

# **Osteosynthesis for Surgical Management of Fractures for Orthopedic Surgeons and Biomedical Engineers**

**OrthoBioMed**

*Project № 2013-1-BG1-LE005-08711*

**October 2013 - September 2015**

12 - 13.11.2013  
Sofia



# Project aim

Adapting and integrating innovative training courses and results from previous Leonardo da Vinci project OSTEOFORM into continuing VET of medicine professionals (residents, surgeons) and professionals involved in implants development and manufacturing.

# Project objectives

1. *Identifying and analysing the needs of biomedical labour market, of biomedical engineers, orthopaedic surgeons, managers, residents in the sector.*
- This objective addresses the priority of making VET more responsive to labour market needs for “white” jobs and of training of healthcare professionals.

# Project objectives

2. *Selecting and analysing the e-learning innovative content to meet these needs and upgrade the content with the new developments in the sector.*
- This objective addresses the need of training new skills for the “white jobs” and for improving access to lifelong learning, to help people move to high-value added sectors as the medicine sector and the biomedical engineering services for the sector.

# Project objectives

3. *Adapting, upgrading and implementing the OSTEOFORM e-learning materials to the legal framework, training system, and language in Bulgaria and Greece and to the needs of target groups in all partner countries.*
- Each country has its own regulations, training practices and certification rules and this objective addresses the specific needs in the target country for the transfer of innovation.
  - At the same time, the European collaboration will help to share experiences and best practices in osteosynthesis and can help the EU to harmonize the training of professionals and to progress towards some qualification standards.

# Results

Result	Deadline	Language(s)
Project reports	01/11/2015	EN
Need analysis report	28/02/2014	EN
Adapted e-learning courses	23/12/2014	BG, EL, ES, EN
Evaluation reports	30/09/2015	EN
Valorisation materials: project Web site, publications, demo DVD, leaflets	30/09/2015	BG, EL, ES, EN
Dissemination workshop	15/09/2015	EN, BG
Exploitation agreement	30/09/2015	EN

# Work programme

Work package	Start date	Finish date	Partners involved	Expected outcomes/ results
Need analysis <ul style="list-style-type: none"><li>- residents in orthopaedics and orthopaedic surgeons;</li><li>- engineers in mechanics needing knowledge and skills in biomechanical engineering</li></ul>	01/10/13	28/02/14	MUP All	Needs analysis report Competence Matrix: learning outcomes for knowledge, skills and competences of the two main target groups in osteosynthesis.

# Work programme

Work package	Start date	Finish date	Partners involved	Expected outcomes/ results
eLearning materials adaptation To adapt and upgrade the e-learning materials towards learning outcomes and to meet the user requirements and needs.	01/03/14	31/12/14	TUS All	Adapted e-learning courses



# Work programme

Work package	Start date	Finish date	Partners involved	Expected outcomes/ results
<p>Evaluation, pilot test</p> <p>The pilot test will be conducted with small groups of learners from the SMEs and partner training organisations – minimum 15 trainees.</p> <p>The field trial with larger audiences will be planned – minimum 60 trainees.</p>	02/01/15	30/03/15	IBV, TUS All	<p>Evaluation reports</p> <p>Report on the common courses tested and implemented and results reported with the number of trainees in each course, assessment results, certificates, trainers' experiences.</p>

# Work programme

Work package	Start date	Finish date	Partners involved	Expected outcomes/ results
Dissemination	01/10/13	30/09/15	MUP All	Valorisation materials: project Web site, publications, demo DVD, leaflets Dissemination workshop

# Work programme

Work package	Start date	Finish date	Partners involved	Expected outcomes/ results
Exploitation	01/04/15	30/09/15	DOS All	Report The field trial will be conducted with – minimum 15 trainees per country, 30 for Bulgaria. Exploitation agreement

# Partners' roles in the project

- **Technical University of Sofia (TUS)**
  - co-ordinating the project development and financial management,
  - monitoring of progress with the PSC and preparing the intermediate and final project reports,
  - communication with the Bulgarian National Agency,
  - adaptation of the e-learning materials to meet the specific requirements of the partner training organizations, HE institutions and hospitals,
  - performance of the functionality and usability tests,
  - organization of the pilot test for continuing education in biomechanical engineering,
  - dissemination of project results,
  - exploitation of project results in the continuing post-graduate education at TUS.

