National Dental Examiners’ Advisory Forum (NDEAF)

Lisa Heinrich-Null, DDS  
Chair, JCNDE

William F. Robinson, DDS  
Vice Chair, JCNDE

Mark L. Christensen, DDS, MBA  
Chair, CIE

June 20, 2018
Overview

• Welcome!
• The purpose of the JCNDE
• The purpose of NDEAF
• The JCNDE and its activities
  – JCNDE background and policy updates
  – JCNDE examination programs and implementation
  – Standard setting activities
  – Administration volume and failure rates
• The Integrated National Board Dental Examination (Dr. Mark Christensen)
• Q & A
Welcome!

- NDEAF is being approached a new way to facilitate direct engagement between members of the JCNDE and communities of interest.

- In attendance today we have:
  - Members of dental boards
    - In-person
    - Remote attendees
  - Members of the JCNDE
    - In-person
    - Remote attendees
  - Members of the Committee for an Integrated Examination (CIE)
  - Invited guests and observers from the AADB, ADA Board of Trustees, ADEA, ASDA, ADHA
  - Staff who work closely with the JCNDE’s examination programs
The Purpose of the JCNDE

• The JCNDE exists to provide information to dental boards to inform licensure decision concerning dental and dental hygiene candidates.
• Dental boards have the critical task of using this information to understand whether a candidate has the skills necessary to safely practice.
• The actions of dental boards are vital to the oral health and general health of the public.
• The JCNDE extends its thanks to dental boards and dental board members for their work in protecting the public health.
• The JCNDE appreciates the opportunity to be of service to boards, in providing important information concerning candidate qualifications for licensure.
• The JCNDE recognizes the importance of its task and shares dental boards concern for the protection of the public.
• This is why we’re all here today!
The Purpose of NDEAF

- NDEAF was created to encourage dialogue between the JCNDE and dental board members
- The JCNDE’s National Board Dental and Dental Hygiene Examinations are designed to help dental boards understand whether a candidate possesses the necessary cognitive skills to safely practice.
  - The content outline for these examinations is available online in Candidate Guides and Technical Reports.
  - Dental board members can use this material to understand the nature of the cognitive skill evaluation, and the validity evidence that supports use of these examinations.
- NDEAF provides an opportunity for the JCNDE to interact face-to-face (or remotely) with board members, to understand their unique perspectives and identify any areas for improvement concerning the National Board Examinations
The JCNDE Bylaws indicate that the purpose of the JCNDE is:

- to provide and conduct examinations to assist state boards in determining qualifications of dentists and dental hygienists who seek licensure.

- to make rules and regulations for the conduct of National Board examinations and certificates.

- to serve as a resource for the dental profession in the development of examinations.
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 is a Commission of the ADA

• Philosophical foundation of Commissions:

  ✓ Consistent and free from bias/conflict of interest – remain objective.

  ✓ No single community of interest can have undue influence in the decision-making process, including the ADA.

  ✓ Quality assurance is necessary to protect the public and assure long-term viability of the profession.

  ✓ Integrity, confidentiality, due process.

• Subject to ADA Bylaws and Standing Rules, while maintaining own Bylaws and Rules in accordance with mission and with HOD approval.

• **Commissions maintain independent authority to carry out their program.**
### History of the JCNDE

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1928</td>
<td>National Board of Dental Examiners established as a standing committee of the ADA for the purpose of providing &amp; conducting written examinations for use by the state boards of dentistry in licensing dentists.</td>
</tr>
<tr>
<td>1933/1934</td>
<td>National Board Dental Examinations first administered.</td>
</tr>
<tr>
<td>1962</td>
<td>NBDHE first administered.</td>
</tr>
<tr>
<td>1973</td>
<td>NBDHE became a comprehensive examination.</td>
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<tr>
<td>1980</td>
<td>National Board of Dental Examiners was restructured as the 15 member JCNDE.</td>
</tr>
<tr>
<td>1992</td>
<td>Part II became a comprehensive examination.</td>
</tr>
<tr>
<td>2007</td>
<td>Part I became a comprehensive examination.</td>
</tr>
<tr>
<td>2009</td>
<td>All National Boards are computer-based examinations.</td>
</tr>
<tr>
<td>Present</td>
<td>All U.S. licensing jurisdictions accept the NBDE and NBDHE as fulfillment of the written examination requirement for licensure.</td>
</tr>
</tbody>
</table>
## Composition of the JCNDE

