clients
Department of Testing Services (DTS)

Test Development
- Conducts 50+ Test Construction Committee meetings

Test Administration
- Administers 40,000+ examinations, responds to 70,000+ phone calls, emails and faxes

Research and Development/Psychometrics
- Oversees analysis and scoring of 40,000+ administrations, professional investigations and publications in support of examination programs

Client Services and Special Projects
- Outside clients and project management
JCNDE Updates: April 2015 Meeting

Reaffirmed Joint Commission’s commitment to the quality and validity of its current examination programs (NBDE Parts I and II, and NBDHE). This includes the following:

• Adopted the recommendations of two independent standard setting committees for NBDE Parts I and II. Standard setting involves the establishment of a “cut score” that separates passing and failing candidates. The Joint Commission’s standards are criterion-referenced (i.e., established based on specific skill requirements), as opposed to norm-based. The two new standards will be scheduled for implementation no sooner than April 2016.

• Adopted resolutions to appoint two separate ad-hoc committees to:
  – review the Joint Commission’s case material development process and provide recommendations to improve the quality of all images viewed by candidates (particularly radiographic images).
  – conduct a comprehensive review of current irregularity appeals policies and procedures, and provide recommendations to the Joint Commission in 2016.

• Reviewed the process of administering breaks (scheduled and unscheduled) during test administration, and directed staff to pursue revisions to reduce break violations.
Outlined additional steps to refine the dental hygiene competency framework used for practice analysis purposes for the NBDHE. Practice analyses are used to determine examination content.

Recommended two staff positions be added to the ADA Department of Testing Services in 2016 to strengthen test security efforts: Manager, Test Security; and Coordinator, Test Security.

Approved the reappointment of Dental and Dental Hygiene examination test constructors and the appointment of primary and alternate test constructors for the Dental and Dental Hygiene examinations for 2016.

Approved the 2014 editions of the *NBDE and NBDHE Technical Reports*.

Approved a list of additional 2015 and 2016 research and development projects and expenditures.
Adopted proposed revisions to the Joint Commission’s *Standing Rules and Examination Regulations*, including:

- Modifications to clarify language and align it with prior Joint Commission decisions;
- Revisions to Examination Regulations, effective immediately;
- Revisions to Joint Commission Standing Rules, contingent upon approval of ADA’s House of Delegates.

The following clarifications involving irregularities are noteworthy:

- Candidates may not take an examination under a false identity. Candidates may not take an examination for another individual, nor can a candidate have another individual take an examination in their place.
- If the JCNDE finds reason to void the NBDE Part I results of an individual who has successfully completed the NBDE Part II and received National Board certification, the decision to void the NBDE Part I results may be stayed pending the outcome of an appeal or until the time for submission of an appeal has expired. The JCNDE will not report the candidate’s results until time has expired or the Joint Commission has rendered its decision concerning an appeal (whichever comes first).

Adopted proposed revisions to the Joint Commission’s bylaws, contingent upon approval by the ADA House of Delegates. These revisions were editorial in nature to bring the bylaws into alignment with *ADA Bylaws* and current practices.
Approved the following, in support of communities of interest:

• Adopted a revised monthly reporting approach for dental schools and dental hygiene programs, based on data involving rolling 12-month intervals. This reporting approach will be implemented in 2017.

• Directed staff to publish findings from an investigation into the impact of pass/fail reporting on examinee performance. This study will be reported to both the dental and test publishing communities.

• Approved procedures for granting permission for dental and dental hygiene educational programs to use Joint Commission:
  – released examination materials.
  – case development and test item development guides for faculty development.

• Approved procedures for the sale of NBDHE 2006 and 2009 released examination materials to individuals for a fee to cover costs of production and distribution.
Approved actions consistent with the Joint Commission’s mission to serve as a leader and resource on assessment for the oral health care profession:

- Directed staff to continue to monitor the Commission on Dental Accreditation’s (CODA) activities regarding implementing an accreditation process for dental therapy education programs.
- Elected Dr. Luis J. Fujimoto as Chair and Dr. Marc E. Levitan as Vice Chair of the Joint Commission, effective November 2016.

Approved actions to help alleviate student debt:

- Examination fees reduced for all examination programs in 2016.
The Joint Commission held a teleconference on January 19, 2016. The following occurred at this meeting:

- Approved an INBDE Implementation Plan, and directed staff to communicate this plan to stakeholders and communities of interest.
- Reviewed developments involving the Commission on Dental Accreditation (CODA), and CODA’s efforts involving the accreditation of dental therapy programs. In light of those efforts, the Joint Commission approved the following actions:
  - Review of the JCNDE Bylaws as they pertain to the potential development of a new dental therapy examination program.
  - Directed staff to develop a business plan and issue an announcement indicating the Joint Commission’s interest in building a new National Board Dental Therapy Examination for licensure purposes.
Call for Case Materials

The Joint Commission needs high quality case materials to support its examination programs. Please contribute to this effort.

