

# Is healthcare a team sport? Widening our lens on interprofessional collaboration and education in sport and exercise medicine

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## ABSTRACT

Effective interprofessional collaboration (IPC) has great potential to improve healthcare delivery. Therefore, students and trainees in healthcare professions should be prepared for a collaborative workforce through interprofessional education (IPE) settings. However, IPC and IPE are rarely addressed in sport and exercise medicine (SEM), although the field significantly impacts the healthcare system. Hence, we conducted a webinar to promote IPC and IPE in the Swiss SEM community. The lessons resulting from the webinar were: (1) professions involved in SEM should have opportunities to learn, with, from and about other professions in healthcare to achieve mutual respect and understanding; (2) IPC and IPE in SEM may raise awareness, value and recognition of the contributions by exercise scientists in healthcare; (3) IPC and IPE may consider collaborating with a variety of professions not traditionally integrated into healthcare but involved in broader public health and physical activity promotion. In summary, sports and exercise professions should embrace interprofessional approaches to better realise their contribution to healthcare and public health.

## INTRODUCTION TO INTERPROFESSIONAL COLLABORATION AND EDUCATION

Interprofessional collaboration (IPC) occurs when 'multiple health workers from different professional backgrounds work together with patients, families, carers (caregivers) and communities to deliver the highest quality of care'.<sup>1</sup> IPC in healthcare is seen as a promising means to address key challenges of healthcare systems, for example, demographic change, multimorbidity, cost explosion and workforce shortage. According to the Quadruple Aim, reflecting four dimensions to enhance healthcare system performance, IPC may help improve patient care experiences, population health, work-life balance of healthcare providers and reduce costs.<sup>2,3</sup> Healthcare systems are therefore pushed to change the predominantly existing practice of multi-professional and siloed care towards an IPC

## Key messages

### What is already known on this topic

- ⇒ Healthcare systems are forced to change existing siloed multiprofessional models towards interprofessional collaboration (IPC) to provide optimal patient care.
- ⇒ Future healthcare workers should be equipped with interprofessional competencies acquired in interprofessional education (IPE) settings.
- ⇒ Sport and exercise medicine (SEM) play vital roles in health promotion and the prevention and treatment of various chronic diseases.

