

The Integrated National Board Dental Examination (INBDE)

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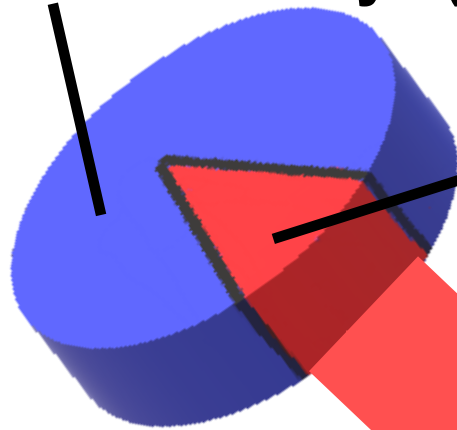
ASDA District 2 Webinar Series
July 6, 2020

Preamble

*(What's the difference
between
INBDE & DLOSCE ?)*

How do the INBDE and DLOSCE differ?

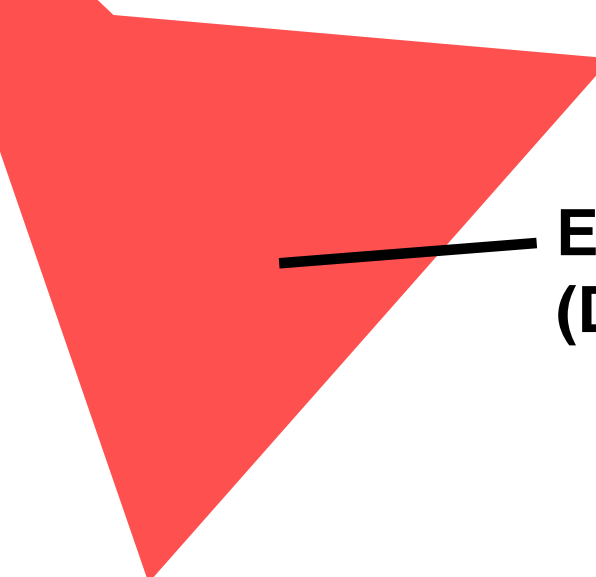
“Domain of Dentistry” (INBDE)



Content directly applicable to clinical licensure



Examination items (DLOSCE)



How do the INBDE and DLOSCE differ?

- INBDE and DLOSCE **both assess clinical competence** (“*skills, e.g., diagnosis and treatment planning, oral health management*”). However, key differences exist:
 - The **INBDE** focuses on **cognitive skills** (*a broader focus*).
 - Biomedical and behavioral underpinnings of clinical decisions, knowledge that includes the “why”
 - Practice and profession considerations, evidence based dentistry, being good consumers of research, patient oral health care education
 - The **DLOSCE** is focused exclusively on the **clinical tasks** a dentist performs while providing direct, chair-side treatment to **patients** (*a narrower focus*).
 - Micro-judgments, errors and knowledge of success criteria

How do the INBDE and DLOSCE differ?

INBDE Example	Corresponding DLOSCE Example
Understand basic principles of pharmacokinetics and pharmacodynamics for major classes of drugs and over-the-counter products to guide safe and effective treatment.	Review patient information and write an appropriate prescription.
Understand local and central mechanisms of pain modulation.	Identify the final needle position (point of insertion, angulation, and depth) immediately prior to injection that will best accomplish complete local anesthesia for a given procedure.
Understand dental material properties, biocompatibility, and performance, and the interaction among these in working with oral structures in health and disease.	Identify one or more flaws present in a metal-ceramic restoration.
Understand the principles and logic of epidemiology and the analysis of statistical data in the evaluation of oral disease risk, etiology, and prognosis.	<i>No corresponding DLOSCE example. Epidemiology and statistics are not covered on the DLOSCE.</i>

INBDE

(Why, What, How)

Purpose of “the Boards”

