The National Board Dental and Dental Hygiene Examinations (INBDE, NBDE II, and NBDHE)

Spring 2022 Webinars

April 20, 2022



Overview

- The ADA and the Commissions
- JCNDE Initiatives and Updates
- Examination Volume and Candidate Performance Trends
- The Integrated National Board Dental Examination (INBDE)
- The Department of Testing Services
- Q & A



Commissions of the ADA

The JCNDE is a Commission. The following are Commissions established within ADA Constitution and Bylaws as agencies of the ADA:

- Joint Commission on National Dental Examinations (JCNDE)
- Commission on Dental Accreditation (CODA)
- Commission for Continuing Education Provider Recognition (CCEPR)
- National Commission on Recognition for Dental Specialties and Certifying Boards (NCRDSCB)



The JCNDE is a Commission of the ADA

- Commissions are agencies of the ADA that have been granted independent authority to carry out their program and duties.
- Philosophical foundation of Commissions:
 - Commissions must be:
 - Consistent
 - Free from bias and conflict of interest
 - 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 the ADA Constitution & Bylaws and ADA Governance and Organizational Manual, and governed by the Rules of the JCNDE and the Operational and Policy Manual of the JCNDE.



Commonalities Among the Commissions

- Commissions recognize there are many stakeholders outside the ADA.
- Commissioners are appointed independently by outside stakeholders relevant to the purpose of the Commission (e.g., AADB, ADEA, ADHA, ASDA, or sponsoring organizations of ADA recognized dental specialties).
- The number of ADA appointees is in the minority with respect to the full Commission (e.g., 3 out of 16 members of the Joint Commission are ADA appointees).
- Commissions typically include a Public Member.
- Commissioners serve four year terms (except students) and qualifications of commissioners is expertise-based. Dentists
 must be ADA members.
- The ADA approves commission operating budgets and the ADA Division of Education employs department staff. The JCNDE is supported by the Division of Education's Department of Testing Services (DTS).
- Commissions elect their own chairs and select their own consultants (test constructors, psychometricians, etc.).



JCNDE Governance

In fulfillment of its *Bylaws* duties, the JCNDE oversees the following licensure examination programs:

- National Board Dental Examination Part II*
- Integrated National Board Dental Examination (INBDE)
- National Board Dental Hygiene Examination (NBDHE)
- Dental Licensure Objective Structured Clinical Examination (DLOSCE)
- Dental Hygiene Licensure Objective Structured Clinical Examination (DHLOSCE)**



^{*} The NBDE Part II is scheduled to be sunset on July 31, 2022.

^{**} Under development with an anticipated launch in 2024.

The Mission and Vision of the JCNDE

Mission*

Protecting public health through valid, reliable, and fair assessments of knowledge, skills, and abilities to inform decisions that help ensure safe and effective patient care by qualified oral healthcare team members.

Vision

The JCNDE is the nation's leading resource for supporting standards of oral healthcare professionals through valid, reliable, and fair assessments.

* The JCNDE's Mission was updated in June 2021.



History of the JCNDE

Year	Event
1928	National Board of Dental Examiners established as a standing committee of the ADA for the purpose of providing & conducting written examinations for use by the state boards of dentistry in licensing dentists.
1933/1934	NBDEs first administered.
1962	NBDHE first administered.
1973	NBDHE became a comprehensive examination.
1980	National Board of Dental Examiners was restructured as the 15 member JCNDE.
1992	NBDE Part II became a comprehensive examination.
2007	NBDE Part I became a comprehensive examination.
2009	All National Boards are computer-based examinations.
2020	INBDE and DLOSCE first administered; JCNDE adds one more Dental Hygiene member; Part I sunset December 31, 2020.
Present	All U.S. licensing jurisdictions accept the NBDE, INBDE, and NBDHE as fulfillment of the written examination requirement for licensure. Six states accept the DLOSCE.
2028	100 year anniversary of the JCNDE!!!



JCNDE Commissioners, Student Observer, and Liaison (2021 – 2022)



Dr. Michael Sanders Chair



Dr. John D. Da Silva Vice-Chair



Ms. Joanna Allaire



Dr. Anthony E Herro



Dr. Rachel Hogan



Ms. Han-Na Jang



Dr. Michael E. King



Dr. Peter M. Loomer



Dr. Julie W. McKee



Ms. Alia Osseiran



Dr. Jeetendra Patel



Dr. Frank Schiano



Dr. Mary A. Starsiak



Dr. Patrick J. Tepe



Dr. Douglas C. Wilson



Dr. Mark Zajkowski



Mr. Tommy Lau (Observer)



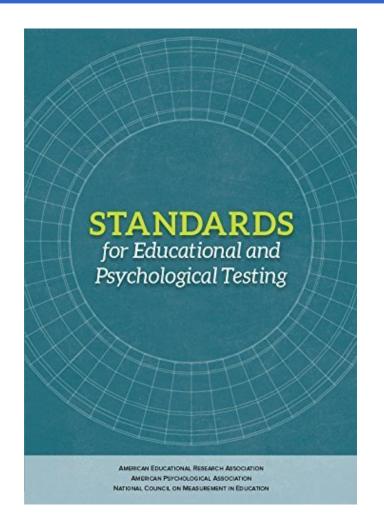
(ADA BOT Liaison)

Commissioners are dental and/or dental hygiene board members, educators, practitioners, students, and/or members of the public. Liaisons and observers do not participate in voting



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 the JCNDE and DTS as examinations are designed, constructed, and implemented.
- The JCNDE's primary focus is on validity, the evidence that supports the interpretation and use of NBE results.

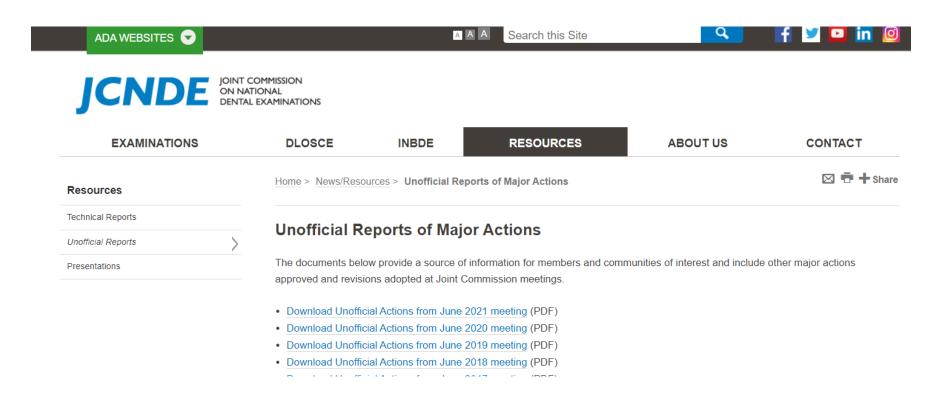




JCNDE 2021 Meeting Actions

The JCNDE met in June 2021 and took the actions reported in the Unofficial Report of Major Actions.

https://jcnde.ada.org/en/news-resources/unofficial-reports





- National Board Examination fees for 2022 are as follows:
 - National Board Dental Examination (NBDE) Part II: \$580
 - Integrated National Board Dental Examination (INBDE): \$810
 - Dental Licensure Objective Structured Clinical Examination (DLOSCE): \$950
 - National Board Dental Hygiene Examination (NBDHE): \$550
- Pursued efforts in support of modernizing the dental and dental hygiene licensure process:
 - Approved development of the Dental Hygiene Licensure Objective Structured Clinical Examination (DHLOSCE), based on a comprehensive business plan.
 - Authorized formation of DHLOSCE Steering Committee to guide development efforts.
 - Directed staff to utilize subject matter experts from JCNDE test constructor pools to begin developing content for the DHLOSCE, as well as to secure additional qualified test constructors for the DHLOSCE as needed and with the approval of the JCNDE Chair in order to meet the needs of the DHLOSCE Program.
 - Approved communication efforts in support of the DHLOSCE and the Dental Licensure Objective Structured Clinical Examination (DLOSCE).
 - Approved updates to DLOSCE results reporting (failing candidates, schools).



