Update on the Integrated National Board Dental Examination (INBDE)

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INBDE Resources

• The JCNDE website contains a number of useful INBDE-related resources

https://www.ada.org/en/jcnde/inbde

Resources Related to Examination Content
  – Foundation Knowledge for the General Dentist
  – INBDE Test Specifications
  – INBDE Domain of Dentistry
  – INBDE Practice Questions
  – INBDE Item Development Guide

Resources Related to Policy and Timelines
  – Formal Notice of INBDE Implementation and NBDE Discontinuation
    • INBDE implementation plan
    • Retest policy
    • Eligibility
    • Administration
INBDE Update

1. What would biochemistry course objectives look like which would provide adequate knowledge for the INBDE?

• First and foremost: Academic deans should be consulted on all decisions concerning course objectives
• The document entitled *Foundation Knowledge for the General Dentist* provides *examples* of disciplines (e.g., biochemistry) that are relevant to each of the INBDE’s ten foundation knowledge areas
• For example, this document indicates Biochemistry is relevant to each of the following subsections of Foundation Knowledge area 1:
  – 1.2 Structure and function of cell membranes and the mechanism of neurosynaptic transmission
  – 1.3 Mechanisms of intra and intercellular communications and their role in health and disease
  – 1.4 Health maintenance through the regulation of major biochemical energy production pathways and the synthesis/degradation of macromolecules. Impact of dysregulation in disease on the management of oral health
  – 1.5 Atomic and molecular characteristics of biological constituents to predict normal and pathological function
• Link: https://www.ada.org/en/jcnde/inbde/test-preparation
2. Roughly what percentage of INBDE exam questions will be based on basic/pre clinical science areas and will all/most of these be integrated as patient box based questions?

- The **INBDE test specifications** provide the percentage of questions allocated to each foundation knowledge area.
- The Patient Box is a tool for skill evaluation; the test specifications do not dictate requirements concerning this.
- The majority of INBDE questions currently include a patient box.

<table>
<thead>
<tr>
<th>#</th>
<th>Foundation Knowledge Area</th>
<th>%</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>
<td>11.8%</td>
</tr>
<tr>
<td>7</td>
<td>Biology of microorganisms in physiology and pathology</td>
<td>10.6%</td>
</tr>
<tr>
<td>8</td>
<td>Pharmacology</td>
<td>10.6%</td>
</tr>
<tr>
<td>9</td>
<td>Behavioral sciences, ethics, and jurisprudence</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>
3. To what extent should behavioral sciences content need to be integrated into every specialty area content of dentistry or will integration into general dentistry content be sufficient?

- The INBDE is focused on the knowledge and skills required for safe, independent practice of entry-level general dentistry.
- Behavioral science content covered on the INBDE is designed to reflect the actual experiences of practicing general dentists.
- The task performed by the dentist in these types of questions would simply provide context for the evaluation of behavioral science knowledge/application.
4. Which periodontal classification system will be used on the INBDE?

- The INBDE will use the periodontal classification system introduced by the American Academy of Periodontology in 2017

5. If 40% of questions utilize the patient box and are integrated in nature, can you please give more specifics on the remaining 60% of the exam?

• Many INBDE questions use a Patient Box to convey information about a patient. The characteristics of the Patient Box are described in the *INBDE Item Development Guide*.

• Case-based item sets make up 40% of the INBDE. A case-based item set consists of two or more items that reference a common set of stimulus materials (e.g., a patient box and an image). INBDE item sets typically involve 2-5 items.

• Standalone items make up the remaining 60% of INBDE content. Standalone items are written to be clinically relevant and integrated; they *can* contain patient boxes and images.
6. What will be the distribution of patient box-based questions vs. standalone questions?

- If a question involves a patient, the question will include a Patient Box. However, item writers are discouraged from including a patient or patient box where doing so would simply add unnecessary verbiage to an item that is already clinically relevant.

