National Dental Examiners’ Advisory Forum (NDEAF)

Update on the National Board Examinations

David M. Waldschmidt, Ph.D.
Secretary, JCNDE and Director, Department of Testing Services

April 24, 2017
Overview

• The American Dental Association and the Joint Commission on National Dental Examinations (JCNDE)
• Update on JCNDE policies
• Update on the Integrated National Board Dental Examination
• Test administration
• Examination volume, performance trends, and research activities
• Q & A
Commissions at the ADA

- Commissions established within ADA *Bylaws*
  - Joint Commission on National Dental Examinations (JCNDE)
  - Commission on Dental Accreditation (CODA)
  - Commission for Continuing Education Provider Recognition (CCEPR)
Relationship between ADA and Commissions defined by:

- ADA Constitution and *Bylaws*
- Standing *Rules* of Councils and Commissions
- Bylaws and Rules (policies and procedures) as promulgated by the Commissions
- Agreements (e.g., USDE Criteria for Recognition and ADA-CODA MOU)
- Philosophic underpinnings: accreditation/licensure/recognition:
  - Quality assurance is necessary to protect the public and assure long-term viability of the profession
  - Consistent and free from bias/conflict of interest (as objective as possible)
    - no single community of interest can have undue influence in the decision-making process, including the ADA
  - Integrity, confidentiality, due process
Commonalities among the Commissions

- Agencies of the ADA defined in the ADA Bylaws
- Budget and *Rules* approval
- ADA nominations and appointments
- Qualifications of members
  - expertise-based
  - dentists must be ADA members
- Independence of stakeholder appointments
- Public member (except CCEPR)
- **Independent authority to carry out the program**
Commonalities among the Commissions

- Many stakeholders outside the ADA
- Elect their own chairs
- Select their own consultants (TCC members, psychometricians, etc.)
- ADA division of Education employs the staff
- Four year terms (except students)
- Adopt their own Rules (w/ HOD approval)
  - Joint Commission-HOD may propose and adopt Rules
# Appointing Organizations and Current JCNDE Appointees

<table>
<thead>
<tr>
<th>Organization</th>
<th>Appointees</th>
</tr>
</thead>
</table>
| **AADB (6)** | Dale R. Chamberlain, DDS  
Luis J. Fujimoto, DMD  
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, JCNDE Vice-Chair  
Rhett L. Murray, DDS |
| **ADEA (3)** | Cataldo W. Leone, DMD, DMSc, FICD  
Frank W. Licari, DDS, MPH, MBA, JCNDE Chair  
Nader A. Nadershahi, DDS, MBA, EdD |
| **ADHA (1)** | Melissa Gail Efurd, RDH, Ed.D |
| **ASDA (1)** | Jordan J. Telin, BS |
| **Public (1)** | Issie L. Shelton-Jenkins, JD, LLM |
| **Liaisons & Observers** | Chad P. Gehani, DDS (ADA Board Liaison)  
Aaron Henderson, BS (ASDA Observer)  
*Liaisons and observers are non-voting appointees* |
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.”
Joint Commission Examinations

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
# Department of Testing Services (DTS)

DTS implements admission and licensure testing programs for:

<table>
<thead>
<tr>
<th>Joint Commission on National Dental Examinations (JCNDE)</th>
<th>Council on Dental Education and Licensure (CDEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• NBDE Part I</td>
<td>• Dental Admission Test (DAT)</td>
</tr>
<tr>
<td>• NBDE Part II</td>
<td>• Advanced Dental Admission Test (ADAT)</td>
</tr>
<tr>
<td>• NBDHE</td>
<td></td>
</tr>
<tr>
<td>• INBDE</td>
<td></td>
</tr>
</tbody>
</table>

**Outside clients**

- Optometry Admission Test (OAT)
- Other miscellaneous clients

Develops future testing programs as requested
# Department of Testing Services (DTS)

