



COVID & the Curriculum: Faculty Perspectives

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Recreating the Clinical Competency in the Zoom World of the COVID-19 Pandemic

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D4 Urgent Care clinic rotation at New York University College of Dentistry provides students with a total immersion experience in the delivery of proper emergency dental care within an urgent care clinic setting. The students provide care for patients who are experiencing the chief complaints of traumatic injury: pain, swelling, bleeding and/or adverse oral conditions. The goal of the student's rotation is presenting them with the diagnostic rationale and the clinical management techniques that are appropriate for the optimal intervention in alleviating the emergent problem.

Proper attention from calibrated urgent care faculty ensures that each student finishes their rotation with a level of knowledge that is demonstrated in both the successful completion of a summative written competency, a two cased-based Objective Structured Clinical Examination (OSCE), and the summative Clinical Competency with an actual presenting urgent care clinic patient.

Competency-based dental education was first introduced by Chambers in 1993.¹ It is currently defined by the American Dental Association Commission on Dental Accreditation Definition of Terms Used in the Standards as "the achievement of a predetermined level of special knowledge and skill derived from education, experience and task completion."² According to the American Dental Education Association in their Compendium of Clinical Competency Assessments, "competency includes knowledge, experience, critical thinking and problem-solving skills, professionalism, ethical values, and technical and procedural skills.

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These components become an integrated whole during the delivery of patient care by the competent general dentist."^{3,4}

It is within the domain of the Clinical Competency that the student must exhibit their proficiency in clinical judgment as well as the actual clinical treatment of the patient's journey from "chief complaint" to the appropriate resolution of their urgent care need. It is through this clinical competency that assessment can be made with respect to the student successfully navigating an urgent care encounter to its successful completion and resolution. This successful completion of the clinical competency fully integrates all the objectives set forth in the course syllabus in clinic "real time."

With the advent of the COVID-19 pandemic, and the subsequent hiatus from providing in-person patient care, students were no longer able to demonstrate clinical competency on a live patient. This affected their ability to fulfill their course requirements in a traditional manner in order to qualify for graduation. Through careful and creative strategizing, faculty members recreated the Urgent Care Clinical Competency using a Zoom metric, enabling D4 students to fulfill their requirements.

Preparation for the Simulated Clinical Competency

The goal was to simulate a Clinical Competency exam through a Zoom experience: The objectives would mirror those established in the course syllabus and employed in the competency assessment of those students who completed the Clinical Competency prior to the pandemic. This alternative method consisted of an online oral exam that simulated a clinical experience. Three distinct clinical scenarios were prepared for use. A rubric (Table 1) was carefully fabricated to correspond to the criteria of the existing Clinical Competency formulary that would be utilized in all three of the clinical scenarios.

TABLE 1: Rubric

Name_____ Student ID#_____

D4 URGENT CARE ORAL CLINICAL COMPETENCY RUBRIC	C	NC
Anxiety and patient management accurately described by the student		
Accurate identification of the patient's subjective input		
Explanation the patient's full medical history and its pertinent indications		
Evaluation of vitals, and what would indicate or necessitate an external medical consult		

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ERX: explanation of current medications and their indications and/or side effects, oral manifestations, as pertinent to the case		
Proper assessment of medical contraindications or indications for an external medical consultation		
Ability to list differential diagnoses		
Identify which diagnostic radiographs are indicated for the definitive diagnosis to be made		
Identify the proper objective diagnostic tests to be conducted for an accurate clinical diagnosis to be made		
Accurate definitive diagnosis must be established		
Identify the correct, indicated clinical treatment		
Successful choice of which local anesthetic, and where anatomically to administer local anesthetic; what action to be taken if profound anesthesia is not attained		
Description of the clinical treatment in its correct sequence with proper use of instruments for said treatment (ie: which forceps, rubber dam and choice of clamp; use of CaOH, antibiotic needed?)		
Student provides correct and full post-operative instructions		
Provides evidence of their post-operative chart notation/progress notes as to verbally explain what they would write		
Proper prescription, and its format to be indicated if one is needed		
Student must indicate verbally that they are giving the patient a comprehensive care appointment and/or follow up appointment with themselves as the primary provider in their general clinic		
FINAL GRADE		

The virtual Clinical Competency rubric incorporated the same criteria for competency and critical errors as those applied to the in-person Clinical Competency. In creating the assessment scenarios, each clinical case

contained a medical history with a component relating to anxiety either evident through listed medications or a medical condition. This was important to include as anxiety, and its subsequent patient management, are significant components of the successful treatment of the urgent care patient. Medical history and medication listings varied upon case scenarios used, and included medication allergies, medical complications, systemic conditions, and vital signs.

These factors helped to simulate various patient presentations that would be encountered in the actual clinical setting. Students did not have the rubric available to them to avoid having knowledge of their virtual "clinical" expectation. A faculty script was prepared for each scenario, with structured guidance for acceptable student responses. A PDF student view was made for each clinical scenario. All Zoom sessions were recorded.