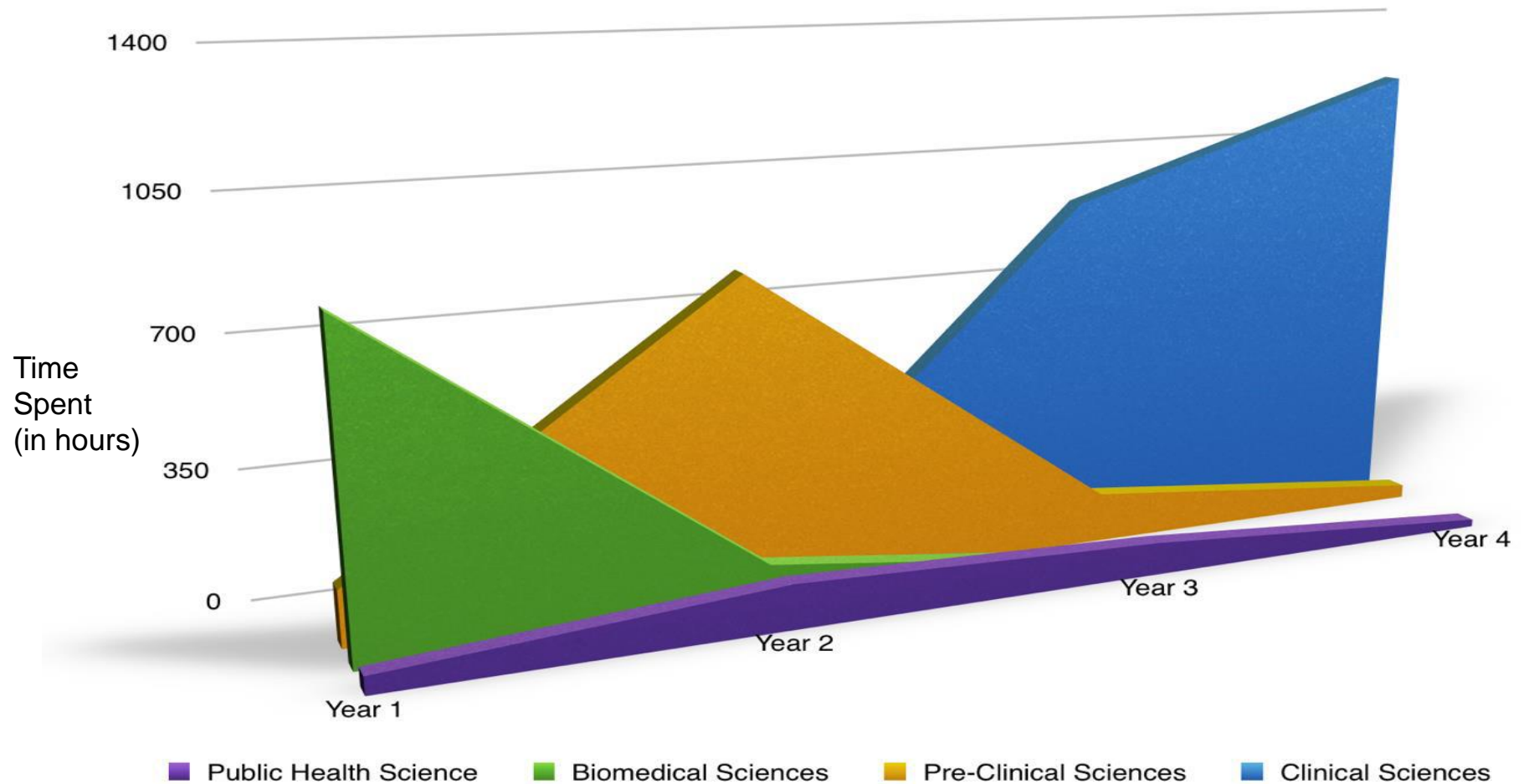
Valid, reliable, and fair assessment tools for assisting state boards in determining qualifications of dentists who seek licensure to practice in any state, district or dependency of the United States, which recognizes the National Board Dental Examinations.

Does a candidate possess a minimum level of cognitive knowledge/skills necessary to safely practice?

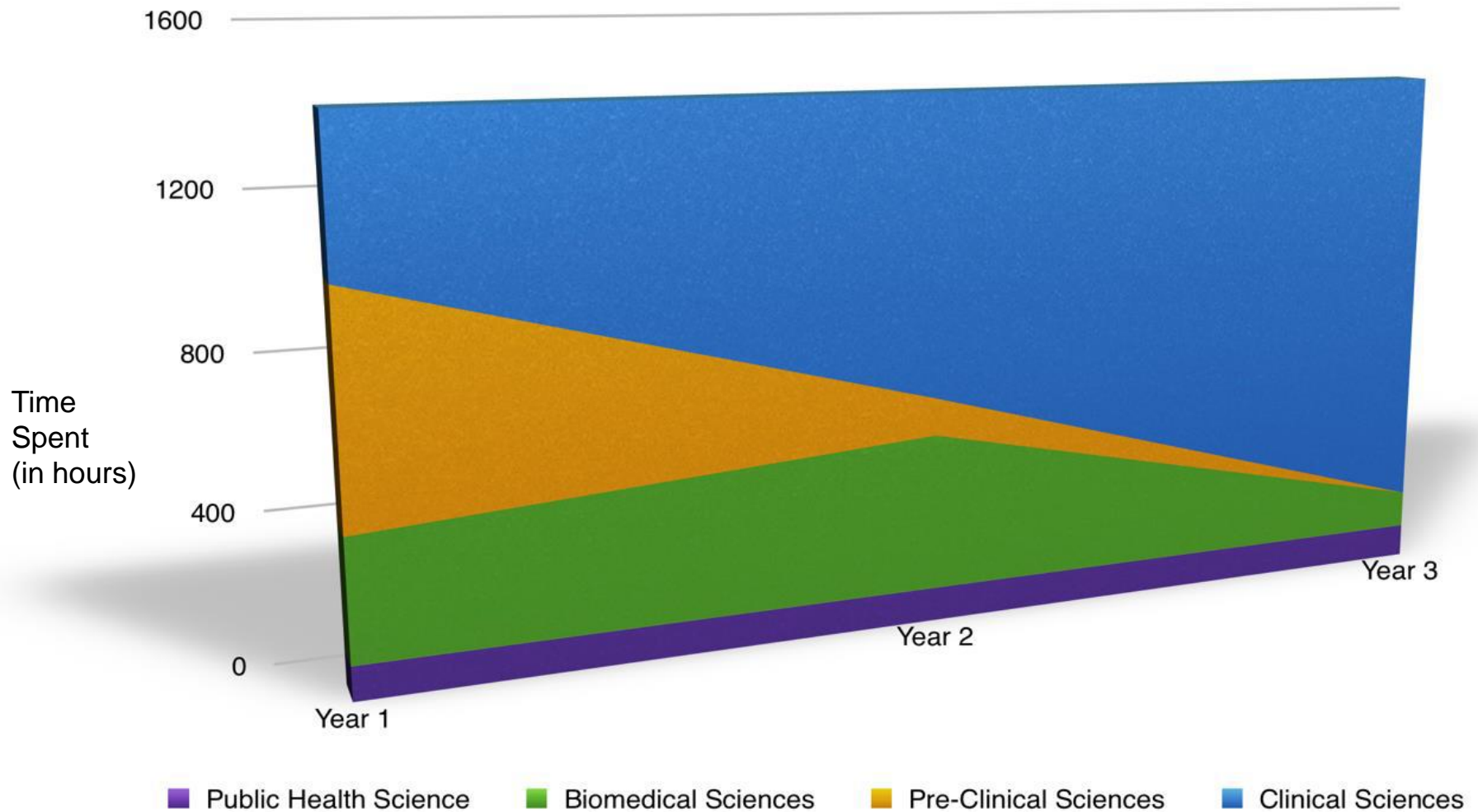
Why change from NBDE I & II to INBDE?

