

# Oral cavity examination: beyond the core curriculum?

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## Abstract

There has been little improvement in the survival of patients with oral cancer despite advances in treatment, and late presentation of the disease is one reason for this poor outcome. Research and experience tell us that tuition in medical schools about examination of the oral cavity is poor. We aimed to ascertain the opinions and experience of students regarding this in our institution by dissemination of a web-based anonymous questionnaire that focused on education about examination of the oral cavity and experience in carrying it out. From a cohort of 600 students 458 (76%) responded. A total of 334 (73%) had not been taught how to examine the oral cavity, 372 (81%) had had no experience of doing so in patients, and only 13/86 (15%) felt confident to diagnose a carcinoma of the lip or oral cavity. Eighty-nine percent felt that the tuition given had not been adequate. Examination of the oral cavity cannot be considered part of the core clinical curriculum, and medical schools and departments of oral and maxillofacial surgery urgently need to embrace the introduction of the necessary skills.

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## Introduction

Oral cancer is the sixth most common cancer worldwide.<sup>1,2</sup> Subtypes and anatomical sites of oral cancers vary, but the most prevalent malignancy of the oral cavity is squamous cell carcinoma.<sup>3</sup> Mortality from oral cancers remains unaffected despite recent therapeutic advances,<sup>4</sup> and almost half of those diagnosed are advanced (stages III or IV), with 5-year survival ranging from 20% to 50%.<sup>4–6</sup> Early detection and a reduction in diagnostic delay are key to improving survival, but this requires clinicians to be knowledgeable and to be equipped with the necessary clinical skills.<sup>7</sup>

Examination of the oral cavity is not routinely taught in medical schools, and research shows that medical graduates are less likely to identify and treat a number of oral or

dental conditions than dental graduates.<sup>8,9</sup> Also, the General Medical Council's document entitled "Tomorrow's Doctors" makes no specific mention of the skills and core knowledge required for examining the oral cavity, yet medical undergraduates should be competent and able to carry out a full physical examination.<sup>10</sup>

The oral cavity is easily accessible and easy to examine with the use of basic equipment – a torch, and in some cases, a dental mirror. It is also minimally invasive unlike gynaecological or digital rectal examination, both of which are intimate.

It has been reported that neither doctors nor medical students are adequately educated about oral diseases, and have a poor awareness regarding oral cancer.<sup>8,9</sup> There are few opportunities for postgraduates to learn to examine the oral cavity, so highlighting the need for education and experience at undergraduate level forms the basis for future diagnosis. For too long diseases have been attached to specialties and subsequently have been given limited attention in medical curricula.

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Table 1  
Clinical rotations where students were taught about and experienced examining the oral cavity.

Rotation	No (%) of students (n = 124)
ENT	41 (33)
General medicine/other	30 (24)
General medicine/gastroenterology	22 (18)
General practice	10 (8)
General surgery	10 (8)
Emergency medicine	6 (5)
Oral and maxillofacial surgery	5 (4)

## Method

A web-based anonymous questionnaire (published online) about the experience of medical students was disseminated in a single institution. It focused on education about examination of the oral cavity and experience in carrying it out, the specialties entrusted to teach these skills, and the confidence of students to diagnose conditions of the oral cavity, and to identify what was normal. The questionnaire was based on the digital rectal examination questionnaire used by Fitzgerald et al. in 2007.<sup>11</sup>

The only information collected on participants was their sex.

## Results

Questionnaires were completed by 458 (76%) of a cohort of 600 students (186 (41%) male, and 272 (59%) female). A total of 124 students (27%) reported that they had been taught how to examine the oral cavity, while 334 (73%) had not.

Eighty-six students (19%) had examined the oral cavity in a patient, and three had also done the examination on a mannequin. Of those who had examined patients 16 (19%) had been fully supervised, 34 (40%) had been supervised sometimes, and 36 (42%) had never been supervised. The mean number of examinations was 7.2 (range 1–50, median 4).

