

The award of CHF 50'000.-- is granted to the following project:

**Student-centred learning with near-peer tutoring compared with a standard faculty-led course for undergraduate training in abdominal ultrasound (the SIGNATURE trial).
A multicentre open-label randomized controlled trial**

Principal investigator:

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Abstract

Background:

Ultrasound has become a bedside tool and clinical skill widely used in general internal medicine, primary care and other settings. Medical graduates first encounter it in early residency, so clinicians and programme directors agree that ultrasound training should become integrated into the undergraduate curriculum. Institutions are changing their curricula accordingly, often supplementing traditional teaching with 'near-peer' tutoring through classes held by advanced peers. Near-peer tutoring has been found to be both effective and cost-effective. Ultrasound education is lagging behind in Switzerland, where we have no consistent ultrasound training for medical students. The most popular course in postgraduate training is a resource-intensive 21-hour basic course for abdominal ultrasound. However, this is expensive, offers very limited placements and may not be the best way to impart these skills to undergraduates, who need training more adapted to their needs.

We therefore developed a 21-hour blended-learning ultrasound course, comprising 5 hours of e-learning and 16 hours of near-peer tutoring. Students and their near-peer tutors autonomously organize individual practical teaching sessions within a three-month time period. Enrolment started in January 2019. We want to determine whether our curriculum is as good as, or better than the existing 21-hour course. We also want to better understand how to achieve effective student-centred learning supported by near-peer tutoring.

Aim:

To compare a new 21-hour blended-learning ultrasound course (5 hours of e-learning and 16 hours of near-peer tutoring) with the standard 21-hour faculty-led basic ultrasound course.

Hypothesis:

Our hypothesis is that, 6 months after finishing the course, students from the blended learning group will perform better than students that took part in a standard basic abdominal ultrasound course.

Outcome measures:

Primary outcome measure: students' ultrasound skills measured by a five-station OSCE six months after the end of courses.

Secondary outcome measures: students' ultrasound skills immediately after the courses; number of optional post-course additional training hours undertaken; association between this and retention of ultrasound skills; student satisfaction.

Design:

A multicentre, open-label randomized controlled trial.

Methods:

We will include 144 medical students at the Universities of Bern, Fribourg and Zurich. Stratified by study site, students will be randomized to one of the two interventions. The blended-learning group will receive e-learning and nearpeer tutoring over three months; the other group will receive 21 hours of teaching, from ultrasound experts, in a 2.5-day course. Students will provide data on demographics, previous ultrasound experience and overall satisfaction with the course via a survey.

Relevance of the project:

If the new blended-learning course is demonstrated to be as good as, or better than, the existing standard course, capacity to offer such courses to undergraduate medical students could quickly be expanded. This would eventually allow undergraduate Swiss medical students to acquire ultrasound skills before starting their residencies.

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