2024

Technical Report

Virtual OSCE

Revised February 5, 2026

Content

Introduction

Organizations who administer high-stakes examinations must be concerned with validity, reliability, and fairness because these measures are required in making pass/fail decisions affecting candidates for licensure or certification. Fairness to candidates and protection of the public are the foremost concerns for the NDEB, and the NDEB has an obligation to provide the highest quality examination program possible.

This Technical Report is a summary of the processes followed by the NDEB to develop, administer, and score the Virtual OSCE administered in 2024. It provides a summary of the information needed to support the validity and reliability of the Virtual OSCE. For additional information, key references are included in Appendix A. Any background information is included to assist in understanding the development of the NDEB's examination processes.

This report serves as a reference for the members of the NDEB Examinations Committee, NDEB Board, and Provincial Dental Regulatory Authorities (DRAs). The processes described in this report may differ from those used in other years.

Background

The NDEB introduced the Written Examination (Written) and the Objective Structured Clinical Examination (OSCE) in 1995 as the certification examinations for graduates of Canadian dental programs accredited by the Commission on Dental Accreditation of Canada (CDAC). The Written and the OSCE were offered as the certification examinations until 2022. Gradually, dental programs in the United States (1997), Australia (2010), New Zealand (2011) and Ireland (2012) became accredited by CDAC and their graduates were permitted to write the Written and the OSCE to be eligible for licensure in Canada. Although modifications were made to the OSCE over the years, the examination remained a Bell ringer station examination for more than two decades. In 2012, the NDEB appointed a committee, the NDEB Integrated Examination Committee, to combine the Written and the OSCE in one examination that would require candidates to apply their knowledge, clinical decision and problem-solving skills. The NDEB approved the conversion to electronic examinations in 2014 which allowed the NDEB to move from a Bell ringer station OSCE to the Virtual OSCE, an electronic examination. The Virtual OSCE was introduced as the certification examination in March 2023.

Part A – Exam Development

Purpose and Format of the Virtual OSCE

The Virtual OSCE is a summative examination that assesses the problem solving and critical decision-making skills required of beginning dental practitioners in Canada.

The Virtual OSCE is a national standard of competence for dentists in Canada. The examination leads to NDEB certification and is required for licensure in Canada.

The Virtual OSCE is an electronic examination. The Virtual OSCE is administered in two half-day sessions. Candidates have six hours (three hours in the morning and three hours in the afternoon) to complete the examination. The examination consists of approximately 200 questions: 50 standard single-answer multiple-choice questions and 150 case-based single-answer or multi-answer multiple-choice questions. Two of the case-based questions require candidates to write prescriptions for a medication commonly prescribed by general dentists in Canada. The questions require candidates to review information provided in the case histories, dental charts, photographs, and radiographs. Each question has up to 15 answer options and one or more correct answer(s).

Blueprint

The Virtual OSCE blueprint below shows the content categories and approximate percentage of questions in each category.

Each category will have questions pertaining to diagnosis and management. Questions may also relate to pediatric or geriatric patients, patients with special needs, radiology, and pharmacology and therapeutics.

Table 1: Virtual OSCE Blueprint

Content Area	Approximate % of Questions
Oral Medicine and Pathology	12
Periodontics	14
Endodontics	10
Prosthodontics	10
Orthodontics	6
Operative Dentistry	16
Surgery	8
Pain	12
Prevention and management of medical emergencies including management of medically complex patients	12
Total	**100%**

Test Construction Process and Validity Evidence

The examination development process follows the NDEB's development plan and is used to support the creation of defensible examination content. Specific elements of that plan are detailed below.

Examination Content

Examiners who are content experts were sent copies of the Examiner's Manual and other preparatory material for review prior to a question development workshop. Questions were constructed by the examiners ahead of the workshops and then reviewed and edited by the team during the workshop. Examiners were directed to write items that assess higher cognitive processes such as application and problem-solving. They were further instructed to avoid trivial knowledge and/or recall questions whenever possible. In addition, all new items were reviewed and, if required, edited by the Chief Examiners and senior staff.

Virtual OSCE items are stored in a third-party software platform. The software platform is also used for exam creation.