<table>
<thead>
<tr>
<th>Appointing Organizations</th>
<th>Number of Members</th>
<th>Term Lengths (in years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Voting Members</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AADB</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>ADEA</td>
<td>3</td>
<td>4</td>
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<tr>
<td>ADA</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>ADHA</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>ASDA</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Public</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td><strong>Non-voting Members</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASDA Observer</td>
<td>1</td>
<td>1*</td>
</tr>
<tr>
<td>ADA BOT Liaison</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

* The ASDA Observer transitions to a Commissioner role in their second year.
# Appointing Organizations and Current Appointees

<table>
<thead>
<tr>
<th>Appointing Organization</th>
<th>Appointees</th>
</tr>
</thead>
</table>
| AADB (6)                | Dale R. Chamberlain, DDS  
Roy L. Irons, DDS  
Frank A. Maggio, DDS  
William F. Robinson, DDS (JCNDE Vice-Chair)  
Wesley Delaine Thomas, DMD  
Leonard P. Weiss, DDS |
| ADA (3)                 | Cheryl Haley, DDS  
Lisa Heinrich-Null, DDS (JCNDE Chair)  
Kanthasamy K. Ragunanthan, DDS, MS |
| ADEA (3)                | Cataldo W. Leone, DMD, DMSc, FICD  
Nader Nadershahi, DDS, MBA, EdD  
Joseph J. Zambon, DDS, PhD |
| ADHA (1)                | Melissa Gail Efurd, RDH, Ed.D |
| ASDA (1)                | Aaron Henderson, BS |
| Public (1)              | Open (selection anticipated on June 20, 2018) |
| Liaisons & Observers    | Jeffrey Kerst, BS (ASDA Observer)  
Chad P. Gehani, DDS (ADA Board Liaison)  
Liaisons and observers do not participate in voting |
Key Points

- The composition of the JCNDE reflects the important perspectives that must be considered in the building and implementing of National Board Examinations, with particular emphasis given to dental boards.
- The JCNDE has a long track record of helping dental boards identify those who are not qualified to safely practice.
- The JCNDE monitors administrations through internal procedures and close collaboration with key vendors (Prometric and Pearson Vue).
- The JCNDE monitors examination and examinee performance closely and regularly, and reviews examination policy on an ongoing basis to address any issues that arise.
- The JCNDE updates examination content and programs to ensure clinical relevance and to help ensure consistent, accurate identification of those who do not possess the cognitive skills necessary to safely practice.
- The Integrated National Board Dental Examination benefits from and will help continue this strong record of performance.
The Joint Commission on National Dental Examinations (JCNDE) met June 2017 and took the actions reported in the Unofficial Report of Major Actions.

These actions are posted here: https://www.ada.org/en/jcnde/news-resources/unofficial-reports
JCNDE 2017 Meeting Highlights

- Approval of test specifications for the Integrated National Board Dental Examination (INBDE), the National Board Dental Examination (NBDE) Part II, and the National Board Dental Hygiene Examination (NBDHE).

- Approval of the methods associated with the JCNDE’s third INBDE field test.

- Approval of a plan of action to further improve the Joint Commission’s practice analysis methods.

