

Thanks to all authors, presenters, and contributors to our research

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Educational research is essential for finding new and better ways to educate medical professionals and is therefore a priority for the AO Education Institute.



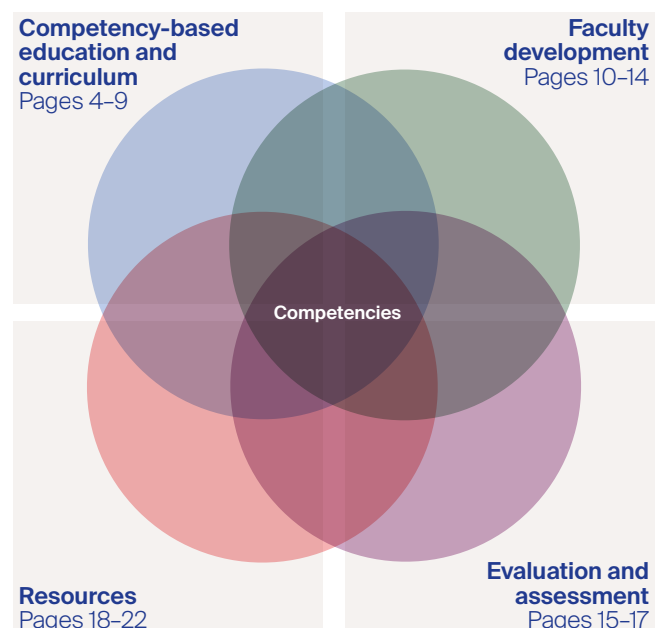
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(2019-2020)

Since 2011, we have published peer reviewed articles in the leading journals in the field and presented at the major medical educational conferences. These activities help to promote and differentiate our education and also show that our external peers acknowledge the high quality of our work.

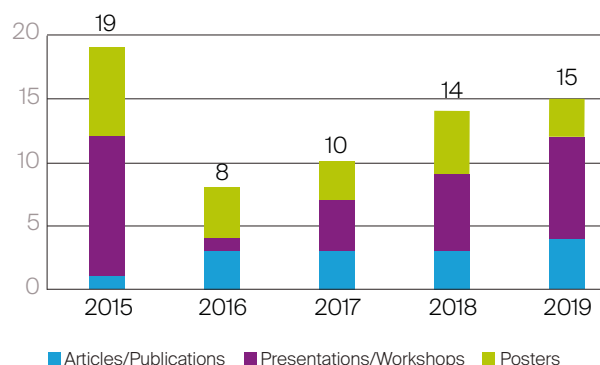
Please take the time to familiarize yourself with our most recent projects.

If you would like to contribute to our future research initiatives and you need our support please submit a project proposal using the specific form on the AO Foundation website in the AO Education Institute section.

The AO Education Institute research in medical education focuses on four main areas:



Research Output (2015-2019)



Optimizing intraoperative imaging during proximal femoral fracture fixation – a performance improvement program for surgeons

Daniel Rikli, Sabine Goldhahn, Michael Blauth, Samir Mehta, Michael Cunningham, Alexander Joeris, PIP Study group



Article: Injury, Int. J. Care Injured 49 (2018) 339–344

<https://doi.org/10.1016/j.injury.2017.11.024>

Introduction

Formal training for surgeons regarding intraoperative imaging is lacking. This project investigated the effect of an educational intervention focusing on obtaining and assessing a standardized lateral view of the proximal femur during intramedullary nailing of a pertrochanteric fracture.

Materials and methods

Anatomical landmarks of the proximal femur that can be identified using intraoperative fluoroscopy and criteria for image quality, i.e. quality of projection were defined in a consensus process, followed by the development of educational materials and a 7-item checklist. Five surgeons from 5 Trauma Centers in 4 countries participated. Each surgeon a) assessed 5 of their own retrospective cases and 5 retrospective cases from 4 colleagues from their clinic, b) viewed an educational video and poster and re-assessed the same cases, and c) assessed the intraoperative images of 5 prospectively collected consecutive cases of their own and of colleagues afterwards.

Results

The percentage of positive ratings for image quality increased from 72% prior to educational intervention to 88% after intervention ($p < 0.001$), and number of “not assessable” images decreased significantly. Percentage agreement between surgeons on the assessments increased from 75% to 87%. The proportion of best possible ratings for fracture reduction and implant position increased from 58% to 72% and from 49% to 66%, respectively. Percentage agreement between surgeons on assessment of reduction and implant position increased.

Discussion and conclusions

A focused educational intervention can improve surgeons' ability to obtain and assess lateral view intraoperative images of the proximal femur and can improve the quality of reduction and implant positioning.

Backward Planning a Craniomaxillofacial Trauma Curriculum for the Surgical Workforce in Low-Resource Settings

David A. Shaye, Travis Tollefson, Irfan Shah, Gopal Krishnan, Damir Matic, Marcelo Figari, Thiam Chye Lim, Sunil Aniruth, Warren Schubert



Article: World Journal of Surgery, November 2018, Volume 42, Issue 11, pp 3514–3519

<https://doi.org/10.1007/s00268-018-4690-y>

Background

Trauma is a significant contributor to global disease, and low-income countries disproportionately shoulder this burden. Education and training are critical components in the effort to address the surgical workforce shortage. Educators can tailor training to a diverse background of health professionals in low-resource settings using competency-based curricula. We present a process for the development of a competency-based curriculum for low-resource settings in the context of craniomaxillofacial (CMF) trauma education.

