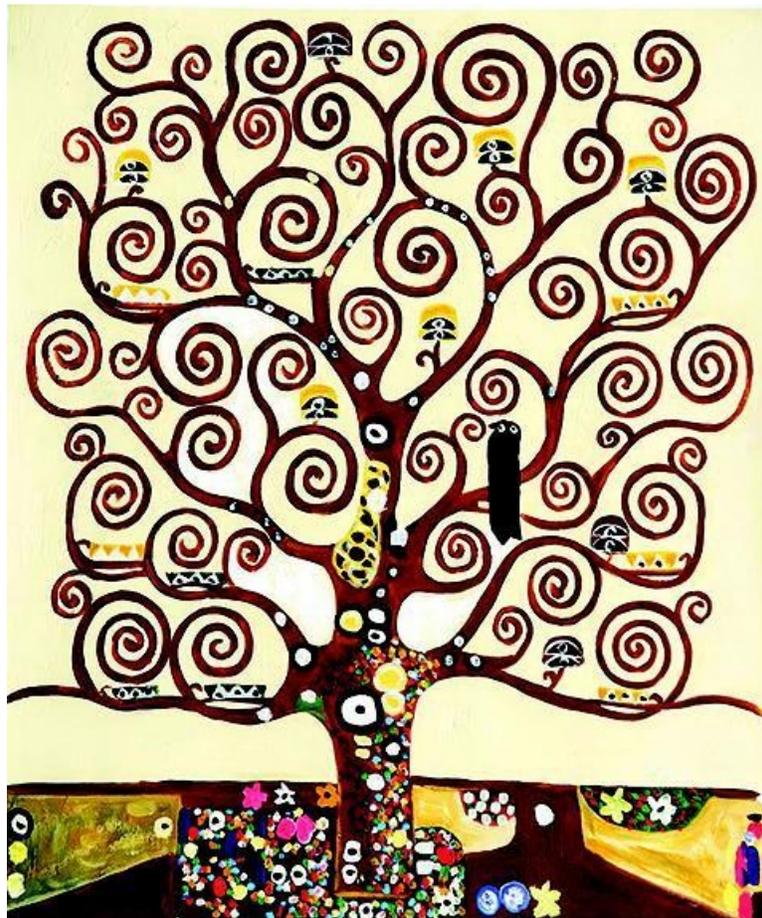# ACCESS
health international
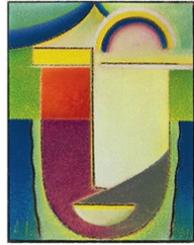
FocusCura

Interview with Dr. Daan Dohmen

Based on Gustav Klimt, Tree of Life, Stoclet Frieze, Lebensbaum, 1905

By Sofia Widén & William Haseltine

ACCESS Health Sweden

November 2016

Our vision is that all people, no matter where they live,
no matter what their age, have a right to access
high quality and affordable healthcare.

www.accessh.org

Elder and Long Term Care
An ACCESS Health International Program Area

Background

FocusCura is an international eHealth provider. It provides five products which improve the quality of life for seniors and chronically ill. The eHealth solutions of FocusCura give the elderly the opportunity to live independently in their homes. Internationally two interesting eHealth applications are provided by FocusCura on a large scale. The first application, cContact works with a tablet. It provides video conferencing. The application helps people to maintain their care network and have contact with them, such as their homecare providers, doctors, general practitioner, specialists, and relatives. The second application, cVitals, is a health monitoring service. It helps patients manage illnesses such as chronic obstructive pulmonary disease, heart failure, and diabetes from their home. Patients collect their own health data. The data is shared with their providers automatically. Both products have been evaluated and cVitals has received a European CE mark. The CE mark is a standardized product certification for medical products.

In the following interview, Dr. Daan Dohmen, the founder and chief executive officer of FocusCura, describes the many facets of technology that FocusCura has introduced into elder care. The philosophy of the company focuses on independent living. The applications allow people to choose the type of care they want, when they need it. For example, they can choose to receive an in person visit with the doctor or a digital visit via video conferencing. This is called 'blended care' and many choose to receive this blended care, a combination of digital and in person care rather than only personal care. Insurance providers reimburse patients equally for all options and interesting results are realized with blended care such as lowering admission rates and increasing efficiency of the care personnel.

About Dr. Daan Dohmen

Dr. Daan Dohmen is the founder and chief executive officer of FocusCura. Dr. Dohmen started as an assistant elder care giver in a nursery home. He completed his education at the University of Twente. His doctoral thesis examined implementation of modern technologies in homecare settings. FocusCura operates currently in several countries and is the first Dutch Apple Mobility Partner allowing the company to leverage Apple's expertise and global reach to get its innovative e-health solutions into the hands of more patients and care givers. Dr. Dohmen hopes to expand his applications and offer them to more interested countries in the future.