# Partners' roles in the project

- Instituto de Biomecanica de Valencia (IBV)
  - adaptation of questionnaires from OSTEOFORM, feedback from residents, surgeons and engineers in Spain on the exploitation of OSTEOFORM;
  - providing access to the database contents of OSTEOFORM as a training tool for identifying fractures and preoperative planning,
  - transfer of the biomechanical finite element models (FEM), to simulate surgical osteosynthesis;
  - collaboration with TUS for the coordination of evaluation activities, preparation and organisation of workshops for need analysis and for pilot test reporting and planning of field trials;
  - helping to prepare and implement the training modules, and participate in dissemination activities.
  - exploitation of OSTEOFORM in Spain and, evaluation of the impact of the transferred project after its end.

# Partners' roles in the project

- Medical University Plovdiv (MUP)
  - Need analysis of orthopaedists, surgeons and residents in Bulgaria;
  - definition of learning outcomes for surgeons' courses;
  - selection and adaptation of the contents on: the fracture mechanisms and the surgical techniques used to treat fractures throughout osteosynthesis implants, postoperative complications;
  - provision of clinical case studies in hand surgery for the database;
  - organisation of a meeting for evaluation of project results and dissemination workshop;
  - pilot test with at least 20 residents and doctors in Bulgaria;
  - Implementation of the eLearning materials in the lifelong learning activities at the university and in the eHealth system in Bulgaria,
  - Dissemination of project results in other areas in the medical sector, present the courses on conferences in the medical sector.

# Partners' roles in the project

- Department of Orthopaedic Surgery and Traumatology of University of Thessalia (DOS)
  - need analysis of residents and orthopaedic surgeons for training in new techniques for osteosynthesis, management of fractures using implants, requirements for implants design;
  - selection and adaptation of the Osteoform e-learning materials to the legal framework, training system, and language in Greece and to the needs of target group;
  - selection of specific clinical cases and design of case studies for the database;
  - preparation and organisation of a workshop for evaluation of learning environment and pilot test planning in Larissa, pilot test with at least 20 residents, doctors, and implant suppliers in Greece;
  - implementation of the courses in the regular resident programme at DOS.

# Meetings plan

<i>Date</i>	<i>Place</i>	<i>Purpose</i>
12-13/11/2013	<b>Sofia</b>	Kick-off meeting
13-14/03/2014	<b>Valencia</b>	Needs analysis and qualifications definition
11/2014	<b>Larissa</b>	Evaluation of e-learning materials, pilot test planning
03/2015	<b>Valencia</b>	Reporting the pilot test results, exploitation planning
09/2015	<b>Plovdiv</b>	Meeting for evaluation of project results. Dissemination seminar

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# Transfer of innovation

1. Transfer / export existing knowledge in the face-to-face courses taught by the institutions participating in the previous project Osteoform on the surgical treatment of fractures and telematic courses in osteosynthesis biomechanics.
2. Using the database of Osteoform as a training tool for identifying fractures and preoperative planning.
3. Transfer of the biomechanical finite element models (FEM) to simulate surgical osteosynthesis, using them as a training tool for medical professionals and engineering.

# OSTEOform project

- *E-learning platform* with training courses specialized in the field of bone fractures and osteosynthesis, as well as permanent access to practical modules.
- Focus on long bones fracture, and their diagnosis and treatment, including implants used in their restoration.
- *Database of anonymous cases* that is continuously updated with presurgical and postsurgical patient information.

# OSTEOform system

- Specialized training courses
- A database of anonymized clinical cases.
- A virtual community of skilled professionals (discussion boards, chats, faqs, blogs, etc).
- Usage of the simulation services with generic implants.
- A tool to practice bone fracture analysis