Methods

CMF trauma surgeons representing 7 low-, middle-, and high-income countries conducted a standardized educational curriculum development program. Patient problems related to facial injuries were identified and ranked from highest to lowest morbidity. Higher morbidity problems were categorized into 4 modules with agreed upon competencies. Methods of delivery (lectures, case discussions, and practical exercises) were selected to optimize learning of each competency.

Results

A facial injuries educational curriculum (1.5 days event) was tailored to health professionals with diverse training backgrounds who care for CMF trauma patients in low-resource settings. A backward planned, competency-based curriculum was organized into four modules titled: *acute* (emergent), *eye* (periorbital injuries and sight preserving measures), *mouth* (dental injuries and fracture care), and *soft tissue* injury treatments. Four courses have been completed with pre- and post-course assessments completed.

Conclusions

Surgeons and educators from a diverse geographic background found the backward planning curriculum development method effective in creating a competency-based facial injuries (trauma) course for health professionals in low-resource settings, where contextual aspects of shortages of surgical capacity, equipment, and emergency transportation must be considered.

International needs analysis in orthopaedic trauma for practising surgeons with a 3-year review of resulting actions

Richard Buckley, Peter Brink, Kodi Kojima, Wa'el Taha, Donald Moore, Mike Cunningham, and AOTrauma Global Needs Analysis Group



Article: JOURNAL OF EUROPEAN CME, 2017, VOL. 6, 1398555

<https://doi.org/10.1080/21614083.2017.1398555>

Introduction

To ensure best-quality education in orthopaedic trauma, the AOTrauma Education Commission conducted a Global Needs Analysis with practising surgeons worldwide.

Material and methods

During July to November 2012, an email invitation to complete an online set of 30 questions in eight languages was sent to our members and associates in all countries through AOTrauma's regional networks. Non-members were invited to participate through collaboration with orthopaedic societies.

Results

A total of 3,790 surgeons practising orthopaedic trauma (49%), orthopaedic (15%), general trauma (15%) and specialty orthopaedic (13%) surgeons responded worldwide. Seventy per cent completed all questions, and the top 10 countries accounted for half the responses. The top 3 areas of educational need were orthopaedic trauma, joint replacement and preservation, and pelvis and acetabulum. Aspects influencing likelihood to attend face-to-face courses were: expert faculty, focus on a specific topic, clear objectives, and discussion and feedback from experts. Barriers to attending courses were time away from practice, cost and lack of availability or access.

Conclusion

The Global Needs Analysis helped our educational committees to identify short- and mid-term priorities over recent years. Adjustments in our planning have helped meet the needs of our audience on a global, regional and national level.

Development of a Performance Improvement Program: A Workplace-Based Educational Intervention on Magnetic Resonance Imaging in Spinal Trauma

Michael A.C. Kraus, Marguerite Mueller, Bernd Ludwig Schmitz, Michael Hart Cunningham, Florian T Gebhard



Article: Journal of surgical education 2016, DOI:10.1016/j.jsurg.2015.12.005

<https://doi.org/10.1016/j.jsurg.2015.12.005>

Objective

Performance improvement (PI) programs are an educational tool used to analyze clinical performance of clinicians. The effect of this tool has not been fully explored in orthopedic and trauma surgery.

Design and setting

A needs assessment was conducted in connection with a worldwide webinar on magnetic resonance imaging in spinal injuries to identify the clinical need for an educational intervention. A 3-step PI process was defined and implemented over a 6-month period in 1 hospital department. Opportunities for improvement were identified by applying a 10-item quality checklist to 26 cases. A focused educational intervention was delivered to address the identified gaps, and a set of 22 posteducation cases was compared. **PARTICIPANTS** The department of radiology and the department of trauma surgery of a level I university hospital participated in this study.

Results

A total of 26 cases collected before the educational intervention showed several areas for potential improvement. Important information was not provided by the surgeons in their communication with the radiologist. The educational intervention outlined the data and suggested actions. Comparing the information transfer of the preintervention and postintervention data, there was a significant improvement following the intervention ($p = 0.0013$).

Conclusion

Our PI program was able to demonstrate a significant influence on the behavior and the attitude of surgeons and radiologists.

Development of a Performance Improvement Program: A Workplace-Based Educational Intervention on Magnetic Resonance Imaging in Spinal Trauma

Michael David Kraus, Marguerite Mueller, Bernd Schmitz, Michael Cunningham, Florian Gebhard



Article: Journal of Surgical Education Volume 73, Issue 3, 2016, Pages 416-421

<https://doi.org/10.1016/j.jsurg.2015.12.005>

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Conclusion

Our PI program was able to demonstrate a significant influence on the behavior and the attitude of surgeons and radiologists.

Understanding the learning needs of practicing trauma and orthopedic surgeons in community hospitals: a mixed methods approach

Jane Thorley Wiedler



UNIVERSITÀ
DEGLI STUDI
DI MILANO

Publication:

Dissertation for international graduate of medical education program, University Ambrosiana, Milan, Italy, 2017.