## Examination Content and Scoring

<table>
<thead>
<tr>
<th>Test Development</th>
<th>Research and Development/Psychometrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducts Test Construction Committee meetings for seven examination programs (70+ meetings annually)</td>
<td>Oversees analysis and scoring of examinations (40,000+), professional investigations, and technical publications in support of examination programs</td>
</tr>
</tbody>
</table>

## DTS Operations

<table>
<thead>
<tr>
<th>Test Administration</th>
<th>Client Services and Special Projects</th>
<th>Test Security and Fraud Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Oversees application processing and test vendor administrations (40,000+ examinations)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Responds to phone calls, live chats, emails, faxes (nearly 70,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Resolves testing day problems</td>
<td>• Services and projects for outside clients</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• DTS project management</td>
<td>• Ensures test content is secure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Security risks are identified and addressed, oversees irregularity/appeal process</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Test security practices mirror industry standards</td>
</tr>
</tbody>
</table>
The Joint Commission on National Dental Examinations (JCNDE) met June 10, 2016 and took the following actions:

Reviewed Joint Commission actions taken since its prior annual meeting in April 2015, including the following:

- Approved the implementation plan for the Integrated National Board Dental Examination (INBDE), a written examination that will supplant NBDE Parts I and II in the future. The INBDE is anticipated to be available in August 2020, with full replacement of the NBDE expected to occur by August 2022.

- Directed Department of Testing Services (DTS) staff to communicate the INBDE implementation plan to stakeholders and communities of interest; this includes a targeted mailing to the leadership of US dental boards.
Approved actions and reviewed progress in support of the INBDE and its implementation, including the following:

• Directed DTS staff to provide additional targeted INBDE communications to the dental education and student communities by sending the INBDE Implementation Plan directly to academic deans, dental deans, the American Dental Education Association (CEO and president), and the American Student Dental Association (executive director and president), on an annual basis.

• Reaffirmed field testing protocols for the INBDE in 2016 and 2017.

• Approved INBDE retesting policies during the NBDE-INBDE transition period. These policies are posted online (www.ada.org/JCNDE/INBDE).
Reviewed recommendations to stakeholders and communities of interest regarding preparation for the INBDE, such as the following:

- Review and monitor INBDE information on the Joint Commission’s website (www.ada.org/JCNDE/INBDE), including validity evidence and the results of field testing.
- Attend INBDE presentations at the National Dental Examiners' Advisory Forum (NDEAF) and/or ADEA annually.

- State boards should prepare to receive INBDE results, making sure to review practice acts, rules, policies, and regulations to determine if changes will be required to accept the INBDE on day one of availability.

- Dental education programs should prepare their school and students for the INBDE through any necessary revisions to curricula and academic policy.

- Licensure candidates should determine which examination track to pursue (NBDE or INBDE) during the transition period. Candidates should prepare accordingly in consultation with the most recent INBDE implementation plan, dental school requirements, dental boards of states in which licensure is sought, and current Joint Commission policies.
Reaffirmed the Joint Commission’s commitment to the quality and validity of its current examination programs (NBDE Parts I and II, NBDHE). This includes the following:

- Approved instituting an Image Review Test Construction Committee charged with the responsibility for 1) maintaining image implementation guidelines and acceptability standards in accordance with industry best practices, 2) evaluating and accepting high-quality images, and 3) categorizing and adjusting images as appropriate, to help ensure that images appearing on National Board Examination are of sufficient quality that entry-level candidates who possess the necessary knowledge and skills would be able to correctly answer questions involving these images.

- Adopted the recommendations of a standard setting committee convened for the NBDH. 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 normatively based. The new standard will be scheduled for implementation no sooner than January 2017.

- Adopted 30 revised clinical content areas for the NBDHE, to represent the clinical content areas required for the safe, entry-level practice of dental hygiene. These clinical content areas had previously been subject to review by both the dental and dental hygiene communities.
• Endorsed a practice analysis approach for the NBDHE, and directed DTS staff to implement this approach. The aforementioned dental hygiene clinical content areas were incorporated into a practice analysis survey that was distributed to entry-level dental hygienists in 2016. Results from this survey were used to help establish the content domain for the NBDHE.