- Completion of a thorough self-assessment, and approval of efforts to pursue strategic planning for the JCNDE in 2018.
JCNDE Strategic Planning Meeting

- The JCNDE held a three day strategic planning meeting in Chicago in May 2018.
- Discussions included topics such as the JCNDE’s purpose and mission, testing industry trends and best practices, the Joint Commission structure, governance, resources, and communications.
- During the Executive Session portion of today’s JCNDE meeting, the JCNDE will discuss the establishment of working committees to further explore major topics identified during the strategic planning meeting.
JCNDE 2018 Topics of Interest to Dental Boards

In today’s JCNDE meeting (directly following NDEAF), the JCNDE will discuss and make decisions concerning the following:

- The Integrated National Board Dental Examination (INBDE)
  - Field test results
  - Final format of examination (# of questions, length of administration)
  - Updates to the Domain of Dentistry (content domain for the INBDE)
  - Formal announcement of launch of the INBDE
- Strategic planning (Executive Session)
- Review of policy and policy outcomes
  - Five (5) years/Five (5) attempts eligibility rule
  - Irregularities and appeals
- Changes to test constructor selection and placement
- Introduction of image portal
- Improvements to results reporting for candidates who fail NBDE Part II
- Please join us! Those participating remotely can simply remain online, logged into ReadyTalk.
The Joint Commission needs high quality images and case materials to support its examination programs. Please contribute to this effort.

Updates will be posted on the JCNDE website and communications will be distributed to all communities of interest.
Communications

National Board Results Now Available Online
No more waiting on the mail for National Board Results. Learn More.

SAVE THE DATE
An INBDE field test will be administered from November 1, 2017-January 31, 2018.

MORE INFO

JCNDE Mission

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.
Examination Implementation, Administration Volume, and Performance Trends
The JCNDE oversees the following licensure testing programs:

- 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)
### DTS implements the National Board Exams

<table>
<thead>
<tr>
<th>Examination Content, Scoring, Analysis, New Development</th>
</tr>
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<tbody>
<tr>
<td><strong>Test Development</strong></td>
</tr>
<tr>
<td>Conducts Test Construction Team (TCT) meetings for seven examination programs (80+ meetings annually)</td>
</tr>
<tr>
<td><strong>Research &amp; Development - Psychometrics</strong></td>
</tr>
<tr>
<td>Oversees analysis and scoring of examinations (45,000+), professional investigations, and technical publications in support of examination programs</td>
</tr>
<tr>
<td><strong>New Psychometric Development &amp; Innovations</strong></td>
</tr>
<tr>
<td>Provides psychometric support in the development of new testing programs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DTS Operations</th>
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</thead>
<tbody>
<tr>
<td><strong>Test Administration</strong></td>
</tr>
<tr>
<td>Oversees application processing and test vendor administrations (40,000+ examinations)</td>
</tr>
<tr>
<td>Responds to phone calls, live chats, emails, faxes (nearly 70,000 annually)</td>
</tr>
<tr>
<td>Resolves testing day problems</td>
</tr>
<tr>
<td><strong>Test Security and Fraud Prevention</strong></td>
</tr>
<tr>
<td>Monitors test security policies, procedures, irregularities and candidate appeals; risk assessment</td>
</tr>
<tr>
<td><strong>Communications</strong></td>
</tr>
<tr>
<td>Provides communications for stakeholders and communities of interest</td>
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<tr>
<td><strong>Client Services/Special Projects</strong></td>
</tr>
<tr>
<td>Project management and services to outside clients</td>
</tr>
<tr>
<td><strong>Volunteer and Meeting Coordination</strong></td>
</tr>
<tr>
<td>Oversees volunteer activities and meeting logistics for TCT and governance meetings.</td>
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</tbody>
</table>
The Standards for Educational and Psychological Testing

• The *Standards* were developed by the American Educational Research Association (AERA), American Psychological Association (APA), and the National Council on Measurement in Education (NCME).

• The *Standards* provide considerations for developing, implementing, and evaluating tests.

• The *Standards* and industry best practices help guide JCNDE and DTS activities as it designs, constructs, and implements the assessments under its care.

