**Knowledge, Skills, and Abilities (KSAs) for a Beginning Dental Practitioner in Canada**

**Revised 2023 - DRAFT**

A competent beginning dental practitioner in Canada must be able to provide oral health care for the benefit of individual patients and communities in a culturally sensitive manner.

Competence assumes that all behaviours are supported by foundation knowledge and skills in biomedical, behavioural and clinical dental science and by professional behaviour. Beginning dental practitioners in Canada must be able to apply foundation knowledge and skills to justify their decisions and actions and to evaluate outcomes. Therefore, foundation knowledge, skills and professional behaviour are understood to be a part of every competency.

Competence also assumes that all behaviours are performed to an acceptable level and that the practitioner can evaluate their quality and effectiveness. Competence cannot be achieved without the ability to self-evaluate. Moreover, there are no degrees of competence: a dentist is either competent or not competent. The KSAs below refer to general dental practice and include the management of patients of all ages including those with special needs. It is assumed that all oral health care is provided in an ethical manner, in accordance with legal requirements at the national and provincial level.

# KSA 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 3 Groups and 15 categories:

## GROUP A: Multi-discipline (23 KSAs) (24 KSAs with revision of working group)

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*.

A working group of representatives of the Canadian Dental Regulatory Authorities Federation (CDRAF), Association of Canadian Faculties of Dentistry (ACFD), Commission on Dental Accreditation of Canada (CDAC) and National Dental Examining Board of Canada (NDEB) conducted an in-depth review of this document in 2021. The working group added 1 KSA (1.2.4), made a revision to KSA (1.33) and developed sub-tables to provide more specificity for a number of KSAs. The sub-tables identify a procedure or attribute and specify the minimum level that all graduates must obtain. The levels are grouped as Didactic, Preclinical and Clinical.

Didactic procedures or attributes are designated “Taught” or “Taught and Tested”.  Testing must be done for all graduates using assignments, didactic quizzes, tests or exams.

Preclinical and Clinical procedures are designated as at the Exposure, Experience or Competence level. It is assumed that all areas designated Exposure, Experience or Competence are taught and tested didactically.

Exposure: Seen a situation (in a class or clinic) but a new graduate may need significant study and mentoring to become competent. If an area or procedure is designated “exposure”, **all** new graduates will have some familiarity in the area, and some new graduates may have experience or reached competency.

Experience: A new graduate is not verified to be able to complete the procedure independently but may progress to competence with more study or mentoring. If an area or procedure is designated “experience”, **all** new graduates must have had experience in the area. Some new graduates may have attained competency.

Competence: This is the level expected of a beginning dentist that incorporates understanding, skill and values. This level requires some degree of speed and accuracy but not at the highest level. A competent new graduate also has the awareness of what constitutes acceptable performance and is therefore safe for independent practice in the area. New graduates may have demonstrated clinical competency through assessment or by a combination of pre-clinical competency testing and clinical experience.

# GROUP A: Multi-Discipline KSAs

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| **1.** | **PATIENT ASSESSMENT AND TREATMENT PLANNING** |
| **1.1** | **Information Collection and Examination** |
| 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 specific risk factors (conduct a risk assessment) for oral disease or injury. |
| **1.2** | **Diagnosis** |
| 1.2.1 | Differentiate between normal and abnormal hard and soft tissues of the oral and 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 differential/definitive diagnoses. |
| **1.3** | **Treatment Planning** |
| 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 risk assessments, diagnoses, and other factors, including, but not limited to, medical, psychosocial, and dental histories. |
| 1.3.4 | Engage the patient, parent or guardian 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 risks. |
| 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**

