

# Welcome to the pitching session on:

## Combining hospital interventional approaches to improve patient outcomes and increase hospital efficiencies

Presentation order	First Name	Last Name	Job position	Organization	Country
1	Maria	Zisiopoulou	Clinical Manager Cardiology	University Medical Center Frankfurt	Germany
2	Jens	Deckert	Public Affairs	EDWARDS LIFESCIENCES	Belgium
3	Kai	Kronström	CEO	EpiHeart	Finland
4	Nicolas	Elvemo	CEO	GlucoSet	Norway
5	Lukas	Lesnovsky	Manager Strategic Partnerships	Datlowe	Czech Republic
6	Tobias	Klinder	Research Scientist	Philips	Netherlands

# Before we start...

- We are recording this session and it will be published on the IHI website and B2Match platform.
- We will also publish the presentation slides.

# How to contact the presenters?

Home Call days Agenda ▾ Organisations Participants Marketplace Project offers ▾ Pitchers - Call 3 Sessions



## Agenda

Thursday, December 15, 2022 x All locations

EVENT AGENDA MY AGENDA

All times are displayed in your time zone (Europe/Rome, currently: 08:56). [Change](#)

Thursday, December 15, 2022

- 10:00 - 11:30** Info Session - Topic: Combining hospital inter improve patient outcomes and increase hosp  
Info Session Room - 7  
You will be able to join 10 minutes before the session st
- 11:30 - 12:30** Matchmaking time- Topic: Combining hospite approaches to improve patient outcomes and efficiencies
- 12:30 - 13:30** Pitching Session - Topic: Combining hospital i approaches to improve patient outcomes and efficiencies  
Pitching Session Room 5  
You will be able to join 10 minutes before the session st

### Pitching Session - Topic: Combining hospital interventional approaches to improve patient outcomes and increase hospital efficiencies

CALL 3

12:30-13:30  
Pitching Session Room 5  
376 participants signed up for this session  
You will be able to join 10 minutes before the session starts

DESCRIPTION:

Presentation order	Presentation title	First Name	Last Name	Job position	Organisation	Country
1	Improvement of patient outcomes in interventional cardiology	Maria	Zisiopoulou	Clinical Manager Cardiology	University Medical Center Frankfurt	Germany
2	The right combination of smart CDSS during all the stages of the patient pathway	Jens	Deckert	Public Affairs	EDWARDS LIFESCIENCES	Belgium
3	Combining cellular therapy with cardiac surgery - improved recovery and life-expectancy	Kai	Kronström	CEO	EpiHeart	Finland
4	Breaking down barriers to interoperability	Nicolas	Elvemo	CEO	Glucoset	Norway
5	Automated analysis and processing of EHRs	Lukas	Lesnovsky	Manager Strategic Partnerships	Datlowe	Czech Republic
6	Combine - Combining diagnostic data and interventional approaches for improved hospital efficiency and patient outcomes	Tobias	Klinder	Research Scientist	Philips	Netherlands

SPEAKERS:

- Jens Deckert**  
Public Affairs at EDWARDS LIFESCIENCES
- Nicolas Elvemo**  
CEO at GlucoSet
- Tobias Klinder**  
Research Scientist at Philips
- Kai Kronström**  
CEO at EpiHeart
- Lukas Lesnovsky**  
Manager Strategic Partnerships at Datlowe
- Maria Zisiopoulou**  
Clinical Manager Cardiology at University Medical Center Frankfurt



# IHI Call Days | Call 3

- Topic 3: Combining hospital interventional approaches to improve patient outcomes and increase hospital efficiencies

## Improvement of patient outcomes in interventional cardiology

Contact person name: Maria Zisiopoulou

Organisation: University Medical Center Frankfurt

E-mail: [Maria.Zisiopoulou@kgu.de](mailto:Maria.Zisiopoulou@kgu.de)

Link to:

- Marketplace opportunity: <https://ihi-call-days.ihi.b2match.io/participations/193220/opportunities>
- Participant profile: <https://ihi-call-days.ihi.b2match.io/participations/193220>