- The mandatory wait period between retest attempts will be changed from 90 days to 60 days, with the 60-day period not subject to appeal. A maximum of four administrations are permitted within any 12-month period. The latter statement also now applies to the INBDE (previously, the INBDE Program permitted only three attempts in one year). This change went into effect on January 1, 2022.
- The JCNDE is modifying its requirement that examinations requiring two days of administration time be administered on two consecutive days. The JCNDE will now require that these examinations be fully completed within either seven (NBDE Part II, INBDE, NBDHE) or fourteen (DLOSCE) days of the first day of administration.
- Rule violations occurring in one National Board Examination program may result in penalties that impact a candidate's ability to test in another National Board Examination program.
- The JCNDE's Committee on Administration will now include one Commissioner who was appointed to the JCNDE by the American Dental Hygienists' Association (ADHA).



- Concerning images appearing on National Board Examinations, the JCNDE directed staff to modify the existing image submission policy so that it reads as follows:
 - Individuals who submit images may continue their use of these images in educational materials, including classroom lectures.
- The JCNDE directed staff to investigate the possibility of shortening the length of Joint Commission examinations and present a report of that investigation to the Committee on Research and Development during its 2022 annual meeting. This was done in light of the JCNDE's positive experience with the short-form NBDHE, and in accordance with recommendations the JCNDE has received over the years from its technical advisory panel.
- The JCNDE identified areas where communication is needed, and directed staff to proceed to help address these needs.



- At the request of the University of Iceland School of Dentistry, the JCNDE approved a resolution permitting eligible candidates to attempt the INBDE in Iceland at approved Prometric test centers beginning in 2022, provided that the administrations can occur securely and at reasonable cost to the JCNDE.
- The next annual meetings of the JCNDE will be held on Wednesday, June 29, 2022 and Wednesday, June 28, 2023.
- The next annual JCNDE State Dental Board Forums will occur on Monday, June 27, 2022 and Monday, June 26, 2023.



Ongoing and Upcoming Strategic Initiatives

- Broadening of scope and comprehensiveness of skill evaluation, consistent with the JCNDE Mission and Vision
 - Continuing commitment to the Dental Licensure Objective Structured Clinical Examination (DLOSCE)
 - Continued development of the Integrated National Board Dental Examination (INBDE)
 - Development of the Dental Hygiene Licensure Objective Structured Clinical Examination (DHLOSCE)
- Improvements to scoring precision, increasing the accuracy in understanding whether a candidate possesses
 the necessary level of skills to safely practice
 - Investigations into the feasibility of using advanced scoring models for the National Board Dental Hygiene Examination (NBDHE)
- Improvements to measurement and test security
 - Investigation into the feasibility of multi-stage adaptive testing
 - Psychometric analyses to detect irregularities
- Focus on JCNDE communications and increasing stakeholder engagement



Dental Hygiene Strategic Initiatives (proposed 5-year roadmap)

Advances under consideration in the next five years include the following:

- Updates and improvements involving examination content areas
 - Development and implementation of an <u>updated, comprehensive practice analysis</u> for dental hygiene [Under development, occurring in 2022 and 2023]
 - Updates to the <u>NBDHE test specifications</u> (i.e., percentages of items assigned to topic areas), based on the updated practice analysis [proposed complete implementation date in 2025]
- Improvements to scoring/results precision, the candidate experience, and test security
 - Implementation of the <u>3PL scoring model</u> for the NBDHE, to more precisely evaluate candidate skills. Note: while results precision will improve, this change is not anticipated to change the candidate experience. [Proposed for 2025]
 - Implementation of an <u>updated NBDHE performance standard</u> [Under discussion, proposed for 2025]
 - Designing and implementing a framework for <u>multi-stage adaptive testing</u> for the NBDHE [Under discussion, proposed for 2026]
- Designing, constructing, and successfully implementing the Dental Hygiene Licensure Objective Structured Clinical Examination (DHLOSCE)
 - Proposed launch at the end of 2024



The Image Portal: A Tool for Improving Examination Image Quality

- The JCNDE relies on the dental community to provide actual patient case materials and high quality images for use in licensure and admission testing.
- New contributions help replenish examination item pools with new content and case materials.
- The Image Portal was introduced in 2018 as a mechanism for submitting images for consideration and possible use in examinations (See https://jcnde.ada.org/en/examinations/test-construction/image-portal)
- Submissions may include:
 - radiographs, intraoral or extraoral photographs.
 - photos of study casts.
 - supplemental case information including dental charts, or medical history.
- ** NEW** JCNDE policy change (2021):
 - Individuals who submit images may continue their use of these images in educational materials, including classroom lectures.

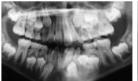
Submit your images

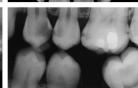
Don't have time to volunteer? We always need images to use within the exams. Upload your case images to the Image Portal.













Content Updates: Periodontal Classifications

- In 2017, the American Academy of Periodontology (AAP) introduced new periodontal classifications.
- Periodontal educators recommend that individuals refer to the 2017 World Workshop on the Classification of Periodontal and Peri-implant Diseases and Conditions—available on the <u>American Academy of Periodontology</u> website—for information.
- The INBDE has incorporated the new classification system since its initial launch in August of 2020. Similarly, the NBDE Part II incorporated the new system since the summer of 2020.
- The JCNDE's implementation of the new terminology within the NBDHE was delayed due to the pandemic. However, <u>ALL</u> NBDHE administrations now reflect the new classification system.
- The preceding was communicated to Dental Hygiene program directors via email in September 2021, with a request to forward the information to students. Information also appears on the JCNDE's NBDHE webpage (http://ada.org/nbdhe):



Fairness and Sensitivity

- Initiatives involving fairness are incredibly important.
- The JCNDE and DTS work extremely hard to ensure that the JCNDE's National Board Examinations treat everyone fairly.
- The mission and vision of the JCNDE emphasize the criticality of utilizing valid, reliable, and fair examinations.
- The Standards for Educational and Psychological Testing (2014) indicate that "fairness is a fundamental validity issue and requires attention throughout all stages of test development and use." (p49)
- Testing professionals work diligently to remove "construct irrelevant variance" from the measures they create.
- There is a tremendous amount of misinformation about testing in social media and the popular press.



Fairness and Sensitivity

- In June 2021 the JCNDE endorsed a resolution promoting fairness, directing staff to investigate the creation of a Fairness and Sensitivity Test Construction Team (TCT).
- This TCT would evaluate examination content through the lens of the values of diversity, equity, and inclusion, to help ensure that National Board Examination questions continue to fairly and accurately measure candidate knowledge, skills, and abilities.
- This effort supplements existing JCNDE fairness and sensitivity efforts and practices, to further support the fairness of National Board Examinations.
- Based on investigation findings, in June 2022 the JCNDE will be considering a proposed fairness and sensitivity review process, that incorporates a test constructor pool consisting of Fairness and Sensitivity Reviewers.



Volunteer Test Constructor Pool

Become a volunteer Test Constructor

The ADA seeks volunteer Test Constructors. Find out how to lend your time and expertise to support critical dental exam programs – and the next generation.

Test Constructor responsibilities

Your valuable knowledge and expertise can contribute to the continued excellence of your profession. Volunteer your time to ensure that the next generation of health professionals possess the knowledge, skills, and abilities to practice safely. Volunteers also receive CE credit.

Examination programs rely on volunteer subject matter experts (SMEs) to help create accurate, reliable, valid, and fair test content. A "subject matter expert" is

https://www.ada.org/education/testing/volunteer-test-constructor



NBDHE Practice Test Modules

- The JCNDE has NBDHE Practice Test Modules available for purchase.
- These modules are intended to help candidates understand the types of questions that will be asked on the NBDHE.
- These modules contain samples of the discipline-based and case-based components of the NBDHE, featuring the questions types and formats used in the actual examination.
- The practice test modules can be found here:

https://jcnde.ada.org/en/examinations/nbdhe-practice-test



NBDHE Practice Test Modules

Candidates may choose to complete individual modules and/or comprehensive practice tests. The number of correct answers will be reported after completion of each module.