Item Selection

The Chief Examiners, the Assistant Chief Examiner and at least one additional experienced examiner began the process for the creation of each exam by doing a preliminary review of the item bank and chose questions to be considered for the preselection undertaking. Items were chosen based on several criteria including consistency with the blueprint, taxonomy of cognitive levels and statistical properties of the items. The total number of questions chosen in this preliminary preselection approximated 1.25 times more than those that were ultimately required.

Examiners who are general practitioners selected the final items for every examination in accordance with the blueprint. The results of past item analyses were used as a guide in the item selection process. Items were selected based on several criteria including consistency with the blueprint, taxonomy of cognitive levels, the need for common items, and statistical properties of the items.

Item Review, Verification and Translation

After test items were selected and a first draft form was built, the items were reviewed and translated using a multi-stage process.

This first draft was reviewed and validated by a group of examiners who verified the technical accuracy of the items. They also consulted with additional subject matter experts when required. This included identifying item enemies (items of similar content) and verifying the representativeness of the content domain and the significance of the content being tested. During this review, questions were subjected to intensive analysis to verify the wording and the correct answers. When an item needed to be reworded, it was either revised for the examination or replaced. The review focused on three areas. First, the content of the questions was verified to ensure that it was consistent with acceptable practices and supported by an approved list of references. Second, a sensitivity review was done to ensure that the question content is not offensive and does not discriminate against candidate subgroups. Third, a language review was done to ensure that the

content does not exceed the language level needed to practice dentistry safely and effectively in Canada.

All examinations are available in both official languages. This includes all forms and preparation materials.

After the first review, test items were translated by dentists familiar with the vocabulary used on the examinations. The questions and the translations were then reviewed by a group which included bilingual subject matter experts who are approved by the Ordre des dentistes du Québec (ODQ). In addition, the NDEB has developed a detailed glossary of translated terms. This glossary is updated annually. This process ensures that candidates writing in either official language have equal opportunity to demonstrate their competence. The translation process ensures consistency between English and French versions of the questions.

Following this process, a second draft was produced. During a second review, trained examiners, including bilingual examiners approved by the ODQ, verified that the changes had been made to the questions and that the French translation was accurate. Additional changes were made as required to items so that all items were finalized during the review.

Following the second review, the examination was available in the final format to be used. During the final review, trained examiners including bilingual examiners approved by the ODQ verified that all questions were correct in both languages. Additional changes were made if required. Various information screens were added to this version. The first screen was a non-disclosure agreement, which candidates must accept to continue. The second screen consisted of information on the number of sections, time allowed per section, and break. There were instruction screens before each part of the exam.

Any issues found were corrected immediately and another version of the exam was published and reviewed, if required.

When finalized, a PDF of the examination was also created as a backup for delivery. To create the PDF, NDEB staff combined all questions into a single PDF document and created bookmarks for each question. Specific instructions were added at the beginning of the document indicating the total number of questions and any additional instructions required for a candidate to complete the exam. The final PDF version was reviewed by the Chief Examiners, translators, NDEB staff and the Director of Examinations.

Before the examination was administered, technical testing took place at a third-party run site. NDEB staff ensured that the exam functioned as expected and that the various tools provided in the examination software were working. In addition, for the NDEB-run test centres, NDEB staff along with the third-party providers ensured the laptops were set up correctly, Wi-Fi was working properly, and any other technical set up was in place the day before the exam was administered.

Staff Support

The following is a summary of the roles involved in the NDEB's test construction and production processes.

Chief Examiners/Assistant Chief Examiner

The Chief Examiners are responsible for the development of the examination including coordination of question development, question selection, monitoring the item bank and results within the guidelines and parameters established by the NDEB as stipulated in the protocol.

Executive Director and Registrar

The Executive Director and Registrar is responsible for staff supervision and the implementation of all policies approved by the Board to ensure the processes operate efficiently and effectively.

NDEB Staff

The Director of Examinations is responsible for the oversight of the examinations department. The Director of Examinations and NDEB staff manage the operational delivery of the examinations. This includes corresponding with examiners, developing administration instructions, production and translation of the examinations, maintenance of the question banks, and arrangements with host institutions and third-party test centres.

Staff is responsible for carrying out directives from the Examinations Committee as approved by the Board.

