

ACTIVITY A.T3.2 IMPLEMENTATION OF PILOT PROJECT

**D.T3.2.3 SIMULATOR TESTING TO IMPORVE ENDOSCOPIST
PRACTICE IN FIELD OF CD**





1. RESULTS ACHIEVED ACCORDINGLY TO OBJECTIVES

- Please review the objectives you have set up in your D.T3.1.1 description, in the Status report Phase 1 and describe activities and results achieved by your pilot. Give an overview of the processes that are part of your pilot project.

Coeliac disease can be diagnosed with combination of different tests. In majority of cases, patients must undergo upper endoscopy - Esophagogastroduodenoscopy (EGDS), whereby biopsy specimens from multiple parts of distal duodenum and duodenal bulb are obtained. Pathologists further examine these samples and determine the degree of intestinal damage typical of coeliac disease. Clinicians who will not directly diagnose coeliac disease in their practice are not aware of the diagnostic procedures that need to be performed in order to confirm the disease. In order to obtain appropriate biopsy specimens a clinician performing EGDS must be well trained. Many young clinicians do not have sufficient endoscopic skills. They can acquire this by learning from the books and from available video materials, but mostly practice on real patients. In order to retain good skills an endoscopist must perform many procedures in one year, which in some smaller centres and in paediatric institutions, might be demanding. Simulator training cannot be a full substitute for performing endoscopy on real patients; however, it can greatly enhance the learning curve. Several studies have addressed the advantages and outcomes of simulator based training in endoscopy.

To improve skills of HCPs who are working with patients with gastrointestinal problems including CD we purchased an EGDS simulator alongside with light source and video processor for existing endoscopes at UKC MB. Initial step was testing of the functionality of simulator by skilled endoscopists performing procedure in real patients. Dr. Tomaž Krenčnik and Dr. Jernej Dolinšek together with endoscopy nurses Erika Macur and Gordana Rudelič tested the equipment. They agreed that the simulator closely resembled real situation. Thereafter short instructions for trainees undergoing the training were developed by Dr. Petra Rižnik. Within these instructions, basic principles of endoscopy procedures were introduced as well as technical specifications of endoscopes. Indications and contraindications for the procedure were presented. Basic endoscopy techniques were also presented. An interactive lecture was prepared for trainees with several scenarios described in more detail.

Several workshops were organised during the implementation phase of the pilot project. Two approaches were used. Group training was organised at conferences such as Meeting of Slovene paediatricians with participation of HCPs already performing endoscopy procedures in their institutions and at Skills lab meeting of future HCPs coming from Central European Medical faculties. Group session was also organised for students of Faculty for Health Sciences of University of Maribor. Another approach was individual training of students of Medical Faculty of University of Maribor. These students were also exposed to real patient endoscopic procedures and were able to compare it with simulator experience. Specialists, residents, interns, medical students, nurses, and students of nursing school attended courses organised within the pilot activity. Regardless of the approach used, all participants were highly satisfied with the training and gained knowledge. As organisers of these courses, we were able to acknowledge great **improvement in theoretical knowledge** about the rationale of endoscopic procedures in patients with gastrointestinal disease, as well as **improvement of technical skills** of participants already performing endoscopies in their institutions. A tutorial video was developed for HCPs. As all the participants were also presented with materials, regarding celiac disease management we also recorded **improved knowledge about celiac disease management** of participants.

EGDS simulator will remain at Paediatric Gastroenterology Unit at University Medical Centre Maribor for future use. Training courses will be organised on an annual basis for future trainees at the department. Recorded material will remain available for future use.



2. ADDED VALUE OF THE DEVELOPED & TESTED PILOT SOLUTION IN YOUR REGIONAL ENVIRONMENT

- Please describe shortly, what is the gained added value for the end-user of pilot service solution

ADDED VALUE for END-USER	
Short term effects	Long-term effects
1. Knowledge about the performance of EGDS.	1. Improved skills of practicing endoscopists.
2. Better knowledge about indications and contraindications for EGDS.	2. Timely appointment for endoscopy of patients who need endoscopic procedure such as CD patients.
3. Better knowledge about diagnostic procedures in celiac disease management.	3. Improved service of health care sector for patients with celiac disease.

3. DEVIATION AND PROBLEMS ENCONTERED

- In case your outcomes are different from the planned, please give an explanation of the reasons and formulate your modified results achieved. Was your planned model working or did you had to make modifications, if yes, describe? Did you had any problems in you pilot implementation? If yes, which was the solution adopted?

We have not encountered any major problems during the pilot activity.

Some problems were anticipated and mitigation measure were adopted efficiently.

- When larger groups were registered for a training event participants were split in smaller groups and more than one station was organised with involvement of more teaching staff.
- When students attending had time constraints individual phases of training were split in different days.
- Lack of interest by students was overcome by blending of interactive and individual approach, which stimulated higher degree of involvement of participants.



4. LESSON LEARNED RELATED TO CO-CREATION OF PILOT SOLUTIONS WITH ENGAGED STAKEHOLDERS

- Please describe what were the benefits and setbacks related to co-creation of pilot project with stakeholders.

LESSONS LEARNED	
Benefits	Setbacks
1. Involvement of participants from different backgrounds and with different knowledge allowed exchange of different views and enabled the introduction of more personalized themes in the training.	1. Involvement of larger groups can slow down a learning curve, and can allow lower involvement of individuals with less motivation.
2. Simultaneous involvement of doctors and nurses enabled better communication between themselves, which is crucial in real settings.	2.
3. Constant feedback by participants during interactive lessons and during training improved the teaching capabilities of teachers.	3.

5. FURTHER ACTION PLAN (ACTIVITIES FOR THE FUTURE)

- What are your further activities of the pilot project development,
 - > On the local level?
 - > Simulator will remain at the Department of Paediatrics of University Medical Centre Maribor for future use by trainees. Medical students, residents and young specialists from Slovenia will be practicing at simulator. All written and other supporting material will be regularly updated, and will be distributed to new trainees.
 - > On transnational level?
 - > Simulators will remain at the Department of Paediatrics of University Medical Centre Maribor for future use by trainees. Participants from neighbouring countries will be invited to participate in training sessions organised at different international events in Maribor. Trainees that regularly visit Department of Paediatrics at the University Medical



Centre Maribor will be involved in training as well. All written and other supporting material will be regularly updated, and will be distributed to new trainees.

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- How did you plan to ensure sustainability to your pilot? Have you plan any action for the maintenance/follow up/development of the actions implemented, after the project ends?

As described above the simulator will remain operational at the Department of Paediatrics of University Medical Centre Maribor. All supporting materials will be regularly updated with new knowledge and developments in the field of gastrointestinal endoscopy. Members of the teaching staff will attend *train the trainers* courses in order to improve skills in training and will be included in the international endoscopy-training network.