- A convergence of factors led to development of the INBDE, which was designed to better serve communities of interest
 - Evolving trends in scope of practice
 - Newer approaches in testing methodology (“psychometrics”)
 - Movement toward integrated content having more direct clinical relevance to the practice of dentistry
 - Desire for improving processes and candidates’ experiences in taking “the Boards”
 - More accurate assessment of competency for regulatory agencies
 - Better alignment with contemporary dental education and to indirectly addresses the need/desire of schools to change their curricula

Current State of Dental Education (Licari, 2018)



Future Curriculum (Licari, 2018)



Framework of the INBDE

- Committee for an Integrated Examination (CIE) was charged in 2009 to develop and validate a new examination instrument for dentistry, to supplant NBDE Part I and Part II, and that:
 - would retain 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., by assessing entry level competency.
 - was to be designed from the ground up to focus on **clinical relevance**.
 - would **integrate** the biomedical, behavioral, and clinical sciences.
 - solicited and incorporated into the framework feedback from stakeholders and communities of interest.
- Therefore, examination purpose drives all considerations, clinical relevance is the best way to achieve that purpose, and integration provides a strong means of implementing and achieving this perspective.

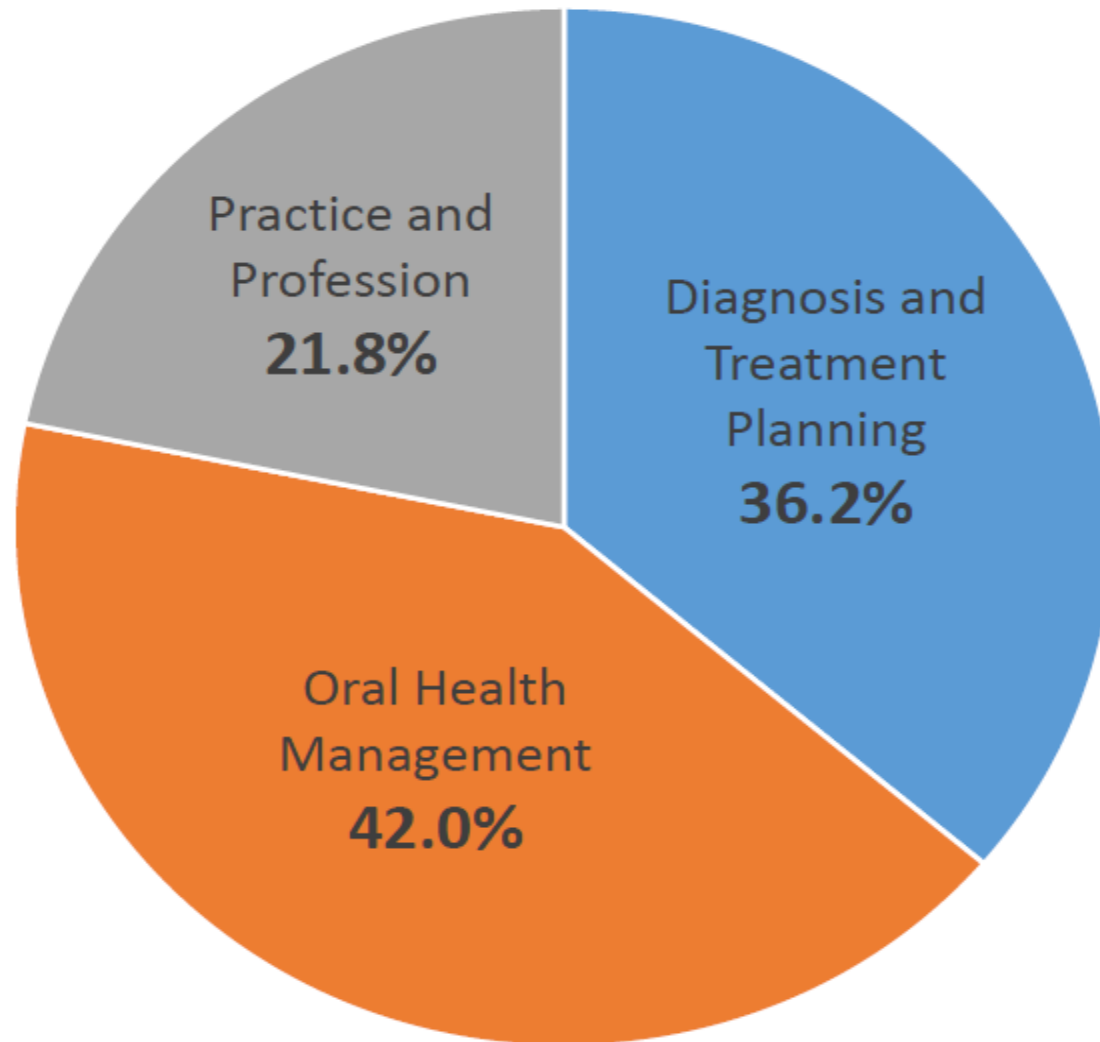
Establishment of Content Domain

- A “**content domain**” is the set of behaviors, knowledge, skills, abilities that a test measures.
- INBDE content domain reflects integration between foundation knowledge areas and clinical content areas necessary for successful entry-level performance.
- Clinical content areas determined by a practice analysis:
 - In 2016, the Joint Commission conducted a practice analysis to determine the *frequency* with which each clinical content area is performed, and the *criticality* of each area to patient care.
 - The JCNDE surveyed over 2,500 entry-level general dentists.
 - A panel of practitioners and educators used the results to establish the INBDE content specifications.