Test Validity and Reliability

Validity

The primary purpose of establishing content validity of credentialing examinations is to show that the process and results underlying their development are a valid reflection of that part of professional competence that the examinations purport to assess. That is, construct validity is about the relationships between the construct of professional competence and the examination instruments. The examination content categories reflect both educational programs and the requirements of practice, and general practitioners select the content for the examinations. In addition, each form is built to match the blueprint approved annually by the Board and contained in the protocols.

Reliability

Test reliability refers to the degree to which examination scores for a group of candidates are consistent over repeated administrations of the test and are therefore considered to be dependable and consistent for an individual candidate. Reliability is estimated using a reliability coefficient, which is a unit-free indicator that reflects the degree to which scores are free of random measurement error. Based on the data provided in the results section of this Technical Report, NDEB examinations display evidence of continued strong reliability.

Documentation

Evidence of test validity is collected through multiple means, one of which is the documentation of development and administration procedures. The NDEB makes these documents publicly available. Only confidential material or material that could jeopardize the integrity of the examination is retained internally. These documents are updated frequently (generally on an annual basis) to reflect the most recent information. References for these documents can be found in Appendix A.

To support the various sources of validity and reliability evidence, the NDEB produces the following documents:

NDEB By-laws

The NDEB By-laws contain sections related to the NDEB's examination programs. Examples of relevant information include:

- Certification eligibility
- the Board's certification and equivalency processes
- Examinations
- Misconduct and appeals policies
- Terms of Reference for various examination-related committees
- Test accommodations

The By-laws are available on the NDEB website (www.ndeb-bned.ca).

The NDEB Knowledge Skills and Abilities for the Entry-Level Dentist in Canada (NDEB KSAs) (Appendix C)

In 2015, the NDEB undertook the development of KSAs required for entry-level dentists in Canada. The KSAs were validated through a practice analysis survey of Canadian dentists and led to the development of blueprints for the Virtual OSCE and NDECC, and revision of the blueprints for the AFK and ACJ. The KSAs identify the body of knowledge that is assessed by NDEB examinations. A clearly outlined body of knowledge is key to establishing the content validity of examinations by providing a link between practice and the examination. The alignment between the KSAs and the competencies of the ACFD

can be reviewed in the ACFD Educational Framework for the Development of Competency in Dental Programs.

Virtual OSCE Protocol

Updated annually, the Virtual OSCE Protocol contains the information the candidate needs to prepare to take the Virtual OSCE. In addition to providing logistical information, this document is meant to reduce construct-irrelevant variance related to testing. The document details the purpose and intended use of the examination. Candidates acquire advance information on examination content, instructions, and other procedures. At a high level, the Virtual OSCE Protocol contains the following information:

- Check-in procedures
- Content and format
- Sample questions
- Reference texts
- Examination regulations
- Misconduct
- Passing standard
- Results
- Appeals and rescores
- Repeats

This document is available in English and French on the NDEB website (www.ndeb-bned.ca).

Examiners Manual: Virtual OSCE

Reviewed and updated as required, the examiner's manual for the Virtual OSCE is an internal document provided to examiners which outlines the question-writing philosophy and guidelines for question format and style.

Virtual OSCE Frameworks

Published on the NDEB website, the Virtual OSCE Frameworks provide an illustration for candidates of the case-based question formats generally used in the Virtual OSCE. They are used by examiners to develop case-based questions.

Instructions for Invigilators

Prior to the administration, invigilators reviewed any new NDEB policies or procedures in relation to the administration of the examination.

Chief Invigilators and/or Test Administrators were required to adhere to the NDEB's instructions and regulations. These documents clearly outlined the responsibility of the invigilators and examination day procedures allowing for standardized administration

across all centres. Invigilators were encouraged to communicate with NDEB staff with questions or concerns regarding the administration or their responsibilities.

NDEB staff hosted a virtual training session with all invigilators to review any new NDEB policies or procedures in relation to the administration of the examination. The virtual training session and documentation were offered in English or French.

A PowerPoint presentation was provided to invigilators prior to the examination administration. A binder containing multiple documents pertaining to examination day was also provided to Chief Invigilators and/or Test Administrators. The purpose of the documents and PowerPoint were to describe, in detail, the procedures to follow before, during and after the administration of the Virtual OSCE. This ensured that candidates had a similar experience when completing the examination, regardless of where they took the exam. This also enhanced security by providing a detailed quality assurance protocol.

