



# Connected Cardiology for Better Care

Region-wide networks with Xcelera are enhancing clinical collaboration and patient care in Denmark.

**Who/where**  
**Region of Southern Denmark:**  
Dr. Sabine Gill, Head of Echolab, Odense University Hospital;  
Nader Rasuli-Oskuii, Clinical Engineer and project leader Region South Denmark;  
Dr. Niels Kragh-Thomsen, Head of Adult Cardiology, Sønderborg Hospital;  
Dr. Kenneth Egstrup, Professor in Cardiology, University of Southern Denmark, Head of Cardiology Svendborg Hospital.  
**Capital Region of Denmark:**  
Dr. Christian Hassager, Head of Echolab, Rigshospitalet, Copenhagen University Hospital; President of Danish Society of Cardiologists

**Challenge**  
To establish a complete solution for cardiology image management, analysis and reporting that enables comparisons of reports within hospitals, and between regional heart centers and satellite hospitals.

**Solution**  
Philips Xcelera integrated multi-modality image management system for cardiovascular information – installed in hospitals across regions in Denmark, linking satellite hospitals and central university hospitals.

Philips Xcelera is a robust, software-based solution for cardiology image management, analysis and reporting. Unique installations of Xcelera in Denmark are bridging the distances between heart centers and satellite hospitals – establishing a new level of confident, collaborative care.



Dr. Niels Kragh-Thomsen

### Saving time and enhancing patient care

Recently, Dr. Niels Kragh-Thomsen had a challenging case. As head of Cardiology at Sønderborg Hospital, he had seen an 85-year-old female patient admitted with decompensation due to a degenerated artificial aortic valve. The satellite hospital in the Southern Region of Denmark routinely refers cases to the “heart center” in Odense. Before the advent of digital reporting, the time required to collaborate on a treatment decision could have severely affected the chances for such a patient. Fortunately in this case, Dr Kragh-Thomsen was able to use Philips Xcelera to instantly show and discuss the patient’s echocardiograms with his colleagues at Odense University Hospital. A treatment decision was promptly made, and the patient was transferred immediately to Odense for a stand valve implantation in the degenerated biological valve.

Dr. Kragh-Thomsen sums up the clinical transformation Xcelera provides succinctly: “Before we had to send a CD to present images for the doctors in Odense, our university hospital. Now we can just pick up the phone and discuss the same images at the same time, and make a fast solution.”

### Denmark’s interconnected healthcare system

Denmark’s population of 5.5 million is served by a national healthcare system that divides the main peninsula and islands into five regions. Dr. Christian Hassager, Head of Echolab at Rigshospitalet, the Capital Region’s central hospital, explains: “Our healthcare system in Denmark is built up: regarding cardiology, we have big centers and we have satellites, and patients are often transferred from one site to another.” The spread of resources can potentially present problems, and to ensure ready data access across these “hub and spoke” arrangements, a complete Cardiology Picture Archiving and Communication System (C-PACS) is necessary.

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Nader Rasuli-Oskuii

### Xcelera: one access point for cardiology needs

Xcelera shows all the multi-modality cardiology patient examinations clinicians need, and provides efficient access to this wealth of information through a single, patient-centric workspace. Nader Rasuli-Oskuii says in this sense, Xcelera is “designed for the future.” The clinical engineer at Odense University Hospital was a main driver of the installation in the Odense heart center, and throughout the Southern Region of Denmark, where a total of 40,000 echocardiography patients are seen every year.



Dr. Christian Hassager

### Unique, region-wide installations

Uniquely broad installations of Xcelera in Denmark are bridging the distances between regional heart centers and satellite hospitals. Within the network across the Region of Southern Denmark, and the Capital Region of Denmark, each hospital can immediately see patient data from every other hospital. This has transformed the process of referring cases to heart centers

to seek diagnosis and treatment advice. By eliminating physical data transfer, and reducing patient transport and duplicate examinations, Xcelera helps simplify clinician workflow – saving time and money. This in turn enables cardiologists to focus on their primary concern: providing quality patient care.

### Simplified clinical workflow and science

In his role as President of the Danish Society of Cardiologists, Dr. Hassager is able to articulate the wider strategic benefits Xcelera has provided. He says it has helped to put Denmark on the map in Europe and in the world. “It enables not only a good clinical way of working, but also makes science a lot easier. And it has helped us all, as Danish cardiologists, to publish papers and get known out in the world.”

Dr. Kenneth Egstrup, Professor of Cardiology at the University of Southern Denmark, works from Svendborg Hospital in the Southern Region of Denmark. He says the installation of Xcelera across his region has been integral in helping him



Prof. Dr. Kenneth Egstrup



Dr. Sabine Gill

### Overcoming the challenges of distance

The region-wide installations of Xcelera facilitates patient access to timely cardiology care despite large distances to heart centers. Dr. Christian Hassager illustrates a unique example: “We have small islands here in Denmark with only 50,000 inhabitants and very few cardiologists – if any – employed. To give these inhabitants access to echocardiography, we educated a sonographer who goes there once a week to do their echos. It’s as if she is just sitting next door: she does the scans and transfers them to the server, we can see the images immediately, discuss them via phone or webcam, and make a plan for the patient. So in this way a cardiologist can access the patient to help treatment. If we go back a few years, we had to transfer the patient to our hospital from that island, just for an echo and a quick talk and then back to the island.”

develop insights and trends in his specialty, echocardiology: “It’s essential for me to have a good system where you can handle and process images to conduct extra studies which you don’t have the time to do when you have the patient in.”

### A vision for the future

The installations of Xcelera in the southern and capital regions of Denmark have brought great advantages, and Dr. Gill hopes the system will be expanded. “This solution has made it possible to get very close contact with our colleagues in the regions, and we have many more conferences than before. Hopefully, if we are lucky, we can broaden the system to the whole country.” With



Xcelera networks in the Region of Southern Denmark, and the Capital Region of Denmark

two out of five regions already operating large, successful Xcelera installations, this vision is certainly feasible. Integrating the entire Danish cardiology image management information into one system would bring immense advantages to the country’s cardiology care. Clinicians are also keen to see further developments, such as incorporating more modalities, better interoperability with products from other vendors, and a more integrated IT solution to support the system.

Dr. Gill enthuses that Xcelera is the right choice for her hospital and region’s needs for connected cardiology: “I absolutely would recommend this solution to other hospitals because we have learned, already after these few months, that we had much closer cooperation with the other hospitals. And I think we get better treatment of patients because we have these online discussions all the time.”

### Xcelera allows clinicians in Denmark to:

- Have greater confidence in collaborative patient care decisions
- Conduct leading cardiology research
- Improve operational costs