For additional information:
http://www.ada.org/en/jcnnde/examinations/test-construction
Test Administration and Research & Development Updates
Irregularities

Definition of Irregularity: there is a question about the validity of test results accurately reflecting the ability/skills of candidate.

Reasons for withholding results include, but are not limited to:

- Unusual answer patterns.
- Atypical score increases from one testing attempt to another.
- Inconsistent performance on different parts of test.
- Improper access to secure test content.
- Test administration irregularity.
- Falsification of personal identification, application information/supporting documents.
- Violation of rules/regulations.
- Falsification of official report.
- Information indicating the results may not be valid.
Irregularity Detection, Investigation, and Appeals

- Detection through testing vendor irregularity reports or miscellaneous sources (e.g., anonymous tips, routine audit procedures).
  - Conduct investigation.
  - Take action (e.g. withhold results, impose retest restriction)
  - Candidate notified; 30 days to submit appeal.
  - Appeal forwarded to Chair.
  - Chair grants, denies, or forwards appeal to JCNDE for ballot.
  - Candidate notified of decision.
### National Board Dental Hygiene Examination

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
</tr>
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<tbody>
<tr>
<td>Optional tutorial</td>
<td>15 minutes</td>
</tr>
<tr>
<td><strong>Session one:</strong> Discipline-based items; 200 items</td>
<td>3.5 hours</td>
</tr>
<tr>
<td>Optional scheduled break</td>
<td>1 hour</td>
</tr>
<tr>
<td><strong>Session two:</strong> Patient case items; 150 items</td>
<td>4 hours</td>
</tr>
<tr>
<td>Optional post-examination survey</td>
<td>15 minutes</td>
</tr>
<tr>
<td><strong>Total Time</strong></td>
<td>9 hours</td>
</tr>
</tbody>
</table>
The NBDE Part I, NBDE Part II, and NBDHE administration schedule will change in 2016 to allow more frequent scheduled breaks.

<table>
<thead>
<tr>
<th>National Board Dental Hygiene Examination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional Tutorial</td>
</tr>
<tr>
<td><strong>Session one:</strong> Discipline-based items</td>
</tr>
<tr>
<td>(100 items)</td>
</tr>
<tr>
<td>Optional 15 minute scheduled break after</td>
</tr>
<tr>
<td>the 100th question</td>
</tr>
<tr>
<td><strong>Session one:</strong> Discipline-based items</td>
</tr>
<tr>
<td>(100 items)</td>
</tr>
<tr>
<td>Optional scheduled break</td>
</tr>
<tr>
<td><strong>Session two:</strong> 7-8 Patient cases</td>
</tr>
<tr>
<td>(approximately 75 items)</td>
</tr>
<tr>
<td>Optional 15 minute scheduled break</td>
</tr>
<tr>
<td><strong>Session two:</strong> 7-8 Patient cases</td>
</tr>
<tr>
<td>(approximately 75 items)</td>
</tr>
<tr>
<td>Optional Post-examination Survey</td>
</tr>
<tr>
<td><strong>Total Time</strong></td>
</tr>
</tbody>
</table>
Figure 1: NBDE Part I Administrations (2006-2015)
** A new standard was introduced this year, based on updated standard setting activities.
Figure 2: NBDE Part II Administrations (2006-2015)
** A new standard was introduced this year, based on updated standard setting activities.
NBDHE Administrations (2006-2015)
NBDHE Failure Rates (%)

** A new standard was introduced this year, based on updated standard setting activities.
Practice Analysis for the NBDE Part II and NBDHE

• Validity is the primary concern when building and implementing an examination program.

• Validity involves collecting evidence and establishing a logical argument in support of the use and interpretation of examination results to serve a particular purpose.

• A chief component of the validity argument is content validity, which references the relevance and representativeness of content appearing on an examination.

• To provide content-related validity evidence, it is necessary to periodically review and define the domain of knowledge, skills, and abilities that are relevant to safe, entry-level practice. This is done through a practice analysis.

• The Joint Commission is currently pursuing practice analysis activities for both the NBDE Part II and the NBDHE.
## Overview of Practice Analysis Activities

<table>
<thead>
<tr>
<th>Step</th>
<th>Key Tasks and Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Identification and establishment of the content domain for practice analysis purposes. (2014 &amp; 2015)</td>
</tr>
<tr>
<td>2</td>
<td>Development of a practice analysis survey, to understand the tasks performed and their criticality to patient care. (2016)</td>
</tr>
<tr>
<td>3</td>
<td>Administration of this survey to entry-level practitioners. (2016)</td>
</tr>
<tr>
<td>4</td>
<td>Development of recommended test specifications based on practice analysis findings and the judgment of a review panel consisting of subject matter experts. (2016)</td>
</tr>
<tr>
<td>5</td>
<td>Joint Commission review of panel findings, and approval of test specifications to be implemented. (2017)</td>
</tr>
<tr>
<td>6</td>
<td>Test Construction Committees begin working to develop new examination forms, adhering to the final, updated test specifications. (2017/2018)</td>
</tr>
<tr>
<td>7</td>
<td>Publication of updated forms to vendor test centers. (2018/2019)</td>
</tr>
</tbody>
</table>
In 2015, the Committee for an Integrated Examination (CIE) reviewed and revised 65 clinical content areas that were previously used in the NBDE Part II 2011 Practice Analysis.

