**Creating Test Questions in INDBE Format**

A single Integrated National Dental Board Exam (INDBE) is replacing the former 2 part National Board (Part I Basic Sciences and Part II Clinical Sciences). The INDBE is a multiple choice question (MCQ) style and course directors could assist our students to become accustomed to the INDBE by creating questions using a similar format. The Joint Commission on National Board Examinations provides an excellent guide on item development which is helpful in understanding INDBE question construction which can be accessed by the following link: <https://www.ada.org/~/media/JCNDE/pdfs/INBDE_Item_Development_Guide.pdf?la=en>

Suggestions in creating test questions:

* First, decide the concept you wish to assess.
* Next, consider what level of student you are testing (1st year vs 3rd year for example) and what sophistication of thought process you want to assess.
* Thought processes progress through understanding of a concept, to application of basic information, and then to reasoning/critical thinking to solve a problem or come up with a solution.
* Consider integrating your question into a clinical scenario. Such questions tend to be application or reasoning/critical thinking types. Think about how the concept you are assessing might affect patient evaluation, clinical diagnoses, or treatment decisions.
* Even though the Integrated Board will freely use the patient box (see patient box example and accompanying question at the end of this doc), there will many free-standing questions on the Board so don’t feel you have to create a patient box to write integrated questions.
* Patient boxes can be helpful since they can be used multiple times. Simply change the parameters in the box making for different correct answers year-to-year. This may assist in complying with school policy recommendations that you use a minimum of 40% new questions on exams.
* Be careful to avoid a series of questions from a patient box that requires a correct answer on a previous question to be able to answer subsequent questions; the test taker is penalized heavily in such scenarios.
* Watch also that subsequent questions in multiple question scenarios for the same patient box do not alert the test taker to the correct answer for a previous question that could then be revisited and corrected by the test taker.
* Avoid using a patient box when only one question is asked; put relevant information directly in the question in such a case since the patient box is likely not necessary.

Tips for writing multiple choice questions (MCQs):

* The INDBE questions will have four answer choices only with one correct answer (the key) and three incorrect answers (the distractors).
* Be succinct when creating the stem (or question) for your item—avoid information that is extraneous, distracting, or simply adds reading time to the question.
* The stem should be in question form (see question example at end of this doc) and should be clear as to what is being asked; one shouldn’t have to read the possible answers to decipher the question.
* The key and distractors should be of similar length since test takers often select the longest choice when they are aren’t sure of the correct answer.
* The distractors should be reasonable and real—don’t create distractors that are nonsensical, humorous, or made up terms, diagnoses, or procedures, etc. which wastes distractors and may give away the answer.
* Avoid a correct response and one distractor that are opposites of each other; this quickly eliminates 2 of the alternatives for the test taker.
* Consider alphabetizing the answer and the distractors so that all choices are randomly distributed to the A, B C, and D positions. Students not sure of the answer tend to choose B or C for their answer.
* Try not to write EXCEPTION questions where possible; want test taker to pick the positive answer, not the choice which is incorrect or a poor solution to a problem.
* Avoid all of the above or none of the above choices—ask for a specific, correct response.
* Watch that distractors don’t overlap: 3—4 years, 4—5 years, 5—6 years, etc.; can create more than one correct answer.
* Finally, consider having a colleague review your questions (we are all learning to write better assessments) and evaluate the performance of your questions. ExamSoft provides good analytics for this process.

**Patient Box Example**

Patient: 62 y. o. female patient

Chief Complaint: Swelling, acute pain lower right molar area

Background and/or Pt. History: Type I diabetic—insulin dependent

Current Findings: Inflamed gums and moderate alveolar bone loss generally Tooth #30 has gross decay to pulp and is unrestorable Patient’s HbA1c reading is 9.0

**Sample Question from Patient Box**

Based on patient’s chief complaint and findings, what should the most preferred course of action be for her dentist?

A. Delay treatment until evidence that patient’s diabetes is controlled **B.** Extract #30 with antibiotic prophylaxis C. Drain buccal swelling #30, re-evaluate patient in 1 week D. Place patient on antibiotics for 2 weeks, re-evaluate following antibiotic treatment