

# Study

## Raising the level of CPR skills at Copenhagen Hospitals



### Case Study

- Combining Resusci Anne Simulator, MicroSim InHospital and Resusci Anne Skills Station to train all clinical personnel in Copenhagen County in Basic, Intermediate and Advanced Life Support.

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# Case

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# Raising the level of CPR skills at Copenhagen Hospitals

For hospitals and other healthcare institutions it has always posed a great challenge to train and re-train their personnel to master the lifesaving skills of Basic Life Support (BLS). Complexity is added by the fact that some of the personnel need additional training in Advanced Life Support (ALS) comprising of both advanced individual skills and knowledge on how to act as part of a acute medical team.

Healthcare personnel work busy schedules and as many training officers have experienced, it can be an overwhelming task to bring groups of employees together for training. The solution is to implement training concepts that allows for high degrees of flexibility, self-service and automated documentation on the Basic and Intermediate level, and to utilize the freed up resources combined with new concepts and products in patient simulation to train in teams those who work in teams. In contradiction to most other skills learned in life, acute medical skills are ultimately measured by the ability to save more lives. It is therefore critical that the effect of the training can be proven by research on both learning outcomes and ultimately also survival rates.

## The Challenge: To train all clinical personnel in Copenhagen County in acute medical life support

This case study documents how Copenhagen County in Denmark took a holistic approach to training all clinical personnel on 3 different localizations in acute medical life support on both basic, intermediate and advanced levels.

As part of the contract discussions the County worked with Laerdal Denmark to identify the internal challenges to be solved for this massive educational effort to become a success. As this was also the largest cross-level and inter-disciplinary implementation of the respective products ever from Laerdal's side, there was no former history or experiences to draw upon. The following three areas were identified as major challenges needed to be addressed prior to, and as part of, the implementation:

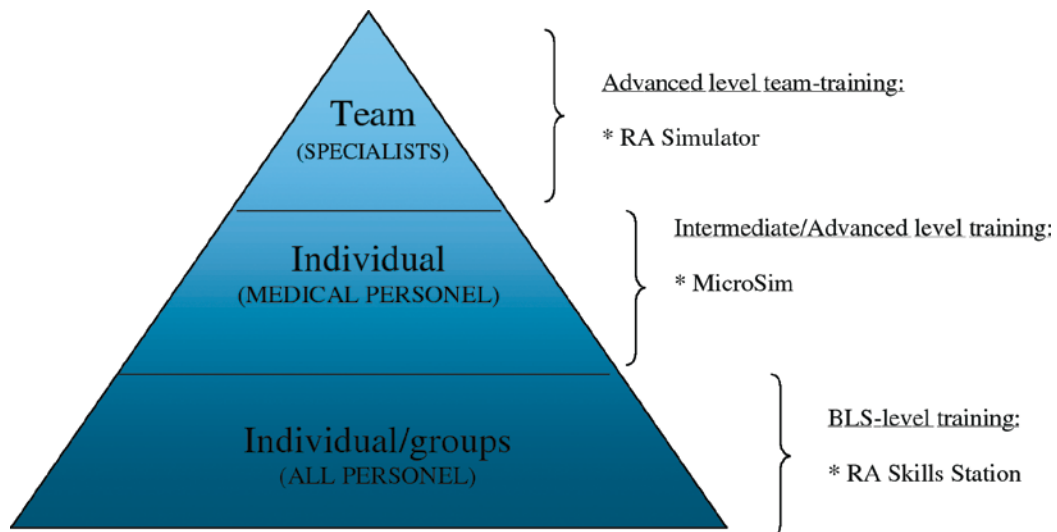
1. Motivation of end users
2. Document cost- and time benefit
3. IT integration

In the following each of the three areas are briefly discussed.

## 1. Motivation of end users

Like in many hospitals, Copenhagen County Hospitals previously have spent most of their training efforts and resources on their specialists. In this program, however, the aim is to roll out CPR training to all clinical personnel in the County, located at 3 different sites. This means that departments that almost never witness a cardiac arrest still must actively take part in the training / certification process.