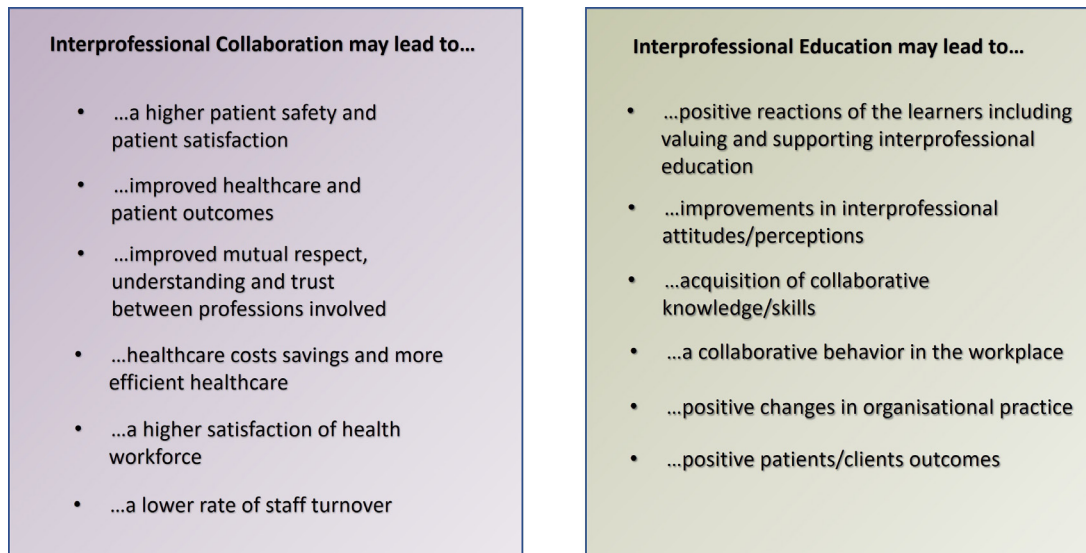
### What this study adds

- ⇒ Students and professionals in SEM can make important contributions to IPE and IPC.
- ⇒ IPE and IPC can improve recognition of SEM professionals in healthcare systems.
- ⇒ SEM professionals should collaborate with and learn from specialists not traditionally involved in healthcare, such as urban architects, to make societies more physically active and eventually healthier.

model.<sup>1,4</sup> To be collaborative-ready, competencies for interprofessional education (IPE) have been identified to prepare healthcare workers to collaborate across professional boundaries in integrated care models.<sup>1,5-7</sup> Therefore, it is vital to implement IPE as early as possible in the respective curriculum as a prerequisite for collaboration out in practice.<sup>1,6,8</sup> These competencies define IPE as 'when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes'.<sup>1</sup> Figure 1 summarises postulated effects of IPC and IPE.<sup>1,3,5,6</sup>

## INTERPROFESSIONAL COLLABORATION AND EDUCATION IN SPORTS AND EXERCISE MEDICINE

IPE and IPC are gaining increasing attention worldwide,<sup>9</sup> resulting in new forms of collaboration in healthcare practice or education



**Figure 1** An overview of postulated effects of interprofessional collaboration and education.<sup>1 3 5 6</sup>

formats. This is reflected by a substantial increase in IPC/IPE-related articles in the literature.<sup>10</sup> Although IPE and IPC might be enriching components in the fields of sport and exercise medicine (SEM), this area of healthcare is only sparsely addressed in the literature mentioned above.<sup>11–13</sup> This is somewhat surprising, as the field of SEM has significant importance in global population health.<sup>14–17</sup> Physical inactivity is one of the most significant risk factors for worldwide (premature) mortality,<sup>18</sup> along with smoking, elevated glycaemia and arterial hypertension.<sup>15</sup> Additionally, physical activity delivery (ie, the ‘exercise is medicine’ concept)<sup>16</sup> reduces the risk of premature death and the occurrence of a variety of chronic non-communicable diseases. It can be used as an efficient means to treat these diseases.<sup>14 17</sup>

### A CALL FOR INTERPROFESSIONAL COLLABORATION AND EDUCATION IN SPORT AND EXERCISE MEDICINE

The field of SEM should be integrated within IPC and IPE projects. In an international survey, a high level of SEM professionals indicated a readiness and willingness to embrace IPC and IPE. However, their perception of practice reflects a different reality, where healthcare systems do not fully support IPC.<sup>13</sup> In Switzerland specifically, there is only a limited number of ongoing IPC projects, and SEM is not often included in national frameworks or strategies to implement IPC/IPE.

Therefore, we wanted to draw attention to this topic and question how to promote IPC and IPE in the Swiss SEM community. To achieve this, we conducted a webinar titled ‘Is Healthcare a Team Sport? Widening our Lens on Interprofessional Collaboration and Education in Sports Science and Exercise Medicine’, which received support from the Swiss Society of Sports Science.<sup>19</sup> To dovetail experiences from other countries with framing conditions and structures in Switzerland, we integrated American and Australian perspectives in this webinar. The authors of this paper jointly planned, implemented and provided

input to the webinar. This viewpoint presents key aspects from these inputs and the subsequent discussion with the webinar participants. To provide insights and recommendations for action to the whole SEM community, we complemented these key aspects by recent literature.