• The JCNDE’s primary focus is on validity, the evidence that supports the interpretation and use of NBE results.
Test Development cycle

1. Needs analysis
2. SMEs write items based on needs
3. Items entered into database
4. Editorial review
5. Items reviewed by SMEs
6. Editorial review
7. Items selected for forms (pretest and scored) based on blueprint
8. Forms reviewed by SMEs
9. Counts confirmed
10. Editorial review
11. Forms built
12. Forms confirmed by TD and R&D
13. Forms compiled and reviewed
14. Form hand off to Pearson
15. Finalized forms review and sign off
16. Forms sent to Prometric
17. Form review and editing cycle
18. Form final review and sign off
19. UAT
20. Final sign off if no issues
21. Candidate comments reviewed by R&D and sent to TD to address concerns
22. Statistics and concerns provided by R&D
23. Item Maintenance
Sample Annual Department Activities

- Administer 45,000+ examinations
- Phone calls, live chat, email and fax correspondence
- DENTPIN requests/updates
- Examination guides, website updates
- Examination/test applications including fee waiver requests and testing accommodations
- Score reporting
- Fulfill additional score report requests (30,000+)
- Fulfill orders for NBDHE released item sets and National Board certificates.
- Resolve issues/problems with testing (emergencies, ID problems, testing conditions)
- Conduct 50+ test construction committee meetings
- Scoring and research services for contracted clients
- JCNDE and DAT publication and website updates
- R&D staff research publications and presentations
- Activities conducted by professionally trained staff, many with advanced degrees
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).
  – All candidates who do NOT demonstrate the necessary skill level through their examination performance will fail the examination

• Based on standard setting activities, the JCNDE has recently INCREASED STANDARDS across all of its examination programs.

• The new standards for the NBDE Part I, NBDHE, and NBDE Part II were separately reviewed & approved by the Joint Commission, and implemented in November 2016, January 2017, and March 2017, respectively.
Volume Data and Performance Trends

• The following slides present information concerning examinee volume and performance for a 10-year period.

• Examinee volume data includes all individuals (first time, repeaters, accredited, non-accredited) completing the National Board Dental Examinations (Part I and Part II) and the National Board Dental Hygiene Examination.

• Performance trend data include candidates enrolled in accredited schools in the U.S and Canada who took the examination for the first time.
Figure 1: NBDE Part I Administrations (2008-2017)
NBDE Part I Failure Rates (%)

* A new standard was introduced this year, based on updated standard setting activities.
Figure 2: NBDE Part II Administrations (2008-2017)

- **Total**
- **Accredited**
- **Non-Accredited**

Year:
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017

Values:
- 0
- 1,000
- 2,000
- 3,000
- 4,000
- 5,000
- 6,000
- 7,000
- 8,000
- 9,000
- 10,000
- 11,000
- 12,000
**A new standard was introduced this year, based on updated standard setting activities.**

Figure 3: NBDHE Administrations (2008-2017)

- Total
- Accredited
- Non-Accredited

Year:
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017

Number of Administrations:
- 0
- 1,000
- 2,000
- 3,000
- 4,000
- 5,000
- 6,000
- 7,000
- 8,000
- 9,000
- 10,000
- 11,000
- 12,000
** A new standard was introduced this year, based on updated standard setting activities.
The Integrated National Board Dental Examination (INBDE)

Update and Implementation Plan
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

2017-2018 Appointments

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

**Lisa Heinrich-Null, DDS**
- Chair – JCNDE (2018)
- Chair – Research & Development (2017)
- Chair – Administration (2016)

**William F. Robinson, DDS**
- Vice Chair – JCNDE (2018)
- Chair – Research & Development (2018)
- Chair – Administration (2017)

**Nader Nadershahi, DDS, MBA, EdD**
- Chair – Administration (2018)
- Chair – Examination Development (2017)

**Cataldo W. Leone, DMD, DMSc, FICD**
- Chair – Examination Development (2018)

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 Team member
Stakeholders and Communities of Interest

- The Public
- Dental boards (states, territories)
- The JCNDE
- The CIE
- INBDE working committees
  - INBDE Science Panels
  - Test Specification Review Panels
- Test Construction Teams
- Department of Testing Services
- Dental programs
- Dental students
- Associations (ADA, AADB, ADEA, ASDA, ATP, etc.)
- Vendors (test administration, item bank)
Current State of Dental Education

Time Spent (in hours)

Year 1
Year 2
Year 3
Year 4

- Public Health Science
- Biomedical Sciences
- Pre-Clinical Sciences
- Clinical Sciences
Future Curriculum