Vital signs of success of this huge educational effort to the owners and management will be positive feedback from end users, high level of participation and of course also positive results in terms of the skills level rising. Hence, early in the project phase it was identified that a very important part of the implementation at Copenhagen County Hospitals would be to motivate personnel at all levels to participate and to contribute to raising the overall level of CPR skills. No doubt, part of the motivation has been the chance to use cutting edge technology delivered by Laerdal. To ensure both effectiveness and efficiency a strategy for providing the right training to the right people was developed:



## 2. Cost- and time benefit

The main cost for training at all levels in the pyramid is manpower. In a study published in *Resuscitation* it is estimated that as much as 80% of costs of training and retraining are paid working hours. The study concludes that by using a system similar to the RA Skills Station chosen by Copenhagen Hospitals can reduce student and instructor time with up to 75%.<sup>1</sup> The basis of comparison for the highest volume users (low end of the pyramid) was a 2-4 hours standard CPR training course. A strategic financial intention for Copenhagen County was to spend less money at the lower levels, and more on the group of Specialists. In other words, instead of giving a lot of people some medium level of training, the aim was to find out the cheapest way to maintain or even raise the level of skills for the low end group, and canalize more of the resources to the expert group.

Furthermore it was early identified as a major challenge to document all this training in a cohesive and reusable way since the 3 hospitals currently use different kind of personnel management systems etc.

To measure the effects of the training and to be able to document the results in a more high-level way, there was a requirement from the County stating that they would like to be able to trace and research the training and certification results in more detail. In fact they wanted a system where they could calculate figures like: "Average compression rate", "Average ventilation rate", "Average hands-off time during CPR, etc.

## 3. IT Integration

A vital part of the implementation has been to make sure that IT integration works smoothly and in a manner that allows for a universal way to document the skills acquired. Personnel quite often switch jobs between the different hospitals and the County required that personnel should not lose their training history when switching between the different hospitals. In this particular case it was also decided to integrate the Laerdal Competence Management System with the County's salary system so that the acquired training history actually was linked to each individual's salary/employee number. This way all personnel kept their certifications even if they switched to one of the other hospitals.

In addition it was listed as a requirement from Copenhagen County that trends and statistical results across the full user group should also be made available for export and analyses from the Laerdal Competence Management System.

### The solution offered to Copenhagen County

To fulfill most of their needs described above, we took our starting point in the triangle above.

By splitting up in 3 levels the management has the opportunity to tune the use of resources where they are most needed.

*For the top level (Specialists) the yearly training/ certification:*

- Cardiac Arrest Team Training by Resusci Anne Simulators + MRx Q-CPR
- MicroSim, 5 modules
- Resusci Anne Skills Station

*For the intermediate level the yearly training/ certification:*

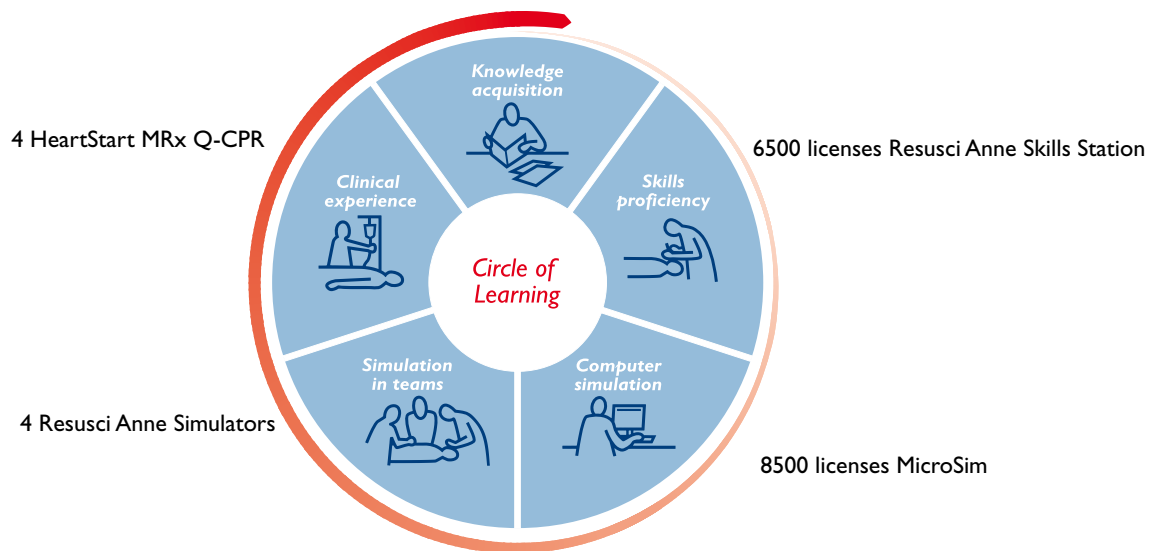
- MicroSim, 1 Cardiac Arrest Module
- Resusci Anne Skills Station

*For the BLS level the yearly training/ certification:*

- Resusci Anne Skills Station

<sup>1</sup> Vik et.al. (2001), *Resuscitation*, "An Automated Voice Advisory Manikin System for Training in Basic Life Support without an instructor – a novel approach to CPR Training"