• Adopted a resolution to form an ad hoc committee to review the Joint Commission’s practice analysis methodology and report back to the Committee on Research and Development in 2017. The Joint Commission also endorsed staff efforts to further improve the methodology in the interim period.

• Approved reappointment of current NBDE and NBDHE test construction committee (TCC) members, and selected new NBDE and NBDHE TCC members for committees meeting in 2017.

• Approved changes to dental hygiene TCC member qualifications in the areas of periodontics, clinical dental hygiene, and oral medicine/oral diagnosis/oral pathology.

• Adopted a resolution in response to a letter from the ADA’s Council on Dental Practice. Consistent with sentiments expressed in the letter, the resolution encourages all National Board Examination TCCs to write questions where applicable within their individual test specifications that relate to issues of provider health and wellness, addiction, and opioid prescribing.
• Approved procedures for granting permission for use of the Joint Commission’s released examination materials by dental and dental hygiene educational programs.
• Approved procedures for granting permission to educational programs for use of the Case Development and Test Item Development Guides by dental schools 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 the 2015 Technical Reports for the NBDE and NBDHE.
• Recommended that the following positions be added to DTS in 2017, to support testing programs and corresponding projects: Associate Psychometrician, Assessment Specialist-Digital Imaging, DTS Editor, and Project Coordinator. DTS ultimately received support for three of these four positions.
• Approved a list of 2016 and 2017 research and development projects and expenditures.
JCNDE Major Actions (cont.)

• Recommended a proposed revision to the *ADA Standing Rules for Councils and Commissions*, contingent upon approval by the ADA’s Board of Trustees (BOT). The proposed revision modified the procedure for tabulating Joint Commission mail ballots involving candidate appeals, such that votes not received shall be considered abstentions. Existing procedures required non-votes to be considered affirmative votes (i.e., in favor of granting the appeal). The BOT approved this change.

• Adopted revisions to the *Joint Commission’s Bylaws, Standing Rules, and Examination Regulations*. Revisions to *Examination Regulations* are effective immediately; revisions to *Joint Commission Bylaws* and *Standing Rules* are contingent upon approval by the ADA’s House of Delegates. Noteworthy revisions are as follows:
  – *JCNDE Examination Regulations*: Candidates are no longer required to wait 12-months to retest, after their third failed attempt on a National Board Examination.
  – *JCNDE Examination Regulations*: National Board Examination results reporting has undergone minor modifications to facilitate electronic reporting through the DTS Score Reporting Hub in late 2016. This includes elimination of state board reporting of subject-based scale scores for examination attempts made under conjunctive scoring models, and removal of report language concerning the implications of cut score achievement.
JCNDE Major Actions (cont.)

- **JCNDE Standing Rules**: New Commissioners will be subject to a simultaneous service policy, to help avoid potential conflicts of interest.

- **JCNDE Bylaws**: A change was made to Joint Commission officer elections. The Vice Chair of the Joint Commission will now become Chair of the Joint Commission, at the end of his or her term as Vice Chair.

  - Reviewed a draft 2017 self-assessment report, and approved formation of an ad hoc committee to review the self-assessment process and communicate its findings to the Joint Commission in 2017.

  - Elected Dr. Frank Licari as Chair and Dr. Lisa Heinrich-Null as Vice Chair of the Joint Commission. Their terms began in October of 2016.

  - Approved June 14, 2017 as the scheduled meeting date for 2017.
Update on the Integrated National Board Dental Examination (INBDE)
What is the INBDE?

- 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 the practice of dentistry and 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.
Committee for an Integrated Examination (ad hoc)

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

2016-2017 Appointments

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

**Frank W. Licari, DDS, MPH, MBA**
- Chair – JCNDE (2017)
- Chair – Research & Development (2016)
- Chair – Examination Development (2015)

**Lisa Heinrich-Null, DDS**
- Vice Chair – JCNDE (2017)
- Chair – Research & Development (2017)
- Chair – Administration (2016)

**Nader Nadershahi, DDS, MBA, EdD**
- Chair – Examination Development (2017)

**William F. Robinson, DDS**
- Chair – Administration (2017)

The Joint Commission Chair has also made additional, one-year appointments.