Reporting and Considering Sagittal Balance with lumbar and lumbo-pelvic Parameters on lumbar X-rays by Neurosurgeons and Radiologists: A single-center Status Quo Analysis, Performance Improvement Project and follow-up Study

Alessio Chiappini



University
of Basel

Publication:

Master Thesis, University of Basel, Department of human medicine, Switzerland, 2016.

Competency-based education and curriculum Presentations/Workshops

AO Recon Skills Lab For learning principles in hip and knee arthroplasty (BP28-2932 AO Recon Skills Lab – ein neuer Weg der Fortbildung?)

Philipp von Roth, Robert Hube, Michael Huo, Bas Masri



Presentation: Deutscher Kongress für Orthopädie und Unfallchirurgie, Berlin, Oct 22–25, 2019.

Developing consensus-based guidelines and education for Emergency Medical Teams for limb injuries in disasters and conflicts

Ian Norton, Elhanan Bar-On, Jane Wiedler, Stefanie Hautz, Harald Veen



Symposium: Association for Medical Education in Europe (AMEE) Conference in Basel, Aug 25–29, 2018.

Competency-based Curriculum and Faculty Development for CPD in Surgery Worldwide

Mike Cunningham, Miriam Uhlmann, Jane Thorley Wiedler, Kokeb Abebe, Tatjana Topalovic



Workshop: Association for Medical Education in Europe (AMEE) Conference in Vienna, Aug 24–28, 2019.

Factors predicting a change in diagnosis in patients hospitalized through the emergency room

Stefanie C Hautz, Stefan Schaubert, Juliane Kämmer, Thomas Sauter, Tanja Birrenbach, Wolf E. Hautz



Round table: Association for Medical Education in Europe (AMEE) Conference in Helsinki, Aug 26–30, 2017.

Regional implementation of a new international facial trauma course in Europe

Iain McVicar, Damir Matic, Marcello Figari, Thiam Chye Lim, Dr Irfan Shah, Diana Greiner, Mike Cunningham



Presentation: British Association of Oral & Maxillofacial Surgeons (BAOMS) Annual Scientific Meeting in Durham (UK), Jun 20–22, 2018.

Value of faculty feedback to inform program evaluation of a curriculum pilot

Jane Thorley Wiedler, Jonathan S. M. Dwyer, Theddy Slongo



Presentation: Association for Medical Education in Europe (AMEE) Conference in Glasgow, Sept 7–9, 2015

Improving an already successful course through increased use of small-group discussion

Daniel Danielsson, Sat Parmar, Gerson Mast, Diana Greiner, AOCMF Curriculum Planning Committee



Presentation: International Conference on Surgical Education and Training (ICOSSET), Copenhagen, Nov 30, 2015.

Integrating Skills Lab stations into a course on the principles of fracture fixation

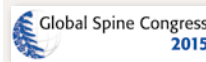
Emanuel Gautier, Friedrich Baumgaertel, Peter Daescher, Barbara Niederée, Urs Rüetschi, Sandipan Chatterjee



Poster: Association for Medical Education in Europe (AMEE) Conference in Basel, Aug 25-29, 2018.

The influence of a performance improvement program on MRI in spinal trauma

Michael Kraus, Marguerite Müller, Florian Gebhard, Bernd Schmitz, Mike Cunningham



Poster: Global Spine Congress in Buenos Aires, Argentina, May 20-23, 2015.

Barriers to effective engagement in faculty development online activities: A global approach

Miriam Uhlmann



Publication: Dissertation for international graduate of medical education program, University Ambrosiana, Milan, Italy, 2017.

Purpose

Engaging physicians in online activities for faculty development is difficult. The reasons why are unclear and differences exist across regions and countries. This study explored the main barriers and factors influencing participation in global online faculty development activities as part of blended learning programs and suggests strategies to overcome those barriers considering contextual and cultural factors.

Methods

A mixed study approach was chosen. Quantitative data from more than 600 surgeon participants in an international faculty development program were analyzed to identify similarities and differences in engagement across regions and age groups, and to explore the influence of the online moderators on participants' behavior. Based on these results, a grounded theory approach in the form of 20 semi-structured interviews with a subset of surgeon participants from Europe, the Middle East, and North America was conducted and categories for barriers and factors developed.

Results

The results from the quantitative data analysis showed significant differences between regions but no significant differences between age groups. Participants from North America had the least level of engagement with content and in online discussions, while those from the Middle East had the highest. The results also highlight a positive relationship between the level of activity of the online moderators and the participants' level of engagement. The grounded theory approach identified a lack of interaction with peers and moderators (not knowing each other, lack of social bonding) and issues with technology as the main barriers to successful participation in online learning. Barriers varied only slightly across regions. General satisfaction with online learning and the blended learning approach, personal commitment and motivation, interaction and online discussions, and a clear structure and sequence helped to overcome barriers.

Discussion

The framework of barriers and contributing factors developed in this study can be used to help design online faculty development activities for busy physicians considering contextual and cultural influences. To improve online engagement and thus learning, it is recommended to apply evidence-based adult learning principles, adapt to regional/national and individual learning styles, provide a broad variety of online teaching modalities and seamless technology, and support social interaction. Moderators play an important role and therefore need to be well prepared if they are to facilitate the online learning process effectively.