Individual Modules

Scientific Basis for Dental Hygiene Practice

(30 items/30 minutes)

Form SBDHP-101 - \$20

Form SBDHP-102 - \$20

Provision of Clinical Dental Hygiene Services

(65 items/65 minutes)

Form PCDHS-101 - \$60

Form PCDHS-102 - \$60

Community Health / Research Principles

(15 items/20 minutes)

Form CHRP-101 - \$20

Form CHRP-102 - \$20

Case Based Items

(70 items/125 minutes)

Form CBI-101 - \$75

Form CBI-102 - \$75

Full NBDHE Practice Test

Form NBDHEPT-101 (180 items/240 minutes) - \$100

Form NBDHEPT-102 (180 items/240 minutes) - \$100



NBDHE Practice Test Outcomes

- On average, in 2021 candidates who took the practice test scored higher on the NBDHE, than those that did not.
- Failing candidates who initially took the NBDHE, and then took a practice test before re-testing, saw an even higher average increase.
- Correlation ≠ Causation. But the above is consistent with the notion that utilization of the practice test may be helping candidates in their preparations to challenge the NBDHE.



Committee on Communications and Stakeholder Engagement

Responsibilities relate to <u>all communication activities</u> related to National Board Examinations.

- This Committee is charged with the task of reviewing and planning communication activities in support of Joint Commission programs, to help ensure that Joint Commission communications are strategic, informative, timely, relevant, and considerate of the communication needs of external stakeholders.
- This Committee develops a strategic communications plan to guide the JCNDE's communications and engagement with key stakeholder groups in accordance with recommendations emerging from the JCNDE strategic planning process.
- In 2022 the JCNDE has conducted a communications survey to better understand the
 effectiveness of its communications. Results will be presented to the JCNDE at its
 annual meeting in June.



Spring 2022 JCNDE Webinars

The National Board Dental and Dental Hygiene Licensure Objective Structured Clinical Examinations (DLOSCE, DHLOSCE)

- Wednesday, April 13, 2022 12:00PM CST
- Speakers: R. Michael Sanders, DMD, EdM, Chair, Joint Commission on National Dental Examinations (JCNDE) and David M. Waldschmidt, Ph.D., Senior Director, Department of Testing Services (DTS) and Director, JCNDE

The National Board Dental and Dental Hygiene Examinations (INBDE, NBDE II, NBDHE)

- Wednesday, April 20, 2022 12:00PM CST
- Speakers: David M. Waldschmidt, Ph.D., Senior Director, DTS and Director, JCNDE

Test Security – The Five W's: The Full Effect of Cheating in High-Stakes Licensure Testing

- Thursday, April 28, 2022 12:00PM CST
- Speakers: R. Michael Sanders, DMD, EdM, Chair, JCNDE, Frank W. Licari, DDS, MPH, MBA, Dean and Professor, Roseman University College of Dental Medicine, Cathy Albrecht, Esq., Senior Associate General Counsel, and Bryan Svendby, MA, SSCP, Manager, DTS Test Security and Fraud Prevention



Communications



EXAMINATIONS	DLOSCE	INBDE	RESOURCES	ABOUT US	CONTACT
Resources	Home > News/Res	ources			⊠ 🖶 🕇 Share
Technical Reports					
Unofficial Reports	Resources				
Presentations	INBDE Practice Qu Update to Eligibility Important Note Cor INBDE Formal Noti Online National Boa INBDE Implementa Reference Texts	Policy ncerning Periodontology fication ard Results	⁷ Terminology	dates for all testing candidate	es regarding COVID-19)
	JCNDE Seeks	Public Member			
			Examinations (JCNDE) seeks a m and concluding in fall of 2026. No	•	,
	National Board Den Objective Structure understand the qua JCNDE oversee the individuals who sen	ntal Examination (INBDE d Clinical Examination (diffications of candidates e policies and procedure ve on the JCNDE hold a	ment and administration of the Nat E), the National Board Dental Hygion DLOSCE)—which are used by dea seeking licensure to practice dent es of the NBE programs, which have a variety of perspectives, having be locators, dental practitioners, dental	ene Examination (NBDHE), and ntal and dental hygiene boards tistry and dental hygiene. The s we important implications for the een appointed by associations	d the Dental Licensure across the United States to ixteen Commissioners of the public health. The composed of dental and/or



The DLOSCE and Criteria for Selecting Examinations Used to Protect the Public

Criteria	Patient-Based Exams	Manikin	DLOSCE
Amount of time exam has been available	50+ years	50+ years	1 year +
Evidence for validity, reliability, and fairness	Weak	Weak	Strong
Cost and inconvenience (dental schools, students)	High	Moderate	Low
Potential for patient harm during administration	Yes	No	No
Candidate can influence the passing "bar"	Yes	No	No
Likelihood of "false passes"	High	High	Low
Likelihood of "false fails"	High	High	Low
Comprehensiveness of measurement	Low	Low	High
Protection of the public	Low	Low	High



Evidence Supports the DLOSCE

 A Senior Associate Dean for Academic Affairs was asked to rate dental student clinical performance:

Please place each student into one of the following categories, with regard to their final clinical performance in dental school, relative to their 4th year peers.

Top 20% Middle 60% Bottom 20%

- Students placed in the top 20% performed 1.28 standard deviation units higher on the DLOSCE, than those in the bottom 20%.
- In layman's terms, a 1.28 standard deviation unit difference corresponds to:
 - the difference between having an NFL pro-bowl quarterback (or not), with regard to pass completions.
 - the difference in average daily high temperatures in Chicago, between April and December.



The DHLOSCE

Dental Hygiene Licensure Objective Structured Clinical Examination (DHLOSCE) development timeframes were proposed as follows:

Year	Core Task(s)
2021	Establish Steering Committee and working committees
2022	Build core examination content
2023	Develop items and supplemental materials (3D models, stimulus materials, etc.); Conduct focused field testing (e.g., on samples of key examination components)
2024	Launch examination and follow-up



Candidate Performance on National Board Examinations

NBDE Part II

NBDHE

INBDE

(Note: The INBDE and DLOSCE are presented separately)



Standard Setting

- As a reminder, the NBEs are used by boards to understand whether a candidate possesses
 the minimally acceptable level of knowledge, skills, and abilities that are necessary for safe,
 entry-level practice.
- Standard setting activities help define this minimally acceptable level (i.e., the standard).
- These activities involve highly qualified subject matter experts who receive training and participate in multiple rounds of review and surveys.
- Since 2015, these activities have been 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).
- The selected standard is operationalized as a pass/fail point or "cut score."
- NBE standards are <u>criterion-referenced</u>, <u>not</u> norm-referenced (i.e., not "grading on a curve").
- Standards are maintained across examination forms through equating procedures that control for subtle differences in difficulty across forms.