From this process emerged an updated set of 56 clinical content areas that indicate the tasks and activities performed by entry-level dentists as part of the safe, entry-level practice of dentistry.

The 56 clinical content areas fell in the following areas:
- Diagnosis and Treatment Planning (13)
- Oral Health Management (23)
- Practice and Profession (20)

The Joint Commission will review NBDE Part II practice analysis activities at its meeting in June 2016, and determine next steps.
Activity in 2015 involved reviewing and revising dental hygiene clinical content areas:

- In April and May of 2015, the Committee on Dental Hygiene reviewed feedback from communities of interest concerning a set of 43 dental hygiene clinical content areas.
- Based on this review and the feedback received, the Committee recommended changes and consolidation of certain areas.
- In June 2015, the Joint Commission reviewed the recommendations of the Committee and adopted 30 dental hygiene content areas as the content areas required for the safe, entry-level practice of dental hygiene. Staff was also directed to submit the approved content areas to the dental community for review and commentary.

- The Joint Commission will review NBDHE practice analysis activities at its meeting in June 2016, and determine next steps.
Standard Setting for the NBDE and NBDHE

• “Standard setting” refers to the structured process by which subject matter experts (SMEs) recommend a performance standard for an examination.

• Standard setting activities are used to set the cut score that separates passing and failing candidates. As such they have direct implications for examination failure rates.

• The identification of a cut score represents subject matter experts’ collective judgment concerning the skill level required for safe practice; those with scores below the cut score have an unacceptably high likelihood of making serious errors in practice.

• The Joint Commission periodically conducts standard setting activities to ensure the appropriateness of the cut score in place for each examination.
Standard Setting for the NBDE and NBDHE

- Standard setting activities for the NBDE and NBDHE were recently conducted by Dr. Gregory Cizek, a nationally recognized expert in standard setting.
- Three separate panels were convened (one for each exam).
- Each panel was composed of Subject Matter Experts (SMEs).
- Panel members were selected to be broadly representative and aligned with the purpose of the examination they were considering:
  - Practitioners (dentists and/or dental hygienists)
  - School or program faculty
  - Joint Commission members
  - Members of state boards
  - Dental school deans and associate deans (NBDE)
  - Current and former Test Construction Committee members
  - Geographically representative
  - Gender balanced
Standard Setting for the NBDE and NBDHE

- In 2014, the JCNDE conducted standard setting activities for NBDE Parts I and II.
- In 2015, the JCNDE conducted standard setting activities for the NBDHE.
- Each of the three panels recommended increasing the standard for the examination program they considered.
- The new NBDE standards are scheduled to be implemented “no sooner than April 2016.”
- In June 2016 the JCNDE will consider the NBDHE panel’s findings and recommendation, make a decision concerning the new standard, and set deployment dates.
Panelists voiced strong support for the final standard identified for each examination.

<table>
<thead>
<tr>
<th>Survey Item Number and Statement</th>
<th># of Panelists</th>
<th>Mean Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Overall, I support the final group-recommended cut score as fairly representing the appropriate performance standard for the <strong>NBDE Part I</strong>.</td>
<td>10</td>
<td>4.6</td>
</tr>
<tr>
<td>15. Overall, I support the final group-recommended cut score as fairly representing the appropriate performance standard for the <strong>NBDE Part II</strong>.</td>
<td>12</td>
<td>4.9</td>
</tr>
<tr>
<td>15. Overall, I support the final group-recommended cut score as fairly representing the appropriate performance standard for the <strong>NBDHE</strong>.</td>
<td>12</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Key: Values are on a five-point scale, ranging from 1=Strongly Disagree to 5=Strongly Agree; NR = no response.
Transition from Paper to Electronic Score Reporting

- In 2015, Joint Commission and ADA IT staff collaborated to design an official website, the DTS Hub, where authorized users could obtain official results and approve applications electronically for examinations administered by the Department of Testing Services.

- The DTS Hub will replace paper results reporting, and will be a portal through which stakeholders can view official results for Joint Commission examinations.

- State boards will be able to quickly and easily access the results of candidates currently under review.

- The DTS Hub is expected to improve security, as well as permit search, sort, and various reporting functions.