The Importance of Faculty Development for the Regional Implementation of A Global Competency-Based Curriculum for Spine Surgeons

Miriam Uhlmann, German Ochoa, Brian Ashman, Joseph S. Green, Mike Cunningham



Presentation: 12th APMEC & 3rd International Conference on Faculty Development in the Health Professions, Singapore February 4–8, 2015.
Best Oral Presentation Finalist.

Aims

AOSpine has created a comprehensive, modular curriculum to support the continuous acquisition of knowledge and skills by spine surgeons worldwide at all stages of their career. A major challenge for worldwide implementation is that courses are chaired regionally and locally by surgeons with great variation in their familiarity with the concept of competency-based medical education. This research evaluated curriculum implementation during the first 3 years after its launch and how faculty development contributes to success.

Methods

Over 3 years, the curriculum was implemented in over 200 clinical education events: face-to-face courses, webinars, and online learning. During this time the competency-based faculty development programs for faculty, chairpersons, and educational advisors were adapted to address curriculum implementation intensively; comprehensive resources (checklists, course learning outcomes, program templates, prepared lectures, and cases for discussions) were provided. The curriculum was promoted by AOSpine's international and regional leaders to ensure buy-in and motivation. In order to avoid technical or administrative barriers, the implementation of the curriculum was included in staff training and the implementing surgeons received support materials (online tools and modules, hard copy brochures and guides). During 2013, a global needs analysis was conducted using qualitative interviews followed by a structured online questionnaire with coded responses and open-text fields (quantitative and some qualitative data). Profiling of respondents was conducted to enable subgroup analysis; the intended sample size was N = 850.

Results

The survey showed the following results: Out of the 848 respondents, 256 (30%) were faculty members; almost all respondents reported high levels of agreement with statements regarding the positive impact of the curriculum; awareness of the AOSpine Curriculum varied depending on the region and the role of the respondent (participant or faculty); 34% of faculty respondents had applied the curriculum when they were faculty, chairperson, or educational advisor; half of the faculty members who applied the curriculum as a chairperson completed a training for chairpersons in the past 2 years; and most respondents who attended a faculty development program expressed further need for education, especially to provide advice/support to colleagues and explain the value of the curriculum to learners.

Conclusion

Global Curriculum implementation: intensified communication on all levels is needed; in some regions, chairpersons and educational advisors seek more information and training; faculty development programs improve the awareness of the curriculum but there is still a need to train faculty members who have not recently been involved in educational activities and also to train those who have had recent faculty assignments but did not complete an updated faculty development program. Supporting and educating chairpersons and educational advisors in the planning phase is crucial for successful implementation of a competency-based curriculum (Dath D, Iobst W, 2010). Faculty members should also be informed well in advance about the concept of competency-based medical education. A new faculty newsletter has been launched to inform our community about ongoing changes in the curriculum. They are to facilitate the online learning process effectively.

Creating a learning organisation

Miriam Uhlman



Workshop: 12th Annual European CME Forum, Barnes Wallis Building, University of Manchester, UK. 6-8 Nov, 2019

Meeting the Challenges for Faculty in Global Surgical Education

Wa'el S Taha, Miriam Uhlmann



Workshop: Association for Medical Education in Europe (AMEE) Conference in Basel, Aug 25-29, 2018.

Engage in a Thought-Provoking Peer-to-Peer Facilitated Discussion

Amy Farr, Miriam Uhlmann, Jo Varney



Presentation: GAME FUTURIST FORUM, Budapest, Hungary, October 18-19 2019.

Professional Development as a Catalyst for Organizational Change-An International Leadership Continuing Education Program

Miriam Uhlmann, Chitra Subramaniam



Workshop: GAME Annual Conference in New Jersey, May 18-19, 2018.

Global CPD Competency Framework

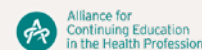
Miriam Uhlmann, Jo Varney



Presentation: GAME FUTURIST FORUM, Budapest, Hungary, October 18-19 2019.

A means to an end: Achieving Patient Satisfaction Through Culturally Sensitive Communication

Samar Mohamed Hassona A. Aboulsoud; Chitra Subramaniam, Miriam Uhlmann



Workshop: 43rd Annual Conference of the Alliance for Continuing Education in the Health Professions in Orlando, USA, January 26-29, 2018

Constructive Alignment: What makes teaching-learning interactions stick?

Chitra Subramaniam, Miriam Uhlmann



Workshop: Association for Medical Education in Europe (AMEE) Conference in Vienna, Aug 24-28, 2019

Barriers and factors influencing engagement in global faculty development online activities

Miriam Uhlmann



Presentation: 4th International Conference on Faculty Development in the Health Professions, Helsinki, Finland, August 25-27, 2017.

Cultural Competency

Miriam Uhlmann, Alvaro Margolis, Chitra Subramaniam



Presentation: 44th Annual Conference of the Alliance for Continuing Education in the Health Professions in National Harbor MD, JANUARY 23-26, 2019

Global vs local: the strength of education developed with culturally diverse teams

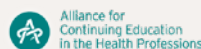
Samar Mohamed Hassona A. Aboulsoud, Chitra Subramaniam, Miriam Uhlmann



Workshop: Association for Medical Education in Europe (AMEE) Conference in Helsinki, Aug 26–30, 2017.