Interview

Sofia Widén (SW): Hello, Dr. Dohmen. Please tell me, does FocusCura have any facilities in Singapore?

Daan Dohmen (DD): No. We are currently active in the Netherlands, Belgium, Sweden and Denmark. We have some leads in the United States and United Kingdom as well. It may be too early to start there. We want to find interesting markets. We also want to find markets suitable for eHealth or telehealth. We need a government that allows and reimburses care on a distance, like via video, monitoring or similar technology. Such reimbursements are not available in all countries. I worked as an assistant elder care nurse. That is how I started here. Opposite to here, there is a nursing home. That is where I started wanting to become a doctor. In the Netherlands, we have a lottery system. My number was not chosen. Only people whose numbers are chosen are allowed to attend medical school. Grades are not considered. I think the system is different now. You apply for admission. When I went to university, this was not possible.

SW: Where did you go to school?

DD: I went to the University of Twente. I was the first student to earn a master's degree in technical medicines. The degree program combines medical technology, the basics of medicine, and the basics of administration or economics of healthcare. I completed my doctorate on eHealth implementation methods. I focused on eHealth as part of homecare for the elderly.

I asked myself, "How can we use modern technology to help elderly stay at home and remain independent as long as possible?" We found some solutions, including the personal alarm among others. We discovered that one factor that helps elderly to stay at home is whether they are connected with their environment. Do they have children living far away? Are they mobile? Do they have nurses or doctors from homecare or hospital care? We started with two applications that we run internationally. One of them is VideoCare. The other one is Home Health Monitoring. I want to create a system of blended care. Some of the contact and communication will be physical. Some of it will be virtual.

In many countries, elder care all runs much like a machine, a factory. We use the same process for everyone. For example, you indicate you need help taking your medicine. We send someone to give it to you. If you do not want someone to come to your house, you need to go to the doctor. FocusCura provides alternative methods of care. The average age of our client is about seventy nine. When we execute our model, the average age will be over eighty. About one hundred and thirty thousand people use our solutions daily in the Netherlands. VideoCare and Home Health Monitoring allow them to do some tasks themselves. Nurses and doctors then have more time for patients who need more attention.

I will tell you a story about Mr. and Mrs. Morette. Mr. Morette was seventy nine years old. He had no health problems. He lived at home. His wife, Mrs. Morette, was eighty three years old. She had diabetes and Parkinson's disease. Mr. Morette was able to help her with most tasks. Their life was normal. They did everything they wanted. Occasionally, the nurse would visit. They did not need special treatment until Mrs. Morette broke her hip. She went to a rehabilitation facility. After she came home, someone came to their house every two hours. These people cleaned, dressed her wounds, or gave her insulin. These services were all reimbursed. The Morettes did not need to pay for them. The problem was they had no privacy. They were exhausted because they had to get up and open the door so often. Also, Mr. Morette could not go out. He had to stay at home to ensure everything went well. We changed their situation with free applications. Mrs. Morette needs

to take a lot of medications. Now she can take them herself. We gave her a medication application.

SW: What philosophy do you teach the nurses?

DD: Our philosophy has two parts. One part addresses the connection we make between the call center, the person's nurse or doctor, and the person at home. This connection enables you to take your medications yourself. The nurse does not need to come to your house. She can spend her time helping another patient. For example, if a nurse has ten minutes, she used to spend five minutes with one patient and five minutes with another. If one person can take his medicine himself, the nurse can spend ten minutes at the house of the patient who needs physical attention. This is what patients want. They do not like nurses coming to their homes only to give them a pill and leave. The other part of our philosophy ensures that each patient has her own district nurse. We make this possible with VideoCare. It is available on an iPad.

SW: Is VideoCare developed for Swedish, Dutch, Danish and English?

DD: Yes. We go to other countries, as well. You download the application. Some people have the iPad installed at their house. We install it and teach them to use it. We work together with the Elderly Bond, which is a membership for elderly delivering all kind of services, like the AARP social welfare organization in the US. They have three hundred thousand members. We train older volunteers. The volunteers help other elderly to use the iPad. The application is simple. You see, it is one large button. It is user friendly, especially for the elderly. We also have a version for younger people. It is more complex. The elderly need a simple user interface. I will demonstrate. The first time I open the application, I am invited by my homecare staff to connect with them. The application connects me to my district nursing team. It holds all my relevant contacts. One care centre is responsible for me at any time. I have access to help with psychological or social problems. I can connect with my general practitioner or a physiotherapist. I have access to a pharmacist, as well. I can get my medications. I have contact with the pharmacist through a private video chat. I can add personal contacts. I can invite my relatives who live far away. The application holds all my contacts in one place. The green dot shows me they are available. A red dot means they are not available. I can chat with them through video. I also can have a group video chat.

