Background: Clinical judgment is no longer enough to face healthcare problems in Mexico. Medical education must develop creative skills on students to keep up with epidemiologic transitions through innovation. The Research and Technology Innovation Park (PIIT) is a science and technology park considered a benchmark on innovation in Mexico.

Summary of work: A program was designed to challenge students to find solutions to epidemiologic problems by applying knowledge from non-medical backgrounds with experts from PIIT. This instructional model was based on lateral thinking. The students prepared healthcare solutions for poster presentations working in a group conforming by classmates, faculty members, and experts.

Summary of results: A total of 85 projects where developed within 13 centers and assessed in a poster presentation by experts considering originality, feasibility, and social impact. Each poster was graded by three examiners scoring 1) regular, 2) adequate, and 3) excellent. The overall mean was 2.42; 2.53 for originality, 2.45 for feasibility, and 2.30 for social impact.

Discussion: The triple helix model (government, academia, and private sector) at PIIT was transformed into a learning scenario. Denial reactions emerged against learning information related to energy, packaging, or food processing. At the end, they learned that practices and methods from other fields promote creativity to solve healthcare problems.

Conclusion: The lateral thinking process requires education and training to develop creative thinking skills. Self-direction on students is required to overcome frustration to transfer knowledge from a different field into biomedical disciplines. The next step for this project is to encourage students to orient their projects considering the social impact.

Take-home message: The implementation was challenging for administrators, faculty, and students considering legal aspects, time, and costs. It is required further analysis to repeat the experience increasing competency development and students satisfaction.
#3D3 (821)
From leaders to leadership: an integrated approach to leadership development in psychiatry training

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Background: Clinical leadership is integral to high quality care: historically, leadership development opportunities have taken the form of short courses, targeting doctors approaching the end of their clinical training. We report on an integrated, longitudinal and early career leadership development programme [1] combining formal and workplace based learning.

Summary of work: This was a prospective, longitudinal, qualitative study exploring trainees conceptions of leadership at the start and end of the first programme year (n = 61 and 55). We also conducted 15 in-depth interviews with trainees to explore their lived experiences of the programme. Data was content coded and thematically analysed.

Summary of results: Initially, trainees saw leadership as goal-driven, task-orientated behaviour enacted in management roles. The programme leads them to talk about leadership in embodied ways, requiring self-awareness and using their personal influence to positive effect. This extends beyond providing good clinical care to improving services in line with identified needs.

Discussion: Trainees in this study are re-thinking leadership, seeing it as integral to their work with patients and teams. They attribute this to programme design. E-learning elements provide a structure for reflective activity: facilitated group work enables them to explore workplace challenges with their peers and consider strategies to adopt.

Conclusion: An early career, integrated approach to leadership development has the potential to promote leadership at every level in healthcare systems. Trainees in this study report changes in the ways they think about leadership and how it is enacted. This is influencing the ways they work with patients and colleagues.

Take-home message: Leadership development can take place throughout a medical career
Open access e-learning materials (e-learning for health) provide a structure for reflection
Peer learning in facilitated groups helps trainees make connections between concepts of leadership and their everyday practice.

#3D4 (2709)
The use of a high fidelity course to prepare physicians in leadership and decision making in more senior roles

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Background: The UK medical speciality training is divided in two parts: core training (CT1-CT2) and speciality training (ST3-ST6). The transition between CT2 to ST3 is the most difficult with a significant increase in responsibility. A high-fidelity simulation course has been designed to better prepare trainees for this transition.

Summary of work: The course was delivered five times in two sites. Participants (n=40) were recruited nationally and consisted of CT2s as well as ST3s. Perception of preparedness for the transition was quantitatively assessed using a pre-course questionnaire. A further questionnaire determined whether the course improved perception of preparedness.