### Fostering interprofessional approaches in SEM

Generally, it is recommended to include interprofessional activities both in practice and in education. Professions should have opportunities to learn with, from and about other professions involved in healthcare with a focus on SEM. There are several learning experiences described for IPE<sup>20</sup> that could be transferred to interprofessional learnings in SEM, such as simulations, patient-centred case studies, problem-based approaches, topic-led workshops or health promotion activities.<sup>13 21–23</sup> As a prerequisite, various educational institutions (eg, medical faculties, sports science institutes, schools for health professions) need to collaborate and provide time, space and resources to plan and conduct IPE projects. The overarching goals are to generate mutual respect, an understanding of each profession’s roles and responsibilities, and eventually to recognise that IPC is a significant means for optimising patient care and advancing physical activity promotion.<sup>21–24</sup> These experiences and perceptions promoted by IPE should increase students’ awareness of IPC once they are professionally active. More concisely, in the practice of SEM healthcare, IPC could be supported by initiating and building relationships with other professions, regular interprofessional communications, interprofessional case reports or shared medical records.<sup>21–23</sup> Here, as a prerequisite, institutions, especially leadership and management levels, need to commit to IPC and provide time and space for interprofessional meetings and exchange possibilities.<sup>5 25</sup>

### Strengthening roles and responsibilities of exercise science professionals

Another point addressed in the webinar was that the work done by exercise science professionals should be

better acknowledged. Various professions (eg, physicians, physiotherapists, nurses, dietitians, biomedical scientists) are involved in SEM, and besides these, exercise sciences professionals play a vital role in this community (eg, physical activity promotion, prevention, therapy or rehabilitation). Thus, exercise science professionals should be recognised as part of the interprofessional SEM healthcare team.<sup>11 13 26</sup> To achieve this, policy and health insurances should recognise and support exercise professionals as healthcare providers. In contrast to Switzerland, more accredited exercise physiologists (AEPs) are professionally involved in the Australian healthcare system.<sup>27</sup> These AEPs often work in collaboration with physicians, physiotherapists and other allied health professionals, are recognised as healthcare providers, a professional organisation represents their interests and the services they deliver are covered by health insurance.<sup>28</sup>

This leads to more than half of the trained exercise scientists (58%) work in the Australian healthcare system. In comparison, less than 5% of their Swiss counterparts are involved in the Swiss healthcare system.<sup>27</sup> Interestingly, AEPs' practice has a clear and positive financial impact on the Australian healthcare system.<sup>29</sup> It therefore makes sense to transfer existing knowledge from already established AEP programmes (Australia, USA, South Africa, Canada, UK) to further countries.<sup>28</sup> Similarly, in the USA, athletic trainers (AT) as allied health professionals (sport and exercise professionals) are seen as a vital part of the SEM healthcare team. ATs are involved in various roles and responsibilities, such as prevention, emergency care, clinical diagnosis, therapeutic interventions and rehabilitation of injuries and medical conditions.<sup>30</sup> IPE is a mandatory part of AT Master's Degree programme, and there is a high level of attention on IPC in ATs in practice.<sup>22–24 26 30</sup> Including exercise science students, trainees or practitioners in IPE and IPC will help introduce their roles and responsibilities to other healthcare professions and raising the value of their work in healthcare. It is recommended that national sports science organisations and boards reflect on how to implement IPE in their respective curricula. In this regard, it may be beneficial for national sports science organisations to collaborate with existing national boards already focusing on IPE to gain awareness in the interprofessional community and on political-strategic levels. Here, insights and proceedings from Australia and the USA could be helpful to better implement IPE and IPC in countries like Switzerland.

### Interprofessional approaches under the umbrella of public health

Finally, we encourage stakeholders to widen our lens beyond healthcare when discussing IPC and IPE. When providing optimal conditions for achieving healthier lifestyles in all population groups, we should consider the collaboration of various additional professions.<sup>31</sup> Promoting physical activity under the umbrella of public health is a multifaceted approach including medical,

personal, psychological, social, cultural and environmental factors.<sup>32 33</sup> Consequently, there are many more opportunities to work and learn with, from and about all the other professions involved in public health and physical activity promotion. From the interprofessional perspectives outlined above, it is recommended to complement IPC and IPE for sport and exercise professions with other professions integrated into public health, for example, psychologists, urban and landscape architects, ergonomists, social scientists, teachers and educators, sports coaches, politicians and various other professions working in the community. Interprofessional approaches could be facilitators bringing together multiple professions' knowledge, skills and perspectives to create healthier lifestyles for all population groups across settings.

