Core content to qualify as an AOTrauma Course—Advanced Principles of Fracture Management for ORP

Developed by the AOTrauma ORP Educational Taskforce

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Criteria that were applied by the Educational Taskforce to define contents for the AOTrauma Course—Advanced Principles of Fracture Management for ORP

- Respecting the seven principles of education at AOTrauma.
  Education
  - Is based on learner needs
  - Motivates to learn
  - Is relevant for the defined target audience
  - Is interactive (›2/3 of the face-to-face courses are spent in interactive activities)
  - Provides feedback (e.g. pre- and postcourse assessments, practical exercises, small group discussions)
  - Promotes reflection
  - Leads to verifiable outcomes
- The core content provides the knowledge, skills, and attitudes needed to apply the principles of fracture management in basic situations in trauma patient care (Basic Principles) and in patients with more complex injuries (Advanced Principles)
- Optional activities build in flexibility to cover specific regional end local needs of participants
- Suggested educational methods meet the course goals and can be implemented around the world

Teaching methods

A well-balanced mix of educational methods and careful sequencing of topics is essential for successful teaching and learning at the advanced level. Short, evidence-based lectures cover the more advanced knowledge and principles of fracture management. In practical exercises participants are trained in the application of fixation techniques based on the underlying principles of fracture management. Discussing in small groups helps participants to reflect upon the knowledge and skills acquired in lectures and practical exercises.

Goal of the AOT Course—Advanced Principles of Fracture Management for ORP

The AOT Course—Advanced Principles of Fracture Management for ORP teaches fundamental principles and current concepts in the treatment of injuries, incorporating the latest techniques in operative fracture management. During the entire course, pre, per and post-operative nursing and planning remains central and fundamental.

Target audience

The AOT Course—Advanced Principles of Fracture Management is targeted at ORP (Operating Room Personnel) who are interested in furthering their knowledge and skills in operative fracture management.

Course objectives

At the end of this course participants will be able to:

- Describe AO Principles for the operative stabilization of fractures
- Relate to soft-tissue damage, fracture healing, and surgical intervention in the injured patient
- Explain the principles of and preparation for operative minimally invasive surgery
- Plan appropriate care for minimally invasive techniques using locking compression plates
- Discuss strategies for the care of polytrauma patients and decision making for preparation of surgeries
- Anticipate potential pitfalls and intraoperative complications in fracture care
- Formulate systems for maintaining safe standards of practice
- Prepare and use correctly instruments and corresponding implants for current fracture treatment
- Use professional networks to share ideas, challenge poor practice, and provide support

This list is a summary of all core and complementary elements of the AOTrauma Course—Advanced Principles of Fracture Management for ORP.

Module 1: General principles		
Welcome and introduction (Session together with surgeons, if back-to-back course) Lecture—Surgeon or ORP faculty	10'	Core
The AO world—From history to lifelong learning (Session together with surgeons, if back-to-back course) Lecture—Surgeon or ORP faculty *Note: If this lecture is not included in the course program, all participants must be invited per email to consult the history of AO online. Please communicate with your AOT ORP contact directly or orp@aotrauma.org for support.*	15'	Optional
Principles of fracture fixation—Review Lecture—Surgeon faculty	20'	Core
Reduction techniques—Case-based review Case based lecture—Surgeon faculty	20'	Core
Module 2: The polytrauma patient ➢ Plan this module at the beginning of the course.		
The polytrauma patient Lecture—Surgeon faculty	20'	Core
Small group discussion The polytrauma patient—Setting priorities Discussion—Surgeon and ORP faculty ➢ Describe a polytrauma case and discuss in group the priorities, nursing issues, communication, and process for treatment.	45'	Core
Practical exercise Stabilization of the pelvic ring using a large external fixator Practical—Surgeon and ORP faculty • Video: 00122 • Bone model: 4060 ➢ Use the first 5 min to explain rules and to give safety instructions.	70'	Core
Module 3: Distal femur		
Principles of intramedullary nailing—Review Lecture—Surgeon faculty	20'	Optional
Small group discussion Patient with a femoral fracture Discussion—Surgeon and ORP faculty ➢ Focus on: o The treatment with a femoral nail (CFN, as used in the exercise) and other options	45'	Optional

o The use of the large distractor		
Practical exercise Application of the large distractor Practical—Surgeon and ORP faculty • Video: 20163 • Bone model: 2263.G	50'	Optional
Practical exercise Intramedullary nailing of a femoral shaft with reaming Practical—Surgeon and ORP faculty • Video: 00140 • Bone model: PR0340	60'	Optional

Module 4: Geriatric patients

Supplement this module with the optional module 4 "Children" if desired.