SW: Do you provide contact with doctors, as well?

DD: No, we only offer the technology and help them implement it. They, the homecare organization or hospital provides the care itself.

SW: Do I understand correctly? You can offer the general practitioner this application on his tablet?

DD: Yes. He can also download it himself. Once he is in the system, you can connect with him. We build the network around the patient. The network enables all relevant medical professionals to be involved in the patient's care. You can see who is treating a patient. You can see when they are available. For example, the nurse will make an appointment to visit on Monday. She can see you virtually through VideoCare on Wednesday or Thursday. This is a blended care model. Mrs. Morette has a daily ten minute video chat with her own nurse. They talk about how she is doing. The nurse asks if she has any problems, including if she is sleeping well. Then she will take her own insulin. The nurse checks that she has taken it. The nurse can decide whether it is necessary to visit the house or whether the virtual contact is sufficient.

SW: Is the patient reimbursed by the insurer for the nurse's call?

DD: Yes. In the Netherlands, insurers offer the same reimbursement whether a medical professional visits you or speaks with you through video conference.

SW: Does this give medical professionals an incentive to use the video conference?

DD: Yes. We have about ninety thousand video visits like this every month. I will give you an example. Peter Marksman is a district nurse in the eastern part of the Netherlands. He helped one of his patients to dress, to wash, and to shower. One day the woman said to him, "Peter, you come here all the time. I want to do this myself. I am not confident that I can do it. Can I try?" Mr. Marksman said, "We will put an iPad in the bathroom. I will be in the living room. We will initiate the video connection. If something happens, I will be there in one minute." They did this for a few weeks. Mr. Marksman said, "I will sit in my office. We will do everything exactly the same." After three months, she could shower herself. She does not need anyone to come into her home. That is the blended version of elder care. She is happy she can do tasks herself. Most people who can take care of themselves want to do so. They also need to know that if something happens, they can receive physical care.

In TioHundra, a nurse might drive for an hour to the house of the patient. Once there, the nurse may need to return to get information from the call

center. Sometimes only the doctor is privy to a patient's information. With this service, a doctor can have more contact with a patient without going to the patient's house. This service allows a doctor to include family in a patient's care. For example, the family of a woman in TioHundra lived in Norrtälje. If a relative lives in Stockholm and the doctor wants to have the relative involved in conversation, he can set up a group call. He can speak with everyone without having to travel. Sometimes, doctors tell me they receive only five Euros to visit a patient. To drive costs more than that. The iPad also allows you to connect an extra device so the doctor can examine the eye or the ear. You can bring the specialist from Stockholm directly into the home of the patient.

SW: Do you provide this service with the use of Apple products?

DD: Yes. We are the first Apple Mobility Partner in the Netherlands.

SW: What academic partners do you have here?

DD: We work with the academic center in Utrecht. I am copromoting some doctoral students on this topic together with the university.

SW: What is your core product internationally?

DD: In the Netherlands we have five products, which are called cAlarm, cKey, cMed, cContact and cVitals. Internationally we started with the VideoCare application and the home monitoring application. A patient might have heart failure, chronic obstructive pulmonary disease, Parkinson's disease, hypertension, or gestational diabetes, for example. They get a prescription from the doctor. They download the application and might receive measurement devices like a blood pressure monitor, scale or glucose meter for instance. The application is preloaded with the actions you need to take. Today I had to take my blood pressure, my pulse, my weight, and my glucose. I need to fill out a questionnaire on chronic obstructive pulmonary disease. Then I receive a reading. I might need to take my blood pressure again or check my weight. We have devices you can connect to the iPad, including the Omron blood pressure meter. It is a validated program we developed together with doctors.

SW: Is it a Bluetooth scale?

DD: Yes. We have different versions available. You can add it manually if a patient has their own blood pressure meter. The information goes to the server. We developed algorithms that define the risk of the patient. If there is an increased risk, we notify the doctor. A yellow alarm means something is going on, but the patient is not at risk yet. An example is a reading that

shows heart patient's weight is going up. A red alarm automatically notifies the doctor or the medical care center. They must react immediately.