**Dale R. Chamberlain, DDS**
- JCNDE Commissioner

**Steven D. Vincent, DDS, MS**
- JCNDE Test Construction Committee member
<table>
<thead>
<tr>
<th></th>
<th>Twelve Steps for Test Development* (Downing, 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Planning</td>
</tr>
<tr>
<td>2.</td>
<td>Content Definition</td>
</tr>
<tr>
<td>3.</td>
<td>Test Specifications</td>
</tr>
<tr>
<td>4.</td>
<td>Item Development</td>
</tr>
<tr>
<td>5.</td>
<td>Test Design and Assembly</td>
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<tr>
<td>6.</td>
<td>Test Production</td>
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<tr>
<td>7.</td>
<td>Test Administration</td>
</tr>
<tr>
<td>8.</td>
<td>Test Scoring</td>
</tr>
<tr>
<td>9.</td>
<td>Standard Setting</td>
</tr>
<tr>
<td>10.</td>
<td>Reporting Test Results</td>
</tr>
<tr>
<td>11.</td>
<td>Item Banking</td>
</tr>
<tr>
<td>12.</td>
<td>Technical Reports and Validation</td>
</tr>
</tbody>
</table>

*Bold text indicates area of current focus.*
## Timeline

<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>Year</td>
<td>Event</td>
</tr>
<tr>
<td>------</td>
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</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>
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<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>
<tr>
<td>2016</td>
<td>Short Form Field Test (Sept). Item writing. Retest policy. Refinement of approaches.</td>
</tr>
</tbody>
</table>
INBDE Field Testing Plan

INBDE Item Writing

- Selected model items
- Automatic Item Generation

Sample Item Survey
Administer 2015-2016

- Qualitative Analysis
  Results: 2016

Short Form
Administer 2016

- Psychometric Analysis
  Results: 2017

Mid Length Form
Administer 2017

- Psychometric Analysis
  Results: 2018

NBDE Part II Practice Analysis

- Approx. 500 items (as finalized)

INBDE Scored Exam
INBDE Sample Item Survey

Study Overview

- Designed to help understand how dental students apply knowledge of the biomedical, clinical, and behavioral sciences in responding to INBDE items.
- Administered to NBDE Part II candidates online, from July 1, 2015 through September 22, 2015
- 170 NBDE Part II candidates participated.
- A follow-up study was also conducted to collect additional data.

• Findings

- Candidates indicated that INBDE items required them to apply their biomedical science knowledge and clinical experiences.
- INBDE items were regarded as straightforward, fair, and clinically relevant.
- The Patient Box provided a clean and simple presentation; some participants commented that they preferred this question format to what is currently used on the Board Exams.
- No significant changes appeared necessary with respect to INBDE item development efforts.
INBDE Model Items

Patient

| Male, 48 years old |

Chief Complaint

| “I’ve been in pain for two days and now my face is swollen.” |

Background and/or Patient History

| Hypertension |
| Type 2 diabetes |
| Penicillin allergy |

Current Findings

| Facial edema |
| Lymphadenopathy |
| Extensive apical radiolucency associated with tooth 6 |
| Temp: 100.3 °F |
| BP: 150/93 |
| Blood glucose 240 mg/dL |

The most appropriate antimicrobial agent is

A. amoxicillin and clavulanate (Augmentin®).
B. cephalexin (Keflex®).
C. clindamycin (Cleocin®).
D. metronidazole (Flagyl®).
The most appropriate antimicrobial agent is

A. amoxicillin and clavulanate (Augmentin®).
B. cephalexin (Keflex®).
C. **clindamycin (Cleocin®).**
D. metronidazole (Flagyl®).
INBDE Short Form Field Test

Study Overview
• The INBDE Short Form Field Test (SFFT) took place from October 10, 2016 through January 31, 2017.
• This field test included two short INBDE forms, each containing 120 items (80 unique items plus 40 shared items that appeared on both forms).
• The forms met the INBDE test specification requirements established in 2011.

