

BFCC A.4.2.4. Innovation dialogue event 24 April 2017 Krakow Report

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Document Control Sheet

Project	Baltic Fracture Competence Centre (BFCC)
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Distribution	[Consortium]

1. Innovation Dialog Report

#	Table of content
A.	<i>The need / opportunity (challenge)</i>
Instrumentation for removal of broken implants	
B.	<i>Short description of the opportunity (one sentence)</i>
Surgeons need to be equipped with the set of tools, and instruments of universal nature that would help them remove the parts of the broken implants or fixing elements of different origins that accidentally stuck in the bone.	
C.	<i>The background – description of the problem</i>
<p>During a surgical procedure to set a fracture, the bone fragments are first repositioned (reduced) into their normal alignment. They are held together with special implants, such as plates, screws, nails and wires. Internal fixation allows shorter hospital stays, enables patients to return to function earlier, and reduces the incidence of nonunion (improper healing) and malunion (healing in improper position) of broken bones.</p> <p>The implants used for internal fixation are made from stainless steel and titanium, which are durable and strong. There are many types of implants and joints, and no standards as it regards methods and tool of implants removal.</p> <p>The major surgical problem: Inability to remove the implant stuck in the bone Difficulty removing an implant can occur if the implant is difficult to locate, if the implant breaks, or in some cases, if it is simply stuck. A repeat fracture happens accidentally when patient is overconfident due to the fact he does not fill a pain anymore. In most cases metal implants can be removed, sometimes causing unnecessary damage to normal bone and soft-tissue. In rare circumstances, the effort to remove an implant may be abandoned and the implant left behind.</p> <p>It is also always a risk that seemingly simple, straight-forward surgical procedure may become more complicated. For that reason, surgeons always should be wary of a hardware removal surgery, as these procedures can become more challenging than anticipated. There are also cases where hardware removal becomes impossible – most often related to a broken metal implant inside the body.</p> <p>When facing the major surgical problem surgeons most often improvise by combining available tools, instruments, methods and approaches developed ad hoc to address the problem.</p>	
D.	<i>Description of the best practices which are actually preformed in order to solve the problem</i>
Tbd	
E.	<i>Description of the need / opportunity (challenge)</i>
<p>This is the need for a design the ready made set of universal instruments that would be handy in case of necessity of removal of metal implant stuck in the bone. Instruments need to be designed with the knowledge of divers types of implants and internal fixations, as well as need to base on idiosyncratic experience of clinicians.</p> <p>While it is impossible to foresee all the possible complications, it is assumed that well designed set will be supportive in majority of cases and will especially: speed the procedure, lower damage of soft tissues, lower the risk of other complications caused by improvisation.</p> <ul style="list-style-type: none"> • REDUCE – the necessity to improvise with instruments that are not purposefully designed for the • ELIMINATE – randomness in completing the instrumentation for complicated procedure • STRENGTHEN – capacity to address the problem correctly • CREATE – standards for development of implants and supporting instrumentation that makes dealing with complications less problematic 	

F.	<i>Supplement: source documents from the workshop (participants, notes, mind maps, photos etc.)</i>
<p>Participants:</p> <ol style="list-style-type: none"> 1. Małgorzata Kubicz – CUMRIK, Rehabilitacja 2. Jarosław Brudnicki, CUMRIK 3. Guzik Piotr, CUMRIK 4. Robert Wojtasik, STRYKER 5. Krzysztof Mydel, UHK 6. Grzegorz Biel, Johnson&Johnson 7. Marek Piotrowski, SUH Medical Devices Dept. 8. Jarosław Wichnial, SUH DKRP 9. Barbara Magik, CUMRIK 10. Krystyna Wajda, SUH 11. Renata Fryc, KLSK(facilitator) 12. Kazimierz Murzyn, KLSK (facilitator) 	
G.	<i>Id of the event (place, date)</i>
BFCC Innovation Dialog Event held in University Hospital Krakow April 24th	
H.	<i>Contact to the lead person</i>
1. Jarosław Brudnicki, CUMRIK	
I.	<i>Sources (other):</i>
Busam ML, et al. "Hardware removal: indications and expectations" J Am Acad Orthop Surg. 2006 Feb;14(2):113-20.	