This presentation contained:

- instructions prior to the examination
- instructions for examination day (which includes verbal instructions)
- procedures to follow during the administration of the examination
- procedures to follow at the end of the examination
- instructions following the examination

Part B – Administration

Locations

The Virtual OSCE is administered three times a year, usually in March, May, and November. Except for approved test accommodations, the examination is administered on the same day at all centres. Measures were taken to administer the exam in a distraction-free and comfortable environment where candidates could demonstrate their competence on the examinations.

The March examination session was held across Canada with centres established in cities where there is a Canadian dental school and select international locations. May and November examination sessions were held in Canada, Australia and the United States. Examination centres may also be established outside of Canada with an expectation that a minimum of 25 candidates will register for a centre and that an examination location with acceptable security can be established. Space at test locations is limited due to the number of seats available at each exam site. Registration is on a first come first served basis and not all candidates are able to secure a seat in their preferred test location.

The examination locations and number of candidates for the March, May and November 2024 Virtual OSCE are shown in Table 2.

Table 2: March, May and November 2024 Virtual OSCE locations and number of candidates

Locations	March 2024	May 2024	November 2024
Edmonton, Alberta	74	-	68
Calgary, Alberta	-	58	-
Vancouver, British Columbia	56	-	-
Winnipeg, Manitoba	39	-	-
Halifax, Nova Scotia	42	-	-
London, Ontario	80	-	-
Ottawa, Ontario	76	-	1
Toronto, Ontario	132	118	67
Montreal, Quebec	144	67	141
Quebec City, Quebec	53	-	-
Saskatoon, Saskatchewan	48	-	-
Cork, Ireland	49	-	-
Boston, Massachusetts	-	-	-
Detroit, Michigan	71	-	-
Sydney, Australia	-	-	75
Total	**864**	**243**	**352**

Candidate Orientation

Detailed information regarding the Virtual OSCE is provided on the NDEB website. This includes test format, examination protocol, registration information and fees. After registering for the exam, candidates are provided additional site-specific exam information. An electronic examination orientation is also available on the NDEB website. A webinar was also provided to candidates.

NDEB-Run Test Centre

Standard check-in procedures were in place for all candidates at each NDEB-run test centre. A set of standardized instructions was read to all candidates in their language of choice prior to the commencement of the examination. Candidates were reminded of the rules of conduct and provided the opportunity to remove prohibited items from the examination room before the examination started. No variation from the examination administration was allowed unless a test accommodation had been granted by the NDEB.

Exam Administration Staff

For electronic examinations, the NDEB used a third party that provided invigilator support. Each test centre had (a) designated Chief Invigilator(s) and/or Test Administrator(s). The Chief Invigilator's and/or Test Administrator's primary responsibility was ensuring the examinations were administered according to NDEB procedures.

On examination day, NDEB staff supported on-site third-party staff either in person or via electronic communications. NDEB staff was available to assist the third-party staff in addressing issues such as permissions, exam authorization problems, technology issues, and emergency situations.

Delivery

Ahead of the examination, NDEB staff, along with the third-party provider, ensured the laptops and Wi-Fi were working correctly and the technical set up was in place at each site.

March 2024

The NDEB administered the March 2024 examination using the electronic platform. The sites are available in Table 2.

May 2024

The NDEB administered the May 2024 examination using the electronic platform. The sites are available in Table 2.

November 2024

The NDEB administered the November 2024 examination using the electronic platform. The sites are available in Table 2.

Reporting

The Chief Invigilator and/or Test Administrator is responsible for completing a report following the administration of the examination. The report includes irregularities that occurred that may have disrupted the administration of the examination. The report will also include details regarding any misconduct that occurred prior to, during, or after the examination.

Test Accommodations

The purpose of test accommodations is to remove construct-irrelevant barriers that would interfere with a candidate's ability to demonstrate their competence. Accommodations may be provided for a disability, medical condition, or religious reason.

Pursuant to the NDEB By-laws and policies, test forms or administration conditions may be modified to accommodate candidates requiring testing accommodations. Candidates must submit a written request prior to the registration deadline and are required to provide supporting documentation.

Accommodations may include an alternate date, separate examination room, a reader, or longer examination times. The number of requests for these types of accommodations is small, and as such, the NDEB is unable to establish the validity of these modified examination forms for this specific population.