Time Spent (in hours)

- Year 1
- Year 2
- Year 3

- Public Health Science
- Biomedical Sciences
- Pre-Clinical Sciences
- Clinical Sciences

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### Twelve Steps for Test Development* (Downing, 2006)

| 1. Planning                          | 7. Test Administration             |
| 2. Content Definition                | 8. Test Scoring                    |
| 4. Item Development                  | 10. Reporting Test Results         |
| 5. Test Design and Assembly          | 11. Item Banking                   |
| 6. Test Production                   | 12. Technical Reports and Validation |

*Bold text indicates areas of focus (current or prior).*
## 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>
</tr>
<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>
</tbody>
</table>
## Timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>Key Tasks and Activities</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>2017</td>
<td>Mid-length Field Test (Nov). Item writing. Refinement of test specs and approaches.</td>
</tr>
<tr>
<td>2018</td>
<td>Field test results review. Item writing. Formal announcement of implementation.</td>
</tr>
</tbody>
</table>
Clinical Relevance, Purpose, and Integration

• Clinical relevance and alignment with test purpose are the key considerations in establishing content and the items that appear on the INBDE.

• Integration is viewed as a means of implementing and promoting this perspective; as such, integration is secondary to clinical relevance and alignment with test purpose.

• In summary, examination purpose drives all considerations, clinical relevance is the best way to achieve the exam purpose, and integration provides a strong means of achieving clinical relevance.
The INBDE Content Domain

- A “content domain” is the set of behaviors, knowledge, skills, abilities that a test measures.

- In establishing the INBDE content domain, the Joint Commission focused on two key questions:
  - 1) What tasks must entry-level general dentists be able to perform to practice safely?
  - 2) What knowledge, skills and abilities underlie the performance of those tasks?
56 Clinical Content Areas (2016)

- The Joint Commission has established 56 “clinical content areas” that represent the tasks entry-level general dentists must be able to perform to practice safely.

- The clinical content areas were based on ADEA’s 2008 Competency for the New General Dentist.