Professional Education for Professional Educators: Contributors to Improved Outcomes

Joseph S. Green, Elizabeth G. Yarboro, Chitra Subramaniam, Miriam Uhlmann



Presentation: 40th Annual Conference of the Alliance for Continuing Education in the Health Professions in Grapevine, Jan 13–17, 2015.

Professional Development as a Catalyst for Organizational Change: An International Leadership Continuing Education Program

Miriam Uhlmann, Chitra Subramaniam



Presentation: 42nd Annual Conference of the Alliance for Continuing Education in the Health Professions in San Francisco, USA, January 26–29, 2017.

Professional Education for Professional Educators: Contributors to Improved Outcomes

Joseph S. Green, Elizabeth G. Yarboro, Chitra Subramaniam, Miriam Uhlmann



Workshop: 40th Annual Conference of the Alliance for Continuing Education in the Health Professions in Grapevine, Jan 13–17 2015

An International Approach: Developing Educational Skills of Faculty, Course Chairs and Clinical Education Leaders to Enhance Orthopedic Care for Patients

Chitra Subramaniam, Miriam Uhlmann



Workshop: World Congress on Continuing Professional Development: Advancing Learning and Care in the Health Professions in San Diego, USA, March 17–19, 2016.

Faculty development Posters

A driver for individual and organizational change—Leader Education Program (LEP)

Tatjana Topalovic, Teija Lund, Chitra Subramaniam



Poster: 5th International Conference on Faculty Development in the Health Professions September 23-25, 2019, Ottawa, Canada.

Challenge or opportunity: The importance of women in orthopedics

Tatjana Topalovic, Amy Kapatkin



Poster: Association for Medical Education in Europe (AMEE) Conference in Vienna, Aug 24-28, 2019

Challenge or opportunity: The importance of women in orthopedics

Tatjana Topalovic, A. Kapatkin



Poster: 5th International Conference on Faculty Development in the Health Professions September 23-25, 2019, Ottawa, Canada.

A driver for individual and organizational change - The AO Foundation (AO) Leader Education Program (LEP)

Teija Lund, Chitra Subramaniam, Tatjana Topalovic, Miriam Uhlmann



Poster: Association for Medical Education in Europe (AMEE) Conference in Basel, Aug 25-29, 2018.

Why Surgeons Volunteer in Medical Education—Retention and Reinforcement of Faculty Motivation

Nathalie Rutz, Kodi Kojima, Miriam Uhlmann, Urs Ruetschi



Poster: Association for Medical Education in Europe (AMEE) Conference in Glasgow, Sept 7-9, 2015.

Faculty education program (FEP): overcoming barriers to engagement in online activities

Chitra Subramaniam, Miriam Uhlmann



Poster: 12th APMEC & 3rd International Conference on Faculty Development in the Health Professions, Singapore February 4-8, 2015.

Why surgeons volunteer in medical education-retention and reinforcement of faculty motivation

Rutz N, Kojima K, Rüetschi U, Uhlmann M



Poster: 12th APMEC & 3rd International Conference on Faculty Development in the Health Professions, Singapore February 4-8, 2015.

Non-technical training in orthopedic surgery: An unrecognized need

Khalid H Alzahrani, Ahmad M Elsheikh, Sohail S Bajammal, Wael S Taha, Miriam Uhlman



Article: J Musculoskelet Surg Res 2019;3:260-4

[https://doi.org/10.1016/j.sur-
onc.2010.10.001](https://doi.org/10.1016/j.sur-onc.2010.10.001)

Objectives

Surgical safety has become a raising concern over the past few decades. Many studies have shown that it is correlated to nontechnical performance rather than clinical expertise, and it can be improved if nontechnical competencies are combined with technical training in the surgical profession. The primary purposes of this study were to assess and prioritize the perceived needs of orthopedic surgeons for nontechnical skills for orthopedic surgeons in correlation to years of experience.

Methods

An online survey was sent to 200 AOTrauma members in the Middle East clearly stating the study purposes and volunteer participation. A 5-point Likert scale was used to collect surgeons' ratings of the selected nontechnical topics.

Results

One-hundred and nine of 200 (54.5%) invited participants responded. More than half (65.1%) being surgeons with >10 years of experience. The majority (92%) of respondents emphasized the importance of nontechnical skills training for orthopedic surgeons. Of the enlisted topics, professionalism and patient privacy scored the highest priority for junior surgeons, while more experienced surgeons ranked patient safety and teamwork as their top two desired topics. An interesting finding was that medicolegal training was rated as an increasing need as more surgical experience was gained.

Conclusions

This study highlights the demand for nontechnical skills training from the orthopedic trauma surgeons' perspective. The results showed that topics such as patient safety essentials, professionalism, teamwork, and medicolegal issues came on the top of the list. Addressing this demand by creative and specialty-focused nontechnical skills courses will help to improve patient care.