A total of 372 (81%) respondents reported having had no experience of examining the oral cavity in patients, and 67% of respondents reported that this was because it was not included in the course curriculum.

The clinical settings that offer teaching and experience in examination of the oral cavity are shown in Table 1. The confidence of students to identify diseases of the oral cavity varied and is shown in Table 2.

A total of 407 (89%) respondents reported that they did not think that training in examination of the oral cavity was adequate.

## Discussion

The findings that 73% of students had not been trained to examine the oral cavity and that 89% thought that the training

Table 2  
Oral diseases that students were confident to identify.

Disease	No (%) of students (n = 86)
Dental caries	20 (23)
Oral manifestation of gastrointestinal disease	18 (21)
Cancer of the lip or oral cavity	13 (15)
Dental abscess	8 (9)
Normal variants of oral anatomy	7 (8)
Oral mucosal abnormality	6 (7)
Oral manifestation of haematological disease	6 (7)
Oral manifestation of facial trauma	5 (6)
Oral manifestation of dermatological disease	3 (4)

was not adequate had been anticipated as it is taught in few medical schools.<sup>8</sup> Topographic anatomy of the head and neck is taught within medical degrees but it is often done in the early years of the course when students are not equipped to appreciate the true importance of oral disease.

Nineteen percent of students stated that they had examined the oral cavity in a patient. Their clinical experiences were predominantly gained from ear, nose, and throat (ENT) departments and general medical wards. Exposure in these areas is not surprising given that a large number of ENT consultations involve examining the oral anatomy, and a number of units operate on and care for patients with head and neck cancer.

Medical students are commonly based on general medical wards that accommodate large numbers of patients with a wide range of common illnesses and diseases. Students are taught that it is best practice to examine the oral cavity when examining the gastrointestinal system, particularly when looking for evidence of Crohn's disease, stigmata of chronic liver disease, oral candidiasis, and signs of dental caries. Perhaps one of the most noteworthy findings of this study is that only 4% of the students who had examined a patient had done so in the specialised environment of oral and maxillofacial surgery. A possible explanation for this is that it is uncommon for undergraduate students to be attached to such departments unless they are on a specialised placement.

Studies have also shown that undergraduate students have gaps in their knowledge about the risk factors for oral cancer, preventative measures, and signs associated with early forms of oral malignancy,<sup>2,12,13</sup> and only 15% of students who had examined patients felt that they could correctly identify lip or oral cancer. It is important to point out, however, that this information is self-reported and subjective, and the students' knowledge and skills have not been tested under examination conditions. If their diagnostic skills were tested objectively the result might prove to be worse.

In our institution, the National University of Ireland, Galway, a student-selected component in oral and maxillofacial surgery has been introduced in the first year of the curriculum. The learning outcomes of the programme provide opportunities for students to examine the oral cavity in the

presence of an oral and maxillofacial surgeon, and they gain experience in the identification and diagnosis of primary oral conditions as well as oral manifestations of systemic disease.

Information and skills taught in medical school during pre-clinical and clinical years are critical in affecting the practice of qualified doctors. Tuition that enables undergraduates to become familiar with common oral diseases as well as a normal mouth, could dramatically improve diagnostic capability. Sourcing and using opportunities for clinical teaching in specialist attachments in oral and maxillofacial surgery, ENT, and plastic surgery could also be beneficial as long as the specialties collaborate to provide students with the opportunities to examine patients and be assessed. Many other specialties' associations already have guidelines for undergraduate medical education (genitourinary, radiology, dermatology, and anatomy), and an undergraduate curriculum in dental, and head and neck specialties is now required in UK medical schools.

### Conflict of interest

None of the authors declare any conflict of interest.

### Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at [doi:10.1016/j.bjoms.2010.10.021](https://doi.org/10.1016/j.bjoms.2010.10.021).

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