Overview 1st project year

Marco Kalz, Max Haberstroh, Tony Hosmans, Niklas Lenssen, Joris Klerkx
Why EMuRgency?

- Appr. 50 reanimations/week by emergency services in the EMR
  - 8 – 10 people survive
  - The survival rate could be doubled if
    - Immediate help by laymen would be in place
    - Professional help would earlier be in place
Why EMuRgency?

Chances for survival...

...through immediate cardiac massage are increased with the factor 3!
Why EMuRgency?

• New guidelines by the European Resuscitation Council....
  – faster chest compressions (>100/min)
  – deeper cardiac massage (> 5 cm deep)
  – hands-only CPR allowed for untrained laymen
Why EMuRgency?

• Benefits for the whole Euregio Meuse-Rhine
  – Increased survival rates and decreased costs for rehabilitation and therapy
  – Access to state-of-the-art notification system and training technology for citizens
  – Technological & educational innovations
  – Early adopter region for the ERC guidelines
  – The EMR recognized as „survival region“
  – Joint research & development
  – Future Expertise development for eHealth
The EMuRgency idea

• EMuRgency is a socio-technological innovation project in the health domain
• The project addresses problems that cannot be solved by health initiatives alone
• It combines technological development, educational innovations and interdisciplinary research
# Partner overview

<table>
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<tr>
<th>Organization</th>
<th>Details</th>
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<tr>
<td>Open Universiteit Nederland, Heerlen, Centre for Learning Sciences and Technologies</td>
<td>Dr. Marco Kalz</td>
</tr>
<tr>
<td>Universitätsklinikum Aachen, Klinik für Anästhesiologie</td>
<td>Prof. R. Rossaint</td>
</tr>
<tr>
<td>RWTH Aachen, Lehrstuhl Informationsmanagement im Maschinenbau</td>
<td>Prof. S. Jeschke</td>
</tr>
<tr>
<td>Ziekenhuis Oost-Limburg, Genk, Afdeling Kritieke Diensten</td>
<td>(Dr. René Heylen), Dr. Sven van Poucke</td>
</tr>
<tr>
<td>KU Leuven, Human Computer Interaction Lab</td>
<td>Prof. Erik Duval</td>
</tr>
<tr>
<td>CHR Citadelle, Liege, Service des Urgences et du SMUR du CHR de la Citadelle</td>
<td>Dr. Michel Verignon</td>
</tr>
<tr>
<td>CECOTEP, Liege, EPAMU</td>
<td>Tony Hosmans</td>
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<tr>
<td>Maastricht University, School for Public Health and Primary Care</td>
<td>Prof. Dr. Ton Gorgels</td>
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</table>

**NEW APPROACHES FOR RESUSCITATION SUPPORT AND TRAINING**
Partner expertise

Medical Expertise
- AACHEN
- Ziekenhuis Oost-Limburg
- CHR CITADELLE
- Maastricht University

Technological Expertise
- KU LEUVEN
- IMA
- ZLW
- IfU

Educational Expertise
- Centre for Learning Sciences and Technologies
- ECOTEPE asbl
The EMuRgency activities

• WP1: Project coordination
• WP2: Design, development, testing and implementation of a notification system for first aid support
• WP3: Educational innovations for resuscitation training (mobile & game based learning)
• WP4: Setup of a EMR school network for resuscitation training
• WP5: Setup of a stakeholder network in the EMR region
• WP6: Development, evaluation and implementation of interactive displays to increase awareness
WP1 Project Coordination

• Reporting
• Financial contact & financial reporting
• Establishment of a communication infrastructure
• Consortium meetings & monthly meetings
• Mix of face-to-face & online meetings
• External representation of project
• Networking with related initiatives
WP1: Project Coordination

• Consortium meetings:
  – Kick-off: 5.9. – 6.9. 2011, Heerlen, NL
  – 2\textsuperscript{nd} meeting: 7.2. & 8.2. 2012, Aachen, DE
  – 3\textsuperscript{rd} meeting: 4.6. & 5.6. 2012, Liège, BE

• Monthly meetings:
  – Rotating between locations

• Online meetings:
  – Monthly technical meetings, bilateral meetings
WP1: Project Coordination

- Internal project communications: Basecamp platform
WP2: Essential Components
WP2: User Registration
WP2: Case Initializer

New approaches for resuscitation support and training

Start New Case

Notes

Name

Peterstraße 25, 52062 Aachen, Germany

50.77399113232036, 6.09052137642238
WP2: Prototype of the Mobile Client
WP2 Notification system

• Activities year 2:
  – Further development
  – Testing and evaluation
  – Legal reviews NL & BE
  – Interface to dispatch centers
  – iOS version
WP3 Educational Innovations