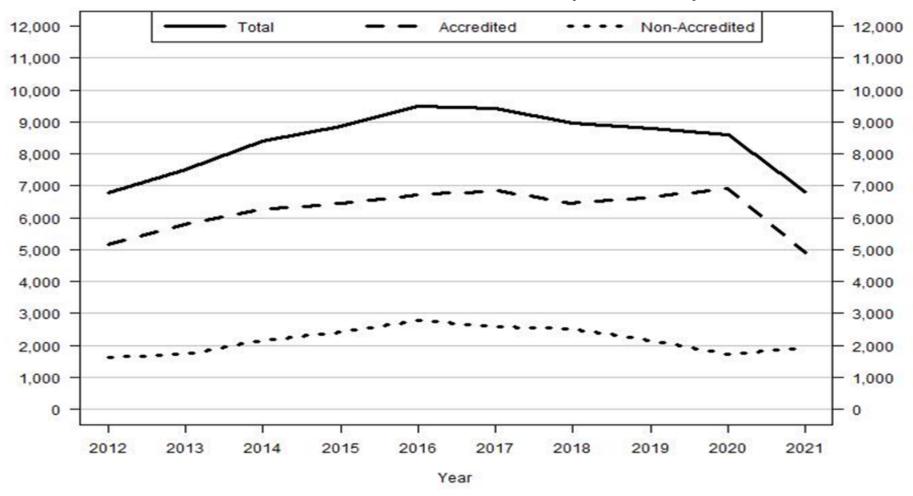
Volume Data and Performance Trends

- The following slides present information concerning examinee volume and performance for a 10-year period for the NBDE Part II, NBDHE, and INBDE.
- Examinee volume data includes all individuals completing these examinations (first time, repeaters, candidates educated by accredited and non-accredited programs).
- Performance trend data include candidates enrolled in accredited schools in the U.S and Canada who took the examination for the first time.



NBDE Part II Administrations (2012-2021)

NBDE Part II Administrations (2012-2021)

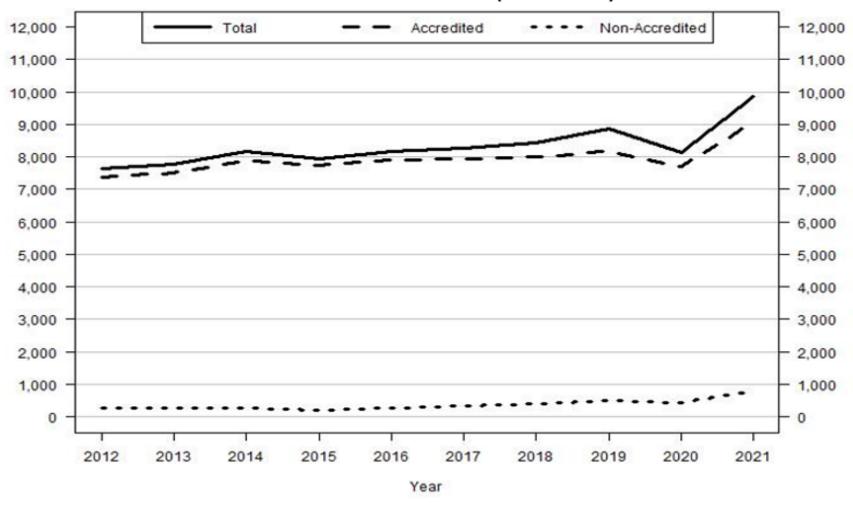




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NBDHE Administrations (2012-2021)

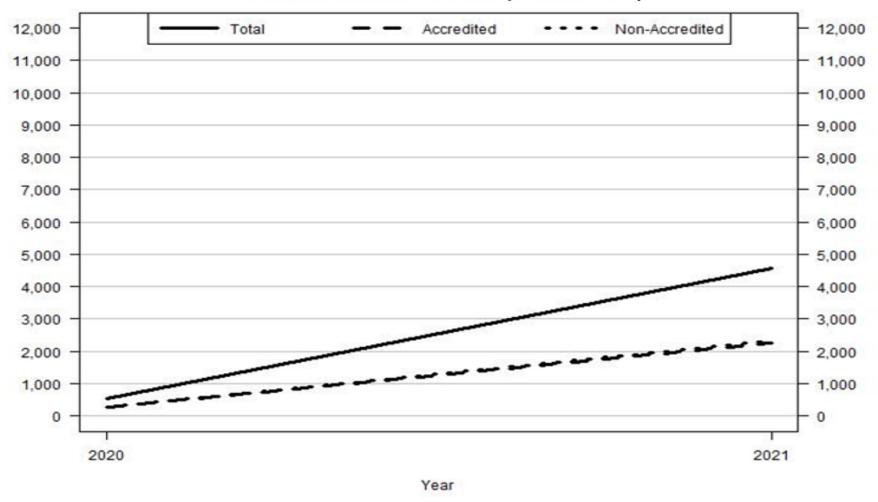
NBDHE Administrations (2012-2021)





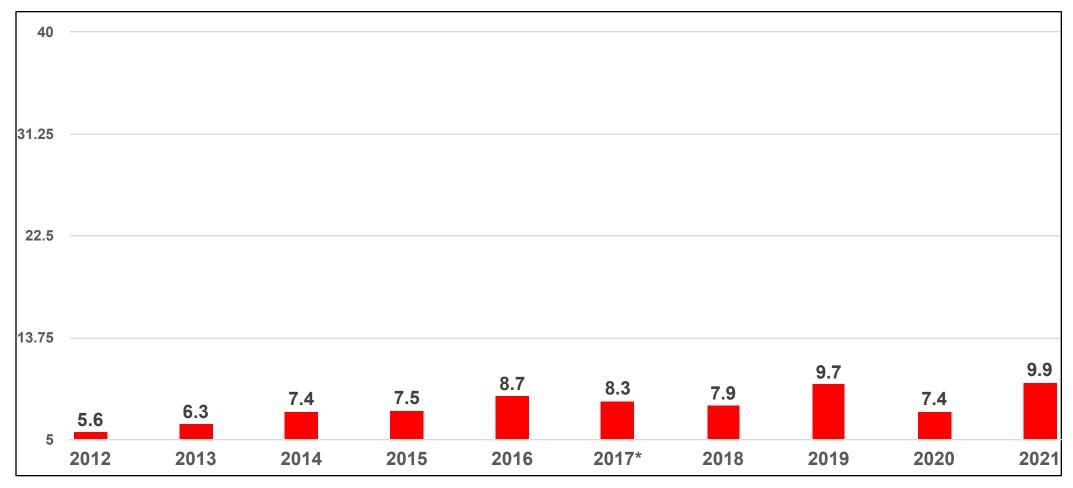
INBDE Administrations (2020-2021)

INBDE Administrations (2020 - 2021)





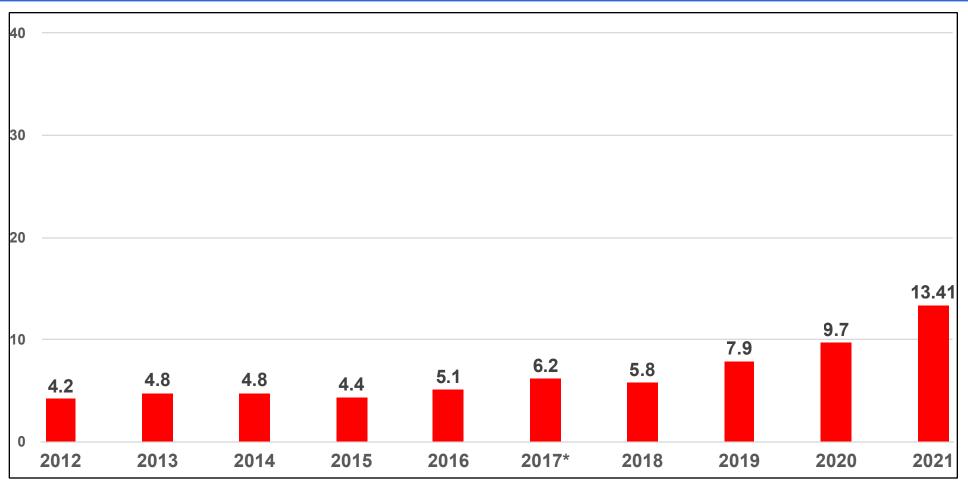
NBDE Part II Failure Rates (%)



^{*} A new standard was introduced this year, based on updated standard setting activities.