- The DTS Hub is scheduled to be built and tested during the first nine months of 2016, and launched in September 2016.
Changes due to Electronic Reporting*

- Candidates who tested via paper (as opposed to computer) will not be able to view the number of items they answered correctly.
  - Affects NBDE Part I candidates who tested prior to 2007, and NBDE Part II candidates who tested prior to 2006.

- State boards will see the following reporting changes:
  - Electronic reporting will replace paper based reporting.
  - Subject-based scale scores for attempts made under conjunctive scoring will no longer appear.
  - The following two statements will not appear on electronic reports:
    - Candidate has achieved a standard score of 75 or higher on the NBDE and has therefore successfully completed requirements for the National Board Certificate.
    - Candidate has achieved a standard score below 75 on the NBDE and is required to repeat the examination.

* Subject to JCNDE approval in June 2016.
The History of Scores Displayed with Paper Reporting

### NBDE PART I

<table>
<thead>
<tr>
<th>Date</th>
<th>Test</th>
<th>Score</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/2013</td>
<td>Comprehensive Part I Examination</td>
<td>--</td>
<td>Fail</td>
</tr>
<tr>
<td>12/2012</td>
<td>Comprehensive Part I Examination</td>
<td>--</td>
<td>Fail</td>
</tr>
<tr>
<td>12/2008</td>
<td>Comprehensive Part I Examination</td>
<td>71</td>
<td>Fail</td>
</tr>
<tr>
<td>10/2007</td>
<td>Comprehensive Part I Examination</td>
<td>68</td>
<td>Fail</td>
</tr>
<tr>
<td>12/2002</td>
<td>Anatomic Science</td>
<td>49</td>
<td>Fail</td>
</tr>
<tr>
<td></td>
<td>Biochemistry</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physiology</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Microbiology</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pathology</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dental Anat.</td>
<td>Avg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Occlusion</td>
<td>62</td>
<td>Fail</td>
</tr>
<tr>
<td>07/2002</td>
<td>Anatomic Science</td>
<td>58</td>
<td>Fail</td>
</tr>
<tr>
<td></td>
<td>Biochemistry</td>
<td>64</td>
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<tr>
<td></td>
<td>Physiology</td>
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<td></td>
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<tr>
<td></td>
<td>Microbiology</td>
<td>75</td>
<td></td>
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<tr>
<td></td>
<td>Pathology</td>
<td>75</td>
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<td>Avg</td>
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<td></td>
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<td>68</td>
<td>Fail</td>
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### Changes due to Electronic Reporting

<table>
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<td>--</td>
<td>Fail</td>
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<tr>
<td>12/2012</td>
<td>Comprehensive Part I Examination</td>
<td>--</td>
<td>Fail</td>
</tr>
<tr>
<td>12/2008</td>
<td>Comprehensive Part I Examination</td>
<td>71</td>
<td>Fail</td>
</tr>
<tr>
<td>10/2007</td>
<td>Comprehensive Part I Examination</td>
<td>68</td>
<td>Fail</td>
</tr>
<tr>
<td>12/2002</td>
<td>Conjunctive Part I Examination</td>
<td>62</td>
<td>Fail</td>
</tr>
<tr>
<td>07/2002</td>
<td>Conjunctive Part I Examination</td>
<td>68</td>
<td>Fail</td>
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Changes due to Electronic Reporting

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<tr>
<th>NBDE Part I</th>
<th>12/2013</th>
<th>Comprehensive Part I Examination</th>
<th>Score(^1)</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Date (MM/YYYY)</td>
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<table>
<thead>
<tr>
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<th>Score(^1)</th>
<th>Status</th>
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<tbody>
<tr>
<td>Test Date (MM/YYYY)</td>
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</tbody>
</table>

*Candidate has achieved a standard score of 75 or higher on NBDE Part II and has therefore successfully completed requirements for the National Board Certificate.
Changes due to Electronic Reporting

<table>
<thead>
<tr>
<th>Name</th>
<th>DENTPIN</th>
<th>Graduation</th>
<th>School</th>
</tr>
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</table>

**NATIONAL BOARD DENTAL EXAMINATIONS (NBDE)**

<table>
<thead>
<tr>
<th>NBDE Part I</th>
<th>12/2013</th>
<th>Comprehensive Part I Examination</th>
<th>Score</th>
<th>Pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Date</td>
<td></td>
<td></td>
<td></td>
<td>Status</td>
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</table>

<table>
<thead>
<tr>
<th>NBDE Part II</th>
<th>12/2015</th>
<th>Comprehensive Part II Examination</th>
<th>Score</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Date</td>
<td></td>
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<td>Status</td>
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</table>

*Candidate has achieved a standard score below 75 on NBDE Part II and is required to repeat the examination.