Why are geriatric patients different? Interactive lecture— Surgeon faculty ➢ *include:* • *Issue of osteoporotic bone (integrate video of "PHILOS with apple")*	20'	Core
Practical exercise Internal fixation of proximal humeral fracture ORP and surgeon faculty • Video: 20211 (PHILOS) • Bone model: 5012	60'	Core
Osteosynthesis of periprosthetic fractures Lecture—Surgeon faculty	20'	Optional
Arthrosplasty in acute trauma Lecture— Surgeon faculty ➢ *Include:* • *Hip* • *Shoulder* • *Others only briefly (knee, elbow, and ankle)*	20'	Optional

Module 5: Pediatric patients

Why are pediatric patients different? Lecture—Surgeon faculty ➢ *Include:* • *Why do we have to use different implants for children?*	20'	Optional
Small group discussion Osteosynthesis in pediatric patients Discussion—Surgeon and ORP faculty	45'	Optional
Practical exercise Internal fixation of a femoral shaft fracture in a child Practical—Surgeon and ORP faculty • Video: 20204	60'	Optional

• Bone model: 12261		
Module 6: Malleolar fractures		
Malleolar fractures Lecture—Surgeon faculty	20'	Optional
Small group discussion Perioperative preparation for an osteosynthesis of a malleolar fracture Discussion—ORP and surgeon faculty	45'	Optional
Practical exercise Internal fixation of a malleolar fracture Practical—Surgeon and ORP faculty • Video: 00138 (44 Type C fracture) or 00114 (44 Type B fracture) • Bone model: LD3120 (video 00138) or 3118 (video 00114)	60'	Optional
Module 7: Forearm fractures		
Forearm shaft fractures Lecture—Surgeon faculty	20'	Optional
Small group discussion Perioperative preparation for an osteosynthesis of a forearm shaft fracture Discussion—ORP and surgeon faculty	45'	Optional
Practical exercise Internal fixation of a forearm shaft fracture Practical—ORP and surgeon faculty • Video: 00113 • Bone model: 6501	60'	Optional
Module 8: Wrist		
Wrist: Advanced plating and screw techniques Lecture—Surgeon or ORP faculty ➢ Focus on: o Instruments and implants	20'	Core
Practical exercise Internal fixation of a distal intraarticular fracture of the radius Practical—Surgeon and ORP faculty • Video: 20206 (LCP) • Bone model: 6503	60'	Core
Module 9: Osteosynthesis involving a joint		
Osteosynthesis involving a joint—Review Lecture— Surgeon faculty	20'	Optional
Principles of tension band wiring Lecture—Surgeon faculty	20'	Optional

Practical exercise Internal fixation of an olecranon fracture with tension band wiring ORP and surgeon faculty • Video: 00132 • Bone model: 6011	45'	Optional

Module 10: Complications

Compartment syndrome Lecture—Surgeon faculty	20'	Optional
Complicated soft-tissue injuries Lecture—Surgeon faculty ➢ *Include:* • *Flaps* • *VACS* • *Who, when, …*	20'	Optional
Bone grafts Lecture—Surgeon faculty ➢ *Include:* • *Autografts* • *Allografts* • *Artificial grafts*	20'	Optional
Implant materials Lecture—ORP faculty	20'	Optional
Small group discussion Difficult cases and troubleshooting Discussion—Surgeon and ORP faculty ➢ *Organize this session towards the end of the course.* ➢ *Include:* • *Importance of planning and templating*	45'	Optional

Module 11: Others

Patient safety Lecture—ORP faculty ➢ *Include safety of patient and staff, eg:* • *Use of safety checklist* • *X-ray protection* • *Burns (Diathermy, prepping, …)* • *…*	20'	Optional
Leadership Interactive lecture—ORP faculty ➢ *Include:* • *Communication* • *Teamwork*	30'	Optional
Characteristics of x-rays	20'	Optional

Lecture—Surgeon or ORP faculty		
AO Skills Lab For ORP only the following four stations are recommended. Skills lab can only be planned if the material will be available for the surgeons' course. B. Soft-tissue penetration during drilling (15') E. Techniques of reduction—part 1 (15') F. Techniques of reduction—part 2 (15') K. Damaged implant removal (15') If you would consider additional stations, please first contact Isabel Van Rie Richards at ivanrie@aotrauma.org.	60'	Optional

Additional elements

What have I learned? Reflection To be planned at the end of the day.	20'	Core
Brief review of the day To be planned at the beginning of course day 2 or 3.	10'	Core
What have I learned? Reflection To be planned at the end of the course.	30'	Core
About AOTrauma	15'	Optional

If you have any questions or would like support or additional information, please contact orp@aotrauma.org