- JCNDE staff estimate that approximately 70% of INBDE items will contain a patient box; these will include standalone items and items that are part of case-based item sets.
7. Can you estimate what is the weight/percentage of the following topics in the exam? Evidence-based dentistry, biostatistics, epidemiology, dental public health, library sciences

- While it is difficult to provide an exact percentage, the INBDE test specifications and the document titled *Foundation Knowledge for the General Dentist* shed some light on this

- Evidence-based dentistry, biostatistics, and library sciences are covered primarily within foundation knowledge area 10 which makes up 9.8% of the examination
  - Note that evidence-based dentistry in many cases involves meta-analytic studies involving research questions that can focus within and across Foundation Knowledge areas

- Epidemiology and dental public health are covered within foundation knowledge areas 7, 8, 9, and 10
INBDE Update

8. How well did student performance on the INBDE pilot exams correlate with their performance on Part I and Part II of the NBDE?

- Candidate performance on the 2017-2018 INBDE Field Test was positively correlated with performance on NBDE Parts I and II

<table>
<thead>
<tr>
<th></th>
<th>Observed Correlation</th>
<th>Disattenuated Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBDE Part I</td>
<td>.58</td>
<td>.65</td>
</tr>
<tr>
<td>NBDE Part II</td>
<td>.74</td>
<td>.84</td>
</tr>
</tbody>
</table>

*Correlation Between INBDE Field Test and NBDE Performance (N = 1,180 participants)*

Note. Disattenuated correlations were estimated using the following reliability coefficients: Field Test=.87; NBDE Part I=.94; NBDE Part II=.91
INBDE Update

9. Will more released questions be available and when will that take place? Will a larger sample question bank be released?

- Forty four (44) INBDE practice questions are available on the JCNDE website

- The JCNDE does not plan to release additional practice questions in the immediate future
10. Will there be study guides for students prior to taking the exam?

- The following resources will be helpful to candidates who are preparing to take the INBDE
  - Foundation Knowledge for the General Dentist
  - INBDE Test Specifications
  - INBDE Domain of Dentistry
  - INBDE Practice Questions

- Stakeholders can use the INBDE practice questions to understand the types of questions that will appear on the examination

- Programs are also free to use concept maps and related tools to help prepare students
# INBDE Update (Spielman, 2018)

<table>
<thead>
<tr>
<th>AREA OF SCIENCE</th>
<th>ANATOMY</th>
<th>BIOCHEMISTRY</th>
<th>HISTOLOGY</th>
<th>GENETICS</th>
<th>IMMUNOLOGY</th>
<th>PATHOLOGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systems/Conditions</td>
<td>NEUROANATOMY</td>
<td>CELL BIOLOGY</td>
<td>PHYSIOLOGY</td>
<td></td>
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<tr>
<td></td>
<td>DENTAL ANATOMY</td>
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<tr>
<td></td>
<td>EMBRYOLOGY</td>
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<tr>
<td>CARDIOVASCULAR</td>
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<tr>
<td>Myocardial infarction</td>
<td>Anatomy of sublingual area; anatomy of the sublingual vein for absorption of nitroglycerine, Anatomy of coronary arteries</td>
<td>Blood clotting factors</td>
<td>Contractility of heart muscle; collateral blood supply; vascularization of the heart;</td>
<td></td>
<td>EKG in pathology: where in the heart; what kind of changes; complications – evaluation &amp; potential of MI</td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Genetic basis of hypertension</td>
</tr>
<tr>
<td>Coronary Artery Disease</td>
<td>Cardiac anatomy and neurovasculature</td>
<td>Apolipoproteins, deposition, HDL scavenging</td>
<td>Artery structure of arteria wall; factors that regulate blood pressure (i.e. anemia)</td>
<td></td>
<td>Mechanics of arterial plaque formation;</td>
<td></td>
</tr>
<tr>
<td>Congestive Heart Failure</td>
<td>Pulmonary and systemic vasculature</td>
<td></td>
<td>Heart as pump</td>
<td></td>
<td>Edema - differential of diagnosis of edema (day vs night) (left vs right) pulmonary edema</td>
<td></td>
</tr>
</tbody>
</table>
11. Are you aware of publications from editors such as Kaplan useful as aids and that might be purchased by University libraries?