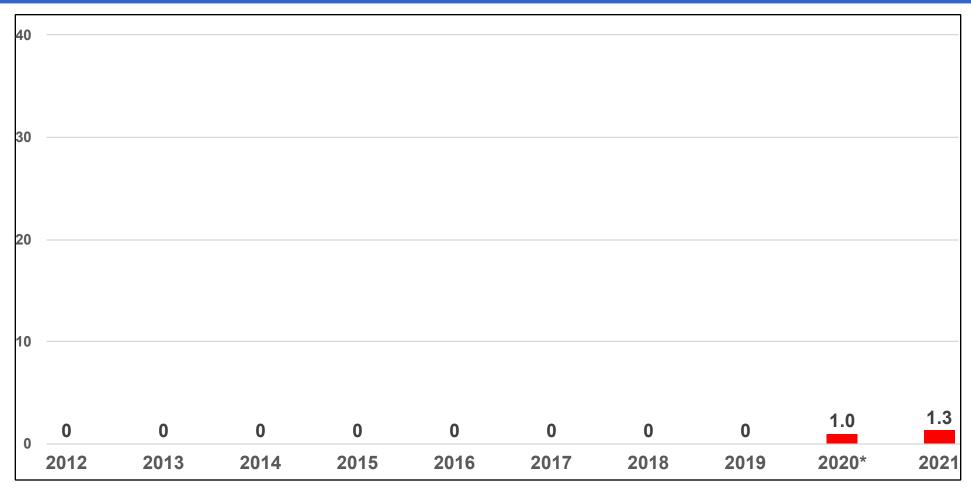
NBDHE Failure Rates (%)



^{*} A new standard was introduced this year, based on updated standard setting activities.



INBDE Failure Rates (%)



^{*} The INBDE standard was introduced this year, based on standard setting activities.



The Integrated National Board Dental Examination (INBDE)



Overview

- Background
- The Domain of Dentistry
- Core Facts
- Results Reporting
- Resources and Item Development
- Standard Setting
- Additional Information



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.

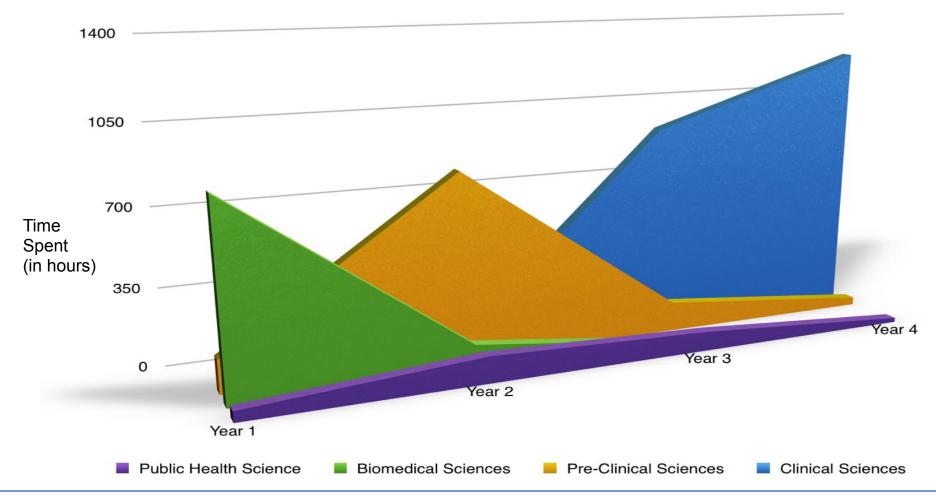


How did the INBDE come about?

- 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 National Board Dental Examination (INBDE) 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.
- The INBDE was designed from the ground up to focus on clinical relevance, within the JCNDE's "Domain of Dentistry"
- The INBDE has relied heavily on subject matter input to inform development, with measurement/psychometric guidance provided by the Department of Testing Services (DTS)
- Development and implementation of the INBDE has been an historical undertaking for the JCNDE.

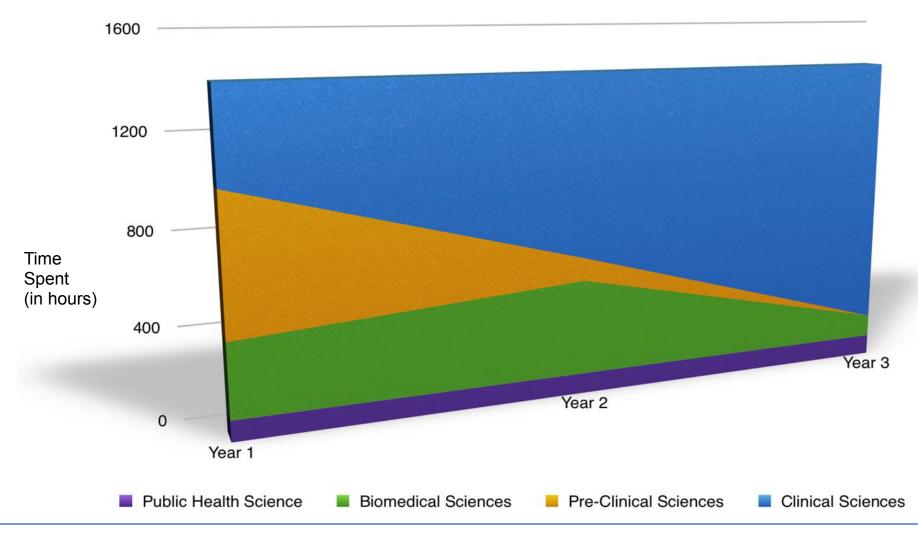


Current State of Dental Education (Licari, 2018)





Future Curriculum (Licari, 2018)





What content is assessed by the INBDE?

- 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. These content areas are classified into three sections:
 - 1) Diagnosis and Treatment Planning
 - 2) Oral Health Management
 - 3) Practice and Profession
- The JCNDE also adapted 10 Foundation Knowledge Areas from medicine, to represent the knowledge, skills, and abilities necessary to perform the aforementioned tasks.
- The tasks and foundation knowledge areas together form the "Domain of Dentistry" which represents the basis for INBDE content



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.