# Challenges and objectives

- What problem are you trying to solve?
  - Improvement of patient outcomes in myocardial infarction.
  - Myocardial infarction (heart attack) is a leading cause of death worldwide and is responsible for approximately 42% of all deaths from cardiovascular disease.
  - Is your project suitable for IHI?
    - Yes
  - Give concrete example of potential results and expected impact
    - Data-driven decision support for clinicians and patients
    - Better planning and use of hospital resources

# Main activities

1. Standardized Data gathering – myocardial infarction
  - PROMs (patient-reported outcome measures)
  - Medical history
  - Biochemical blood data
2. Data analysis and model development (AI driven)
3. Implementation in healthcare practice

# Expertise and resources offered

1. Already extensive experience with transcatheter aortic valve implantation (TAVI) patients
2. Existing algorithm solutions for patient-related outcomes (prediction of length of stay, complications, mortality, costs)
3. Resources: University cardiology clinic, data scientists, IT-infrastructure, wearables monitoring

# Expertise requested

- Desired partners
  - Small and medium sized enterprises and / or large companies for
    - App development
    - Cost-effectiveness analysis
    - Investigator initiated trials for clinical pathways (patient and process workflows)



# IHI Call Days | Call 3

- Combining hospital interventional approaches to improve patient outcomes and increase hospital efficiencies

## The right combination of smart CDSS during all the stages of the patient pathway

Contact person name: Jens Deckert & Kristian Michnacs

Organisation: Edwards Lifesciences

E-mail: [Jens\\_Deckert@edwards.com](mailto:Jens_Deckert@edwards.com) & [Kristian\\_Michnacs@edwards.com](mailto:Kristian_Michnacs@edwards.com)

Link to:

- Marketplace opportunity

# Challenges and objectives

<i>Problem to solve?</i>	<i>Project suitable for IHI</i>	<i>Results and expected impact</i>
<p>Technologies such as Clinical decision support systems (CDSS) <b>are not being optimally combined to provide the best patient care</b></p>	<ul style="list-style-type: none"><li>• <b>Cross sectoral approach</b></li><li>• Showcasing how existing hospital <b>technologies</b> can be <b>optimally combined</b></li><li>• <b>Enhance patient pathways</b> and <b>decrease societal burden</b></li></ul>	<ul style="list-style-type: none"><li>• Assess use cases</li><li>• Improve hospital efficiencies and guide policy</li></ul>

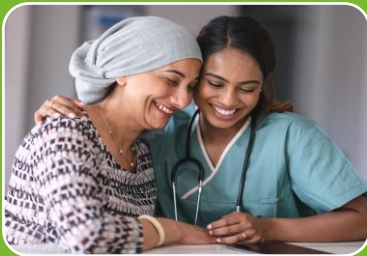
# Main activities



Showcase how existing **technologies & use cases** can be optimally combined in smart and innovative ways  
→ e.g. Cardiovascular and General surgery interventions



We will focus on providing the right combination of solutions during all the stages of the patient pathway.



We will propose and evaluate new patient and healthcare professional centric models and methodologies able to provide outstanding patient outcomes and sustainable hospital settings and procedures

# Expertise and resources offered and requested

## Resources in place (potential partners)\*



Medtronic



Project coordinator  
identified  
(University hospital)

Technology  
integrator

*\*we will bring the necessary in-kind contribution as specified in the call*

## Expertise requested

- Hospitals & healthcare professionals
- SMEs
- Patient organization
- Technology integrator profiles
- HTA, IT, etc.

# IHI Call Days | Call 3

- Combining hospital interventional approaches to improve patient outcomes and increase hospital efficiency:

## Combining cellular therapy with cardiac surgery – improved recovery and life-expectancy

Contact person name: Kai Kronström

Organisation: EpiHeart Oy, Finland

E-mail: [kai.kronstrom@epiheart.com](mailto:kai.kronstrom@epiheart.com)

Link to:

- Marketplace opportunity: <https://ihi-call-days.ihi.b2match.io/participations/201672/opportunities>
- Participant profile: <https://ihi-call-days.ihi.b2match.io/participations/201672>

# Some background

- Cardiac cellular therapies have a potential to support to recovery from ischemic damages and to revert heart failure
- Combining cardiac cellular therapy with cardiac surgery taking place anyway (i.e. coronary artery by-pass grafting, LVAD implantation, other) provides notable synergies (safety, costs, efficacy)
- Despite clear potential there are still challenge to tackle.
- Fits nicely for the call

# Challenges and objectives

- Challenges
  - Limited amount of data on efficacy, especially considering different patient groups
  - Limited understanding on mechanisms of action
  - Limited clinical accumulation of clinical data
- Objectives
  - Address above mentioned challenges
  - Drive the cardiac cellular therapy towards proven, cost efficient, value adding, integrated and generally used treatment.
- Results
  - Foundation for quick clinical adoption created (i.e. scientific proof, other hindering aspects resolved)
  - rapid clinical adoption on the way.