- The 56 clinical content areas are classified into three component sections:
  - 1) Diagnosis and Treatment Planning
  - 2) Oral Health Management
  - 3) Practice and Profession
<table>
<thead>
<tr>
<th>#</th>
<th>Diagnosis and Treatment Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Interpret patient information and medical data to assess and manage patients.</td>
</tr>
<tr>
<td>2</td>
<td>Identify the chief complaint and understand the contributing factors.</td>
</tr>
<tr>
<td>3</td>
<td>Perform head and neck and intraoral examinations, interpreting and evaluating the clinical findings.</td>
</tr>
<tr>
<td>4</td>
<td>Use clinical and epidemiological data to diagnose and establish a prognosis for dental abnormalities and pathology.</td>
</tr>
<tr>
<td>5</td>
<td>Recognize the normal range of clinical findings and distinguish significant deviations that require monitoring, treatment, or management.</td>
</tr>
<tr>
<td>6</td>
<td>Predict the most likely diagnostic result given available patient information.</td>
</tr>
<tr>
<td>7</td>
<td>Interpret diagnostic results to inform understanding of the patient’s condition.</td>
</tr>
<tr>
<td>8</td>
<td>Recognize the manifestations of systemic disease and how the disease and its management may affect the delivery of dental care.</td>
</tr>
<tr>
<td>9</td>
<td>Recognize the interrelationship between oral health and systemic disease, and implement strategies for improving overall health.</td>
</tr>
<tr>
<td>10</td>
<td>Select the diagnostic tools most likely to establish or confirm the diagnosis.</td>
</tr>
<tr>
<td>11</td>
<td>Collect information from diverse sources (patient, guardian, patient records, allied staff, and other healthcare professionals) to make informed decisions.</td>
</tr>
<tr>
<td>12</td>
<td>Formulate a comprehensive diagnosis and treatment plan for patient management.</td>
</tr>
<tr>
<td>13</td>
<td>Discuss etiologies, treatment alternatives, and prognoses with patients so they are educated and can make informed decisions concerning the management of their care.</td>
</tr>
<tr>
<td>#</td>
<td>Clinical Content Areas (2016)</td>
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<tr>
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<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>14</td>
<td>Prevent, recognize and manage medical emergencies (e.g., cardiac arrest).</td>
</tr>
<tr>
<td>15</td>
<td>Prevent, recognize and manage dental emergencies.</td>
</tr>
<tr>
<td>16</td>
<td>Recognize and manage acute pain, hemorrhage, trauma, and infection of the orofacial complex.</td>
</tr>
<tr>
<td>17</td>
<td>Prevent, diagnose and manage pain during treatment.</td>
</tr>
<tr>
<td>18</td>
<td>Prevent, diagnose and manage pulpal and periradicular diseases.</td>
</tr>
<tr>
<td>19</td>
<td>Prevent, diagnose and manage caries.</td>
</tr>
<tr>
<td>20</td>
<td>Prevent, diagnose and manage periodontal diseases.</td>
</tr>
<tr>
<td>21</td>
<td>Prevent, diagnose and manage oral mucosal and osseous diseases.</td>
</tr>
<tr>
<td>22</td>
<td>Recognize, manage and report patient abuse and neglect.</td>
</tr>
<tr>
<td>23</td>
<td>Recognize and manage substance abuse.</td>
</tr>
<tr>
<td>24</td>
<td>Select and administer or prescribe pharmacological agents in the treatment of dental patients.</td>
</tr>
<tr>
<td>25</td>
<td>Anticipate, prevent, and manage complications arising from the use of therapeutic and pharmacological agents in patient care.</td>
</tr>
<tr>
<td>26</td>
<td>Diagnose endodontic conditions and perform endodontic procedures.</td>
</tr>
<tr>
<td>27</td>
<td>Diagnose and manage the restorative needs of the partially or completely edentulous patient.</td>
</tr>
<tr>
<td>28</td>
<td>Restore tooth function, structure, and esthetics by replacing missing and defective tooth structure, while promoting soft and hard tissue health.</td>
</tr>
<tr>
<td>29</td>
<td>Perform prosthetic restorations (fixed or removable) and implant procedures for the edentulous and partially edentulous patient.</td>
</tr>
<tr>
<td>30</td>
<td>Diagnose and manage oral surgical treatment needs.</td>
</tr>
<tr>
<td>31</td>
<td>Perform oral surgical procedures.</td>
</tr>
<tr>
<td>32</td>
<td>Prevent, diagnose and manage developmental or acquired occlusal problems.</td>
</tr>
<tr>
<td>33</td>
<td>Prevent, diagnose and manage temporomandibular disorders.</td>
</tr>
<tr>
<td>34</td>
<td>Diagnose and manage patients requiring modification of oral tissues to optimize form, function and esthetics.</td>
</tr>
<tr>
<td>35</td>
<td>Evaluate outcomes of comprehensive dental care.</td>
</tr>
<tr>
<td>36</td>
<td>Manage the oral esthetic needs of patients.</td>
</tr>
</tbody>
</table>
## 56 Clinical Content Areas (2016)