Sample
• A total of 4,167 NBDE Part II candidates enrolled in accredited dental schools were invited to participate in the Field Test. 840 candidates participated.
• Each participant received a full refund of their Part II fee ($425), and a chance to win an iPad based on the number of items they answered correctly.
• Participants were removed from the final analytic sample if they showed low effort. The final sample comprised 704 participants from 59 dental schools.
• The candidates in the final sample were representative of the NBDE population with respect to performance on the NBDE Parts I and II.

Findings
INBDE Short Form Field Test

Major Findings

- Overall, the majority of items performed reasonably well.
- Eighty-nine percent (89%) of participants indicated they were satisfied with their experience on the Field Test.
- Eighty-nine percent (89%) of participants indicated that the questions on the test were clinically relevant (less than 3% disagreed).
- Candidates who had taken the NBDE Part II prior to participating in the SFFT tended to have a more positive impression of INBDE content than those who had not.
- Eighty-five percent (85%) of participants indicated that their educational training prepared them well to answer these types of questions.
- Overall, the comparisons suggest that the INBDE may be viewed by candidates as an improvement over the NBDE Part II in many ways.
- Results from INBDE field testing provide validity evidence in support of the intended use and interpretation of INBDE results.
INBDE field testing efforts have been successful to date.

The Joint Commission is on track for an August 2020 release of the INBDE.
Integrated National Board Dental Examination (INBDE) Implementation Plan: “Best Case Scenario”

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 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 previously approved an INBDE Implementation Plan for 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.

• The plan includes timeframes under a “best case scenario.”
INBDE Implementation Plan Considerations

• 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 considerations and recommended actions specifically for dental boards.

• The considerations indicated should NOT be regarded as comprehensive of all of the INBDE-related interests of dental boards.
### 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 annual basis at 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.
  • Consider whether any modifications to practice acts, rules, policies, or procedures will be required.
  • 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.
Call for Case Materials

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

The JCNDE anticipates the availability of an image portal in 2017, for submitting images.

For additional information:
http://www.ada.org/en/jcnnde/examinations/test-construction
Test Administration Update
### Test Administration Request Handling Volume 2016

<table>
<thead>
<tr>
<th>Responded to requests</th>
<th>32,000+ phone calls</th>
<th>37,000+ emails, live chats, faxes, and correspondence</th>
<th>69,000+ total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processed applications</td>
<td>10,629 NBDE Part I</td>
<td>8,312 NBDHE</td>
<td>28,767 total</td>
</tr>
<tr>
<td></td>
<td>9,826 NBDE Part II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processed requests for additional official reports</td>
<td>20,415 NBDE Part I</td>
<td>3,473 NBDHE</td>
<td>23,888 total</td>
</tr>
<tr>
<td></td>
<td>NBDE Part II</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NBDE Test Administration and Fees

- Electronic process; six-month eligibility. Monitor website for upcoming enhancements.
- Administered nationwide at Prometric Test Centers, any business day.
- Approximately 286 professional level testing centers in North America with 5,470 available seats.

 promoters.com

| 2017 Fees |
|-----------------|--------|
| **NBDE Part I** | $395   |
| Official reporting to candidate and dean of accredited dental school. Candidate report is sent to the address on application. |
| **NBDE Part II** | $440   |
| Official reporting to candidate, dean of accredited dental school, and three licensing boards if requested on application. Candidate report is sent to the address on application. |
| **Additional Score Report** | $36    |
| Recipients not selected on application. |
| **Audit Request** | $65    |
| **National Board Certificate with Optional Frames** | See JCNDE website |
| Available upon successful completion of NBDE Part I and Part II. |
NBDHE Test Administration and Fees

Administration
- Electronic registration process; six-month eligibility. Monitor website for upcoming enhancements.
- Administered nationwide at Pearson VUE Test Centers, any business day.
- About 3,540 available seats in 259 professional level testing centers.
- Secure test environment and video monitoring.