<table>
<thead>
<tr>
<th>NBDE PART I</th>
<th>Test Date</th>
<th>Score</th>
<th>Status</th>
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</table>
Update on the Integrated National Board Dental Examination (INBDE)
An Important Note

The INBDE is currently under development. As such, the specific details associated with this examination program are evolving and will change over time.

Information shared in this presentation is based on preliminary program requirements and represents the best available information as of the date of this presentation.
The INBDE and the CIE

• In 2009, the JCNDE appointed a Committee for an Integrated Examination (CIE) to develop and validate a new examination instrument for dentistry that integrates the biomedical, behavioral, and clinical sciences to assess entry level competency in dental practice, to supplant NBDE Part I and Part II.

• The integrated examination retains the same fundamental purpose as NBDE Part I and Part II – to assist state boards of dentistry in determining qualifications of dentists who seek licensure to practice in the U.S.
How did the INBDE come about?

- A convergence of factors led to the INBDE, which was designed to better serve communities of interest by:
  - Improving test content to make it more appropriate and relevant to contemporary dental education
  - Improving processes and candidates’ experiences in taking the examination
  - Better assisting regulatory agencies

- Examination content trends and the movement toward integrated content and clinical relevance also were considered.
The members of the ad hoc CIE are well acquainted with the Joint Commission’s mission and workings.

**Mark Christensen, DDS (Chair)**
(AADB 2006-2009)
Vice-Chair – JCNDE (2009)
Chair – Administration (2008)
Chair – Dental Hygiene (2006 & 2007)

**Bruce D. Horn, DDS**
(AADB 2007-2010)
Chair – JCNDE (2010)
Chair – Administration (2009)
Chair – Dental Hygiene (2008)

**B. Ellen Byrne, DDS, Ph.D.**
(ADEA 2009-2012)
Chair – Research & Development (2012)
Chair – Administration (2011)

**Andrew Spielman, DMD, MS, Ph.D.**
(ADEA 2008-2011)
Chair – JCNDE (2011)
Chair – Examination Development (2009)

**Ron J. Seeley, DDS**
(ADA 2007-2010)
Chair – JCNDE (2009)
Chair – Examination Development (2008)

**Stephen T. Radack, III, DMD**
(ADA 2008-2011)
Chair – Research & Development (2010 & 2011)
Vice-Chair – JCNDE (2010)
Committee for an Integrated Examination

The Joint Commission Chair and NBDE Standing Committee Chairs serve as ex-officio members of the CIE.

**Luis J. Fujimoto, DMD**  
Chair – JCNDE (2016)  
Chair – Research & Development (2015)

**Patricia A. Parker, DMD**  
Chair – Examination Development (2016)

**Lisa Heinrich-Null, DDS**  
Chair – Administration (2016)

**Frank W. Licari, DDS, MPH, MBA**  
Chair – Research & Development (2016)  
Chair – Examination Development (2015)
### Twelve Steps for Test Development* (Downing, 2006)

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Planning</td>
<td>7. Test Administration</td>
</tr>
<tr>
<td>2. Content Definition</td>
<td>8. Test Scoring</td>
</tr>
<tr>
<td>4. <strong>Item Development</strong></td>
<td>10. Reporting Test Results</td>
</tr>
<tr>
<td>5. Test Design and Assembly</td>
<td>11. Item Banking</td>
</tr>
<tr>
<td>6. Test Production</td>
<td>12. Technical Reports and Validation</td>
</tr>
</tbody>
</table>

*Bold text indicates area of current focus for the CIE.
<table>
<thead>
<tr>
<th>Year</th>
<th>Key Tasks and Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>ADEA Commission on Change and Innovation (CCI) recommended changes to dental education and assessment.</td>
</tr>
<tr>
<td>2006-2007</td>
<td>JCNDE monitored and considered CCI progress and recommendations.</td>
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<tr>
<td>2008</td>
<td>JCNDE created ad hoc Committee on Strategic Planning, conducted environmental scans, and considered the future.</td>
</tr>
<tr>
<td>2009</td>
<td>JCNDE resolved to create an integrated examination, and appointed members to the ad hoc Committee for an Integrated Examination (CIE).</td>
</tr>
<tr>
<td>2010</td>
<td>CIE worked to lay the content foundation for the exam.</td>
</tr>
<tr>
<td>2011</td>
<td>Practice analysis and science panels conducted using content foundation.</td>
</tr>
<tr>
<td>2012</td>
<td>General test specifications developed.</td>
</tr>
<tr>
<td>2013</td>
<td>Details about item development and approach were solidified. Resolutions were created to enhance communication and alignment between the Joint Commission and the CIE.</td>
</tr>
<tr>
<td>2014</td>
<td>Approach was refined, and first INBDE Test Construction Committees were formed. Item writing began.</td>
</tr>
</tbody>
</table>
The Domain of Dentistry

• The Domain of Dentistry represents the clinical content and Foundation Knowledge areas required for the safe, independent, general practice of dentistry by entry level practitioners.