INBDE Content Domain: *The Domain of Dentistry*

- JCNDE 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 originally on ADEA's 2008 *Competencies for the New General Dentist*, and have been revised by the JCNDE over the years.
 - The 56 clinical content areas are classified into three clinical component sections:
 - 1) Diagnosis and Treatment Planning
 - 2) Oral Health Management
 - 3) Practice and Profession
- JCNDE also established **10 Foundation Knowledge (FK) Areas**, adapted from medicine, to represent the knowledge, skills, and abilities necessary to perform the aforementioned tasks.

INBDE Content by Clinical Component Section



56 Clinical Content Areas

#	Diagnosis and Treatment Planning
1	Interpret patient information and medical data to assess and manage patients.
2	Identify the chief complaint and understand the contributing factors.
3	Perform head and neck and intraoral examinations, interpreting and evaluating the clinical findings.
4	Use clinical and epidemiological data to diagnose and establish a prognosis for dental abnormalities and pathology.
5	Recognize the normal range of clinical findings and distinguish significant deviations that require monitoring, treatment, or management.
6	Predict the most likely diagnostic result given available patient information.
7	Interpret diagnostic results to inform understanding of the patient's condition.
8	Recognize the manifestations of systemic disease and how the disease and its management may affect the delivery of dental care.
9	Recognize the interrelationship between oral health and systemic disease, and implement strategies for improving overall health.
10	Select the diagnostic tools most likely to establish or confirm the diagnosis.
11	Collect information from diverse sources (patient, guardian, patient records, allied staff, and other healthcare professionals) to make informed decisions.
12	Formulate a comprehensive diagnosis and treatment plan for patient management.
13	Discuss etiologies, treatment alternatives, and prognoses with patients so they are educated and can make informed decisions concerning the management of their care.
14	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.
15	Interact and communicate with patients using psychological, social, and behavioral principles.

56 Clinical Content Areas

#	Oral Health Management
16	Prevent, recognize and manage medical emergencies (e.g., cardiac arrest).
17	Prevent, recognize and manage dental emergencies.
18	Recognize and manage acute pain, hemorrhage, trauma, and infection of the orofacial complex.
19	Prevent, diagnose and manage pain during treatment.
20	Prevent, diagnose and manage pulpal and periradicular diseases.
21	Prevent, diagnose and manage caries.
22	Prevent, diagnose and manage periodontal diseases.
23	Prevent, diagnose and manage oral mucosal and osseous diseases.
24	Recognize, manage and report patient abuse and neglect.
25	Recognize and manage substance abuse.
26	Select and administer or prescribe pharmacological agents in the treatment of dental patients.
27	Anticipate, prevent, and manage complications arising from the use of therapeutic and pharmacological agents in patient care.
28	Diagnose endodontic conditions and perform endodontic procedures.
29	Diagnose and manage the restorative needs of edentulous and partially edentulous patients.
30	Restore tooth function, structure, and esthetics by replacing missing and defective tooth structure, while promoting soft and hard tissue health.
31	Perform prosthetic restorations (fixed or removable) and implant procedures for edentulous and partially edentulous patients.
32	Diagnose and manage oral surgical treatment needs.
33	Perform oral surgical procedures.
34	Prevent, diagnose and manage developmental or acquired occlusal problems.
35	Prevent, diagnose and manage temporomandibular disorders.
36	Diagnose and manage patients requiring modification of oral tissues to optimize form, function and esthetics.
37	Evaluate outcomes of comprehensive dental care.
38	Manage the oral esthetic needs of patients.

56 Clinical Content Areas

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

INBDE Foundation Knowledge Areas

INBDE Content by Foundation Knowledge Area

#	Foundation Knowledge Area	Percent
FK1	Molecular, biochemical, cellular, and systems-level development, structure and function	12.2%
FK2	Physics and chemistry to explain normal biology and pathobiology	6.8%
FK3	Physics and chemistry to explain the characteristics and use of technologies and materials	8.0%
FK4	Principles of genetic, congenital and developmental diseases and conditions and their clinical features to understand patient risk	10.6%
FK5	Cellular and molecular bases of immune and non-immune host defense mechanisms	9.0%
FK6	General and disease-specific pathology to assess patient risk	11.8%
FK7	Biology of microorganisms in physiology and pathology	10.6%
FK8	Pharmacology	10.6%
FK9	Behavioral sciences, ethics, and jurisprudence	10.6%
FK10	Research methodology and analysis, and informatics tools	9.8%

Content Specifications by Clinical Component Section and Foundation Knowledge Area