Test accommodations represent the only allowable variations in administration conditions, and these variations are documented in detail. In recent years, the number of examination accommodations has been increasing, and most accommodations involve no modifications to examination materials.

A list of test accommodations granted for the 2024 Virtual OSCE Examinations are included Table 3.

Table 3: 2024 Test Accommodations Granted

Accommodation	Number requested	Number granted
Alternate schedule and private/semi-private room	4	4
Food/medication/medical devices permitted	2	2
Strategic seating	1	1

Part C – Examination Scoring

Standards for Pass/Fail

It is the NDEB's statutory obligation to certify only those who are qualified to enter the dental profession in Canada. In the interest of public health and safety, the NDEB establishes standards necessary to ensure competency.

Standard Setting

A standard setting meeting for the Virtual OSCE was held from April 15-17th, 2023 to review performance level descriptors and cut scores. Sixteen subject matter experts were involved in the standard setting procedures. The modified Angoff method (Angoff, 1971) was used to establish a single passing point (or "cut score") for the Virtual OSCE form (i.e., the score in the examination that differentiates competent from not-yet-competent performance).

A passing score was recommended by the Examinations Committee and approved by the Board on April 21, 2023.

Passing Score

The standard reflecting the minimally-competent candidate was applied to the March 2023 examination. The passing score for subsequent Virtual OSCEs was determined through statistical chain equating.

In line with national standards, the NDEB uses a standardized (rescaled) passing score of 75 for all its examinations. The passing score has no impact on the difficulty or reliability of the NDEB's examinations.

Scoring

The Virtual OSCE items, except prescription items, are single or multi-answer multiple-choice items with up to 15 different distractors.

All multiple-choice items have a maximum score of 1 and a minimum score of 0.

For multi-answer multiple-choice items, the score on each question depends on whether the candidate selects all the correct answers, some of the correct answers, or an incorrect answer. Every answer in a multi-answer multiple-choice item has a value. If the candidate selects all the correct answers and no incorrect answers, they receive the full mark for the item. If the candidate selects an incorrect answer, they receive a score of 0.

NDEB staff performed multiple quality assurance steps to ensure that the scoring was done accurately. Scores around the pass mark and a random sample were checked

to confirm their accuracy. The answers were compared to the master answer key, and all calculations were verified.

Prescription items were manually scored on a scale of 0 to 4 by a group of calibrated examiners.

Initial Statistical Analysis

After verification, initial results processing, and reviewing any procedural abnormalities, an initial statistical analysis was performed. Reports generated from the initial statistical analysis were produced:

- Candidate Performance by Exam Summary
- Question Performance by Exam Summary
- Exam Performance Detail
- Question Performance – Top/Low/Biserial Distribution (Condensed) (required for examinations which include multi-answer test items)
- Common Drift Analysis
- Language fairness report

Items were flagged for the following reasons:

- difficulty: Less than 0.3
- biserial: Less than 0.05 (unless the difficulty is greater than 0.95)
- a language fairness assessment

Review and Final Statistical Analysis

Reports generated from the initial statistical analysis were provided to the Chief Examiners and Assistant Chief Examiner, and other attendees at a statistics review meeting. Items flagged during the initial item analysis were reviewed in depth. If determined to be flawed, non-performing or compromised after review, the items were removed from further analyses.

Flagged items were reviewed to:

- confirm the accuracy of the answer key
- identify potential ambiguities, including the possibility of multiple correct answers
- identify potential "trick" items or unclear wording
- identify a possible English-French translation issue
- identify item drift as evidenced by an unusual increase or decrease in percent correct

Examiners use their expert judgement to determine if an item will be excluded and take into consideration the purpose of the question.

A final statistical analysis was then performed, and results calculated with those items excluded. Results were validated by third-party psychometricians.

Equating and Rescaling

Test equating is a standardized statistical process that is used to ensure each version of an examination is of equal difficulty. In addition to the passing score, candidate scores are also rescaled. Several data quality assurance steps are taken to ensure that the equating and rescaling is done in a fair manner while respecting the statistical assumptions that underly these mathematical procedures. The Pass or Fail scores of candidates are determined by their total score on the examination. A total score equal to or greater than the pass score results in a Pass and a total score less than the pass score results in a Fail.