2017 Fees

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBDHE</td>
<td>$415</td>
</tr>
<tr>
<td>Fee includes official reporting to candidate, program director of accredited dental hygiene school, and 3 licensing boards if requested on application. Candidate report is sent to address on application.</td>
<td></td>
</tr>
<tr>
<td>Additional official report</td>
<td>$36</td>
</tr>
<tr>
<td>Fee for recipients not selected at time of application.</td>
<td></td>
</tr>
<tr>
<td>Audit Request</td>
<td>$65</td>
</tr>
<tr>
<td>National Board Certificate with Optional Frames</td>
<td>See JCNDE website</td>
</tr>
<tr>
<td>Available upon successful completion of NBDHE.</td>
<td></td>
</tr>
</tbody>
</table>
Examination Volume

Part II Monthly Volume (‘12-'16)
Examination Volume

NBDHE Monthly Volume ('12-'16)

January February March April May June July August September October November December

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Testing Irregularities and Appeals

Definition of Irregularity: A question has emerged about the validity of test results accurately reflecting the ability and skills of candidate.

Reasons for withholding scores 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 or supporting documents.
• Violation of rules and regulations.
• Falsification of official report.
• Information indicating the results might not be valid.

Irregularity detection and investigation:

• Report of irregularity received from testing vendor or miscellaneous source (e.g., anonymous tips, routine audit procedures).
• Investigation conducted.
• Action determined (e.g. withhold score or retest restriction).

Notification/Appeal Process

• 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.
Infrastructure and Administration Improvements

- **DTS Hub**: The DTS Hub is an electronic portal through which state dental boards can view results. By third quarter of 2017 schools and programs will be able to view results through the Hub as well.

- **My Account result reporting**: My Account is an electronic portal through which candidates can track their National Board applications and results requests. Candidates can now view their results through My Account as well.

- **Administration Schedules**: The NBDE and NBDHE administration schedules have been adjusted to allow more frequent scheduled breaks. Total testing time remains largely unchanged.

- **Live Chat**: In early 2016 the website was updated to include a live chat feature. DTS has received monthly service awards eight times since the feature went live.
Examination Volume, Performance Trends, and Research Activities
Figure 1: NBDE Part I Administrations (2007-2016)
Figure 2: NBDE Part II Administrations (2007-2016)
NBE Purpose and Interpretation

• The purpose of the National Board Examinations (NBE) is to assist state boards in determining the qualifications of individuals seeking licensure to practice.

• The NBE are used to determine whether a candidate possesses the minimally acceptable level of knowledge, cognitive skills, and ability that is necessary for safe, entry-level practice:
  – Dentistry (NBDE)
    • Part I: Anatomic sciences, biochemistry-physiology, microbiology-pathology, and dental anatomy & occlusion.
    • Part II: Dental and clinical dental sciences.
  – Dental Hygiene (NBDHE)
    • Scientific basis for dental hygiene practice, provision of dental hygiene services, community health and research principles.
Standard Setting

• The National Board Examinations are criterion-referenced and not norm-referenced examinations.

• Subject matter experts identify standards (pass/fail points) following established procedures and criteria that reference specific skill level requirements, not by the process sometimes known as “grading on a curve.”
  – All candidates who demonstrate the necessary skill level through their examination performance will pass the examination (it is NOT the case that scoring is established to fail a certain percentage of examinees).

• The standard for each examination program is the same for all examination forms administered to candidates within that program. This occurs through the use of equating procedures that control for subtle differences in difficulty in test items across examination forms.

• The standard for each examination is determined through a process called “standard setting”.