- The JCNDE does not review or endorse publications from editors such as Kaplan

- The JCNDE recommends that candidates use textbooks and lecture notes as primary sources for study. Candidates are cautioned not to limit their examination preparation to the review of the INBDE practice questions
INBDE Update

12. When will “old” INBDE tests be released? What do you recommend as study aids?

- Because the INBDE is a new examination program, “old” tests are unlikely to be released for several years. No release schedule has been established.

- The JCNDE recommends that candidates use textbooks and lecture notes as primary sources for study
13. Will there be questions that are similar to those in the current NBDE?

- Yes, the INBDE and NBDE programs have different content specifications, but assess many of the same underlying concepts. Scores on the 2017-2018 INBDE Field Test were positively correlated with scores on NBDE Parts I and II.

- The INBDE has an enhanced focus on clinical relevance, relative to the NBDE Part I.
14. How will pass/fail be determined – i.e. raw score, curved?

- In February 2020, the JCNDE will convene a panel of subject matter experts to recommend the pass/fail performance standard for the INBDE. The recommendation will be determined using a process called standard setting.

- During the standard setting activities, the panelists will review INBDE questions and make judgments about how a “just qualified” licensure candidate would perform. The standard setting activities will be facilitated by Dr. Gregory Cizek, a Professor of Educational Measurement and Evaluation who is a nationally recognized expert on standard setting methods.

- The INBDE will not be graded on a curve. All candidates who perform at or above the established performance standard will pass the examination.
15. When will more specific information be given to schools regarding what students will need to know for the exam? For example, in anatomy: is non-head-and-neck material applicable? If so, how specific?

- The touchstone for determining whether specific content or concepts will or will not appear on the examination is CLINICAL RELEVANCE. If a given concept is relevant to the decisions and judgments a practicing dentist must make, then it is fair game for inclusion on the examination.

- The document titled *Foundation Knowledge for the General Dentist* is relevant to this question; it provides detailed examples of the topics and subtopics within each foundation knowledge area.

- Additional helpful resources include the following:
  - INBDE Test Specifications
  - INBDE Domain of Dentistry
  - INBDE Practice Questions
INBDE Update

16. Is the Joint Commission creating a dental therapy national exam? If so, are there dental therapists from the only program that has an application accepted by CODA (the Alaska Dental Therapy Educational Program) including on the planning and development? What about educators from this same program?

- The JCNDE is not currently creating a national dental therapy examination.

- The JCNDE has not received any formal requests by dental boards to create such an examination.
INBDE Update

17. Has or will linking between the NBDE and INBDE been or will be done in order to describe a score comparison between the two tests?

• The JCNDE does not plan to link NBDE and INBDE scores. NBDE and INBDE results are both reported as Pass/Fail

• The JCNDE conducts analyses and investigations in support of its vision and mission.
18. Are students eligible to take the integrated board if they have failed part one?

• Yes. However, once a candidate attempts the INBDE, they are no longer eligible to take NBDE Part I.

• Examination eligibility decisions are made by dental programs, in accordance with JCNDE policies.

• Additional information about INBDE eligibility is available in the document titled Formal Notice of INBDE Implementation and NBDE Discontinuation. https://www.ada.org/en/jcnde/inbde
19. If a student takes part one and passes, what happens if they fail part two just before it disappears?

• The NBDE Part II will be discontinued on July 31, 2022. No administration of NBDE Part II will occur after that date.

• Candidates who have not passed NBDE Part II by July 31, 2022 must attempt the INBDE to obtain National Board certification.

• Additional information about INBDE eligibility is available in the document titled *Formal Notice of INBDE Implementation and NBDE Discontinuation*

Questions?