Summary of results: Of the submitted pre-course questionnaires, 80% they were not prepared for the transition. 95% of participants ‘strongly agreed’ or ‘agreed’ they were more prepared after the course. 70% and 83% ‘strongly agreed’ or ‘agreed’ that the high-fidelity simulations increased their clinical knowledge and awareness of human factors respectively.

Discussion: The course was well received, as it identified and addressed a gap in the UK medical speciality training programme. A significant number of trainees enter ST3 feeling underprepared for the responsibilities that they are required to take on. More needs to be done to prepare CT2s in greater leadership roles.

Conclusion: High-fidelity simulations, using common clinical scenarios complicated with human factor issues have a vital role in medical speciality training. This course has shown that simulations can help prepare physicians to transition to roles requiring more responsibility; in both clinical decisions and leadership skills required to deal with human factors.

Take-home message: High-fidelity simulation courses can help bridge the gap in speciality training, between CT2 and ST3, which is regarded as the most difficult transition. High-fidelity simulations not only increase clinical knowledge, but more importantly it increases awareness of the importance of human factors and the need of leadership skills.
Training qualified leaders in clinical education

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Background: The clinical learning environment is pivotal in physician’s learning of clinical skills and professional competences. There is a need to organise and support learning at clinical workplaces. In Sweden, there is no established pathway to become a qualified leader in clinical education.

Summary of work: In 2014, a new pilot programme was launched in the Region Västra Götaland "Leader in clinical education", covering three areas: Leadership and professional development, Higher education and workplace learning in medicine, and Quality improvement in health care. 1 dj/week during 2.5 year. In evaluation, participants’ learning experiences were used.

Summary of results: The quantitative evaluation displayed that goals were met and relevant to future work; a functional learning process and examination. In qualitative evaluation, a main theme emerged, “By participative learning I developed competence and confidence as leader in education”. Six months after examination, 4/7 were employed as part-time leaders.

Discussion: Leadership training created group cohesion and facilitated learning. Future improvements include co-teaching, working in pairs and more introduction of reflection portfolios. A qualification as a leader can change the value of education, on a system level. Strategic support from the Region Västra Götaland compensated loss of income during specialist training.

Conclusion: The three main areas and a prolonged process appears to support and facilitate learning to be a leader in clinical education.

Take-home message: A pilot programme to train and qualify leaders in clinical education was functional and feasible.

VICTEAMS: a virtual environment to train medical team leaders

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Background: Health care delivery in military conflict, in peacekeeping missions or in the aftermath of disaster, implies stress environments with danger exposures, life-threatening events and high levels of work demand. In this context, the rapid response of emergency medical teams has an important role to play in preventing serious adverse events.

Summary of work: Research has shown that medical errors can be related to non-technical factors, including ineffective team leadership, nonstandardized communication and lack of situation awareness. The VICTEAMS project aims at building a virtual environment for training non-technical skills of rescue team leaders, such as communication, stress management and leadership.

Summary of results: In this interactive learning environment, virtual characters play the role of the team members. Twenty stressors from five domains have been identified. The leader learner must be able to adapt. This work is still in progress and a first insight of the virtual environment and characters will be presented.

Discussion: To produce unpredictability and stimulate the learner, depending on the training goals, different types of errors should occur, both on the technical level (e.g. bad material preparation or bad process) and on the non-technical level (e.g. miscommunication, tunneling, etc), in coherence with the virtual characters skills and their stress level.

Conclusion: The learner is immersed in an unpredictable virtual environment and interacts with the virtual characters. While he can directly act on the environment and the victims, he has to learn how to manage stress but also the team and how to delegate actions, perform supervision operations and collect information.

Take-home message: First, the conception of an immersive environment dedicated to medical simulation requires the work of a multidisciplinary expert team implying multiple skills (Virtual Reality, Artificial Intelligence, Cognitive Psychology, Ergonomics, Pedagogy, Algorithmic, Motion Capture, Military and Emergency Medicine). Second, immersive virtual reality could be a tool for future medical team training.