### CONCLUSION

In summary, interprofessional approaches will improve the depth and breadth of education in professions involved in SEM. IPE and IPC should be promoted within the SEM community so that practitioners can better interact with other professions to provide the best care possible to patients eventually. The healthcare perspective should not be limited to traditional healthcare professions but widened to the entire public health sector to include other specialists focusing on physical activity and healthy lifestyle promotion (<https://www.sportwissenschaft.ch/de/Webinars/Webinars-2021/Interprofessional-Collaboration-and-Education>).

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### REFERENCES

- 1 World Health Organization. Framework for action on interprofessional education and collaborative practice, 2010.

- Available: [http://apps.who.int/iris/bitstream/10665/70185/1/WHO\\_HRH\\_HPN\\_10.3\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/70185/1/WHO_HRH_HPN_10.3_eng.pdf) [Accessed 30 Mar 2022].
- 2 Bodenheimer T, Sinsky C. From triple to quadruple aim: care of the patient requires care of the provider. *Ann Fam Med* 2014;12:573–6.
  - 3 Lutfiyya MN, Chang LF, McGrath C, et al. The state of the science of interprofessional collaborative practice: a scoping review of the patient health-related outcomes based literature published between 2010 and 2018. *PLoS One* 2019;14:e0218578.
  - 4 Khalili H, Hall J, DeLuca S. Historical analysis of professionalism in Western societies: implications for interprofessional education and collaborative practice. *J Interprof Care* 2014;28:92–7.
  - 5 Reeves S, Fletcher S, Barr H, et al. A BEME systematic review of the effects of interprofessional education: BEME guide No. 39. *Med Teach* 2016;38:656–68.
  - 6 Spaulding EM, Marvel FA, Jacob E, et al. Interprofessional education and collaboration among healthcare students and professionals: a systematic review and call for action. *J Interprof Care* 2019;35:1–10.
  - 7 Ulrich G, Amstad H, Glardon O, et al. Interprofessional education in the Swiss healthcare system: situation analysis, perspectives and roadmap. *Careum Working Paper* 2020. Available: [www.careum.ch/workingpaper9-long](http://www.careum.ch/workingpaper9-long) [Accessed 30 Mar 2022].
  - 8 Riskiyana R, Claramita M, Rahayu GR. Objectively measured interprofessional education outcome and factors that enhance program effectiveness: a systematic review. *Nurse Educ Today* 2018;66:73–8.
  - 9 Barr H. Interprofessional education: the genesis of a global movement, 2015. Available: <https://www.caipe.org/download/barr-h-2015-interprofessional-education-genesis-global-movement/> [Accessed 30 Mar 2022].
  - 10 Khalili A, Thistlethwaite J, El-Awaisi A, et al. Guidance on Global Interprofessional Education and Collaborative Practice Research: Discussion Paper. A joint publication by InterprofessionalResearch, Global & Interprofessional.Global, 2019. Available: <https://interprofessionalresearch.global/global-ipecp-guidance/> [Accessed 30 Mar 2022].
  - 11 Breitbart AP, Richardson R. Interprofessional education and practice in athletic training. *Athl Train Educ J* 2015;10:170–82.
  - 12 Fletcher S, Breitbart AP, Reeves S. Interprofessional collaboration in sports medicine: findings from a scoping review. *Health & Interprofessional Practice* 2017;3:eP1128.
  - 13 Ulrich G, Breitbart AP. Interprofessional collaboration among sport science and sports medicine professionals: an international cross-sectional survey. *J Interprof Care* 2021;1–11.
  - 14 Bull FC, Al-Ansari SS, Biddle S, et al. World Health organization 2020 guidelines on physical activity and sedentary behaviour. *Br J Sports Med* 2020;54:1451–62.