Redesigning an International Orthopaedic CME Course: The Effects on Participant Engagement over 5 Years

Abhiram R. Bhashyam, Quirine M.J. van der Vliet, R. Marijn Houwert, Rogier K. J. Simmermacher, Peter Brink, Piet de Boer & Luke P. H. Leenen



Article: Journal of European CME, 8:1, 1633193, DOI: 10.1080/21614083.2019.1633193

[https://doi.org/10.1080/
21614083.2019.1633193](https://doi.org/10.1080/21614083.2019.1633193)

The time required to observe changes in participant evaluation of continuing medical education (CME) courses in surgical fields is unclear. We investigated the time required to observe changes in participant evaluation of an orthopaedic course after educational redesign using aggregate course-level data obtained from 1359 participants who attended one of 23 AO Davos Courses over a 5-year period between 2007 and 2011. Participants evaluated courses using two previously validated, 5-point Likert scales based on content and faculty performance, and we compared results between groups that underwent educational redesign incorporating serial needs assessment, problem-based learning,

and faculty training initiatives (Masters Course), and those that did not (Non-Masters Course). Average scores for the usefulness and relevancy of a course and faculty performance were significantly higher for redesigned courses ($p < 0.0001$) and evaluations were significantly improved for both groups after faculty training was formalised in 2009 ($p < 0.001$). In summary, educational redesign incorporating serial needs assessment, problem-based learning, and faculty training initiatives were associated with improvement in participant evaluation, but these changes required 4–5 years to become evident.

Evaluation and assessment Presentations/Workshops

Regional implementation of a facial trauma course in Asia pacific

Thiam Chye Lim, Iain McVicar, Damir Matic, Marcelo Figari, Irfan Shah, Diana Greiner, Mike Cunningham



Presentation: 16th Asia Pacific Medical Education Conference (APMEC), Singapore Jan 9-13, 2019

Designing and implementing a worldwide assessment and evaluation system

Miriam Uhlmann and Michael Cunningham



Presentation (Webinar): GAME webinars, 12 April 2018

Implementing a Pre-Assessment and Post-Evaluation System for Surgeon Education Worldwide

Miriam Uhlmann, Urs Rüetschi, Alain Rickli, Mike Cunningham



Presentation: 2018 GAME Annual Conference in New Jersey, May 18-19, 2018.

Proficiency based progression as an 'outcome' based approach to graduate medical education and training; What is it and how to do it!

Anthony G Gallagher, Michael Cunningham



Workshop: Association for Medical Education in Europe (AMEE) Conference in Glasgow, Sept 7-9, 2015.

Evaluation of Hospital-based Clinical Training Modules for Operating Room Personnel

Pauline Johnston, Alan Norrish, Isabel Van Rie Richards, Kathrin Lüssi Straub



Poster: Association for Medical Education in Europe (AMEE) Conference in Basel, Aug 25-29, 2018.

Evaluation Process and Continuous Improvement of the Faculty Education Program at AO Foundation

Julia Bystrzinski, Miriam Uhlmann



Poster: Association for Medical Education in Europe (AMEE) Conference in Barcelona, Aug 28-31, 2016.

Implementation of an online evaluation and assessment system for all AO veterinary educational events worldwide

Alessandro Piras, Toby Gemmill, Mark Glyde, Amy Kapatkin, Alain Rickli, Mike Cunningham



Poster: Association for Medical Education in Europe (AMEE) Conference in Helsinki, Aug 26-30, 2017.

Development and Evaluation of a Blended Learning Module on Minimally Invasive Spinal Surgery

Mike Cunningham, Roger Härtl, Daniel Gelb, Dean Chou, Staffan Kallback, Jessica Kimball



Poster: Association for Medical Education in Europe (AMEE) Conference in Barcelona, Aug 28-31, 2016.

Implementing and evaluating a new global educational course on facial trauma for surgeons

Iain McVicar, Marcelo Figari, Damir Matic, Thiam Chye Lim, Diana Greiner, Mike Cunningham



Poster: Association for Medical Education in Europe (AMEE) Conference in Helsinki, Aug 26-30, 2017.

Faculty assessment during a continuing professional development educational event for spinal surgeons

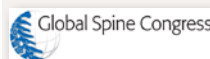
Katharine Anna Quagliozzi, Miriam Uhlmann, Michael Cunningham



Presentation: Association for Medical Education in Europe (AMEE) Conference in Glasgow, Sept 7-9, 2015

AOSpine Needs Assessment at the Spine Surgery Department, University Hospital Basel

G. Jost, M. Cunningham, S. Schaeren



Poster: Global Spine Congress 2017 in Milan, May 3-6, 2017.

The importance of chairperson feedback for the monitoring and improvement of competency-based curricula and associated training programs

Barbara Niederee, Miriam Uhlmann, Kathrin Lüssi



Poster: Association for Medical Education in Europe (AMEE) Conference in Glasgow, Sept 7-9, 2015.

An e-Delphi study generates expert consensus on the trends in future continuing medical education engagement by resident, practicing, and expert surgeons

Rüetschi Urs, Carlos Mario Olarte Salazar



Article: Med Teach. 2019 Dec 27:1-7.
doi: 10.1080/0142159X.2019.1704708.
[Epub ahead of print]

<https://doi.org/10.1080/0142159X.2019.1704708>

Background

The Delphi method is a demonstrated way to gather structured expert opinions to forecast, plan, and prioritize around a given topic. It builds consensus through iterative rounds.

Aims

The goal of this study was to build consensus-based predictions for the year 2022 about: future trends in surgeon continuing medical education (CME); the role of technology in learning for surgeons of different experience levels (trainee/resident, practicing, expert); and CME funding models.

