



# COLLEGE OF DENTURISTS OF ONTARIO

## **FOUNDATION DOCUMENT FOR THE QUALIFYING EXAMINATION**

### **Introduction**

The purpose of a licensure or qualifying examination (QE) is to protect the public by ensuring that an applicant who seeks entry into the profession of denturism possess sufficient knowledge, skills, judgment, and abilities (also known as competencies) to practise denturism without risk of harm to his/her patients. The education requirements and the content of the QE must reflect what competent denturists in Ontario do on the job. The College of Denturists of Ontario's ("College") qualifying examination is designed to assess an applicant's readiness (overall minimum competency) to practise denturism.

The QE is based upon internationally recognized testing standards and procedures, designed to ensure that each examination candidate is afforded an optimal, standardized assessment experience, and that the examination is valid, objective, and defensible. The QE undergoes a rigorous psychometric review that is supported by input from subject matter experts (SME's) who are a highly trained group of denturists practising in Ontario. The College, through the joint efforts of the psychometric (assessment) consultant Martek Assessment Ltd., the SME's and the Qualifying Examination Committee, ensures the development, administration and review of the QE. College approved references are used by SME's for all examination questions.

The primary function of the foundation document is to describe how the QE was developed; specifically, it provides a summary of the development of the QE followed, the competencies to be assessed (i.e. what is examined on), the structure of the QE and the scoring of the QE.

## **Laying the Foundation: The Development of the National Competency Profile for Denturists**

In the fall of 2012 a group of content experts, the Competency Profile Working Group, (WG) was established. The WG members consisted of 14 denturists representing provincial denturism regulators, provincial and national professional associations, educational institution program coordinators and practitioners from various provinces.

Working with Professional Examination Service (a standard/assessment credentialing agency with long standing expertise in this area) the WG was tasked with creating an initial competency profile that was broad and inclusive of all jurisdictions' permitted acts and reflected entry-to-practice competencies.

Once the draft competency profile was completed, external feedback was sought using three focus groups with stakeholder representatives from the regulatory, practitioner and educational community from across the country.

The WG then met to review the comments from the focus groups, updated and finalized the profile as they deemed appropriate, based on the feedback received.

This competency profile was then further validated by means of a nation-wide survey of practising denturists. The survey was designed to not only elicit both quantitative and qualitative data/feedback on each competency set out in the profile but also determine their relative importance based on the following two parameters:

- How frequently, on average, was each competency outlined in the draft profile performed during the last 12 months?  
and
- How serious would the consequences be if a denturist failed to perform the competency appropriately, i.e. risk of harm to the patient.

Open-ended questions were also asked to assess the completeness of the profile.

The data received from the survey (194 responses) was reviewed by the WG and applicable feedback was integrated into competency profile. The WG was satisfied that the national competency profile for entry to practice was complete and by virtue of the consistent profile across Canada, represented ***the knowledge, skills, abilities, attitudes and judgments required to safely and effectively fulfill the requirements of the profession of denturism.***

The College of Denturists of Ontario's Council approved the *National Competency Profile for Denturists* in September 2013. The profile consists of 23 core entry-to-practice competencies in 6 different categories with 48 exemplars. [Link to the National Competency Profile for Denturists.](#)

The National Competency Profile for Denturists is the foundation for developing College's qualifying examination. It reflects the most current measurable requirements for competent, safe, ethical and effective denturism practice in Ontario. It will continue to be updated on a regular cycle (every 5 years) to ensure these requirements remain current.

### **Format of the Qualifying Examination**

December 2013, Council approved the new format for the QE - 1 day multiple choice questions (MCQ) examination, day of rest followed by 2 days of an objective structured clinical examination (OSCE).

Part I (MCQ) of the QE would, for this administration (summer 2014), used the existing test blueprint as described below.

#### Part I of the QE: MCQ Subject Matter Categories and Weighting

Dental Anatomy, Physiology & Histology	18%
Dental Materials	10%
Dentures, Implants & Prosthetics	30%
Jurisprudence	6%
Microbiology & Infection Control	7%
Nutrition	2%
Pathology	17%
Pharmacology	8%
Radiographic Pattern Recognition	2%

*MCQ assess a candidate's knowledge based on the subject matter categories. Part I consists of 300 MCQ independent items.*

Part II (OSCE stations) of the QE would be developed using the competency profile as the test blueprint. The competency profile also sets out what percentage of stations should address each competency area, i.e. the relative importance each competency category would be given to the OSCE. An OSCE is comprised of a series of stations through which all QE candidates rotate on a timed basis. In each station, the candidate is faced with a simulated task or problems; the candidate is required to perform specific functions to complete the task or address the problem. The OSCE stations can be interactive and non-interactive. OSCE stations that are interactive use a “standardized patient” (individuals who have been specially trained to portray denturism patients). A candidate in an interactive station is observed and assessed by a trained assessor/examiner using a standardized and objective marking guide. Non-interactive (or quiet) stations have multiple choice responses to tasks or problems and involve no direct observation or assessment.