Clinical Component Section	FK 1	FK 2	FK 3	FK 4	FK 5	FK 6	FK 7	FK 8	FK 9	FK 10	Total
Diagnosis and Treatment Planning	5.0%	2.2%	1.8%	4.6%	3.6%	5.2%	4.2%	3.2%	3.0%	3.4%	36.2%
Oral Health Management	6.8%	4.4%	4.4%	4.2%	4.2%	3.8%	4.2%	4.4%	2.8%	2.8%	42.0%
Practice and Profession	0.4%	0.2%	1.8%	1.8%	1.2%	2.8%	2.2%	3.0%	4.8%	3.6%	21.8%
Total	12.2%	6.8%	8.0%	10.6%	9.0%	11.8%	10.6%	10.6%	10.6%	9.8%	100.0%

Content Domain Comparison

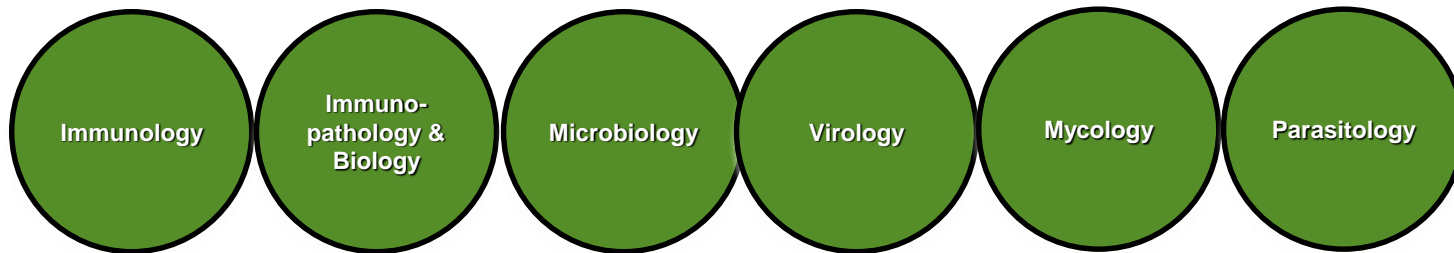
Comparison of scientific areas covered by individual *Foundation Knowledge* (FK1-FK10) and those currently covered on either Part I or Part II of NBDE

Selected excerpts from a presentation by
Dr. Andrew Spielman (NYU) to the Joint Commission's
Committee on Research and Development
delivered on
February 22, 2013

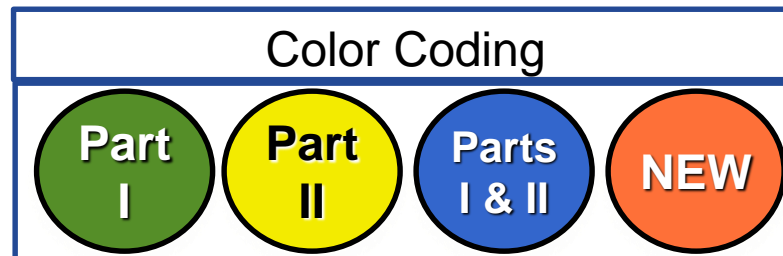
Basic and Foundation Sciences covered in part by Foundation Knowledge 5 (FK5)

FK5

Cellular and molecular bases of immune and non-immune host defense mechanisms

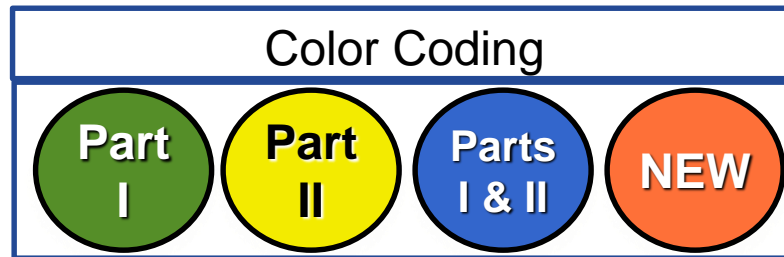
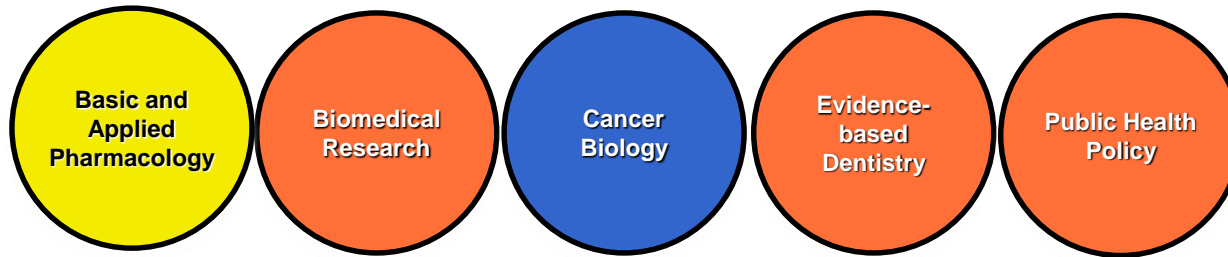


Note: A science area potentially covered by a Foundation Knowledge **does not** mean it will end up with a substantial number of questions on the new exam; the size of the circle of a specific scientific field is **not proportional** to its relative representation on the exam.