Methods

A three round e-Delphi method was employed for this study. Panelist identities were anonymized, and controlled feedback and consensus rules were employed. Fifteen international expert panelists' input was collected via electronically distributed, open-ended questionnaire (Round 1) and 5-point Likert scale ranking surveys (Rounds 2 and 3), in a series of nine questions (Round 1) and 26 and 25 summary statements (Rounds 2 and 3, respectively). Summary statements were collated via key words and ideas collected from panelist's input. Mean, median, standard deviation, and 95% confidence intervals were calculated.

Results

Response rate was 100% for each round. Consensus in Round 2 was 61% and 88% in Round 3. Seven key finding statements with supporting background information was the result.

Discussion: Reliable, affordable internet access was identified as a likely barrier to education for certain regions, even in 5 years' time. The use of similar educational resources were identified for all levels of surgeon, what varied was the reliance on a particular resource by each level of surgeon.

Conclusion

Institutes of employment were predicted to have ended CME funding for expert surgeons by 2022. Industry sponsored CME was predicted to have a continued role for trainee/residents and practicing surgeons.

AO international consensus panel for metrics on a closed reduction and fixation of a 31A2 pertrochanteric fracture

Kodi Kojima, Matt Graves, Wa'el Taha, Mike Cunningham, Alexander Joeris, Anthony G. Gallagher



Article: Injury, Int. J. Care Injured 49 (2018) 2227-2233

<https://doi.org/10.1016/j.injury.2018.09.019>

Background

The foundations of an effective and evidence-based training program are the metrics, which characterize optimal performance.

Purposes

To develop, operationally define, and seek consensus from procedure experts on the metrics that best characterize a reference approach to the performance of a closed reduction and internal fixation of a 31A2 unstable pertrochanteric fracture with a cephalomedullary nail with distal locking through the proximal guide.

Methods

A Metrics Group consisting of 3 senior orthopaedic surgeons, a surgeon/medical scientist, an education expert and a behavioural scientist deconstructed the performance of the selected fixation procedure and defined performance metrics. At a modified Delphi meeting, 32 senior orthopaedic and trauma surgeons from 18 countries critiqued these metrics and their operational definitions before reaching consensus.

Results

Initially performance metrics consisting of 14 Phases with 62 Steps, 84 errors and 20 Sentinel errors were identified that characterize the safe and effective performance of the procedure. During the Delphi panel meeting these were modified and consensus was reached on 15 Phases (1 added, $p = 0.967$) with 75 Steps (14 added and 1 deleted; $p = 0.028$), 88 errors (10 added and 6 deleted; $p = 0.47$), and 28 Sentinel errors (8 added; $p = 0.107$). Pre and Post Delphi characterizations were highly correlated ($r = 0.81-0.94$).

Conclusions

Surgical procedures can be broken down into constituent, essential, and elemental tasks necessary for the safe and effective completion of a reference approach to a specified procedure. Procedure experts from 18 countries reached consensus on performance metrics for the fixation procedure. This metric-based characterization should form the basis of more quantitative validation studies to guide the construction of a proficiency-based progression training curriculum.

Improving management of limb injuries in disasters and conflicts

Guy Jensen, Elhanan Bar-On, Jane Thorley Wiedler, Stefanie C. Hautz, Harald Veen, Alan R. Kay, Ian Norton, Richard A. Gosselin, and Johan von Schreeb



Article: Prehosp Disaster Med. 2019;34(3):330-334.

<https://doi.org/10.1017/S1049023X19004242>

It has become clear that disaster relief needs to transition from good intentions or a charity-based approach to a professional, outcome-oriented response. The practice of medicine in disaster and conflict is a profession practiced in environments where lack of resources, chaos, and unpredictability are the norm rather than the exception. With this consideration in mind, the World Health Organization (WHO; Geneva, Switzerland) and its partners set out to improve the disaster response systems. The resulting Emergency Medical Team (EMT) classification system requires that teams planning on engaging in disaster response follow common standards for the delivery of care in resource-constrained environments. In order to clarify these standards, the WHO EMT Secretariat collaborated with the International Committee of the Red Cross (ICRC; Geneva, Switzerland) and leading experts from other stakeholder non-governmental organizations (NGOs) to produce a guide to the management of limb injuries in disaster and conflict.

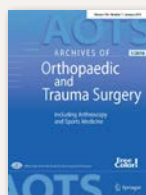
The resulting text is a free and open-access resource to provide guidance for national and international EMTs caring for patients in disasters and conflicts. The content is a result of expert consensus, literature review, and an iterative process designed to encourage debate and resolution of existing open questions within the field of disaster and conflict medical response.

The end result of this process is a text providing guidance to providers seeking to deliver safe, effective care within the EMT framework that is now part of the EMT training and verification system and is being distributed to ICRC teams deploying to the field.

This work seeks to encourage professionalization of the field of disaster and conflict response, and to contribute to the existing EMT framework, in order to provide for better care for future victims of disaster and conflict.

Development and initial evaluation of a point-of-care educational app on medical topics in orthogeriatrics

Katrin Singler, Tobias Roth, Sacha Beck, Michael Cunningham, Markus Gosch



Article: Arch Orthop Trauma Surg (2016) 136:65–73, DOI 10.1007/s00402-015-2366-8

<https://doi.org/10.1007/s00402-015-2366-8>

Introduction

Research by AOTrauma's orthogeriatrics education taskforce identified ongoing educational needs for surgeons and trainees worldwide regarding the medical management of older adults with a fracture. To address practicing surgeons' preference for increased use of mobile learning, a point-of-care educational app was planned by a committee of experienced faculty. The goals were to deliver the app to surgeons, trainees, and other healthcare professionals, to measure usage, and to evaluate the impact on patient care.