Standard Setting: Overview and Purpose

- Standard setting activities for all NBE programs were recently facilitated by Dr. Gregory Cizek, a nationally recognized expert in standard setting who has authored several books on the subject (Cizek 2001, 2012; Cizek & Bunch, 2007).

- Standard setting panels consisted of 10 to 12 subject matter experts, with panelists selected to be broadly representative and aligned with the purpose of the examinations.

- Panelists were extensively trained on procedures, and feedback was collected on five occasions at strategic points within the two-day process.

- An established standard setting method called the “Bookmark” method was used across three rounds of standard setting activities per NBE program.
At the conclusion of the final round, the three independently conducted standard setting panels provided recommendations to the Joint Commission that increased the performance standard for the corresponding examination each panel had reviewed.

Application of the new standards to the aforementioned samples from 2013 (NBDE) and 2014 (NBDHE) yielded increased failure rates as follows:

- **NBDE Part I:** Failure rate increased from 6.3% to **10.1%**
- **NBDE Part II:** Failure rate increased from 6.3% to **8.6%**
- **NBDHE:** Failure rate increased from 4.8% to **5.6%**
Panelist Feedback

- At the conclusion of all activities, participants’ evaluations of all aspects of the process were uniformly strong and supportive, with each panelist indicating that they supported the final group-recommended performance standard.
  
  - Panelist feedback on the last item of the final evaluative questionnaire:

<table>
<thead>
<tr>
<th>Survey Item Number and Statement</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>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>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>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. All table entries are based on N=10 (Part I) or N=12 (Part II and NBDHE) responses.
* A new standard was introduced this year, based on updated standard setting activities. Note: the new standard introduced in 2016 was introduced in the 4\textsuperscript{th} quarter.
** A new standard was introduced this year, based on updated standard setting activities.
** A new standard was introduced this year, based on updated standard setting activities.
The new standards for NBDE Parts I and II were reviewed and approved by the Joint Commission, and have recently been implemented.

Staff monitor failure rates closely. At present, observed failure rates for the NBDE Part I are consistent with the aforementioned projections. With respect to NBDE Part II, it is too early to tell.

The new NBDHE standard was reviewed and approved by the Joint Commission, and will be introduced shortly.
Validity is a primary indicator of test quality.

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

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

• Practice analysis survey was conducted in June of 2016, involving data from two separate samples (JCNDE and ADHA).

• JCNDE sample:
  ✓ A total of 3,863 dental hygienists responded to the survey. 2,853 provided valid responses. The final adjusted response rate was 9.6%.
  ✓ The sample was broadly representative of U.S. licensing jurisdictions.
  ✓ Respondent age ranged between 18 and 64 years, with a mean of about 32.
  ✓ About 82% of the respondents had been in practice for five years or less.

• ADHA sample:
  ✓ A total of 260 ADHA members responded to the survey. 195 provided valid responses.
  ✓ The sample was broadly representative of U.S. licensing jurisdictions.
  ✓ Respondent age ranged between 22 and 63 years, with a mean of about 32.
  ✓ About 62% of the respondents had been in practice for five years or less.
2016 Research and Development Activities

- A total of 30 clinical content areas underlying the domain of entry-level dental hygiene practice were presented in the survey.
- The mean frequency rating and mean importance rating were calculated for each clinical content area.

<table>
<thead>
<tr>
<th>Importance to Patient care:</th>
<th>Frequency of Use in Patient Care:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Extremely important</td>
<td>5. More than 5 times per day</td>
</tr>
<tr>
<td>3. Very important</td>
<td>4. 3-5 times per day</td>
</tr>
<tr>
<td>2. Important</td>
<td>3. 1-2 times per day</td>
</tr>
<tr>
<td>1. Somewhat important</td>
<td>2. 1-4 times per week</td>
</tr>
<tr>
<td>0. Not important</td>
<td>1. Less than once per week</td>
</tr>
<tr>
<td></td>
<td>0. Never</td>
</tr>
</tbody>
</table>

- The overall index of importance for each clinical content area was estimated by multiplying the frequency rating by a weighted importance rating.
- Survey results were highly similar for the JCNDE and AHDA samples.
2016 Research and Development Activities

• Development of updated NBDHE test content specifications

✓ An NBDHE practice analysis test specifications review panel was convened in October 2016 to review findings from the 2016 NBDHE practice analysis survey and consider revisions to the existing NBDHE test specifications in accordance with survey results.