Basic and Foundation Sciences covered in part by Foundation Knowledge 8 (FK8)

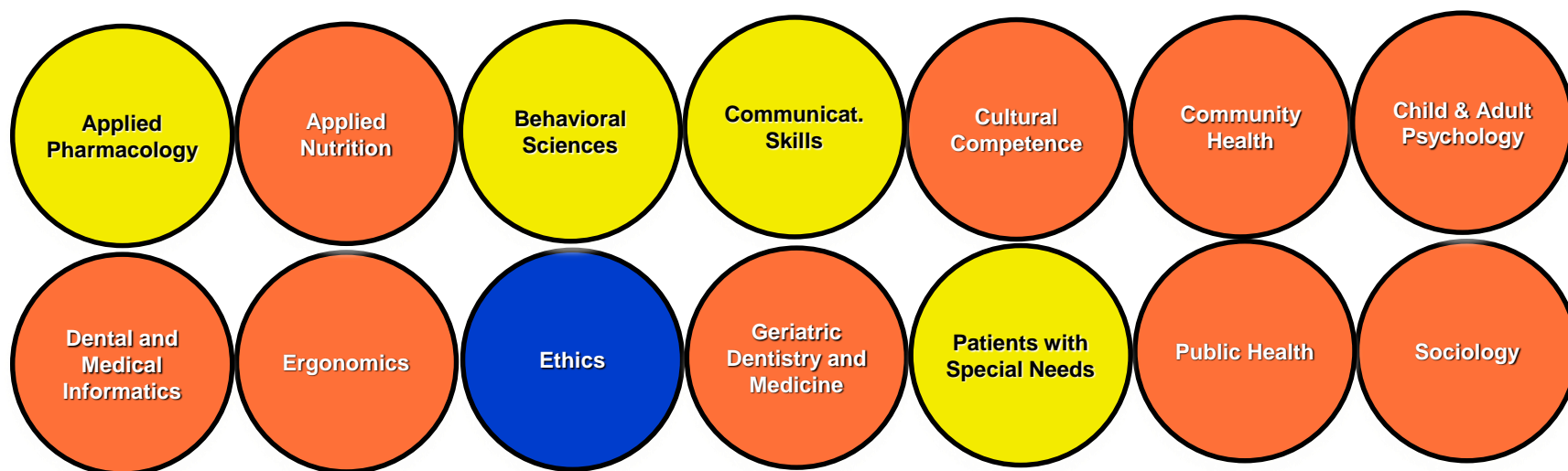
FK8	Pharmacology
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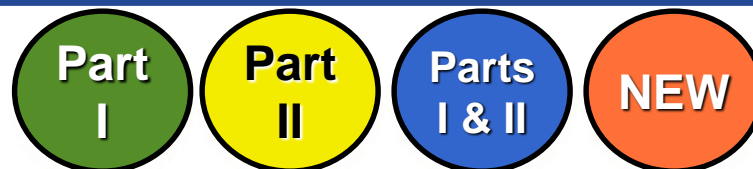
Basic and Foundation Sciences covered in part by Foundation Knowledge 9 (FK9)

FK9

Behavioral sciences, ethics, and jurisprudence



Color Coding



Item Development

(i.e., coming up with the actual exam questions)

Guiding Principles in INBDE item development

- Bases on the **Just Qualified Candidate (JQC)**, who is a hypothetical examinee whose knowledge, skills, and abilities (KSAs) represent the lowest level that would still be considered acceptable to pass the INBDE.
 - The JQC is a candidate who possesses the minimally acceptable level of knowledge, cognitive skills, and ability in the biomedical, behavioral, and clinical dental sciences—including the areas of professional ethics and patient management—that is necessary for the safe, entry-level general practice of dentistry.
- Intended to **differentiate the JQC from those who fall below** that skill level; this is the focal purpose of “the Boards.”
- **Not intended to differentiate stellar students from average students**; the ADAT allows this distinction to be made.
- Items should avoid focusing on trivia and esoteric bits of knowledge.
- Items should reflect clinically relevant situations that a practicing dentist would encounter.

INBDE Item Development

- **Test Construction Teams (TCTs)** have been formed for each clinical content section.
 - Diagnosis and Treatment Planning
 - Oral Health Management
 - Practice and Profession
- Consist of 5-person groups that meet for a half-week ≥ 1 x per year, as needed.
- Additional INBDE TCTs have focused tasks:
 - Case Development, Clinical Relevance Review, Form Review
- The **process relies heavily on general dentists** to inform item selection, again to help ensure the clinical relevance of examination content.

The Patient Box *(new in INBDE)*

Patient
Female, 28 years old.
Chief Complaint
"I haven't been able to open my mouth for two days."
Background and/or Patient History
Three days prior, left mandibular third molar extraction.
Current Findings
Maximum opening is 10 mm

INBDE Patient Box: Patient Section

Patient

Female, 28 years old.

Chief Complaint

"I haven't been able to open my mouth for two days."

Background and/or Patient History

Three days prior, left mandibular third molar extraction.

Current Findings

Maximum opening is 10 mm

Section

Patient

Description

- This section presents patient demographic characteristics (gender, age, and potentially ethnicity).

Presentation Format

- Male or Female, x years old.
- Ethnicity may be included if relevant.

Example

- Female, 28 years old.

INBDE Patient Box: Patient Section

Patient

Female, 28 years old.

Chief Complaint

"I haven't been able to open my mouth for two days."

Background and/or Patient History

Three days prior, left mandibular third molar extraction.

Current Findings

Maximum opening is 10 mm

Section

Patient

Description

- This section presents patient demographic characteristics (gender, age, and potentially ethnicity).

Presentation Format

- **Male or Female**, **x** years old.
- Ethnicity may be included if relevant. **Implicit bias of TCTs? (improvements will occur ongoing!)**

Example

- Female, 28 years old.

