

Dental Licensure Objective Structured Clinical Examination Summary of Validity Evidence

Validity is the most important consideration in developing and evaluating examinations (AERA, APA, & NCME, 2014, p. 11). Validity refers to the degree to which evidence and theory support a specific interpretation and use of examination results for a given examination purpose. This document summarizes the validity evidence supporting dental boards' use of Dental Licensure Objective Structured Clinical Examination (DLOSCE) results in licensure decision making. The Joint Commission on National Dental Examinations (JCNDE) invites dental boards to consider the information provided herein, as they consider using DLOSCE results in 2020 to inform licensure decisions.

The DLOSCE is professionally developed and validated

The DLOSCE Program is overseen by the JCNDE. The JCNDE has a long and distinguished track record of providing valid and reliable high-stakes examinations for licensure purposes, for use by dental boards as they work to protect the public health. DLOSCE development, which began in earnest in 2017 and has occurred continuously since that time, is directed by the DLOSCE Steering Committee which is composed of members of the JCNDE, general practitioners in private practice; educators with experience teaching comprehensive, general dentistry in dental school clinics; current state dental board members. The Committee is also advised by a technical consultant with extensive experience in developing a dental OSCE for licensure purposes. DLOSCE development, administration, and scoring are implemented by the ADA's Department of Testing Services (DTS), which employs professionally trained staff that includes individuals with advanced degrees in Psychometrics, Educational Psychology, Industrial/Organizational psychology, and Leadership. DTS has implemented dental high stakes testing programs for decades, including the testing programs of the JCNDE.

The DLOSCE assesses the clinical skills that entry-level general dentists must possess in order to practice safely

The purpose of the DLOSCE is to identify whether a candidate for dental licensure possesses the level of clinical skills necessary for the competent practice of dentistry. Content validity evidence strongly supports dental boards' use of the DLOSCE for that purpose. The DLOSCE focuses exclusively on the clinical tasks a dentist performs while providing direct, chair-side treatment to patients. The examination is comprehensive in its assessment of clinical judgment, including content in the following areas: Restorative Dentistry; Prosthodontics; Oral Pathology, Pain Management and TMD; Periodontics; Oral Surgery; Endodontics; Orthodontics; Medical Emergencies; and Prescriptions. Diagnosis and Treatment Planning—as well as Occlusion—are assessed across the aforementioned topic areas. The examination additionally includes questions involving each of the following patient types: pediatric, geriatric, special needs, and medically complex.

The DLOSCE content domain was established based on the recommendation of a subject matter expert panel whose members gave careful consideration to the types of clinical skills that entry-level general dentists must possess. In detailing the content domain, the panelists considered the results of a 2016 dental practice analysis survey involving over 2,500 entry-level general dentists practicing throughout the US and its jurisdictions. The practice analysis survey shed light on the frequency with which entry-level general dentists perform certain tasks, and

the criticality of those tasks to patient care. The subject matter expert panel used the information from the practice analysis, along with their own experience and judgment, to recommend test specifications for the examination. Test specifications define the topic areas the examination covers, and the number of test questions that are devoted to each topic area. Each form of the DLOSCE adheres to the established test specifications, ensuring that candidates who attempt the DLOSCE encounter an examination that is comprehensive in its coverage of the content domain.

DLOSCE content is developed by highly qualified subject matter experts through a multistep process that ensures quality

DLOSCE content is developed by teams of highly qualified subject matter experts who work in teams to build examination questions that are capable of accurately and reliably identifying those who possess the clinical skills necessary to safely practice dentistry. The teams are carefully constructed to ensure that they contain individuals with expertise in all required areas of dentistry. The DLOSCE subject matter expert pool includes more than 170 individuals—including general dentists and specialists—that the JCNDE can draw upon to develop and review DLOSCE questions and stimulus materials. Each DLOSCE question is developed by a team of specialists, and then separately reviewed by a team of general dentists to help confirm and ensure clinical relevance. The JCNDE employs window testing and delayed results reporting for the DLOSCE, so that psychometric analyses can be conducted to identify and address any potential issues with examination questions before examination results are released to candidates.

The DLOSCE includes innovative question formats that increase standardization while also promoting clinical fidelity

The DLOSCE is a computer-based examination that includes sophisticated, lifelike 3D models that candidates can interact with and manipulate to facilitate diagnosis. Utilization of 3D models in lieu of live patients provides further benefits through increased standardization of the testing experience, improving the reliability and validity of the examination with respect to its intended purpose. Extended multiple choice questions that accompany these 3D models reduce the impact of guessing and provide candidates with a clinical situation involving more clinical judgments and possessing greater fidelity. In many cases candidates can receive partial credit for their responses.

The DLOSCE is administered under highly standardized and secure conditions

The DLOSCE is administered under highly standardized testing conditions that are closely monitored. Deviations from standardized testing conditions are reported to DTS by the test administration vendor (Prometric) so they can be reviewed by the JCNDE and adjudicated appropriately. Candidates who violate rules and regulations can incur severe penalties. This includes the voiding of scores and the imposition of mandatory wait periods. DTS employs a dedicated test security and fraud prevention specialist who works diligently to prevent testing irregularities and to identify them when they occur. Psychometricians within DTS conduct forensic analyses aimed at detecting anomalous candidate behaviors and results.

The DLOSCE is designed to produce reliable results

Reliability refers to the precision and stability of examination results, and the degree to which those results are consistent across replications of a testing procedure. Reliability is reduced by the presence of random measurement error, which can result from factors such as candidate guessing or fatigue, or the presence of distractions in the testing environment. Examination results tend to be highly reliable when the examination contains a sufficient number of high quality questions, and is administered under highly standardized conditions. The DLOSCE contains 150 questions, each of which undergoes a rigorous development process involving multiple quality control hurdles that must be successfully passed for the question to proceed. The strength of these procedures—accompanied by the fact that the examination is administered under highly standardized conditions—has led the JCNDE to conclude that the DLOSCE is ready for release in 2020, and will demonstrate high levels of reliability when it is administered.

Summary

The JCNDE thanks dental boards for their continued reliance on the examinations of the JCNDE. The JCNDE is confident that the DLOSCE is a strong examination that will do an excellent job in helping boards to protect the public health. The DLOSCE is ideally suited to helping boards identify those who possess—and those who do NOT possess—the level of dental clinical skills that is necessary to safely practice. The DLOSCE is well-suited for use in addressing the clinical examination licensure requirements of each board, and is particularly responsive to boards' pressing needs in these challenging times. The JCNDE looks forward to working closely with all boards interested in accepting the DLOSCE for licensure purposes in 2020 and beyond.

References

American Educational Research Association, American Psychological Association, and National Council on Measurement in Education (2014). *Standards for Educational and Psychological Testing*. Washington, DC: Author.