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| **3.** | **ORAL MEDICINE AND PATHOLOGY** |
| 3.1 | Manage oral mucosal and osseous diseases.   |  |  |  |  | | --- | --- | --- | --- | | **Procedure/** | **Didactic** | **Preclinical** | **Clinical** | | Formulate a differential diagnosis for a detected abnormality. |  |  | Exposure | | Prescribe and interpret radiographs and other required diagnostic tests for the detected oral mucosal and osseous abnormalities based on clinical assessment. |  | Experience |  | | Soft tissue biopsy | Taught and Tested |  |  | | Recognize and communicate to other health care professionals features that suggest greater urgency for immediate consultation/referrals. | Taught and Tested |  |  | | Communicate to patients the reason for the referral/consultation. | Taught and Tested |  |  | | Interpret a biopsy/consultation report and correlate the findings with the clinical  presentation. | Taught and Tested |  |  | |
| **4.** | **RADIOLOGY** |
| 4.1 | Prescribe, make and interpret radiographs.   |  |  |  |  | | --- | --- | --- | --- | | **Procedure** | **Didactic** | **Preclinical** | **Clinical** | | Prescribe bitewing, periapical and panoramic radiographs. |  |  | Competence | | Prescribe CBCT imaging | Taught and Tested |  |  | | Acquire bitewing and periapical radiographs |  |  | Competence | | Acquire panoramic radiographs |  | Experience |  | | Interpret intraoral and panoramic radiographs for common diseases and abnormalities |  |  | Competence | | Recognize radiographic features that suggest significant abnormalities | Taught and Tested |  |  | |
| **5.** | **PERIODONTICS** |
| 5.1 | Manage conditions and diseases of the periodontium.   |  |  |  |  | | --- | --- | --- | --- | | **Procedure** | **Didactic** | **Preclinical** | **Clinical** | | Mechanical plaque removal; Scaling/root planing. |  |  | Competence | | Re-evaluate response to periodontal treatment. |  |  | Competence | | Periodontal surgery | Taught and Tested |  |  | | Periodontal maintenance therapy |  |  | Competence | | Management of Peri-implant diseases | Taught and Tested |  |  | |
| **6.** | **ENDODONTICS** |
| 6.1 | Manage diseases and injury of the pulp.   |  |  |  |  | | --- | --- | --- | --- | | **Procedure** | **Didactic** | **Preclinical** | **Clinical** | | Pulpotomy/Pulpectomy, |  | Competence | Competence | | Uncomplicated Non-Surgical Root Canal Therapy |  | Competence | Competence | | Complicated Non-Surgical Root Canal Therapy |  | Experience |  | | Surgical Root Canal Therapy | Taught and Tested |  |  | |
| **7.** | **PROSTHODONTICS** |
| 7.1 | Manage partially and completely edentulous patients.   |  |  |  |  | | --- | --- | --- | --- | | **Procedure** | **Didactic** | **Preclinical** | **Clinical** | | RPD |  | Competence | Competence | | Complete Dentures |  | Competence | Competence | | FPD |  | Competence |  | | Implant supported restoration |  | Experience | Exposure | |
| **8.** | **ORTHODONTICS** |
| 8.1 | Manage abnormalities of orofacial growth and development.   |  |  |  |  | | --- | --- | --- | --- | | **Procedure** | **Didactic** | **Preclinical** | **Clinical** | | Preventive and Interceptive Orthodontics |  | Experience | Exposure | | Comprehensive Orthodontics (brackets/aligners) |  | Exposure |  | | Orthodontic Treatment involving surgery or multidisciplinary approaches | Taught and Tested |  |  | |
| **9.** | **OPERATIVE** |
| 9.1 | Restore carious lesions and manage other defects in teeth   |  |  |  |  | | --- | --- | --- | --- | | .**Procedure** | **Didactic** | **Preclinical** | **Clinical** | | Direct restoration |  | Competence | Competence | | Crowns |  | Competence | Competence | | CAD-CAM procedures |  | Experience |  | | Post/Core |  | Experience | Competence | | Metal/Aesthetic inlay/onlay/veneer |  | Exposure |  | |
| **10.** | **ORAL SURGERY** |
| 10.1 | Manage surgical procedures related to oral soft and hard tissues.   |  |  |  |  | | --- | --- | --- | --- | | **Procedure** | **Didactic** | **Preclinical** | **Clinical** | | Uncomplicated extraction |  |  | Competence | | Complicated extraction |  |  | Experience | | Adjunctive hard and soft tissue procedures (eg tooth exposure, alveoplasty) | Taught and Tested |  |  | | Incision and drainage | Taught and Tested |  |  | | Orthognathic surgery | Taught and Tested |  |  | |
| **11.** | **PEDIATRIC, GERIATRIC AND SPECIAL NEEDS DENTISTRY** |
| 11.1 | Manage pediatric patients. |
| 11.2 | Manage geriatric patients. |
| 11.3 | Manage and accommodate patients of all ages with special needs. |
| **12.** | **PAIN MANAGEMENT** |
| 12.1 | Achieve local anesthesia for dental procedures. |
| 12.2 | Manage odontogenic pain. |
| 12.3 | Manage non-odontogenic pain. |