• CPR apps study
• 30s video & study
• Basic E-Learning unit & study
• Gamification concept & study
• AED Pointer
WP3 Educational Innovations

• CPR Apps study:
  – Market review of apps & functionalities
  – Expert review of the long list
  – Laymen review (usability & hedonic quality) of the short list
WP3 Educational Innovations

30 Seconds of your life for the whole life of someone else

Biermann H¹, Lenssen N¹, Sopka S², Beckers SK¹, Kalz M³, Berkhout J³, van der Baaren J³, Felzen M², Rossaint R¹, Skorning M¹

1: Department of Anaesthesiology, University Hospital Aachen, RWTH Aachen, Germany
2: Department of Intensive- and Intermediate Care, University Hospital Aachen, RWTH Aachen, Germany
3: Center for Learning Sciences and Technologies (CELSTEC), Open University, Netherlands

Aims of the 30 seconds videoclip:
- Rising awareness about resuscitation
- Spreading the idea of chest-compression only CPR
- Motivating for participation in full BLS-Course

Fig.1: Part of the 30s-Video
WP3 Educational Innovations

An open educational resource for minimal online resuscitation training

John van der Baaren¹, Henning Biemann², Marco Kalz¹, Max Skorming², Wendy Kicken¹

Cardiac arrest in the Euregio Meuse-Rhine

- Bystander should be able to:
  - Check consciousness
  - Call 112
  - Perform chest compressions
- Very large audience so training should be:
  - Low cost (free online resource)
  - Short (5-10 minutes)
- Skill oriented training consisting of:
  - A 30 second movie
  - Short instructions of procedures
  - Interactive exercise for chest compressions

First responder notification system

New educational formats

School network

Stakeholder network

Public and interactive displays

Short training to increase first-responder CPR

When a cardiac arrest occurs it is vital that bystanders act immediately. As a minimum bystanders should be able to check consciousness, call 112 and perform chest compression of sufficient depth and speed until an ambulance or other professional support arrives.

The majority of people however do not have these skills. Courses in Basic Life Support are available but are however too time-consuming and costly option when our aim is to train the vast majority of people and maintain their skill level.

The short course, which will be available in four languages as open educational resource (OER), consists of:
- Short (30 sec) video showing how to handle in case of a cardiac arrest;
- Short instructions on procedures;
- Chest compression exercise where learners can manipulate speed and depth of compression on a realistic video of a manikin.
WP3 Educational Innovations

• CPR training as a game
  – Mobile content delivery as preparation
  – Simulation of incident, wayfinding, stress
  – Peer-video for debriefing
WP3 Educational Innovations

AED-POINTER

Un site web pour comparer les DEA...

AED COUNTER

0436

How did you find the AED-Pointer website?
- By Facebook
- By information e-mail
- By a promotional support (poster, flyers, ...)
- By hearsay
- By an internet search engine
- Other

With the map you can discover the exact locations of the Automated External Defibrillators (AED).

http://www.aed-pointer.eu

NEW APPROACHES FOR RESUSCITATION SUPPORT AND TRAINING
WP3 Educational Innovations

• Activities for year 2
  – Mobile Training App development
  – Gamification concept study
  – E-Learning content: Translation & further content
  – AED Pointer further development and spread
WP4 School network

• Consensus on training concept for the school network
  – Different materials (mannequins)
  – Focus on economical aspects of mass trainings in secondary schools
WP4 School network

Formation à la Réanimation Cardiopulmonaire et à l'utilisation d'un Défibrillateur Externe Automatisé en seulement 30 minutes à l'aide d'un DVD, d'un mini-mannequin et d'un DEA didactique.

Le participant initié pourra conserver son kit, s'entraîner chez lui et également sensibiliser son entourage à cette pratique.

Exemple de cours collectif :

Initiation dans les écoles

Pour les écoles, la participation est gratuite.

Si vous êtes intéressés d'en faire bénéficier vos élèves, n'hésitez pas à prendre contact avec nous ou à nous envoyer le formulaire d'inscription.
### WP4 School network

<table>
<thead>
<tr>
<th>School name</th>
<th>B</th>
<th>C</th>
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<tr>
<td>138 Elzendaalcollege</td>
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<td>144 Dendron College</td>
<td>Horst a/d Maas</td>
<td>Horst a/d Maas, Nederweert, Roermond en Heerlen</td>
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<td>145 Citaverde College</td>
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<td>Maastricht en Gronsveld</td>
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<td>155 Valuas College</td>
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WP4 School network

• Activities for year 2
  – Preparation and implementation of school trainings
  – Data collection
  – Reporting
  – Refining the training approach
WP 5 Stakeholder network & PR

• Website in 4 languages
• Social Media Activities (FB & Twitter)
• Events in the region
• Flyers
• Exhibition stand
• Scientific papers & presentations
WP 5 Stakeholder network & PR

New approaches for resuscitation support and training

Check for breath

Welkom bij het EMuRgency project

Het project "EMuRgency: Nieuwe benaderingen voor ondersteuning en training bij reanimatie" richt zich op een groeiend bewustzijn van het probleem van hartstilstand in de Europese Rhine-Maas en uiteindelijk het tonen van overlevingskansen.