Materials and methods

The committee of geriatricians and surgeons designed and developed four modules on osteoporosis, delirium, anticoagulation, and pain based on published evidence and the content was programmed into mobile app formats. A registration form was integrated and a 14-question online evaluation survey was administered to users.

Results

The AOTrauma Orthogeriatrics app was installed by 17,839 users worldwide between September 2014 and October 2015: Android smartphones (44 %), iPhones (32 %), iPads (15 %), Android tablets (9 %). 920 users registered and 100 completed the online evaluation: orthopedic/trauma surgeons (67 %), residents/fellows (20 %), and other professionals (13 %). Ratings for all aspects were 4 or higher on a 1–5 Likert scale (5 = Excellent). 80 % of evaluation respondents found the answer to their question or educational need on their last visit, and 26 of 55 respondents (47 %) reported making a change in an aspect of their management of patients as a result of their learning from the app.

Conclusion

The orthogeriatrics app reached its intended audiences and was rated highly as a method of providing education to help improve patient care. Content input by experienced faculty and app improvements based on user feedback were key contributors to successful implementation.

Point-of-care learning: Integrating an app into your curriculum for healthcare professionals

Michael Cunningham, Urs Rüetschi



Presentation: Association for Medical Education in Europe (AMEE) Conference in Glasgow, Sept 5, 2015

AO Surgery Reference usage data for assessing educational needs

Lars Veum, Jane Thorley Wiedler, Fergal Monsell



Poster: Association for Medical Education in Europe (AMEE) Conference in Basel, Aug 25-29, 2018.

AO Trauma STaRT: Orthopaedic trauma online learning in Khon Kaen Hospital, Thailand

Wanjak Pongsamakthai



Poster: Association for Medical Education in Europe (AMEE) Conference in Glasgow, Sept 7-9, 2015.

Building a curriculum development process documentation and information platform

Kokeb Abebe, Sandipan Chatterjee, Michael Cunningham, Miriam Uhlmann, Jane Wiedler



Poster: Association for Medical Education in Europe (AMEE) Conference in Barcelona, Aug 28-31, 2016.

Initial evaluation of an educational app on medical issues in orthogeriatrics

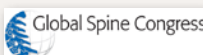
Katrin Singler, Markus Gosch, Tobias Roth, Sacha Beck, Michael Cunningham



Poster: Association for Medical Education in Europe (AMEE) Conference in Glasgow, Sept 7-9, 2015.

Metrics development for a minimal-invasive lumbar decompression procedure for surgical training

C. Melcher, R. Navarro, C. Wipplinger, M. Cunningham, K. Foley, A. Korge, W. Bernd, C. Birkenmaier, R. Härtl



Poster: Global Spine Congress in Singapore, May 2-5, 2018

Online learning in Medical Education—changing the learning process in a revolutionary way?

Kokeb Abebe, Kodi Kojima, Wa'el Taha



Poster: Association for Medical Education in Europe (AMEE) Conference in Glasgow, Sept 7-9, 2015.

Use of an international point-of-care educational app on medical topics in orthogeriatrics by surgeons in Germany, Switzerland, and Austria

Markus Gosch, Katrin Singler, Klinikum Nürnberg, Tobias Roth, Sacha Beck, Mike Cunningham



Poster: Gerontologie und Geriatrie KONGRESS 2016, Sept 7-10 2016, Stuttgart.

View on education of the future trauma surgeon, the STaRT project

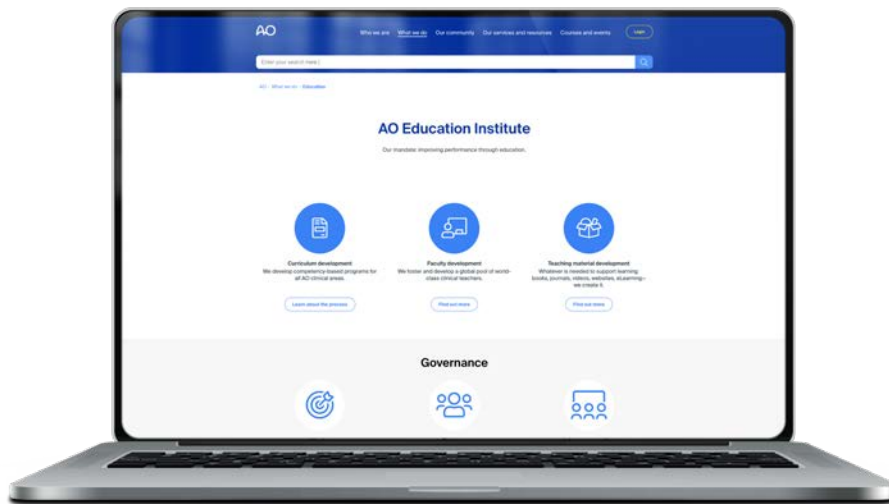
Peter Brink



Poster: 16th European Congress of Trauma & Emergency Surgery in Amsterdam, The Netherlands, May 10-12, 2015.

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