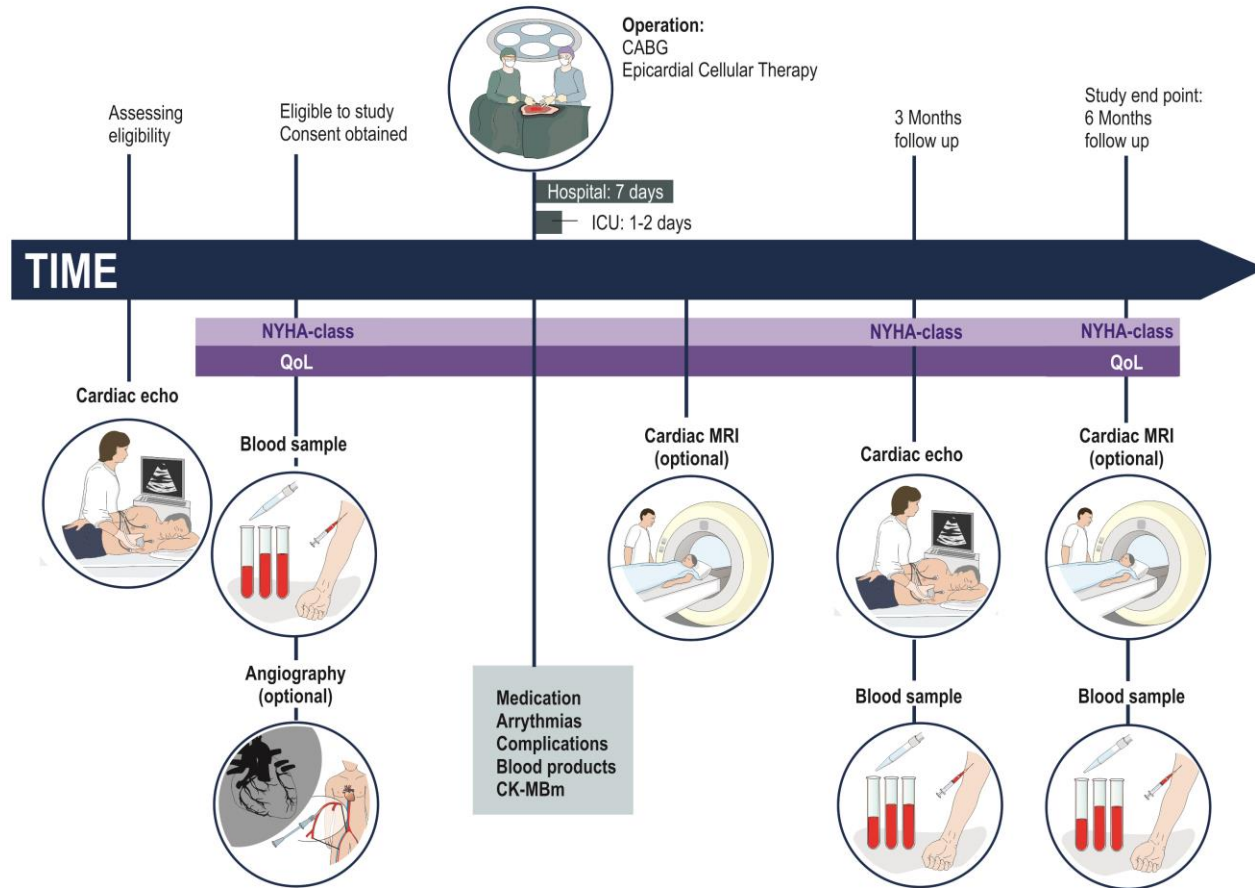
# Main activities

- Clinical study framework finalization
  - CABG study arm
  - LVAD implantation arm
  - Real-life data arm (CABG patients)
- Clinical study execution
- Data analysis framework and (AI)tools creation to predict efficacy in patient level
- Dissemination