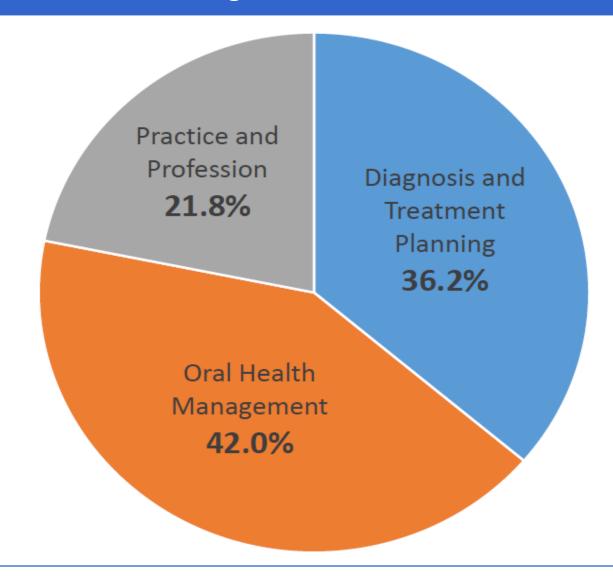


56 Clinical Content Areas

#	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.



Content Area Percentages





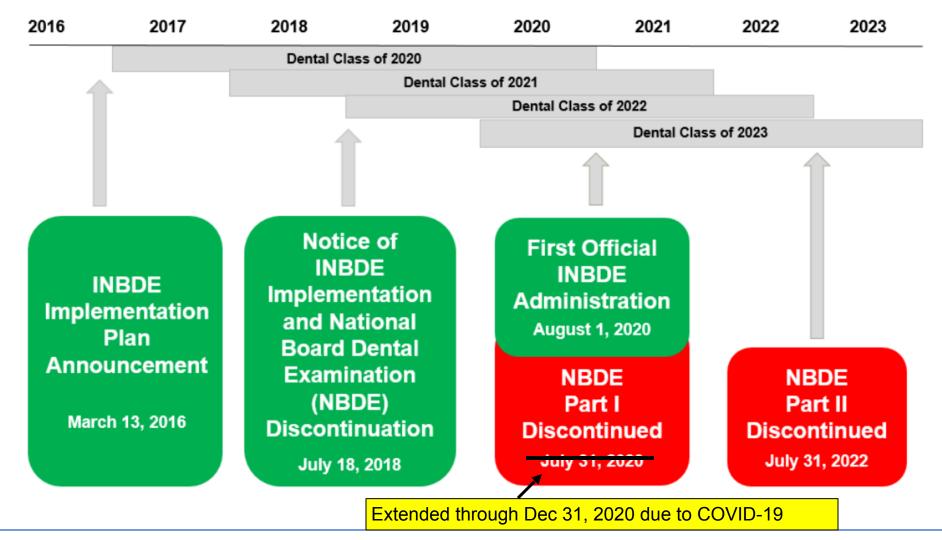
INBDE Content Specifications

INBDE Content by Foundation Knowledge Area

#	Foundation Knowledge Area	Percent
1	Molecular, biochemical, cellular, and systems-level development, structure and function	12.2%
2	Physics and chemistry to explain normal biology and pathobiology	6.8%
3	Physics and chemistry to explain the characteristics and use of technologies and materials	8.0%
4	Principles of genetic, congenital and developmental diseases and conditions and their clinical features to understand patient risk	10.6%
5	Cellular and molecular bases of immune and non-immune host defense mechanisms	9.0%
6	General and disease-specific pathology to assess patient risk	11.8%
7	Biology of microorganisms in physiology and pathology	10.6%
8	Pharmacology	10.6%
9	Behavioral sciences, ethics, and jurisprudence	10.6%
10	Research methodology and analysis, and informatics tools	9.8%



INBDE Implementation and NBDE Discontinuation





INBDE Core Facts

- Administration: The INBDE contains 500 questions and requires 1½ days to administer
 - Administrations occur at Prometric professional testing centers located throughout the US and Canada
 - National Board Examination fees in 2022 are as follows:
 - INBDE \$810; NBDE Part II \$580; DLOSCE \$950; NBDHE \$550
 - Examination regulations are strictly enforced, with corresponding penalties for rule violations (e.g., mandatory wait periods)
 - Irregularity handling and appeal procedures are described in the INBDE candidate guide, and mirror those present for other examinations of the JCNDE (e.g., NBDE Part II)



INBDE Administration Schedule

INTEGRATED NATIONAL	BOARD DENTAL EXAMINATION SO	CHEDULE				
DAY 1						
Section	Content	Minutes				
Tutorial (optional)		15				
Section 1	100 standalone items	105				
Scheduled Break 1 (optional)		15				
Section 2	100 standalone items	105				
Scheduled Break 2 (optional)		30				
Section 3	100 standalone items	105				
Scheduled Break 3 (optional)		15				
Section 4	60 items (item sets)	105				
DAY 1 TOTAL TIME	8 ho	urs 15 minutes				
	DAY 2					
Section	Content	Minutes				
Tutorial (optional)		15				
Section 5	70 items (item sets)	105				
Scheduled Break 4 (optional)		15				
Section 6	70 items (item sets)	105				
Post-Exam Survey		15				
DAY 2 TOTAL TIME 4 hours 15 minutes						
TOTAL TIME	12 hou	rs 30 minutes				



Retest Policy

- Candidates who have not successfully completed the NBDE Part I or Part II may choose to take the INBDE.
- Once a candidate has tested on the INBDE, the candidate may no longer test on the NBDE Part I or Part II.
- Candidates who have failed to successfully complete the NBDE Part I or Part II
 prior to the discontinuation of these examinations must successfully test on the
 INBDE to obtain National Board certification.
- INBDE attempts are independent of NBDE attempts with respect to the Five Years/ Five Attempts Eligibility Rule. This rule will continue to apply to all NBDE Part I and Part II testing attempts, and candidates will also have five years/five attempts on the INBDE. Subsequent to the fifth year or fifth attempt, failing candidates may test once every 12 months after their most recent attempt.
- ***NEW (2022) *** As of January 1, 2022, candidates must wait a minimum of 60 days between unsuccessful test attempts. A maximum of four (4) candidate administrations are permitted in a 12 month period within any given National Board Examination Program. This policy cannot be appealed.
- In providing INBDE results, all attempts on the National Board Dental Examinations (i.e., NBDE Part I, NBDE Part II, and the INBDE) will be reported.



INBDE Results Reporting

- Candidate Results: INBDE results are reported as Pass/Fail
 - Candidates who <u>pass</u> simply receive notification they have passed.
 - For remediation purposes, candidates who <u>fail</u> are provided with information concerning their performance in the following areas:
 - Foundation Knowledge Areas (10)
 - Clinical Content Sections (3)
- School Results: Candidate pass/fail status, monthly reports, and annual reports are all reported to dental schools through the DTS Hub.
- State Board Results. Candidate pass/fail status is reported to dental boards through the DTS Hub.
 - The DTS Hub indicates whether a candidate has met or not met the National Board Dental Examination cognitive skills requirements for dentistry.



INBDE – Report for Failing Candidates

INBDE Candidate Performance Summary Page 1 of 2

Name: MARY SAMPLE

DENTPIN: 12345678
Exam: INBDE
Exam Date: 01/20/2018
Status: Fail
Score: 74

Your scale score is **74**. Scale scores can range from 49 to 99. You must achieve a scale score of 75 or higher to pass the examination. The graphic below depicts your overall performance on the examination.

Lower Performance

Your Score

Pass National Average

In interpreting your scale score, please consider the following:

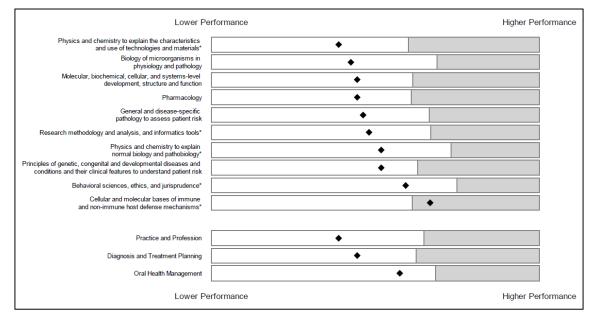
- Scale scores cannot be used to determine the exact number of additional questions you needed to
 answer correctly to pass. For example, a scale score of 74 does NOT imply that you were only one
 correct response away from passing the examination.
- The JCNDE does not release the total number of questions that must be answered correctly to pass the INBDE.
- · Your scale score is based on your performance on the entire examination.
- Additional information about the INBDE is provided in the INBDE technical report, which is available at http://www.ada.org/en/jcnde/.



INBDE – Report for Failing Candidates

INBDE Candidate Performance Summary Page 2 of 2

Name: MARY SAMPLE DENTPIN: 12345678



*The INBDE contains relatively few questions in this area so performance information should be interpreted with caution. Due to the small number of questions, some candidates may see large shifts in their performance in this area from one examination attempt to another. Your pass/fail result for the INBDE is based on your performance on the entire examination.



INBDE – Monthly School Performance Report

Page 1 of 3

Report Date: 09/03/2021

Integrated National Board Dental Examinations (INBDE) **Candidate Administration Report**

School: 1234 SAMPLE SCHOOL OF DENTISTRY

Administration Period: August 2021

Total Sample Size: 5

The list below contains the names of current students, recent graduates, and past graduates who tested in the month indicated and whose results are included in this report.

	Name	DENTPIN	Status	Test Date	Year of Graduation*
Curren	t Students and Recent Graduates				
1	SAMPLE, AARON	12345679	Pass	08/20/2021	2022
2	SAMPLE, LETITIA	98765432	Pass	08/12/2021	2022
3	SAMPLE, MARIA	13151719	Pass	08/22/2021	2022
4	SAMPLE, NAMBURY	20406080	Pass	08/05/2021	2022
5	SAMPLE, WEI CHEN	84889296	Pass	08/09/2021	2022

Self-reported by the candidate.