INBDE Patient Box: Chief Complaint Section

Patient
Female, 28 years old.
Chief Complaint
"I haven't been able to open my mouth for two days."
Background and/or Patient History
Three days prior, left mandibular third molar extraction.
Current Findings
Maximum opening is 10 mm



Section	Chief Complaint
Description	<ul style="list-style-type: none">• This section presents the chief complaint as described by the patient or a guardian.
Presentation Format	<ul style="list-style-type: none">• If quoted directly from the patient, enclose the statement in quotation marks and voice the statement in the first person.
Example	<ul style="list-style-type: none">• "I've been unable to open my mouth for two days."

INBDE Patient Box: Background/Patient History

Patient
Female, 28 years old.
Chief Complaint
"I haven't been able to open my mouth for two days."
Background and/or Patient History
Three days prior, left mandibular third molar extraction.
Current Findings
Maximum opening is 10 mm



Section	Background/Patient History
Description	<ul style="list-style-type: none">This section presents background information such as history of dental diagnosis and treatment, medical conditions, allergies, social history, etc.
Presentation Format	<ul style="list-style-type: none">The information is assumed to be factual and provided by the treating dentist.
Example	<ul style="list-style-type: none">Three days prior, left mandibular third molar extraction.

INBDE Patient Box: Current Findings Section

Patient
Female, 28 years old.
Chief Complaint
"I haven't been able to open my mouth for two days."
Background and/or Patient History
Three days prior, left mandibular third molar extraction.
Current Findings
Maximum opening is 10 mm



Section	Current Findings
Description	<ul style="list-style-type: none">• This section presents information collected by dental professionals during the current visit.
Presentation Format	<ul style="list-style-type: none">• Can include information such as height and weight, vital signs, results of diagnostic tests, and a general assessment of the patient condition.
Example	<ul style="list-style-type: none">• Facial edema• Lymphadenopathy• Extensive apical radiolucency associated with tooth 6• Temp. 100.3°• Blood glucose 240 mg/dL• BP 150/93

INBDE Model Items

Patient

Female, 75 years old

Chief Complaint

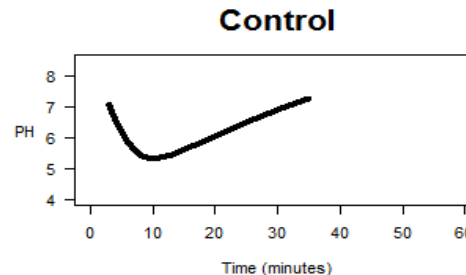
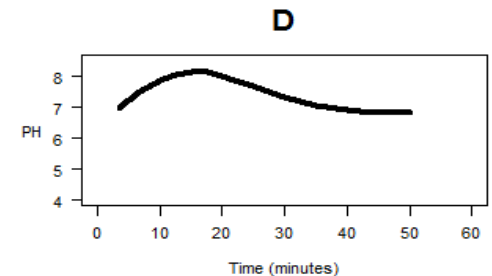
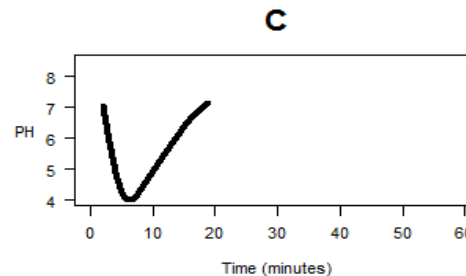
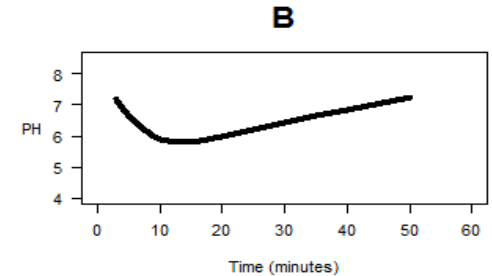
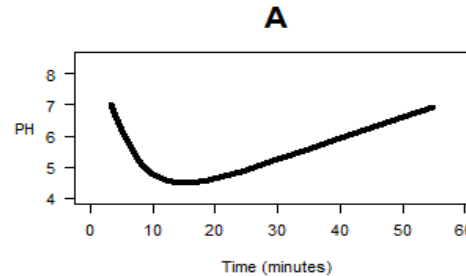
“My mouth has been dry for over a month.”

Background and/or Patient History

Oropharyngeal cancer treated by radiation.

Current Findings

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



Answer: A

INBDE Model Items

Patient

Male, 38 years old

Chief Complaint

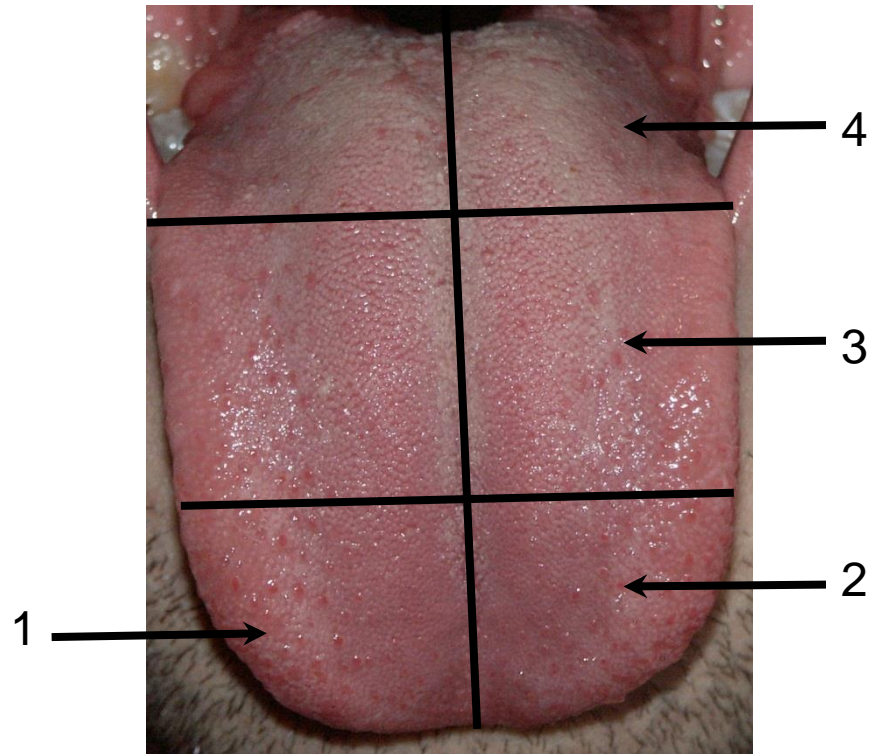
"I haven't been able to taste on the left side of my tongue for the past three days."