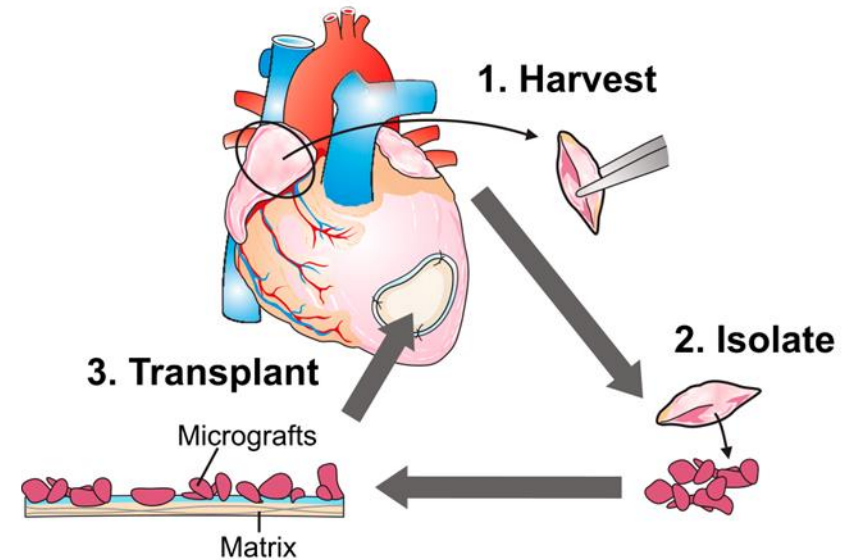
CABG=Coronary Artery By-pass Grafting  
LVAD=Left Ventricular Assisting Device (implantation)



# Clinical study flow and cell therapy



Autologous cellular therapy administered during the surgery



# Expertise and resources offered

- EpiHeart is a start up / SME dedicated in reinventing cardiac cellular therapy. Epiheart has developed medical devices enabling a cardiac cellular therapy.
- EpiHeart can provide state-of-the-art understanding on cellular therapies, guidelines and CE-marked medical devices for a promising “cardiac micrograft therapy”, including first-in-human completed level of experience.

# Expertise requested

## Core:

- Cardiac surgery centers (~5) with research interest (i.e. University Hospitals)
- AI specialist, i.e. clinical data & software specialist cable to analyze data and develop predictive models
- EpiHeart coordinator, SME “re-inventing cardiac cellular therapy”

## Optional:

- Academic research unit(s) for study designs, analysis, dissemination
- Entities having other cellular therapies or components suitable for the project.
- Project co-ordination support

# IHI Call Days | Call 3

- Topic 3

## “Closing loops in the ICU”

Contact person name: Nicolas Elvemo

Organisation: GlucoSet AS

E-mail: [Nicolas.Elvemo@glucoset.com](mailto:Nicolas.Elvemo@glucoset.com)

# Challenges and objectives

- ICU patients are unstable, and several parameters must be kept in a range for minimizing risk and cost (nutrition, glucose, blood pressure, cardiac output, oxygen level)
- A number of treatment protocols that could improve outcomes in ICU patients are inefficient in practice because they are managed by humans
- Combining novel technologies would help us improve patient outcomes

# Main activities

- Take TRL3 technologies
  - Therapeutic algorithms
  - Minimally invasive sensors
  - EHR/PDMS access
- Develop to TRL7 decision-support/closed loop for optimizing:
  - Nutrition, glucose, blood pressure, fluids, O2

# Expertise and resources offered

- Confirmed partners: expertise
  - SME: Sensor tech. & decision support (private member)
- Tentative partners: expertise
  - SME: Structuring EHR/PDMS data for decision support
  - Academia: Therapeutic algorithms
  - Research institute: Connectivity
  - Research hospitals: User needs; animal and in clinic testing

# Expertise requested

- Anyone
  - Structuring EHR/PDMS data for decision support
  - Therapeutic algorithms
  - Implementing device connectivity?
  - User needs
  - Animal and in clinic testing
- Large companies
  - Any of the above, plus in-kind contributions?