✓ The review panel was comprised of five members of the Joint Commission, four full-time practicing dental hygiene practitioners from various regions of the U.S., and two dental hygiene educators.

✓ The panel recommended adjustments to the current test specifications. These recommendations are scheduled to be presented to the Joint Commission for review and approval in 2017.

✓ The new test specifications will ultimately be incorporated into NBDHE forms administered in 2019.
2016 Research and Development Activities

- **NBDE Part II Practice Analysis**
  - The NBDE Part II practice analysis survey was administered in September of 2016.
    - Among the 29,535 general dentists asked to participate, a total of 4,471 (15.1%) responded to the survey. Among these, 2,542 general dentists provided valid responses.
    - The final adjusted response rate was 15.9%.
    - The sample was broadly representative of U.S. licensing jurisdictions.
    - Respondent age ranged between 23 and 62 years, with a mean of about 34.
    - About 98% of the respondents graduated from dental schools in the United States.
    - About 82% of the respondents had been in practice for five years or less.
    - About 80% of the respondents were in private practice.
    - About 38% of the respondents were owners.
2016 Research and Development Activities

- A total of 56 clinical content areas underlying the domain of entry-level dental practice were presented in the survey.
- The mean frequency rating and mean importance rating were calculated for each clinical content area.

  - Importance to Patient care:
    - 4. Extremely important
    - 3. Very important
    - 2. Important
    - 1. Somewhat important
    - 0. Not important

  - Frequency of Use in Patient Care:
    - 5. More than 5 times per day
    - 4. 3-5 times per day
    - 3. 1-2 times per day
    - 2. 1-4 times per week
    - 1. Less than once per week
    - 0. Never

- The overall index of importance for each clinical content area was estimated by multiplying the frequency rating by a weighted importance rating.
• Development of updated NBDHE test content specifications
  
  • An NBDHE practice analysis test specifications review panel was convened in October 2016 to review findings from the 2016 NBDHE practice analysis survey and consider revisions to the existing NBDHE test specifications in accordance with survey results.
  
  • The review panel was comprised of five members of the Joint Commission, four full-time practicing dental hygiene practitioners from various regions of the U.S., and two dental hygiene educators.
  
  • The panel recommended adjustments to the current test specifications. These recommendations are scheduled to be presented to the Joint Commission for review and approval in 2017.
  
  • The new test specifications will ultimately be incorporated into NBDHE forms administered in 2019.
• Development of updated NBDE Part II test content specifications

– An NBDE Part II practice analysis test specifications review panel was convened in November 2016 to review findings from the 2016 NBDE Part II practice analysis survey and consider revisions to the existing NBDE Part II test specifications in accordance with survey results.

– The review panel was comprised of five members of the Joint Commission, four full-time practicing dentists representing various regions of U.S., and two dental educators.

– The panel’s recommended modifications to the current test specifications are scheduled to be presented to the Joint Commission for review and approval in 2017.

– The new test specifications will ultimately be incorporated into NBDE Part II forms administered in 2019.
News and Resources

- Case Materials
- JCNDE Actions
- Meeting Presentations
- Newsletters
- Reference Texts
- Technical Reports (detailed scoring information)
- Test Construction
## Contact Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Email</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Bryan Svendby, MA, SSCP</td>
<td>Manager, Test Security and Fraud Prevention</td>
<td></td>
</tr>
</tbody>
</table>
Q & A

…followed by a short presentation on the ADA’s Dental Licensure Objective Structured Clinical Examination (DLOSCE)
Thank You

Please complete a survey.
Sponsored attendees, please submit your expense forms through Concur.