<table>
<thead>
<tr>
<th>#</th>
<th>Practice and Profession</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>Understand how patient attributes (e.g., gender, age, race, ethnicity, and special needs), social background and values influence the provision of oral health care at all stages of life.</td>
</tr>
<tr>
<td>38</td>
<td>Interact and communicate with patients using psychological, social, and behavioral principles.</td>
</tr>
<tr>
<td>39</td>
<td>Evaluate and integrate emerging trends in health care.</td>
</tr>
<tr>
<td>40</td>
<td>Evaluate social and economic trends and adapt to accommodate their impact on oral health care.</td>
</tr>
<tr>
<td>41</td>
<td>Evaluate scientific literature and integrate new knowledge and best research outcomes with patient values and other sources of information to make decisions about treatment.</td>
</tr>
<tr>
<td>42</td>
<td>Practice within the general dentist’s scope of competence and consult with or refer to professional colleagues when indicated.</td>
</tr>
<tr>
<td>43</td>
<td>Evaluate and utilize available and emerging resources (e.g., laboratory and clinical resources, information technology) to facilitate patient care, practice management, and professional development.</td>
</tr>
<tr>
<td>44</td>
<td>Conduct practice activities in a manner that manages risk and is consistent with jurisprudence and ethical requirements in dentistry and healthcare.</td>
</tr>
<tr>
<td>45</td>
<td>Recognize and respond to situations involving ethical and jurisprudence considerations.</td>
</tr>
<tr>
<td>46</td>
<td>Maintain patient records in accordance with jurisprudence and ethical requirements.</td>
</tr>
<tr>
<td>47</td>
<td>Conduct practice related business activities and financial operations in accordance with sound business practices and jurisprudence (e.g., OSHA and HIPAA).</td>
</tr>
<tr>
<td>48</td>
<td>Develop a catastrophe preparedness plan for the dental practice.</td>
</tr>
<tr>
<td>49</td>
<td>Manage, coordinate and supervise the activity of allied dental health personnel.</td>
</tr>
<tr>
<td>50</td>
<td>Assess one’s personal level of skills and knowledge relative to dental practice.</td>
</tr>
<tr>
<td>51</td>
<td>Adhere to standard precautions for infection control for all clinical procedures.</td>
</tr>
<tr>
<td>52</td>
<td>Use prevention, intervention, and patient education strategies to maximize oral health.</td>
</tr>
<tr>
<td>53</td>
<td>Collaborate with dental team members and other health care professionals to promote health and manage disease in communities.</td>
</tr>
<tr>
<td>54</td>
<td>Evaluate and implement systems of oral health care management and delivery that will address the needs of patient populations served.</td>
</tr>
<tr>
<td>55</td>
<td>Apply quality assurance, assessment and improvement concepts to improve outcomes.</td>
</tr>
<tr>
<td>56</td>
<td>Communicate case design to laboratory technicians and evaluate the resultant restoration or prosthesis.</td>
</tr>
</tbody>
</table>
INBDE Content by Clinical Component Section (2017)

- Diagnosis and Treatment Planning: 34.6%
- Oral Health Management: 42.0%
- Practice and Profession: 23.4%
Foundation Knowledge Areas: Key Source/Reference

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https://www.aamc.org/download/271072/data/scientificfoundationsforfuturephysicians.pdf
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 | Research methodology and analysis, and informatics tools |

* FK 9 and 10 contain minor edits that are currently pending JCNDE approval.
# INBDE Content, by Foundation Knowledge Area

<table>
<thead>
<tr>
<th>#</th>
<th>Foundation Knowledge Area</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Molecular, biochemical, cellular, and systems-level development, structure and function</td>
<td>12.2%</td>
</tr>
<tr>
<td>2</td>
<td>Physics and chemistry to explain normal biology and pathobiology</td>
<td>6.8%</td>
</tr>
<tr>
<td>3</td>
<td>Physics and chemistry to explain the characteristics and use of technologies and materials</td>
<td>8.0%</td>
</tr>
<tr>
<td>4</td>
<td>Principles of genetic, congenital and developmental diseases and conditions and their clinical features to understand patient risk</td>
<td>10.6%</td>
</tr>
<tr>
<td>5</td>
<td>Cellular and molecular bases of immune and non-immune host defense mechanisms</td>
<td>9.0%</td>
</tr>
<tr>
<td>6</td>
<td>General and disease-specific pathology to assess patient risk</td>
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<tr>
<td>7</td>
<td>Biology of microorganisms in physiology and pathology</td>
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</tr>
<tr>
<td>8</td>
<td>Pharmacology</td>
<td>10.6%</td>
</tr>
<tr>
<td>9</td>
<td>Sociology, psychology, ethics and other behavioral sciences</td>
<td>10.6%</td>
</tr>
<tr>
<td>10</td>
<td>Research methodology and analysis, and informatics tools</td>
<td>9.8%</td>
</tr>
</tbody>
</table>

* FK 9 and 10 contain minor edits that are currently pending JCNDE approval.
INBDE Content by Foundation Knowledge Area (2017)