Given that the Virtual OSCE is a high-stakes linear examination that produces a single final score, the reliability/precision metrics are appropriate for this type of examination. Graduates of Canadian dental programs are used as the standard reference group.

Subgroup Differences

The NDEB conducted a differential item functioning (DIF) analysis annually to investigate differences at the item and test level between candidates taking the Virtual OSCE in English and in French. Although the analysis showed that there is no systemic bias, items that behave differently were reviewed as described in the Review section above.

Pilot Testing

The NDEB embeds new questions into examinations as pilot test items. These items are new and have not been evaluated by the candidate population. Pilot items that perform well from a statistical perspective count toward the candidate's score, while those items that do not perform well are excluded.

In addition, item statistics are used to improve items for future use. Due to the NDEB's pilot testing methodology, items are exposed to a live candidate population, which includes all relevant subgroups. The pilot questions are not identified as pilots in the exam.

Reporting

Candidates Results

Release of Results

The results of the Virtual OSCE are posted on a secure website within eight weeks of the administration date. Candidates access their results by logging in to their online profile. When results are posted, candidates receive an email notification. If there is an anticipated delay in the release of results, candidates are notified by email. Candidates are informed if they have passed or failed the examination. Results are reported as Pass/Fail. Successful candidates are given a pass result. Candidates who fail will also receive their test equated, re-scaled score on the failed examination and the pass mark for the examination. This allows candidates to determine how close they were to passing. They are also provided with instructions on how to appeal their score.

Candidate results and records are kept pursuant to the NDEB's internal document retention policies and procedures.

Results for Graduates of Canadian Dental Programs

Canadian Faculties of Dentistry are normally sent reports of their students' results for the March administration, and the school's performance versus national performance. On request, other accredited dental programs that have a sufficient number of candidates (more than 10) participating in a session can receive the same information.

For the Virtual OSCE, the following information was provided:

1. National (Canadian) level means and standard deviations of scores broken down by blueprint category
2. School level means and standard deviations of scores broken down by major blueprint category

Sub-scores for each blueprint category are not included on candidate score reports but grouped sub-scores are included in school reports. These sub-scores are for diagnostic and information purposes only. Individual pass/fail decisions are not made on the basis of sub-score performance. Individual student pass/fail results are provided to schools upon request.

Instructions for proper score interpretation were included with the reports. Specifically, schools were informed that data is provided "for information purposes only". Individual student numerical results are generally not provided to schools unless the school makes a request to the NDEB and demonstrates a valid research or academic need for the data.

Other Reporting

A general statistical performance report for each examination is prepared for the Examinations Committee and the Board annually.

The total number of test takers and pass percentage is posted on the NDEB website annually.

All information related to the Virtual OSCE (e.g., test protocol, reports) is retained as per the document retention policy.

Appeals

The appeal mechanism for the Virtual OSCE is a verification of score. This is a verification of the grade calculations. Responses are manually compared with the answer key followed by a manual recalculation of the score.

Candidates who receive a failing grade on the Virtual OSCE can request a verification of score within one month of the release of results by applying to the Board to have their examination score verified.

A fee is charged for manual rescores. Fees are posted on the NDEB website.

Other Appeals

Within a specified timeframe, candidates may appeal to the Board or Executive Committee in writing, with an accompanying filing fee, regarding:

- a decision of the Examinations Committee regarding misconduct
- compassionate grounds
- the conduct of the examination

A summary of appeals of the 2024 Virtual OSCE can be found in the Table 4.

Table 4: 2024 Virtual OSCE Appeals

Type of Appeal	Number received	Granted	Grades Changed
Verification of Score*	45	-	0
Compassionate Appeal	-	-	-
Conduct of the Examination	6	0	-

Part D - Security

The NDEB takes several measures to ensure the security of its processes.

Credential Verification

Credential verification of applicants is performed to ensure that applicants to all processes are eligible for participation. While the credential verification process differs depending on the process applied for, each process includes source verification with the university to confirm the applicant's credentials.

Candidate Information

Candidates create an online account in the NDEB's online portal called NDEBConnect. Candidate accounts are password protected.

In-house, the NDEB has candidate information stored on secure NDEB servers. This information is only accessible to staff with valid network accounts and drive permissions.