  - 15 Cummiskey J, Lollgen H, Zupet P, et al. The four “E” pillars of exercise prescription for health: The EFSMA program. *Eur J Sports Med* 2016;4:15–32.
  - 16 Thompson WR, Sallis R, Joy E, et al. Exercise is medicine. *Am J Lifestyle Med* 2020;14:511–23.
  - 17 Warburton DER, Bredin SSD. Health benefits of physical activity: a systematic review of current systematic reviews. *Curr Opin Cardiol* 2017;32:541–56.
  - 18 Nigg CR, Harmon B. The Sedentariness Epidemic - Demographic Considerations. In: Razon S, Sachs ML, eds. *Applied exercise psychology: the challenging journey from motivation to adherence*. New York, NY: Routledge, 2017: 5–14.
  - 19 Ulrich G, Nigg C, Erlacher D, et al. Is healthcare a team sport? widening our lens on interprofessional collaboration and education in sport science and exercise medicine. Available: <https://www.sportwissenschaft.ch/de/Webinars/Webinars-2021/Interprofessional-Collaboration-and-Education> [Accessed 30 Mar 2022].
  - 20 Khan NS, Shahnaz SI, Gomathi KG. Currently available tools and teaching strategies for the interprofessional education of students in health professions: literature review. *Sultan Qaboos Univ Med J* 2016;16:e277–85.
  - 21 Arvinen-Barrow M, Clement D. A preliminary investigation into athletic trainers' views and experiences of a multidisciplinary team approach to sports injury rehabilitation. *Athl Train Sports Health Care* 2015;7:97–107.
  - 22 Manspeaker SA, Hankemeier DA. Challenges to and resources for participation in interprofessional collaborative practice: perceptions of collegiate athletic trainers. *J Athl Train* 2019;54:106–14.
  - 23 Manspeaker SA, Hankemeier DA. Collegiate athletic trainers' perceptions of the benefits and drawbacks of interprofessional collaborative practice. *J Interprof Care* 2019;33:654–60.
  - 24 Kraemer E, Keeley K, Martin M, et al. Athletic trainers' perceptions and experiences with interprofessional practice. *Health, Interprofessional Practice & Education* 2019;3:eP1171.
  - 25 Freeth D, Reeves S. Learning to work together: using the presage, process, product (3p) model to highlight decisions and possibilities. *J Interprof Care* 2004;18:43–56.
  - 26 Breitbart AP. The organic and strategic growth of interprofessionalism in athletic training. *J Interprof Care* 2016;30:138–40.
  - 27 Carrard J, Gut M, Croci I, et al. Exercise science graduates in the healthcare system: a comparison between Australia and Switzerland. *Front Sports Act Living* 2022;4:1–11.
  - 28 Jones H, George KP, Scott A, et al. Charter to establish clinical exercise physiology as a recognised allied health profession in the UK: a call to action. *BMJ Open Sport Exerc Med* 2021;7:e001158.
  - 29 Deloitte Access Economics. The value of accredited exercise physiologists to consumers in Australia, 2016. Available: <https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-value-exercise-physiologists-to-consumers-011216.pdf> [Accessed 30 Mar 2022].
  - 30 Rizzo CS, Breitbart AP, Richardson R. Athletic trainers have a place in interprofessional education and practice. *J Interprof Care* 2015;29:256–7.
  - 31 Thibault GE. Public health education reform in the context of health professions education reform. *Am J Public Health* 2015;105 Suppl 1:S8–10.
  - 32 Haskell WL, Lee I-M, Pate RR, et al. Physical activity and public health: updated recommendation for adults from the American College of sports medicine and the American heart association. *Circulation* 2007;116:1081.
  - 33 Hills AP, Dengel DR, Lubans DR. Supporting public health priorities: recommendations for physical education and physical activity promotion in schools. *Prog Cardiovasc Dis* 2015;57:368–74.