# IHI Call Days | Call 3

- Combining hospital interventional approaches to improve patient outcomes and increase hospital efficiencies

## Automated analysis and processing of EHRs

Contact person name: Lukas Lesnovsky

Organization: Datlowe

E-mail: [lukas.lesnovsky@haidi.ai](mailto:lukas.lesnovsky@haidi.ai)

Link to:

- [Marketplace opportunity](#)
- [Participant profile](#) | [www.datlowe.com](http://www.datlowe.com)

# Challenges and objectives (1/2)

## Electronic Health Records

- Fragmented
- Unstructured or confusing
- Various information systems

It is difficult to use the data for:

- care delivery optimization
- patient safety improvements

# Challenges and objectives (2/2)

## AUTOMATIC ANALYSIS OF TEXT USING NLP & ML



### Progress notes examples:

Day 5 (November 19) – Heart: regular without murmur. Blood pressure 154/90. **increased body temperature**. She **developed the cough**. Denies abdominal pain, dysphagia or nausea.

Day 6 (November 20) – **Fever continues**. Urine sample is clear, no signs of dysuria, infection or haematuria. **Pain in her right chest** that intensifies with inspiration. The fracture heals satisfactorily.

Day 7 (November 21) – Generalized weakness, poor appetite. **The sputum is thick and yellow**. **Inspiratory crackles**. **Suspected RTI**.

Day 8 (November 22) – Chest x-ray PA view and lateral which revealed an **acute pneumonia in the right middle lobe**. The remainder of the lung fields is clear. **Temperature 101.8°F**. Prescribed **cotrimoxazole therapy**.

## OUTPUTS

Uncovers **critical information** hidden in clinical records, otherwise easily overlooked.

## REAL EXAMPLE

Since 2019 the technology is used for Surveillance of Healthcare-associated Infections (HAIDI.AI)

**RESULT: 5x** higher accuracy of HAI detection

**IMPACT: 90%** administration time saving (direct)

Care delivery improvements, targeted preventive measures, reduction in HAI incidence.

# Main activities

1. (Automatic) analysis of ANY available EHRs  
(structured data & unstructured clinical notes)
2. Detecting critical information  
(related to diagnose, medication, treatment, patient's profile, etc.)
3. Data-driven optimization of care delivery  
(interventions, care, processes)

# Expertise and resources offered

Team Datlowe is ready to provide:



**The technology,**  
incl. customizations,  
integration and  
implementation team



**Hospitals**  
participating and  
interested in  
innovation in multiple  
EU countries



**Combined skillset:**  
data analytics +  
software engineering +  
contextual medical  
knowledge

# Expertise requested

Hospital looking for optimizing the delivery of care in areas such as:

- reduction in medication errors
- reduction of the consumption of antibiotics
- surveillance of healthcare-associated infections
- ...

Consortium, incl. project leader

# IHI Call Days | Call 3

## Combine

Combining diagnostic data and interventional approaches for improved hospital efficiency and patient outcomes

Contact person name: **Tobias Klinder**

Organisation: **Philips Research**

E-mail: **[tobias.klinder@philips.com](mailto:tobias.klinder@philips.com)**

# Challenges and objectives

- Too much data scattered across multiple systems  
→ **inefficiency, pressure on quality**
- Overburdened healthcare staff  
→ **need support in automating tasks**
- Too many patients are sent to the interventional lab but are not treated  
→ use of **diagnostic modalities (CT) as gatekeeper**



# Objectives



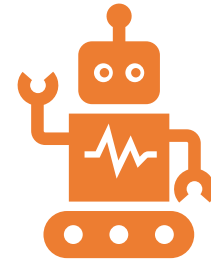
Reduce the cost of treating patients with coronary artery disease

