

# Health

## Project of the Month

# CLINICIP



**Thousands of patients in European intensive care units (ICUs) develop high glucose levels that need to be treated with insulin. Many ICUs cannot easily control the glucose level and as a result, these patients have a much higher risk to die or to develop complications. Within the EC funded project CLINICIP, a system that will help ICU staff to implement glucose control has been developed. The system is presently being clinically approved and is expected to be soon released to the market.**

### At a Glance

#### Project:

CLINICIP will improve the survival chances of critically ill patients and increase efficiency and safety in clinical practice.

#### Project coordination:

JOANNEUM RESEARCH  
Forschungsgesellschaft mbH  
Contact: [Karin.Rehatschek@joanneum.at](mailto:Karin.Rehatschek@joanneum.at)

#### Scientific coordination:

Medizinische Universität Graz  
Contact: [Martin.Ellmerer@healthgate.at](mailto:Martin.Ellmerer@healthgate.at)

#### Partners:

DISETRONIC Medical Systems AG (CH), Technische Universität Graz (AT), Univerzita Karlova V Praze (CZ), Royal Brompton & Harefield NHS Trust (UK), Consiglio Nazionale delle Ricerche (IT), SensLab GesmbH (D), Gesellschaft zur Förderung der Analytischen Wissenschaften e.V. (D), Carmeda AB (S), Gambro Dialysatoren GmbH (D), Katholieke Universiteit Leuven (BE), The Chancellor, Masters and Scholars of the University of Cambridge (UK), B.Braun Melsungen AG (D).

**Duration:** 48 months

**Total cost:** € 11.256.588

**Programme:** IST

#### Further information:

Project website: [www.clinicip.org](http://www.clinicip.org)

Project leaflet:

[http://ec.europa.eu/information\\_society/activities/health/docs/projects/fp6book/clinicip.pdf](http://ec.europa.eu/information_society/activities/health/docs/projects/fp6book/clinicip.pdf)

CLINICIP Symposium (8/10/ 2007) in Berlin:  
<http://www.clinicip.org/index.php?id=219>

Patients in intensive care units (ICUs) can develop high glucose levels. **Shock and trauma** because of **surgical procedures** are the **major causes** for these atypical **physiological symptoms** which are comparable to those of diabetes mellitus.

**CLINICIP project contributes to save lives!**

A number of clinical studies indicated that normalisation of high glucose levels with insulin dramatically improves the survival chances in these ICU patients.

However, treatment of glycaemia with target glucose levels close to normal physiological range is labour-intensive and although the cause/effect is well-known, the unmanageable workload and the prevalent fear of low glucose levels still prevent the general implementation of glycaemic control in ICUs until now.

**Normalisation of high glucose levels with insulin dramatically improves the survival chances**

In a combined effort, clinicians and scientists have joined forces in the CLINICIP project to develop an **intelligent glucose monitoring and control system for critically ill patients**. The overall goal of the **CLINICIP system** was to establish glycaemic control in order to improve survival chances in ICUs and increase efficiency and safety in clinical practice.

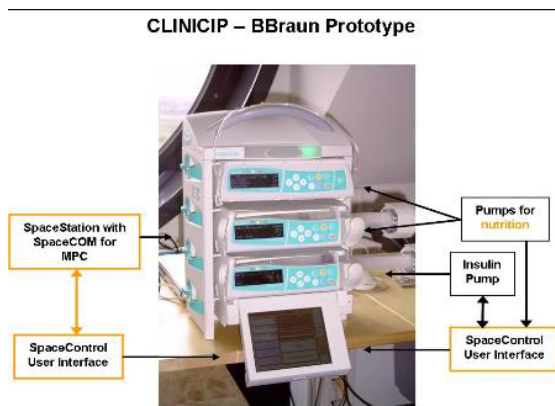
The CLINICIP partners followed a 2-step approach: Within a first step, a decision support system has been developed that combines automated insulin delivery with an intelligent algorithm to analyse how much ●●● 1/2

insulin is needed, based on carbohydrate intake and current glucose levels. Within a second step, sensor systems are developed in order to establish a complete glycaemic control system.

## RESULTS AND EXPECTED IMPACT

### IMPLEMENTATION OF THE CLINICIP PROTOTYPE INTO CLINICAL PRACTISE

The **1<sup>st</sup> CLINICIP Prototype version has been successfully tested** at Royal Brompton Hospital (UK) and Medical University of Graz (AT). These **clinical studies** have been **performed as medical device approval studies towards product evaluation and certification.**



### FIRST CLOSED LOOP STUDIES FOR PROOF OF CONCEPT

Also regarding the full implementation of the closed-loop approach, **first clinical studies have been started and are presently successfully in operation** at Charles University Prague and Medical University Graz. The **results** of these studies will bring a **proof of concept** and will set a milestone in order to initiate further collaboration among the CLINICIP partners.

## PRODUCT RELEASE AND EXPLOITATION OF RESULTS

Recent studies on the 1<sup>st</sup> CLINICIP Prototype implementation have led to further improvement in terms of **usability, acceptability and stability of the system.**

The actually available CLINICIP Prototype system is seen as essential cornerstone of the project's outputs and will serve as an important component in the future workflow of the ICUs.

**Market release** of the above mentioned CLINICIP decision support system can be approximately **scheduled with early 2009.**

### CLINICIP SYMPOSIUM IN BERLIN

Together with the major industrial partner BBraun, CLINICIP is organizing a symposium on glucose control for critically ill patients during the Annual meeting of the ESICM (European Society of Intensive Care Medicine/ <http://www.esicm.org>) in Berlin.

The CLINICIP symposium, which takes place on Monday, October 8<sup>th</sup>, 2007, is focused on the topic "Tight Glycaemic Control – From Concept to Clinical Practice".

This symposium will **highlight the latest scientific findings on glucose metabolism in critical illness** and review recent reports from the latest clinical trials on the topic.

Besides the discussion of the stumbling blocks and pitfalls involved in the implementation of tight glycaemic control, a major part of the symposium will be to **discuss the future and to issue recommendations on how to implement glucose therapy into clinical practice.** Besides speakers from the CLINICIP consortium, also experts from the European research area have been invited to exchange knowledge in this important field.

**"Tight Glycaemic Control – From Concept to Clinical Practice" Berlin 08/10/2007**

### For further information:

ICT for Health - European Commission – Information society and Media DG  
Office: BU31 06/41 B-1049 Brussels

Email: [eHealth@ec.europa.eu](mailto:eHealth@ec.europa.eu)

Tel: +32 (0)2 296 41 94 - Fax: 02 296 01 81

[http://ec.europa.eu/information\\_society/eHealth](http://ec.europa.eu/information_society/eHealth)