Part II of the QE: Competency Profile and OSCE Station Weighting

Clinical Practice	35.0%
Laboratory Procedures	28.9%
Professional Collaboration	8.5%
Practice Management	8.4%
Jurisprudence & Prof. Responsibility	9.7%
Communication	9.5%

*The OSCE assess a candidate's interpersonal skills + clinical knowledge + problem solving skills.*

**Development of the OSCE Stations**

An OSCE Working Group consisting of 15 denturism practitioners from across the province with practice experience ranging from 5 years to over 30 years participated in the development of the Blueprint.

The Working Group and the College’s assessment facilitator Martek Assessment Ltd. systematically discussed each element of the national competency profile and its relationship to developing a competency based examination using OSCE’s as the

assessment method. Furthermore, the Working Group received an introduction to OSCE's and reviewed OSCE examples across other health care professions as well as a comprehensive presentation to OSCEology and the U of Toronto Standardized Patient Program (SPP). The denturism OSCE stations would be developed in conjunction with the SPP; the SPP would also be involved in the role-plays for Part II of the QE.

Using an OSCE template specifically developed for the WG, the members created 12 interactive stations involving the use of a standardized patient and 8 non-interactive (quiet) stations based on the competency profile. All OSCE stations were reviewed and amended where appropriate following considerable discussion among the Working Group members and the SPP.

For the final stage, the OSCE stations were piloted with a new group of denturists (the 14 OSCE assessors) together with the SPP and where appropriate, final changes were made to the OSCE stations. In addition to the pilot, a two-day on-site training was conducted with the assessors including a dry run of the OSCE and training on how to apply the marking criteria for the interactive stations.

The final breakdown of OSCE stations developed to assess the six competency categories in the profile are as follows:

Clinical Practice – 8 stations

Laboratory Procedures – 7 stations

Professional Collaboration – 2 stations

Practice Management – 1 station

Jurisprudence, Ethics & Professional Responsibilities – 1 station

Communication – 1 station

*Note 1 - the interactive stations involve a standardized patient*

*Note 2 - each station has on average 10 to 12 items*

*Note 3 - the non-interactive stations are presented in a case-based multiple choice format*

*Note 4 – the scenarios in the OSCE stations reflect the demographic characteristics (age, gender, etc.) of the population denturists encounter in practice without introducing cultural stereotypes or biases.*

## **Scoring the Qualifying Examination**

### Arriving at a Cut (pass) Score

The setting of a cut score or pass score for licensure or qualifying examination is one of the most important elements of a defensible assessment process.

As the examination is designed to assess a candidate's competence with a focus on safe, effective and ethical practice, therefore, setting a standard is about determining how effectively a candidate is in providing effective and ethical denturism services in the public interest, i.e. is the candidate minimally competent to provide denturism services without risk of harm to the public.

Another way of to illustrate this is to ask whether the candidate has achieved a sufficient level of mastery of the core competencies as set out in the 6 categories set out in the National Competency Profile for Denturists.

The standard for the QE is based on an understanding of "minimal competence", defined as the level of competence that separates those who should receive a certificate of registration to practise denturism from those who should not. The standard setting process the College incorporates is the Angoff method which is the most widely used standard setting approach to determine the required level of performance for entry level candidates in high stakes licensure examinations.

The standard setting group, a group of 8-12 practitioners reflecting a range of professional maturity along with varied experiences, are trained to use this method. Through a process of extensive discussion and interactive exchange, they arrive at a cut (pass) score that the profession has determined that the candidates must meet to ensure safe and effective patient care at the entry-to-practice level.

Arriving at the cut score for both Part I and Part II of the QE requires that each item be rated by the standard setting group in terms of the percentage of minimally competent candidates who "would" answer the item correctly. The cut score for both Part I and Part II of the QE is based on the grand mean (overall average) of all of the items what will count toward the scores of the candidates. The Angoff method is fair because it is based on a standard derived from the ability level required of the minimally competent candidate. It is important to note that unsuccessful candidates are provided with a performance report which identifies areas of strength as well as deficiencies in the

overall competency categories. Items that do not perform as expected are deleted from the overall cut score.

### Overview of the Scoring Procedures

For the MCQ, the examination response sheets are scanned and scored using computer software. Each correct multiple choice item will contribute one point to the candidate's score.

In the interactive OSCE stations, the assessors are provided with a standardized objective marking criteria for each OSCE station as well as a global rating scale by which to reflect a candidate's overall performance.

The non-interactive stations are in a multiple choice format and each correct multiple choice item will contribute to one point to the candidate's score for that station. All stations are rated equally.

For both Part I and Part II of the QE, only one outcome results from the scoring of the examinations, an overall pass/fail. A number of widely acceptable statistical standards and procedures are used by the College's assessment consultant to arrive at the candidates pass/fail reports, assess the effectiveness of the QE overall and the individual items.

At the end of each administration of the QE, items are reviewed, refined and/or deleted and new items for the MCQ and OSCE stations are developed so that the QE bank is fluid.