



MEETING REPORT –

3rd International Meeting on Teaching Epidemiology, 11 & 12 January 2023

The pandemic has had a major impact on our private and professional lives over the past 2.5 years. Epidemiologists, but especially epidemiology as a scientific discipline, have moved into the spotlight of media, society and politics, and have received more public attention than ever before. For our project “Teaching Epidemiology” and our carefully defined 31 core competencies (CCs), the closure of the universities and colleges was an endurance test (how do we keep our students motivated online and how do we effectively teach core competencies online. The pandemic highlighted – it was a stress test for us and the 31 CCs. Amongst the organizational team of the 3rd Epiteaching meeting, we conducted a small survey, asking where epidemiologists tended to fail and which of the 31 CCs need to be strengthened in future curriculum development efforts to fill these skill gaps.

The top 4 CCs that have emerged are:

- A1: Competency to engage with stakeholders and the public to identify relevant health needs from their perspective,
- G1: Competency to effectively communicate the results of health research to health care professionals, lay public and various media and thus contribute to debates concerning health and health care,
- H1: Competency to translate current evidence and knowledge to public health and health care and to appraise and guide health related questions in society from a population perspective,
- Overarching CC 1: Competency to prepare, obtain and manage successful grant proposals, including all scientific and administrative steps needed for submission.

These were the starting point of our discussions and workshops.

Workshop 1 - Focussing on the 4 chosen CCs that fell short in regard to teaching during the pandemic

CC A1 (Competency to engage with stakeholders and the public to identify relevant health needs from their perspective)

We tackled CC A1, stakeholder engagement, in three parts: (methodologies for) 1. stakeholder identification; 2. stakeholder engagement (once identified); 3. identification of needs (once engaged). Under point 1, we mentioned brainstorming, leverage of existing networks, snowballing methods, desk research focusing on NGOs as well as GOs. Specific groups mentioned were: patients, the general public (vulnerable and minority groups), clinicians, insurers, politicians, industry and researchers, or organizations representing these groups. The research topic at hand largely determines the pertinent groups. Under point 2, we mentioned using existing guidance (INVOLVE (UK); PCORI (US); ZonMw (NL)), work through community leaders followed by meetings, use of social and lay media, discussing the choice of the most relevant (patient-oriented) outcomes of research, building existing networks more structurally, and simply calling up people. Under point 3, we emphasized the avoidance of tokenism and jargon, the importance of asking (open) questions, active listening, an attitude of equality and collaboration, co-learning (bi-directional) and accountability towards stakeholders, looking beyond health and into wider socio-economic needs, having a short and longer term perspective on needs, intervention- and outcome mapping, and finally, public health campaigns to raise awareness about potential needs.



CC G1 (Competency to effectively communicate the results of health research to health care professionals, lay public and various media and thus contribute to debates concerning health and health care)

There was a great deal of variability in how group members defined the competency articulated in G1 and the underlying skills. Effective communication was described as the ability to speak to people from varied backgrounds, channel different perspectives, tailor messages and language for different audiences and utilize the most appropriate communication medium for the situation. The role we should play in contributing to public discourse around health topics was described as clarifying scientific results, communicating uncertainty, adding to the literature, explaining nuance, tackling misinformation, and putting relevant evidence into context. Workshop attendees mentioned skills that ranged from facility with data visualizations, media skills, listening skills, stakeholder engagement, code switching, writing skills, speaking skills and debating skills. However, there was also recognition that some communication tasks should be delegated and may go beyond what can be trained in an epidemiology doctoral program. Coaching communication skills was felt to require both coursework and opportunities for practical application. Courses could be offered on communication theory, data visualizations and persuasive writing. Oral communication skill development could be honed using simulations and role-playing, with actors used to represent journalists or lay individuals in the community and feedback could be provided on non-verbal communication, audience engagement, cultural awareness, and other key communication elements. Partnering with communication specialists at institutions or in private industry could result in workshop formats that help students gain practical experience in a safe environment.

CC H1 (Competency to translate current evidence and knowledge into public health and health care and to appraise and guide health-related questions in society from a population perspective)

The wording of the core competency brought up diverse interpretations in the group and we rephrased the CC to 'competency to translate current evidence into actions within public health and health care and to critically appraise evidence of health related issues in society'. Underlying skills needed for this CC included communication, collaboration, negotiation, decision making, critical thinking, cultural sensitivity, but also the ability to map stakeholders, and participatory and interdisciplinary work. Minimum level of proficiency is to have the awareness of what the next steps could be after publishing scientific results and a laymen summary or presentation could be the basic attempt. Supervisors in PhD trajectories should also be aware of this CC to provide enough opportunities to work on skills needed. Many examples have been shared about how to teach/coach this CC. Mock sessions and exposure to the real world outside the university was mentioned as very important, starting with presentations to other (PhD) students from other disciplines and parents and grandparents to actors and real policy persons or other stakeholders. Amongst others courses in soft skills such as storytelling, negotiation, leadership, conflict resolution were mentioned as well as writing a mock advisory letter to the government about health policy issues, a UN meeting simulation, and reviewing TV interviews with epidemiologists during the pandemic.

Overarching CC1 (Competency to prepare, obtain and manage successful grant proposals, including all scientific and administrative steps needed for submission)

The acquisition of competencies to obtain and manage grants requires a blend of methodological and personal skills that are not easily teachable in classroom environments. Specifically, the skill set should include methodological skills (e.g., literature review, writing), communication skills, financial management skills, knowledge of ethical and legal frameworks, as well as interpersonal skills such as teamwork skills. It is a known fact that researchers mostly communicate about successes but not the much more prevalent failures, which can lead to skewed images of funding and grant writing realities. Therefore, it is important to convey a realistic image of funding acquisition, to which dealing with rejections and frustrations are integral. Further critical skills



involve an understanding of the mechanistic processes of funding calls and proposal evaluation, which will help PhDs to place themselves in the evaluator's shoes and to adjust their proposals accordingly. There was broad agreement that the majority of those skills should ideally be acquired through practical experience, mentoring and peer support, as well as learning from successes and failures. These learning processes could be enhanced by creating an atmosphere of honest, constructive feedback among peers and faculties that also includes open discussions about strategies for dealing with funding failures. Furthermore, PhD students and early postdocs could be encouraged to apply for "mini grants" (e.g. for conference travel or short research stays) or career grants.

Workshop 2 - Focussing on innovative teaching formats (of all 31 CCs)

We started the day with an inspirational talk by Dr. Ingrid le Duc from École Polytechnique Fédérale de Lausanne. She showed the evidence base for the effectiveness of different teaching formats to achieve learning goals. Key messages included setting clear learning goals, using different active inquiry learning formats (like flipped classroom, think pair share, peer instruction, jig saw etc), giving and receiving feedback on teaching and clear explanations. The full slide set is available to all meeting participants and on the UZH Epidemiology, Biostatistics and Prevention Institute website. In the workshop, four groups shared experiences with innovative teaching formats. One group emphasized that one format does not fit all since individuals have different learning styles which needs to be considered for single courses but also for entire curricula. Practice-based formats were favored by several groups. Examples include making videos by students rather than faculty on certain study designs or methodological aspects as a basis for in class discussions, courses where students plan, conduct and analyze studies, short quizzes and games (e.g. escape rooms, or outbreak & control simulations). Active learning courses also facilitate that many if not all core competencies can be covered since these courses often connect different parts of the life cycle of studies and since communication, coordination and some leadership aspects are naturally covered if students work together. With practice-based and active learning courses the role of the faculty and teaching assistants may change considerably since they facilitate things and coach students as compared to the more classic teaching role.