CPR events EMR

- Advanced Life Support des ERC, Provider-Course
WP 5 Stakeholder network & PR

Website statistics year 1
WP 5 Stakeholder network & PR

Very nice! The European Resuscitation Council has featured one of our services: AED-Pointer – The open AED database!

AED-Pointer
www.aed-pointer.eu

Presenting EMuRgency at the research days of the Open University of the Netherlands

NEW APPROACHES FOR RESUSCITATION SUPPORT AND TRAINING
WP 5 Stakeholder network & PR

• Pre-registration
  – Approx. 50 volunteers registered already
WP 5 Stakeholder network & PR

• Events in the region
  – Inauguration simulation lab Citadelle
  – Semaine du Coeur Liege
  – Reanimatie Estafette in Venray
  – Workshop on ICT for Health Monitoring & AAL, LICT, KU Leuven
  – World Anaesthesia Day Aachen
  – Presentation ZOL Genk
WP 5 Stakeholder network & PR

- Semaine du Coeur Liege, 25.09.2012, approx. 200 participants, 5% from other EMR regions
WP 5 Stakeholder network & PR

• Inauguration simulation lab Liege, 13.12.2011 (approx. 60 participants, all from region Liège)
WP 5 Stakeholder network & PR

- Reanimatie Estafette Venray (28.09.2012), 600 participants, nearly all from NL
WP 5 Stakeholder network & PR

• Workshop on ICT for Health Monitoring & AAL, LICIT, KU Leuven, 09.10.2012 (70 participants, nearly all from Belgium)
WP 5 Stakeholder network & PR

- World Anaesthesia Day Aachen, 16.10.2012: Lecture with 40 participants, practice session and video demo with 1500 participants (in mechanical engineering lecture), for both events approx. 10% from other EMR regions
WP 5 Stakeholder network & PR

- Presentation students Bachelor Medicine @Auditorium ZOL Genk, 16.10.2012 (50 participants, all from the region)
WP 5 Stakeholder network & PR

• Scientific presentations:
WP 5 Stakeholder network & PR

• Scientific presentations (ct’d):
WP 5 Stakeholder network & PR

• Several poster presentations at the Resuscitation Congress in Vienna
  – 1 project poster
  – 1 poster about the 30s-study
  – 1 poster about the E-Learning unit
  – 1 poster about training in secondary schools
WP 5 Stakeholder network & PR

STAND EMURGENCY PROJECT
- Dare to Save -

NEW APPROACHES FOR RESUSCITATION SUPPORT AND TRAINING
WP 5 Stakeholder network & PR
WP6 Public displays - Goals

• Increase awareness about cardiac arrest problem among laymen
• Increase factual knowledge
• Increase procedural knowledge
• Increase confidence and motivation to lower threshold for doing CPR
• Recruit people to become a volunteer
WP6 Public displays

• Technical Infrastructure ready to deploy for remote display management
• Explorations of data visualizations
• Integration with P2000 monitor in the Netherlands
• Set-up of an Activity Stream System for sharing activities and events
• Technical integration with notification system
WP6 Public displays
Incident visualization
EMuRgency Project has reported
CPR request at Celestijnenlaan 200A
   -- CPR

27 Sep at 15:58

EMuRgency Project has accepted
CPR request at Celestijnenlaan 200A
   -- CPR

26 Sep at 11:41

EMuRgency Project has reported
CPR request at Celestijnenlaan 200A
   -- CPR

26 Sep at 11:41

EMuRgency Project has shared
Vinnie Jones' hard and fast Hands-only CPR (funny short film) (full-length version) - YouTube
   --

22 Aug at 16:45

EMuRgency Project has shared
EMuRgency 30s trailer - EN
   -- emurgency

22 Aug at 16:44
WP6 Public displays

• Activities for year 2
  – Visualizations based on real data
  – Lab studies
  – Field experiments
  – Dissemination of PR material on displays in the region
Initiatives for year 2

• Establishment of quality assurance mechanisms  
  – Installment of external advisory board (3 members)
• Further communication with the European Resuscitation Council
• Strong campaign during the European Cardiac Arrest Awareness week
• Communication with regions/ministries after legal reviews
Initiatives for year 2

• Building the volunteer community
• Mobile Learning in Health Workshop
• First initiatives for sustaining the project
• Events & Sponsorship
• More joint studies
• Technical integration
• Open Access to papers
THANK YOU FOR YOUR ATTENTION