Each participating faculty member was provided with a virtual clinical case in the form of a calibrated "script," along with its corresponding rubric and the PDF "student view" of the case. All predetermined calibrated responses were provided in the faculty script for every line item of the rubric. The expectation was that the student's "competent response" would align with the one listed in the faculty script. Multiple scenarios were practiced if the student did not address a particular line item of the rubric as they progressed through the case. The faculty was advised of ways to reintroduce that concept and tactfully ask the participating student how they would address that particular element, without compromising the ongoing assessment. (Table 2)

TABLE 2. Script

Faculty: Ways to Reintroduce a Missed Rubric Item by Student

- How would you manage an anxious patient?
- Is there anything that needs consideration in the patient’s medical history?
- Can you provide your evaluation of vital signs?
- Can you provide explanation of current medications and their indications?
- Can you give an assessment of contraindications or indications for a medical consultation?
- Are radiographs indicated or missing for a definitive diagnosis to be made?
- Let’s discuss objective diagnostic testing for this case; how would you proceed?
- What would be on the list of possible differential diagnoses?
- What is the definitive diagnosis?
- What is the correct indicated treatment?
- Can you describe and correctly report and then successfully complete the correct treatment in a step-by-step fashion (ie: For extraction which forceps? For Endodontics: Rubber dam and choice of clamp; is use of calcium hydroxide, antibiotic needed?)
- What is your choice of local anesthetic, and where do you anatomically administer the local anesthetic; what would they do if profound anesthesia is not attained?
- Can you provide correct and full post-operative instructions?
-

Can you indicate the patient's next step after urgent care treatment? (Giving the patient a comprehensive care appointment as their primary provider in their general clinic is what is sought as a response)

The faculty attended multiple practice sessions together on Zoom to become familiar with the techniques to accomplish this goal and ensure their calibration. Practice sessions continued until all participating faculty were comfortable going forward to begin testing the students.

Students were emailed a description of the planned virtual Clinical Competency process. They were asked to prepare as if they were completing an in-person urgent care patient encounter. Students were advised to have paper and a pencil or pen to aid with the task. They were made aware that they would be "working through" a case scenario presented to them virtually. Students were appointed an hour of time for the Zoom virtual Clinical Competency.

The Simulated Clinical Competency

The faculty waited for the student to join their assigned Zoom session with a printed rubric form filled out with the student's name and NYU identification number. The faculty made certain also to have their printed PDF version of their "faculty script" for the clinical case being presented. The PDF version of the student view of the same clinical case was placed in a shared screen mode.

The faculty followed their provided script to ensure calibration throughout the assessment process. Any critical error would signify that the student did not pass the competency. Under those circumstances, a different competency would be rescheduled and administered.

The students entered the assigned Zoom session with a PDF "student view" of the virtual case on the screen shared with the faculty. The patient's chief complaint, medical history, vital signs, and a radiograph were provided on the screen. The student was asked how they would plan to proceed. They were advised to think as though the "virtual" patient was actually sitting in the dental chair for treatment. They were told to proceed in a methodical and sequential approach as if in the clinical setting. Note that the student view had no information regarding any objective diagnostic testing. Objective diagnostic tests such as Endo-Ice[®], electric pulp test, percussion and palpation sensitivities were to be requested by the student for purposes of achieving a correct diagnostic endpoint. Students were expected to assess if and what additional radiographs were needed. The faculty script had the predetermined answers for all relevant diagnostic-testing results as per each case scenario. If the student did not address a particular line item on the rubric as they progressed through the case, the faculty would return to the item and politely ask how they would address that particular element without compromising the assessment. Students who had a critical error such as, but not limited to, an inability to arrive at a proper differential or definitive diagnosis to dictate the proper treatment option or to adequately move forward, were deemed unable to pass the competency, and the assessment stopped at that point.

Discussion

The administration of this virtual Clinic Competency enabled students to demonstrate their ability to meet the objectives outlined in the established rubric. The students were able to exhibit their skills to recognize, diagnose, and discuss the appropriate clinical intervention to "most adequately address" the proper diagnosis of the patient presented in their clinical scenario. The faculty-student interaction in this virtual assessment was successful in mirroring the interaction that would have occurred in a live patient competency setting.

Of the 73 virtual assessments administered, four students had a critical error and needed to repeat the assessment. All students were successful in attaining competency on the administration of a second clinical scenario. Different learning styles may have had an impact on the students' performance of a virtual exam.⁵ Further study and modifications of our initial endeavor may prove this type of assessment to have a constructive role within the teaching framework by expanding our ability to establish another methodology for case presentation and student assessment.⁶ The pandemic served to highlight the need for a more diverse range of assessment techniques.

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