**GROUP C: General KSAs**

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| **13.** | **SCIENTIFIC LITERATURE** |
| 13.1 | Justify management recommendations based on a critical evaluation of the scientific literature. |
| **14.** | **COMMUNICATION** |
| 14.1 | Communicate effectively with patients, parents, guardians, staff, peers, other health professionals, relevant social services professions and the public. |
| 14.2 | Ensure that all communications with patients, including advertising and social media use are honest, accurate and comply with relevant law and professional  obligations. |
| 14.3 | Communicate using a patient-centred approach, tailored to the knowledge and language skills of patients. |
| **15.** | **PROFESSIONALISM AND PRACTICE** |
| 15.1 | Demonstrate ethical and legal obligations (e.g., confidentiality requirements, task delegation, commitment to continued professional development, patient-centred care).   |  | | --- | | Collaborate with other dentists and other healthcare providers. | | Support patient decision-making, and adopt a patient-centred approach to care. | | Maintain appropriate boundaries with patients and with other oral health care providers including office staff. | | Demonstrate compassion for patients, and families while maintaining appropriate boundaries. | | Keep patient information confidential and private. | | Foster a respectful and inclusive environment in the healthcare setting in relation to patients, staff and colleagues. | | Treat all patients with respect and do not discriminate. | | Be aware of and satisfy legal obligations to accommodate disability, including accommodating the presence of service animals, patient mobility devices and other needs. | | Engage in and commit to continuous quality improvement and continuing education. | | Maintain one’s own health and well‐being in order to foster optimal patient care. | | Work with patients and colleagues to advocate for the health care needs of individual patients. | | Demonstrate critical thinking and problem-solving skills. | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
|  | |  | | --- | | Treat patients and their families with empathy: understand and share their feelings. | | Be able to self‐reflect regarding the care provided, and the quality of the interactions with patients, families, staff. | | Be self‐aware: know the limits of their own skills and refer patients to others when needed. | | Be adaptable: adapt and respond to different clinical scenarios, patient needs, innovations in practice and legal or professional requirements. | | Commit to continuous learning. | |
| 15.2 | Maintain accurate and complete patient records. |
| 15.3 | Manage occupational hazards related to the practice of dentistry. |
| 15.4 | Take appropriate action when signs of abuse and/or neglect are identified. |
| 15.5 | Know principles of practice administration, financial and personnel management. |
| **16.** | **HEALTH PROMOTION** |
| 16.1 | Recognize the determinants (influencing factors) of oral health. |
| 16.2 | Promote oral health within communities. |

**Glossary of Terms**

## Abuse

Includes physical, psychological, and substance abuse, as well as neglect.

## Manage

To “manage” the oral health care needs of a patient is assumed to include all actions performed by a health care provider that are designed to alter the course of a patient’s condition. Such actions may include providing education, advice, treatment by the dentist, treatment by the dentist after consultation with another health care professional, referral of a patient to another health care professional or relevant social services professional, monitoring treatment provided, but also may include providing no treatment or observation. “Manage” assumes the use of the least invasive therapy necessary to gain a successful outcome in accordance with patient wishes.

**Exposure**

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