• 65 clinical content areas grouped into three component sections:

  1) Diagnosis and Treatment Planning
  2) Oral Health Management
  3) Practice and Profession

• 10 Foundation Knowledge Areas adapted from medicine

* Note: As of 2016, the JCNDE is currently working to further refine these clinical content areas.
The successful entry-level general practitioner is focused on the prevention, diagnosis, and management of oral disease, and the promotion and maintenance of general health. This requires application of knowledge in the following areas:

| FK1 | Molecular, biochemical, cellular, and systems-level development, structure and function |
| FK2 | Physics and chemistry to explain normal biology and pathobiology |
| FK3 | Physics and chemistry to explain the characteristics and use of technologies and materials |
| FK4 | Principles of genetic, congenital and developmental diseases and conditions and their clinical features to understand patient risk |
| FK5 | Cellular and molecular bases of immune and non-immune host defense mechanisms |
| FK6 | General and disease-specific pathology to assess patient risk |
| FK7 | Biology of microorganisms in physiology and pathology |
| FK8 | Pharmacology |
| FK9 | Sociology, psychology, ethics and other behavioral sciences |
| FK10 | Quantitative knowledge, critical thinking, and informatics tools |
Basic and Foundation Sciences covered in part by Foundation Knowledge 8 (FK8) (3C)

The subject areas and disciplines covered by NBDE Parts I and II carry forward to the new exam, and there are also new areas.

<table>
<thead>
<tr>
<th>FK8</th>
<th>Pharmacology</th>
</tr>
</thead>
</table>

Practice Analysis Validation Efforts

• A practice analysis was conducted in 2011 with a sample of new dentists (i.e., dentists who had obtained their license within the previous five years)
  – All 65 clinical content areas were at least “moderately important to patient care.”
  – Frequency and criticality ratings were used to calculate the relative importance of each clinical content area and section.
  – The relative importance of each clinical content area determined how many items should be allocated to each clinical content area.

• Two science review panels were conducted to determine the strength of the relationship between each Foundation Knowledge area and each clinical content area.
  – All 10 Foundation Knowledge areas were determined to be related to one or more clinical content areas
  – The relative strength of the relationship between each Foundation Knowledge Area and each clinical content area determined how many items should be allocated to each Foundation Knowledge area, within each clinical content area.
Percentage of Items (450 items*)

* The number of items on the INBDE has not yet been finalized.
Item Writing Progress

• A five member INBDE Test Construction Committee (TCC) was formed for each clinical content section.
  • Diagnosis and Treatment Planning
  • Oral Health Management
  • Practice and Profession
• TCCs met within their 5-person groups and also as a full unit (15 members) during item reviews.
• INBDE TCCs have drafted over 500 items over 7 sessions.
• A second set of TCCs will launch in the 2nd quarter of 2016.
• Items are currently being written to support field testing efforts.
Which graph best shows the patient’s likely plaque pH response after drinking a sugary beverage?

<table>
<thead>
<tr>
<th>Patient</th>
<th>Female, 75 years old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Complaint</td>
<td>“My mouth has been dry for over a month.”</td>
</tr>
<tr>
<td>Background and/or Patient History</td>
<td>Oropharyngeal cancer treated by radiation.</td>
</tr>
</tbody>
</table>

Current Findings

INBDE Model Items

Model Item 7
Which graph best shows the patient’s likely plaque pH response after drinking a sugary beverage?

Patient
Female, 75 years old

Chief Complaint
“My mouth has been dry for over a month.”

Background and/or Patient History
Oropharyngeal cancer treated by radiation.

Current Findings

Answer: A
INBDE Field Testing Plan

INBDE Item Writing

Selected model items

Automatic Item Generation

120 items

300-450 items (as finalized)

INBDE Short Form

Administer 2016

INBDE Standard Form

Administer 2017

INBDE Scored Exam

Sample Item Survey

Administer 2015-2016

Qualitative Analysis
Results: 2016

Psychometric Analysis
Results: 2017

Psychometric Analysis
Results: 2018


NBDE Part II Practice Analysis

300-450 items (as finalized)
INBDE Sample Item Survey

Purpose

• To understand how dental students apply knowledge of the biomedical, clinical, and behavioral sciences in responding to INBDE items.
• To collect feedback from dental students regarding the presentation of examination content.

Implication

• The survey was intended to help the CIE determine whether any changes were required to INBDE item development.

