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New types of exams for medical students mean better and more valid testing of knowledge and clinical skills

A better exam

The exam is a necessary part of a medical education. The exam is intended to ensure that the students possess sufficient knowledge and skills to work as doctors. At the same time, the exam governs the students' study behaviour: They give priority to knowledge and skills that they know may be included in the exam. For the teachers, exam performance provides ideas for improvements in teaching.

For many years, two types of exams have been used in medical schools in most countries: the written test during which the students must give an account of one or several subjects, and the clinical test, involving clinical examination of a patient and an oral interview. Such types of exams have many weaknesses, for example, they cover only a small section of the academic field (low validity), the grading is characterised by arbitrariness and uncertainty (low reliability) and the implementation requires a lot of time and resources (1).

During the last decades, exams with multiple-choice questions have been introduced in medical schools and by certifying authorities in many countries (2, 3), including Norway (4). Multiple-choice questions mean that the student is asked to tick one (or more) of a number of correct response alternatives to a given question. Such questions result in better validity for the exam as a whole and better reliability in the grading, and allow for testing of many students with a reasonable expenditure of time and resources. On the other hand, such questions may be difficult to formulate and they encourage superficial learning and reproduction of knowledge rather than reflection, in-depth understanding and skills enhancement (2). Use of true/false statements is a variant of multiple choice questions, with only two response alternatives. Short-answer questions are also used. These are harder to grade and require procedures to ensure optimally reliable scores (2).

As important as possessing knowledge, the students must be able to apply this knowledge in clinical situations, perform practical procedures and communicate with patients. Such skills cannot be tested in a written test. In the late 1970s, two British experts in medical education developed a new type of exam called Objective, Structured Clinical Exams (OSCE) (5). Here the students are presented with various clinical and practical assignments that must be solved within a specified number of minutes. The quality of the candidate's performance is given a score by an evaluator on the basis of a pre-defined scoring template. The scoring variations between various teachers are thereby minimized. The assignments are presented in a series of «stations» of 5–15 minutes' duration, which all students must complete. In other words, the students are presented with identical assignments. In addition, the requirements for a passing grade are more evident and better defined. There is no «truth» about what constitute the «correct» requirements for a passing grade – the essence is that the basis for the evaluation is as valid as possible (2). In practice, the grading will be based on academic and relevant discretionary judgment (2, 6).

Station exams in various forms are currently being used in an increasing number of medical schools around the world. The OSCE has some limitations and can be modified or supplemented with other types of exam (2, 7). At the University of Oslo, station exams are currently held in several terms as a combination of skills stations («genuine OSCE stations») and written knowledge stations (7). This requires far less time and resources than the traditional clinical exams with a patient and a traditional written exam. Even though the logistics are complicated, they are feasible. Clinical exams with «genuine» patients still have their place, but are only justifiable in large, clinical disciplines such as internal medicine, surgery and general practice.

For over a decade, only one-third of the Oslo medical student cohorts were examined in dermatology and venereology. This was a traditional clinical exam with a patient and oral questioning. A decreasing performance level among the 30 students who were called up for the exam gave rise to the suspicion that many students gambled on not being called up until a few days before the exam should take place. Consequently, station exams were introduced so that all students could be tested. With the aid of actors as «patients», photographs of rashes and skin lesions, written knowledge stations and a limited number of teachers, more than 100 students are now completing this exam in a single day. To date, our experience is positive.

New types of medical exams have resulted in students being tested in larger sections of medical science and in important clinical skills, and have made the grading more objective and consistent. Use of station exams provides an opportunity to test many students in a short period of time with limited teaching resources. Thereby, the exam fulfils a key function – the students take the discipline seriously.

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