INBDE – Monthly School Performance Report

Page 2 of 3

Report Date: 09/03/2021

Integrated National Board Dental Examinations (INBDE) School Performance Report

School: 1234 SAMPLE SCHOOL OF DENTISTRY

Administration Period: 09/01/2020 - 8/31/2021

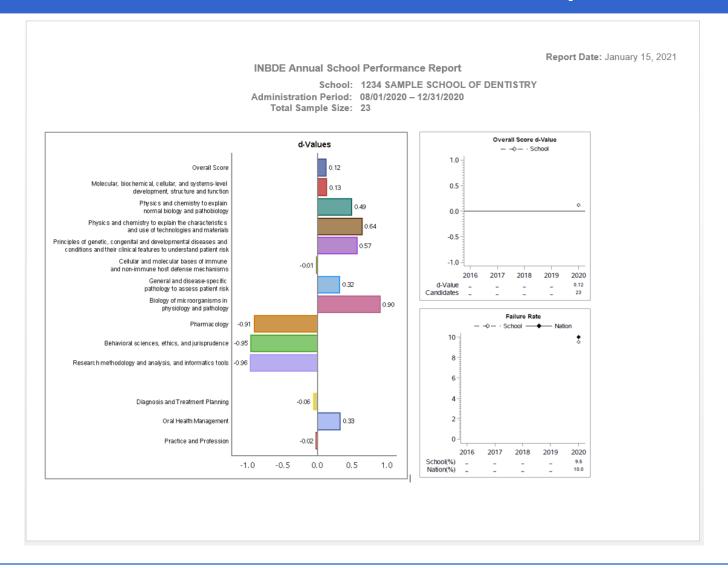
Total Sample Size: 56

The d-values below are based on data from current students and recent graduates who made their first examination attempt during the 12-month administration period indicated above. These d-values show how your school performed compared to 41 other schools who had students attempt the INBDE in the administration period indicated.

<u>Discipline</u>	d-value
Molecular, biochemical, cellular, and systems-level development, structure and function	-1.62
Physics and chemistry to explain normal biology and pathobiology	-0.51
Physics and chemistry to explain the characteristics and use of technologies and materials	-0.13
Principles of genetic, congenital and developmental diseases and conditions and their clinical features	-2.25
Cellular and molecular bases of immune and non-immune host defense mechanisms	-1.39
General and disease-specific pathology to assess patient risk	-1.24
Biology of microorganisms in physiology and pathology	-0.64
Pharmacology	-1.33
Behavioral sciences, ethics, and jurisprudence	-1.21
Research methodology and analysis, and informatics tools	-0.38
Diagnosis and Treatment Planning	-1.32
Oral Health Management	-1.49
Practice and Profession	-0.93
Overall Scale Score	-1.37



INBDE – Annual School Performance Report





INBDE Resources

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

http://ada.org/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
- INBDE Technical Report

Resources Related to Policy and Timelines

- Formal Notice of INBDE Implementation and NBDE Discontinuation
 - INBDE implementation timeline
 - Retest policy
 - Eligibility
 - Administration



INBDE Resources – Foundation Knowledge Areas

Foundation Knowledge Area One (FK1)

Molecular, Biochemical, Cellular, and Systems-Level Development, Structure, and Function

Foundation Knowledge Area 1 (FK1) focuses on application of knowledge of molecular, biochemical, cellular, and systems-level development, structure and function, to aid in the prevention, diagnosis, and management of oral disease and to promote and maintain oral health.

Examples of Relevant Disciplines: Gross and Head and Neck Anatomy, Regional Anatomy, Dental Anatomy, Gnathology, Occlusion (including TMJ), General and Oral Histology, Embryology, Physiology, Cell Biology, Biochemistry, Molecular Biology, Genetics, Neuroscience, Nutrition, Oral Biology, General and Systemic Pathology, Cancer Biology, etc.

Examples of Relevant Clinical Science areas: Periodontology, Oral and Maxillofacial Surgery, Occlusion, TMD, Ergonomics, Prosthodontics, Pediatric Dentistry, Orthodontics, Implant Dentistry, Forensic Dentistry, Oral Medicine, Oral Pathology, Clinical Nutrition, etc.

1.1 Structure and function of the normal cell and basic types of tissues comprising the human body.

Relevant Disciplines: Gross and Head and Neck Anatomy, General and Oral Histology, Dental Anatomy, Occlusion, TMJ, etc.

Examples:

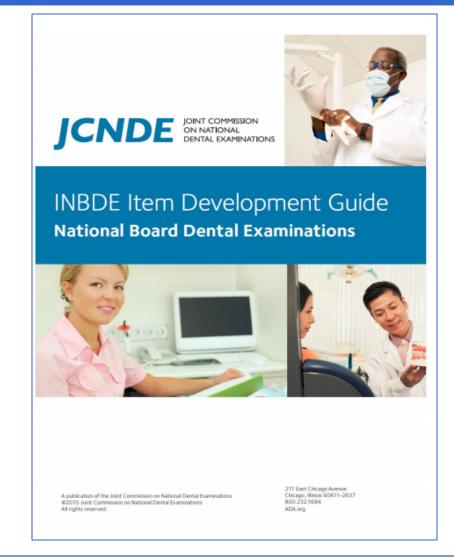
- structure of the human body in general and the craniofacial region in particular
- structure and function of salivary glands, including the production, secretion, content and the function of saliva
- development and structure of the deciduous and permanent teeth
- · development and structure of periodontal tissues
- development, structure and function of the major muscles of mastication and facial expression
- development, structure and function of the temporomandibular joint and its

https://www.ada.org/en/jcnde/inbde/test-preparation



INBDE Item Development

- The INBDE item development guide was drafted to facilitate item development.
- This guide is available online (ada.org/inbde)
- INBDE Test Construction Team
 (TCT) members are asked to write
 clinically relevant, integrated items
 capable of providing insight as to
 whether a candidate has the
 cognitive skills necessary to safely
 practice entry-level dentistry.
- The INBDE utilizes a new item presentation format known as the Patient Box.



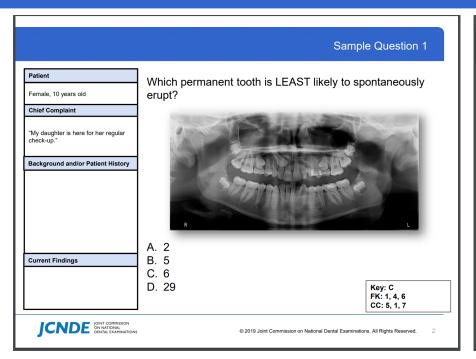


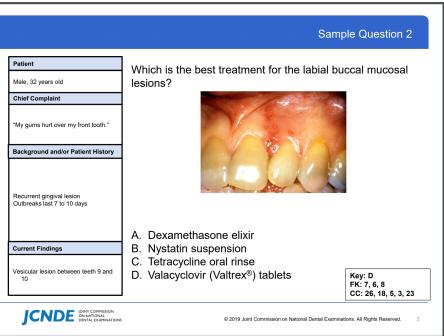
Guiding Principles in INBDE item development

- The Just Qualified Candidate (JQC) is a hypothetical examinee whose knowledge, skills, and abilities (KSAs) represent the lowest level that would still be considered acceptable to pass the INBDE. More specifically:
 - The JQC is a candidate, currently pursuing an accredited dental education program
 in dentistry, who possesses the minimally acceptable level of knowledge, cognitive
 skills, and ability in the biomedical, dental, clinical dental, and behavioral sciences
 —including the areas of professional ethics and patient management—that is
 necessary for the safe, entry-level general practice of dentistry.
- The INBDE is intended to differentiate the JQC from those who fall below that skill level. This is the focal purpose of the INBDE.
- The INBDE is NOT intended to differentiate stellar students from average students.
- Items should avoid focusing on trivia and esoteric bits of knowledge.
- Items should reflect clinically relevant situations that a practicing dentist would encounter.