Administration

The NDEB is in regular communication with onsite staff to keep them apprised of changes to administration processes and emphasize the importance of security measures such as standardized check-in procedures and restricted items. Chief invigilators, Test Administrators, invigilators, and proctors are trained to identify, manage, and report misconduct.

Onsite Security

The NDEB stores all physical examination material in a secure, locked area. All electronic materials are on secure password-protected servers.

During the examinations, invigilators monitor the candidates in the examination room and document any irregularities on the Report of The Chief Invigilator/Test Administrator. After the completion of the examinations, all materials are returned to the NDEB office by courier. NDEB staff verify the return of all materials. These security measures help maintain the integrity of the examinations by limiting exposure to examination items before and after the administration of the examination.

Exam Security

The NDEB's sensitive information is stored on a restricted server and in secure restricted databases. Examination files and applications are not accessible to all those who work for the NDEB but are limited to those users who require access.

The NDEB has a policy that written exam content under development is never sent via email. Rather, these files are uploaded to our password-protected secure sites for sharing and collaboration. Users are limited to what they can view, edit, upload and download based on their roles.

All NDEB portable devices use encryption so no one can access anything on the device without the proper credentials.

During the examination, candidates are reminded that disclosure of confidential examination material, or engagement in any other form of cheating is unacceptable and that such behaviour may result in sanctions.

There are guidelines for the retention of test materials.

Part E - Outcome Summaries

This report provides summary information on the structure of the Virtual OSCE, as well as statistical summaries at the item and test levels.

The sample of candidates at the March examination is largely comprised of Canadian-educated first-time candidates. The sample of candidates in May is largely comprised of second-time candidates and candidates who successfully completed the NDEB Equivalency Process. The sample of candidates in November is largely comprised of Australian-educated first-time candidates and candidates from the NDEB Equivalency Process.

Number of Examination Items by Category

Table 5: 2024 Virtual OSCE by Content Area

Category	March 2024	May 2024	November 2024
Oral Medicine and Pathology	29	24	26
Periodontics	25	27	28
Endodontics	20	18	19
Prosthodontics	16	22	22
Orthodontics	12	11	10
Operative Dentistry	32	30	32
Surgery	16	15	17
Pain	21	18	19
Prevention and management of medical emergencies including management of medically complex patients	22	22	21
Total Scored	193	187	186
Rejected	7	7	8
Total	**200**	**194**	**194**

Table 6: 2024 Virtual OSCE Exams Statistical Analysis

	Attempt	March 2024	May 2024	November 2024
Number of Candidates	1	840	195	308
	2	17	45	33
	3	7	6	11
	Total	**864**	**243**	**352**
Pass (#)	1	763	182	285
	2	10	32	27
	3	5	6	9
	Total	**778**	**220**	**321**
Pass (%)	1	90.8	93.3	92.5
	2	58.8	71.1	81.8
	3	71.4	100.0	81.8
	Overall	**90.0**	**90.5**	**91.2**
Passing Raw Score (%)		**68.32**	**69.10**	**64.3**
Mean Raw Score (%)	1	76.5	78.1	75.2
	2	77.7	84.8	69.7
	3	78.2	81.9	69.8
	Overall	**76.3**	**77.1**	**74.6**
Range Rescaled	1	58 – 91	60 – 91	64 – 92
	2	67 – 82	54 – 87	66 – 85
	3	71 – 82	76 – 85	58 – 86
	Overall	**58 – 82**	**60 – 85**	**64 – 86**
Mean Rescaled Score	1	81.1	81.9	82.3
	2	75.7	77.4	78.4
	3	77.0	80.1	79.6
	Overall	**80.9**	**81.1**	**81.9**
KR 20/ Cronbach's Alpha		**0.83**	**0.87**	**0.86**

Note: Numbers are based on all candidates who sat the examination. This includes candidates who have later been withdrawn as a result of a compassionate appeal.

Part F – Appendices

Appendix A – Key Supporting References

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Appendix C – Knowledge Skills and Abilities (KSAs) Framework

This document lists 43 KSAs that are required for the safe and effective practice of a beginning dental practitioner in Canada. The KSAs in this document are organized into three groups and 15 categories:

GROUP A: Multi-discipline (23 KSAs)

These KSAs apply to more than one discipline or area of practice. The KSAs in this group are organized into two categories: *Patient Assessment and Treatment Plan* and *Management*.