Survey and Sample

• The survey was voluntary in nature, and administered to NBDE Part II candidates.
• There were three separate survey forms, each containing five items, with one item shared across all three forms. Each candidate received one form.
• Items were selected to be broadly representative of the Foundation Knowledge and Clinical Content areas. Some were created via Automatic Item Generation.
• The survey was conducted online from July 1, 2015 through September 22, 2015.
• 170 NBDE Part II candidates participated (3.8% response rate).
INBDE Sample Item Survey

Results

Overall, the feedback was very positive, with candidates indicating:

• They could apply their knowledge and clinical experiences.
• They found the items straightforward, fair, and clinically relevant.
• Many commented about the high quality of images presented.
• They found the Patient Box presentation clean and simple, and some commented that they preferred this question format to what is currently used on the Board Exams.
• No clear differences were noted between items generated via Automatic Item Generation (AIG) and those generated via traditional means.

Conclusions

• Study results indicated no major adjustments were needed to the current INBDE item development process, and no major changes were needed to the INBDE format or item writing approach.
Purpose

- This field test will permit evaluation of item development, test administration, and scoring functions for the INBDE Short Form. The number of items on the INBDE are expected to be finalized based upon the results of this field test.

Test Content

- This field test includes two short forms of the INBDE. Each form contains 120 items (80 unique items plus 40 shared items that are used on both forms). This yields a total of 200 items to be evaluated. (80 + 80 + 40 = 200 items).

Administration Date

- First administration in September 2016.

Sample

- Eligible NBDE Part II candidates enrolled in accredited dental schools will be encouraged to participate, with a target participation of 2,000 candidates.

Results

- INBDE results obtained under this field test will be kept confidential and will not be reported to dental schools and state boards.
INBDE Standard Form Field Test

Test Content
• This study involves developing and administering a standard form of the INBDE, containing between 300 and 450 items.

Administration Date
• First administration in September 2017.

Sample
• Eligible NBDE Part II candidates enrolled in accredited dental schools will be encouraged to participate, with a target participation of approximately 1,400 candidates.

Results
• INBDE scores obtained from this field test will be kept confidential and will not be reported to dental schools and state boards.
• Depending upon study findings, additional field testing might be necessary to ensure production forms of the INBDE are of the highest quality.
INBDE Implementation Plan and Recommended Actions
INBDE Update – Implementation Plan

• To address concerns from stakeholders and communities of interest regarding the timing of INBDE implementation, the JCNDE indicated it would provide four years’ notice before the INBDE is implemented and the NBDE discontinued.

• In response to these concerns and to provide reasonable notice, the Joint Commission approved an INBDE Implementation Plan for immediate distribution to stakeholders and communities of interest.

• The INBDE Implementation Plan provides information concerning how INBDE implementation will occur, the information that will be made available to help facilitate the transition, and recommended actions for stakeholders and communities of interest.
Integrated National Board Dental Examination (INBDE) Implementation Plan: “Best Case Scenario”


INBDE Implementation Plan Announcement
March 13, 2016

Notice of INBDE Implementation and National Board Dental Examination (NBDE) Discontinuation
August 1, 2018

First Official INBDE Administration
August 1, 2020

NBDE Part I Discontinued
July 31, 2020

NBDE Part II Discontinued
July 31, 2022

Note: This implementation plan communicates the best case scenario. Dates presented should be interpreted as “no sooner than.” Actual dates will be contingent upon field testing results. INBDE Practice Test Questions are anticipated for release in 2019.
INBDE Implementation Plan

• On August 1, 2018, the Joint Commission intends to provide stakeholders and communities of interest with notice of INBDE implementation and NBDE discontinuation. This notice will include the following:
  – The projected date when the INBDE will be first available for administration, the official name of the new examination, and how results will be reported.*
  – The dates when NBDE Part I and NBDE Part II will be discontinued.
  – Retesting policies, eligibility rules, and any additional rules needed to facilitate the transition.

• Two years after notification has been provided, NBDE Part I will be discontinued (approx. July 31, 2020).

• The first official administration of the INBDE is expected to take place on August 1, 2020.

• Two years after NBDE Part I is discontinued, NBDE Part II will be discontinued (approx. July 31, 2022).

• Notification of INBDE implementation and NBDE discontinuation is contingent upon successful completion of the INBDE Field Testing Program (not depicted in the preceding diagram).

* Similar to Part I and Part II, INBDE results will be reported as “Pass/Fail.”
INBDE Implementation Plan

• In considering the dates provided, please note the following:
  – The plan as presented communicates the “best case scenario.”
  – The dates provided may be delayed if difficulties are encountered. However, the dates will not be “moved up” (e.g., NBDE Part I will be discontinued no sooner than August 1, 2020).
  – The Joint Commission reserves the right to make changes to the plan at any time and as needed, in keeping with the Joint Commission’s mission and purpose.
  – Any significant changes to this plan will be published as soon as information becomes available.