INBDE Sample Questions





- The JCNDE has provided 43 sample questions written by JCNDE Test Construction Teams for communities of interest (https://www.ada.org/en/jcnde/inbde/test-preparation)
- These questions were provided to help familiarize candidates with how INBDE questions are presented and formatted.
- The JCNDE does not currently have plans to increase the number of sample questions.



Convergent Validity Evidence: Relationship between INBDE and NBDE

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

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

	Observed Correlation	Disattenuated Correlation
NBDE Part I	.58	.65
NBDE Part II	.74	.84

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



INBDE Standard Setting

- The standard for each examination is criterion-referenced (not norm-based) and determined through a process called "standard setting."
- INBDE standard setting activities were facilitated in February 2020 by Dr. Gregory Cizek, a
 nationally recognized expert in standard setting who has authored several books on the
 subject.
- The standard setting panel consisted of 10 subject matter experts.
- Panel members were selected to be broadly representative and aligned with the purpose of the examination:
 - Practitioners
 - Dental school faculty
 - Joint Commission members
 - Members of dental boards
 - Dental school deans and associate deans (NBDE)
 - Current and former JCNDE Test Construction Team members
 - Geographically representative



Standard Setting Panelist Feedback

- Participants were thoroughly trained and underwent a multi-stage exercise.
- 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 grouprecommended performance standard.
 - Panelist feedback on the last item of the final evaluative questionnaire:

Survey Item Number and Statement	Mean Rating
14. Overall, I support the final group-recommended cut score as fairly representing the appropriate performance standard for the INBDE.	4.89

Key: Values are on a five-point scale, ranging from 1=Strongly Disagree to 5=Strongly Agree; NR = no response. One panelist did not answer evaluation question 14, so the mean rating is based on responses from nine of the ten panelists.

 The panel's recommendation was approved by the JCNDE in June 2020 and implemented in August 2020.



Candidate Performance

The following presents INBDE failure rates for first-time and repeating candidates attempting the INBDE in 2020 and 2021. The numbers include both current students and graduates.

INBDE Failure Rate, by Candidate Group and Year

	Accredited [†]						Non-Accredited [‡]					Total		
	First Attempt ^a		l	xed mpt ^b	Reta	ake ^c		rst mpt ^a		xed mpt ^b	Reta	ake ^c	A Atte	ll npts
	N	% Fail	N	% Fail	N	% Fail	N	% Fail	N	% Fail	N	% Fail	N	% Fail
2020	204	1.0	1	0.0	69	7.3	147	38.8	0	-	117	58.1	538	24.5
2021	2,018	1.3	3	0.0	245	16.0	1,340	33.1	1	0.0	971	55.8	4,578	22.3

Indicates candidates who had never previously attempted the INBDE, NBDE Part I, or NBDE Part II.



Indicates candidates who passed NBDE Part I on their first attempt and subsequently elected to attempt the INBDE instead of NBDE Part II.

Indicates candidates who had previously attempted and failed the INBDE, NBDE Part I, or NBDE Part II.

[†] Indicates candidates trained by dental education programs accredited by CODA.

[‡] Indicates candidates trained by dental education programs not accredited by CODA.

INBDE Results

- Candidates educated by CODA-accredited dental programs are performing very well on the INBDE.
- Candidates educated by programs not accredited by CODA are failing in larger numbers, as compared to those from CODA accredited programs (similar to what is seen for NBDE Part II).
- In 2020, there were a small number of CODA accredited dental programs whose candidates were taking the examination in large numbers. As of January 26, 2022, over 5,000 candidates have attempted the INBDE.



Summary

- The INBDE focuses on clinical relevance and is supported by strong validity evidence
- INBDE development has relied heavily on input from dental subject matter experts, with measurement/psychometric guidance provided by the Department of Testing Services (DTS)
- Dental programs and students are currently transitioning to the INBDE, and must do so before the NBDE Part II is no longer available.



Department of Testing Services (DTS)



Department of Testing Services (DTS)

- The Department of Testing Services (DTS) is a shared service of the ADA that employs testing professionals and provides professional examination services in all relevant areas (e.g., test design, content development, administration, analysis, and reporting).
- DTS is one of five departments in the Division of Education/Professional Affairs, and is the largest department in the American Dental Association.
- At the direction of the governing bodies it supports, DTS advises on policy. This
 guidance is informed by professional standards, testing industry best practices, and
 DTS' professional experience.
- DTS implements policy for the valid, reliable, orderly, secure, and fair administration of examination programs within its charge.



Governing Bodies and Testing Programs

DTS implements high-stakes admission/licensure testing programs under the purview of the following governing bodies:

Joint Commission on National Dental Examinations (JCNDE)	Council on Dental Education and Licensure (CDEL)
 National Board Dental Examination Part II Integrated National Board Dental Examination (INBDE) National Board Dental Hygiene Examination (NBDHE) Dental Licensure Objective Structured Clinical Examination (DLOSCE) Dental Hygiene Licensure Objective Structured Clinical Examination (DHLOSCE) 	 Dental Admission Test (DAT) Advanced Dental Admission Test (ADAT) Admission Test for Dental Hygiene (ATDH)
Outside Clients	ADA Board of Trustees
 Optometry Admission Test (OAT) Canadian Dental Aptitude Test (CDAT) Additional clients 	No examinations at this time.



The Department of Testing Services (DTS)

DTS Development

Test Development

Conducts Test Construction
Team (TCT) meetings for
seven operational
examination programs (80+
meetings annually) and
new programs under
development.

Dental Content and Media Development

Develops, reviews, and manages dental content and media assets for examination programs (3D models, illustrations, radiographs, clinical photographs, clinical simulations, Patient Boxes).

Research & Development -Psychometrics

Oversees analysis and scoring of examinations (45,000+), professional investigations, and technical publications in support of examination programs

New Psychometric Development & Innovations

Provides psychometric support in the development of new testing programs.

DTS Operations

Test Administration

Oversees application processing and test vendor administrations (45,000+)

Responds to phone calls, live chats, emails, faxes (nearly 70,000 annually)

Resolves testing day problems.

Test Security and Fraud Prevention

Monitors test security policies, procedures, irregularities and candidate appeals; risk assessment.

Project Management and Operations

Project management and services to outside clients.

Communications

Provides communications for stakeholders and communities of interest.

Volunteer and Meeting Coordination

Oversees volunteer activities and meeting logistics for TCT and governance meetings.



Sample Annual Departmental Activities

Activities conducted by professionally trained staff, many with advanced degrees:

- Oversee approximately 40,000+ annual examination administrations through our testing vendors
- Phone calls, live chat, and email correspondence
- DENTPIN requests/updates
- Communications to stakeholders, including examination guides and website updates
- Process examination/test applications, including fee waiver requests and testing accommodations
- Report examination results
- Fulfill additional score report requests (30,000+)
- Fulfill orders for National Board certificates.
- Resolve testing problems (emergencies, ID problems, testing conditions)
- Conduct 80+ test construction team meetings
- Scoring and research services for contracted clients
- Publication of examinations and updates
- Staff research publications and presentations
- Manage a volunteer pool consisting of hundreds of DTS volunteers



DTS Management Team

David M. Waldschmidt, Ph.D.

Director, JCNDE and Senior Director, DTS

DTS DEVELOPMENT	DTS OPERATIONS				
Matthew Grady, Ph.D. Director, DTS Development		shaw, L.D.H., Ed.D. ΓS Operations			
Michael Matyasik, MS Senior Manager, Test Development	Alexis Curtis, MBA, CMP Manager, Volunteers & Meetings	Nicholas B. Hussong, MA Manager, Test Administration			
Chien-Lin Yang, Ph.D. Manager, Research & Development - Psychometrics	Gregg Marquardt, MBC Manager, DTS Communications	Laura Davis, B.M. Manager, DTS Projects and Operations			
Brad Worner, DDS Manager of Dental Content and Media Development	Bryan Svendby, MA, SSCP Manager, Test Security & Fraud Prevention				



Questions?