GROUP B: Discipline-specific (11 KSAs)

These KSAs are specific to dentistry practice in one of 9 disciplines/areas of practice: *Oral Medicine and Pathology*, *Radiology*, *Periodontics*, *Endodontics*, *Prosthodontics*, *Orthodontics*, *Operative*, *Oral Surgery*, and *Pain*.

GROUP C: General (9 KSAs)

The KSAs are organized into four categories: *Scientific Literature*, *Communication*, *Professionalism and Practice*, and *Health Promotion*.

GROUP A: Multi-Discipline KSAs

1	Patient assessment and treatment plan
1.1	**Exam**
1.1.1	Obtain the patient's chief complaint, medical, psychosocial, and dental histories.
1.1.2	Perform a clinical examination.
1.1.3	Assess patient-specific risk factors for oral disease or injury.
1.2	**Diagnosis**
1.2.1	Differentiate between normal and abnormal hard and soft tissues of the maxillofacial complex.
1.2.2	Interpret the findings from the patient's chief complaint, medical, psychosocial, and dental histories, along with the clinical and radiographic examinations, and diagnostic tests.
1.2.3	Develop a problem list and establish diagnoses.
1.3	**Treatment Plan**
1.3.1	Determine when consultation, referral, and/or further diagnostic testing are indicated.
1.3.2	Communicate relevant patient information for consultation/referral with health care professionals.
1.3.3	Develop treatment options based on the evaluation of all relevant data (i.e., obtained from the patient's chief complaint, medical, psychosocial, and dental histories, along with the clinical and radiographic examinations, and diagnostic tests).
1.3.4	Engage the patient in the discussion of the findings, diagnoses, etiology, risks, benefits, time requirements, costs, responsibilities, and prognoses of the treatment options.
1.3.5	Develop a comprehensive, prioritized and sequenced treatment plan.
1.3.6	Obtain and record informed consent.

2	Management
2.1	**Prevention**
2.1.1	Promote measures to prevent oral disease/injury in response to identified risk.
2.1.2	Provide therapies for the prevention of oral disease/injury.
2.1.3	Implement measures to prevent medical emergencies from occurring in dental practice.
2.1.4	Implement measures to prevent the transmission of infectious diseases.
2.2	**Treatment**
2.2.1	Manage the anxious or fearful patient.
2.2.2	Manage dental emergencies.
2.2.3	Manage medical emergencies that occur in dental practice.
2.2.4	Manage trauma to the orofacial complex.
2.2.5	Manage occlusal function.
2.2.6	Prescribe and administer pharmacotherapeutic agents used in dentistry.
2.2.7	Manage complications, outcomes and continuity of care.

GROUP B: Discipline-Specific KSAs

3	**Oral medicine and pathology**
3.1	Manage oral mucosal and osseous diseases.
4	**Radiology**
4.1	Prescribe, make and interpret radiographs.
5	**Periodontics**
5.1	Manage conditions and diseases of the periodontium.
6	**Endodontics**
6.1	Manage diseases and injury of the pulp.
7	**Prosthodontics**
7.1	Manage partially and completely edentulous patients.
8	**Orthodontics**
8.1	Manage abnormalities of orofacial growth and development.
9	**Operative**
9.1	Restore carious lesions and manage other defects in teeth.
10	**Oral surgery**
10.1	Manage surgical procedures related to oral soft and hard tissues.
11	**Pain**
11.1	Achieve local anesthesia for dental procedures.
11.2	Manage odontogenic pain.
11.3	Manage non-odontogenic pain.

GROUP C: General KSAs

12	**Scientific literature**
12.1	Evaluate the scientific literature and justify management recommendations based on the level of evidence available.
13	**Communication**
13.1	Communicate effectively with patients, parents, guardians, staff, peers, other health professionals and the public.
14	**Professionalism and practice**
14.1	Know ethical and legal obligations (e.g., confidentiality requirements, task delegation, commitment to continued professional development, patient-centred care).
14.2	Maintain accurate and complete patient records.
14.3	Manage occupational hazards related to the practice of dentistry.
14.4	Take appropriate action when signs of abuse and/or neglect are identified.
14.5	Know principles of practice administration, financial and personnel management.
15	**Health promotion**
15.1	Recognize the determinants (influencing factors) of oral health.
15.2	Promote oral health within communities.