**How?** Increase the role of coronary CT as a diagnostic modality in coronary artery disease



Improve the quality of diagnostic and therapy decisions

**How?** Integrate diagnostic imaging and clinical information with real-time interventional images/data.



Reduce the workload and mental burden of clinical staff

**How?** Automate interpretation, quantification and risk assessment using AI-powered CDS

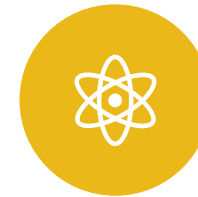
# Technical goals – Cardiology



**Workflow integration:**  
integrate (spectral) CT in the clinical, diagnostic and interventional workflow



**Data integration:**  
combine diagnostic and real-time data (images, vitals) during coronary interventions



**Automation:**  
develop and integrate algorithms to interpret images and clinical data

# Expected outcomes - Cardiology



**Fewer patients sent to the interventional lab** without being treated there (-20%)



**Better data quality** leading to better care decisions (-10% data errors)

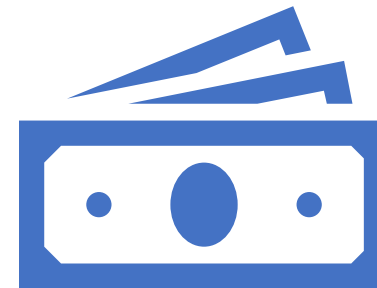


**Savings of ~400 euro** per patient

# Expected duration/budget



Duration: 36 months



Budget: ~20 Meuro;  
Max funding: ~10Meuro.

## Pitching session on:

Combining hospital interventional approaches to improve patient outcomes and increase hospital efficiencies

Presentation order	First Name	Last Name	Job position	Organization	Country
1	Maria	Zisiopoulou	Clinical Manager Cardiology	University Medical Center Frankfurt	Germany
2	Jens	Deckert	Public Affairs	EDWARDS LIFESCIENCES	Belgium
3	Kai	Kronström	CEO	EpiHeart	Finland
4	Nicolas	Elvemo	CEO	Glucoset	Norway
5	Lukas	Lesnovsky	Manager Strategic Partnerships	Datlowe	Czech Republic
6	Tobias	Klinder	Research Scientist	Philips	Netherlands

# How to contact the presenters?

Home Call days Agenda ▾ Organisations Participants Marketplace Project offers ▾ Pitchers - Call 3 Sessions



### Agenda

Thursday, December 15, 2022 x All locations

EVENT AGENDA MY AGENDA

All times are displayed in your time zone (Europe/Rome, currently: 08:56). [Change](#)

Thursday, December 15, 2022

- 10:00 - 11:30**  
Info Session - Topic: Combining hospital inter improve patient outcomes and increase hosp  
Info Session Room - 7  
You will be able to join 10 minutes before the session st
- 11:30 - 12:30**  
Matchmaking time- Topic: Combining hospite approaches to improve patient outcomes and efficiencies
- 12:30 - 13:30**  
Pitching Session - Topic: Combining hospital i approaches to improve patient outcomes and efficiencies  
Pitching Session Room 5  
You will be able to join 10 minutes before the session st



## Pitching Session - Topic: Combining hospital interventional approaches to improve patient outcomes and increase hospital efficiencies

CALL 3

12:30-13:30

Pitching Session Room 5

376 participants signed up for this session

You will be able to join 10 minutes before the session starts

DESCRIPTION:

Presentation order	Presentation title	First Name	Last Name	Job position	Organisation	Country
1	Improvement of patient outcomes in interventional cardiology	Maria	Zisiopoulou	Clinical Manager Cardiology	University Medical Center Frankfurt	Germany
2	The right combination of smart CDSS during all the stages of the patient pathway	Jens	Deckert	Public Affairs	EDWARDS LIFESCIENCES	Belgium
3	Combining cellular therapy with cardiac surgery - improved recovery and life-expectancy	Kai	Kronström	CEO	EpiHeart	Finland
4	Breaking down barriers to interoperability	Nicolas	Elvemo	CEO	Glucoset	Norway
5	Automated analysis and processing of EHRs	Lukas	Lesnovsky	Manager Strategic Partnerships	Datlowe	Czech Republic
6	Combine - Combining diagnostic data and interventional approaches for improved hospital efficiency and patient outcomes	Tobias	Klinder	Research Scientist	Philips	Netherlands

SPEAKERS:

- Jens Deckert**  
Public Affairs at EDWARDS LIFESCIENCES
- Nicolas Elvemo**  
CEO at GlucoSet
- Tobias Klinder**  
Research Scientist at Philips
- Kai Kronström**  
CEO at EpiHeart
- Lukas Lesnovsky**  
Manager Strategic Partnerships at Datlowe
- Maria Zisiopoulou**  
Clinical Manager Cardiology at University Medical Center Frankfurt



Thank you for your attention

[ihi.europa.eu](http://ihi.europa.eu)