To cover the needs laid out through this strategy, the Copenhagen County ordered a total of:



**How the concept is rolled out in the organization**

The single, most resource-demanding task in this project is the integration of Laerdal Competence Management System with Copenhagen County Hospital's local databases. IT is therefore at the very top of this list of priorities as the project is now launched:

- IT integration
- Training appointed super users at each hospital in the use of CMS
- Pilot starting in August at each hospital, automatically calling in 200 users by e-mail via CMS
- Prepare and motivate all staff by sending out pamphlets with thorough information before start

**Lessons learned:**

Working on a multi-level project sale like the one for Copenhagen County can be very gratifying as one get the chance to take a holistic approach towards the training of the personnel. This means that we are allowed the chance to compose and propose an educational blend of Laerdal products that are suited to the needs and the curriculum on different levels of education at the customer's side.

IT can be a challenge from a sales representative's point of view since we do not have details about the customer's system up front. But with the potential upside in large groups of users on systems like MicroSim and the new RA Skills Station, this is a learning curve sales personnel at Laerdal need to embark on as soon as possible. We have also learned that a project of this magnitude and scope, we are dependent on the customer IT support and buy-in, and this

can vary from hospital to hospital. We recommend involving local IT resources as soon as possible in the sales process, i.e. by using an IT questionnaire like we have implemented for MicroSim. Such a questionnaire would also ensure the introduction of an early decision point where necessary IT resources on the customer side are mobilized before too much resources are poured into the educational side of the project.

The implementation of such a big project can be a long process, and a lot of challenges may need to be solved during this implementation. It is suggested that a Laerdal project manager is appointed, and is closely involved in the whole process.

Another key for success is the motivation of end users, and this part can be difficult for us to influence on. An idea could be to help the customer to make a local folder highlighting the benefits of the solutions, telling about measurement and voice feed-back technology, etc. Clearly some of all the evidence produced through research should be referred as well. We need to be very aware that their success is our success. Once the system is installed and running this is a highly efficient system for the customer and a profitable product for Laerdal.

All in all the Copenhagen County case has been a very interesting project for the Danish Sales organisation, our R&D resources and also the involved people at Laerdal Medical in Stavanger. From this case we have gained valuable experience on aspects we would not normally engage in like organizational implications, end-user motivation, etc. It is with great pleasure we see that the experience gained from this case is now utilized in several other prospects and actual project sales.

**About Resusci Anne Skills Station™**

The Resusci Anne Skills Station provides self-directed Basic Life Support CPR skills training and certification, with the research-proven benefits of voice feedback during training. Through the use of the Laerdal Competence Management System (CMS) it adds the possibility of managing larger groups of trainees can be efficiently managed. CMS can also integrate e-mail systems to automate the process of booking, reminding trainees of their training sessions, and to provide training certificates.

**About MicroSim™**

Laerdal MicroSim provides self-directed learning through the simulation of realistic patient scenarios. It is a computer program that simulates medical emergencies and procedures to help learners develop decision-making skills. The technology uses medical models to bring reality to the educational experience with automated intelligent debriefing for immediate medical feedback. The program is configurable to the needs of the educator.

**About Resusci Anne Simulator™**

The Resusci Anne Simulator offers affordability to realistic simulation team training. Based on the learning objectives and curriculum of various emergency medical personnel, this full-bodied simulator is the perfect training companion for hospitals, emergency medicine and military personnel, as well as educational centers. Improve your educational outcomes through the benefits of simulation team-training at an affordable price.

**About HeartStart MRx Q-CPR**

Heartstart MRx is a portable multi-monitor/defibrillator specially adapted to cater for the need in a pre-hospital environment. It enables emergency personnel to continually monitor all types of vital signs; like ECG, etCO<sub>2</sub>, SpO<sub>2</sub>, Blood pressure and temperature. 12 Lead ECG can be recorded, analysed and sent via GPRS to the hospital. It is also a non-invasive pacemaker, and enables synchronised shocks to be delivered. During resuscitation it can be used in manual or in semi-automatic modus. HeartStart MRx is the only defibrillator currently offering the groundbreaking technology of QCPR. QCPR gives real-time feedback to the rescuer about the quality of CPR performed, with guidance on how to improve the performed resuscitation there and then.

**About Laerdal Medical**

Laerdal Medical, one of the world's leading providers of Health-care Solutions, is dedicated to helping save lives with products and services for Airway Management, Immobilization, Basic Life Support, Advanced Life Support, Patient Care, Self-Directed Learning, and Medical Education. Laerdal is pleased to serve all healthcare providers and educators, from the lay rescuer to the medical professional. For more information, visit [www.laerdal.com](http://www.laerdal.com)

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