Background and/or Patient History

Left inferior alveolar nerve block during a prior dental treatment.

Current Findings

Where would a loss of taste be expected?



A. 1 and 2

B. 2 and 3

C. 3 and 4

D. 2, 3, and 4

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®).

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
 - 2017-2018 INBDE Field Test (*November 2017 – January 2018*)
 - 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

Feedback from INBDE Field Test Participants

What insights would you like to share with students who might be anxious to take this new examination?

“The INBDE is more clinically applicable than NBDE part I, while integrating some of the same required knowledge. There was a lot of tested information that new graduates simply should know in order to be good clinicians.”

“It’s not radically different than previous exams and not any harder.”

“If you have paid attention and have studied to the best of your abilities for all the exams throughout dental school, you will not have a problem with this exam. Dental school prepares you for it.”

“The exam is case-based so it is very similar to the cases that you currently see in clinic.”

“It is much more clinically focused than the previous format.”

Feedback from INBDE Field Test Participants

What insights would you like to share with dental programs and faculty members who are working to prepare their students to take the INBDE?

“Teach with a case-based model and help your students to learn the basics of how to take care of their patients and they'll be fine!”

“Focus more on clinical questions and how basic science is used in clinical dentistry.”

“They need to teach basic sciences while incorporating clinical scenarios in order to prepare the students.”

“Prepare the students for the majority of the exam to be case based, including many health conditions and their associated pharmacology.”

“Please try to relate the basic sciences to real-life clinical situations.”

FAQs

Timeline

- **INBDE will be available for administration on August 1, 2020.**
- NBDE Part I will be discontinued ~~July~~ 31, 2020
October
- NBDE Part II will be discontinued July 31, 2022

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.

INBDE Quick Facts

- **Administration:** The INBDE will contain 500 questions and require 1½ days to administer
 - Administrations will occur at professional testing centers located throughout the US and Canada
 - 2020 NBDE fees are posted on website:
 - 2021 NBDE fees: INBDE — \$750; NBDE Part II — \$530; NBDHE — \$490; DLOSCE — \$1650
- **Candidate Results:** INBDE results will be reported as Pass/Fail
 - For remediation purposes, candidates who fail the examination will be provided with information concerning their performance in the major INBDE topic areas
- **School Results:** Candidates' pass/fail status will be reported to dental schools
 - Monthly and annual school reports will be available through the DTS Hub
- **State Board Results.** Candidates' pass/fail status will be reported to boards
 - The DTS Hub will indicate whether a candidate has met or not met the National Board Dental Examination cognitive skills requirements for dentistry
 - No distinction will be made among Part I, Part II, or the INBDE

INBDE Quick Facts

- The INBDE Retest Policy is available online:
http://www.ada.org/~media/JCNDE/pdfs/inbde_retest_policy_and_eligibility.pdf?la=en
 - Candidates who have passed may not retake the examination unless required by a state board or relevant regulatory agency
 - Under the JCNDE's 5 Years/5 Attempts Eligibility Rule, candidates must pass the examination within: a) five years of their first attempt, or b) five examination attempts, whichever comes first. Subsequent to the fifth year or fifth attempt, failing candidates may test once every 12 months after their most recent attempt.
 - Candidates must wait a minimum of 90 days between unsuccessful test attempts. After their third failed attempt, candidates must wait one year before they can retest on the INBDE. The JCNDE will review this policy again in 2021.
- Candidates should contact the dental boards of each state to understand state requirements and the acceptability of the INBDE
 - With respect to administration timing, the JCNDE has received informal feedback from board members suggesting a general preference for candidates to complete the examination in close proximity to when they are applying for licensure
- Additional Resources
 - Sample INBDE questions are available here:
http://www.ada.org/~media/JCNDE/pdfs/INBDE_practice_questions.pdf?la=en
 - Additional information about the INBDE is available at <http://www.ada.org/jcnde/inbde>

Information from other Sources (not the JCNDE)

- INBDE eligibility rules for students of dental schools accredited by the Commission on Dental Accreditation (CODA).
 - While the JCNDE sets general eligibility requirements (e.g., through retesting policies), dental schools also provide their own eligibility requirements (e.g., eligibility approval through the dental dean).
- Additional school requirements concerning the INBDE (e.g., linking successful completion of the INBDE to graduation requirements).
 - These rules are determined by each dental school.
- Written examination requirements for each state.
 - These requirements are determined by each state dental board.

Questions?



Thank You!