• The INBDE Implementation Plan has been posted online and will be sent directly to each state dental board in April 2016.
Additional Information from the JCNDE

• Information concerning the INBDE is available via the Joint Commission’s website (www.ada.org/JCNDE/INBDE)

• The following information is currently available and is updated as changes occur:
  – INBDE background
  – INBDE FAQ’s
  – Domain of Dentistry and general validity evidence
  – Preliminary test specifications
  – Preliminary sample questions

• The following information will be posted as soon as it becomes available:
  – INBDE practice test questions (anticipated one year in advance of initial INBDE administration)
  – Technical report(s) providing detailed information concerning validity
INBDE Information from other Sources (not the JCNDE)

- INBDE eligibility rules for students of U.S. dental schools accredited by the Commission on Dental Accreditation (CODA).
  - These rules are determined by each dental school.

- Additional school requirements concerning the INBDE (e.g., linking successful completion of the INBDE to graduation requirements).
  - These rules are determined by each dental school.

- Written examination requirements for each state.
  - These requirements are determined by each state dental board.
The requirements of key stakeholders and communities of interest were carefully considered in developing the implementation plan.

- State Dental Boards
- Dental Schools
- US Dental Licensure Candidates

The following slides indicate specific considerations and recommended actions for state dental boards.

The considerations indicated should NOT be regarded as comprehensive of all of the INBDE-related interests of the aforementioned groups.
## State Dental Boards

<table>
<thead>
<tr>
<th>Implementation Plan Requirement</th>
<th>How Requirement is Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide sufficient time for state dental boards to assess and understand INBDE validity evidence.</td>
<td>• Post and update validity information on JCNDE website as it becomes available.</td>
</tr>
<tr>
<td>• Provide sufficient time for state dental boards to incorporate the INBDE into licensure decision-making and communicate its acceptability to future licensure candidates.</td>
<td>• Communicate validity information on an annual basis at the National Dental Examiners’ Advisory Forum (NDEAF).</td>
</tr>
<tr>
<td>• Provide sufficient time for state dental boards to prepare to receive INBDE results on day one of availability.</td>
<td>• Release details of implementation plan in 2016, and provide the following notifications:</td>
</tr>
<tr>
<td>• Consider whether any modifications to practice acts, rules, policies, or procedures will be required.</td>
<td>• INBDE first administration possible as soon as 2020.</td>
</tr>
<tr>
<td>• Provide sufficient time for state dental boards to accept both exam sequences:</td>
<td>• NBDE Part I final administration possible in 2020.</td>
</tr>
<tr>
<td>1) INBDE and</td>
<td>• NBDE Part II final administration possible in 2022.</td>
</tr>
<tr>
<td>2) NBDE Parts I and II.</td>
<td>• Provide notice in 2016 of JCNDE plans for indicating the official name of the INBDE and how results will be reported. Current discussions indicate the JCNDE is likely to associate the name “NBDE” with the INBDE, to ease the transition with regard to state rules and practice acts.</td>
</tr>
</tbody>
</table>
Recommended Actions for State Dental Boards

- Understand the INBDE and keep apprised of new developments.
  - Review information concerning the INBDE on the Joint Commission’s website (www.ada.org/JCNDE/INBDE), and attend the National Dental Examiners' Advisory Forum (NDEAF) annually.
  - Review INBDE validity evidence and the results of field testing as these studies occur.
  - Monitor the website to understand and prepare for any changes as they occur.
- Prepare to use the INBDE in licensure decision-making.
  - Prepare to receive INBDE results on day one of availability.
  - Prepare to accept candidates who have successfully completed the National Boards. This could occur under either of the following sequences: 1) INBDE or 2) NBDE Parts I and II.
  - Communicate information concerning the acceptability of the INBDE to future licensure candidates.
The INBDE and the Cone of Uncertainty

• We are in the midst of a highly complex project that is of great importance.

• This is an innovative research endeavor.
  – Research findings can sometimes perplex.
  – Planning has to be flexible to address project needs and stay as close as possible to schedule.
News and Resources

- JCNDE Unofficial Actions
- Meeting Presentations
- Newsletters
- Reference Texts
- Technical Reports
- Test Construction
- Case Submission Guidelines
Additional Information and Resources

Joint Commission on National Dental Examinations
http://www.ada.org/en/jcnde

Integrated National Board Dental Examination
http://www.ada.org/en/jcnde/inbde/

National Boards (Examination Guides, FAQ’s, DENTPIN® Information, Score Report Requests)
  Part I and Part II:
    http://www.ada.org/en/jcnde/examinations/nbde-general-information
  Dental Hygiene:

Test Construction Committee Information
http://www.ada.org/en/jcnde/examinations/test-construction/

Technical Reports, ADEA Presentations, Item Development Guides
http://www.ada.org/en/jcnde/news-resources/technical-reports
http://www.ada.org/en/jcnde/news-resources/presentations
Questions?
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Lunch Reception
Cosponsored by the JCNDE and AADB

Please complete a survey.
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