- FK 1: 12.2%
- FK 2: 6.8%
- FK 3: 8.0%
- FK 4: 10.6%
- FK 5: 9.0%
- FK 6: 11.8%
- FK 7: 10.6%
- FK 8: 10.6%
- FK 9: 10.6%
- FK 10: 9.8%
Content Specifications by Clinical Component Section and Foundation Knowledge Area (2017)
INBDE Item Development

- INBDE Test Construction Teams (TCTs) have been formed for each clinical content section.
  - Diagnosis and Treatment Planning
  - Oral Health Management
  - Practice and Profession
- TCTs meet within their 5-person groups and also as a full unit (15 members) during item reviews.
- INBDE TCTs have drafted over 2,000 items to date in support of field testing efforts.
- Additional INBDE TCTs have focused tasks:
  - Case Development, Clinical Relevance Review, Form Review
INBDE Item Development – The Patient Box

• The Patient Box includes all relevant information a candidate needs to know in order to properly diagnose or treat a patient
  – **Patient**: basic demographic information (gender and age)
  – **Chief Complaint**: reason for the visit
  – **Background and/or Patient History**: dental and medical history, current medications, etc.
  – **Current Findings**: any additional information regarding pre-treatment or diagnosis obtained during the current visit

<table>
<thead>
<tr>
<th><strong>Patient</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, 20 years old</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Chief Complaint</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>“My front teeth have been gradually crumbling and now are sensitive when I touch the edges or try to eat.”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Background and/or Patient History</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>A fixed orthodontic appliance was recently installed in the maxillary arch.</td>
</tr>
<tr>
<td>Afterward the patient is referred to you for restoration of her maxillary anterior teeth.</td>
</tr>
<tr>
<td>Medications: Ibuprofen (Advil) as needed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Current Findings</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern but no acute distress</td>
</tr>
<tr>
<td>Missing tooth structure for 7, 8, 9, and 10, especially of incisal edges, facial enamel and, to a lesser extent, of lingual enamel of 8 and 9</td>
</tr>
</tbody>
</table>
Developing Test Questions for the INBDE - Sample

Patient
Female, 20 years old

Chief Complaint
“My front teeth have been gradually crumbling and now are sensitive when I touch the edges or try to eat.”

Background and/or Patient History
A fixed orthodontic appliance was recently installed in the maxillary arch.
Afterward the patient is referred to you for restoration of her maxillary anterior teeth.
Medications:
Ibuprofen (Advil) as needed

Current Findings
Concern but no acute distress
Missing tooth structure for 7, 8, 9, and 10, especially of incisal edges, facial enamel and, to a lesser extent, of lingual enamel of 8 and 9

The orthodontic brackets and arch wire are removed prior to provisionally restoring teeth 8 and 9. What is the most likely cause of the patient’s condition?

A. Habitual chewing on pencil erasers
B. Grinding of her anterior teeth
C. Sucking on lemons and limes
D. Swishing soft drinks before swallowing
INBDE Field Tests

• The JCNDE has conducted three separate INBDE Field Tests
  – INBDE Sample Item Survey (July 2015 – September 2015)
    • 170 NBDE Part II candidates
  – INBDE Short Form Field Test (October 2016 – January 2017)
    • 840 NBDE Part II candidates from accredited dental schools
    • Approximately 1,400 NBDE Part II candidates from accredited dental schools

• Results from INBDE field testing provide validity evidence in support of the intended use and interpretation of INBDE results

• Overall, the INBDE has been viewed by field test candidates as an improvement over the NBDE Part II in many ways
INBDE Field Test Results: Key messages

• INBDE field testing efforts have been successful to date.

• The Joint Commission is on track for an August 2020 release of the INBDE.
On June 20, 2018 the JCNDE will vote on release of the formal notice concerning INBDE implementation and NBDE discontinuation.
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
  - Test specifications
  - Preliminary sample questions
  - INBDE retest policy and candidate eligibility
  - INBDE draft item development guide
  - INBDE practice test questions
- The following information will be posted as soon as it becomes available:
  - Technical report(s) providing detailed information concerning validity.
Questions?
Thank You!