Patients have access to their own information. They can set a goal together with their doctor. They have access to validated information on their disease. They can have information on sporting, heart failure, movies, or hay fever. We personalize the patient's information and have it ready for him.

SW: Which applications have been verified, tested, and implemented for the home healthcare monitor?

DD: Heart failure, chronic obstructive pulmonary disease, cardiovascular risk management, hypertension and amyotrophic lateral sclerosis.

SW: All of these have been evaluated rigorously with your academic partners, tested, and tried?

DD: Yes. This application is officially a medical device. It is regulated as a medical device throughout Europe. You create risk profiles based on received data. This classifies it as a Medical Device class one so therefore we have the CE mark. Also we are audited every six months on behalf of our quality and privacy according to ISO 9001 and ISO 27001. [ISO 9001 is a standard for quality management system. ISO 27001 is an information security standard.] They ensure everything is done correctly. The audit includes documentation and clinical trials.

SW: Does the healthcare inspector audit you?

DD: The healthcare inspectors can audit us. We had one audit us this year.

SW: How do you define and measure the outcomes and the successes of the applications? What indicators do you look for?

DD: We look for the quality of care. We look at a patient's quality of life and whether it is improving. We look at whether people who use this application become more independent by doing so. Our last measurement showed sixty nine percent of users reported they are more independent with this application. Forty four percent of users reported they have fewer healthcare issues. Users appreciate someone watching over them. Eighty eight percent of users report that they would recommend this service to other patients.

We also look at efficiency levels. We look at the number of hospital readmissions. There are thirty percent fewer hospital admissions related to chronic obstructive pulmonary disease and heart failure, for example. There are close to thirty percent fewer regular hospital visits. This is a significant

improvement. I think it can be even higher. We work with an older group. Thirty four percent of our people are over seventy. Thirty four percent are over eighty.

Being an Apple Mobility Partner helps us make the applications scale further. We want them to be easy to use. We want to develop a way to scale to other countries easily. For example, in Sweden we work closely with Atea. [Atea is a supplier of IT infrastructure.] We want to connect our services within their infra system so they can scale quickly. [An infra system is a system of infrastructure.] We have a list in our value chain proposition of what we need to scale easily.

DD: In addition to providing medical monitoring, we play bingo with elderly through VideoCare every Wednesday. We have many elderly who connect through this activity. They have a bingo card. They play together. They learn to meet each other. They see each other on the screen. This is an example of how we connect medical care, healthcare, and wellness in eldercare. I believe in this ecosystem. We do not introduce a medical device only. We encourage them to use it. It gives them confidence to use it for their healthcare.

SW: What role does psychology and incentive play in using this device?

DD: I earned my doctoral degree in behavioral sciences. I realized that you cannot only look at the medical side of healthcare. Our study results show that the patients do not care about medical statistics. What matters to them is that someone looks after them.

One man who uses our service will illustrate the point I want to make. His life changed when he suffered from an illness and had to stay in the hospital for some time. He had been an active man. Now, he cannot live as he used to. Once he got an exacerbation and was hospitalized for a few days. "They gave me medicine and I was there for a few days and I went home and everything changed. My whole life was changed. I was a very active man doing training police dogs, doing the volunteer for fireman." He said "I was so anxious of getting this again that I was not able to do anything. My wife was asking me three times a day if everything is going well. The children were calling me and I was sitting on the couch and my life was actually controlled by the chronic obstructive pulmonary disease."

Initially, we thought users would stop using the application. They would not want to send in their measurements. But people continue to use it. Why? They feel safer now. Relatives can call patients. The application gives users certain benefits that they otherwise lack. It gives people freedom to live

rather than focus on medical statistics. People want to be independent. They do not want to be dependent on the healthcare system.

SW: I think this is where many companies might go wrong in the early stages of introducing the application.

DD: They focus on the need for more variables, more data.

SW: Instead, you explain that the nurse in the hospital needs this information. The nurse in the homecare organization would work better with it. The relative would feel safer with their elderly family member using the application then not.

DD: We have learned many lessons along the way. The size of operations matters. We started with one hundred to three hundred patients. It is a different matter to serve over one hundred twenty thousand patients in the Netherlands. We need a different organization. We make processes simple and clean.

SW: Did you spend much time on the user interface design?

DD: Yes. People of a certain age need devices that are easy to use. Many have never used computers. We built a simple application for doctors, as well. It works like a car dashboard. It shows when the doctor is available. He has actions he can take. There are blue, red, and yellow flags. He can also receive messages. It also shows detailed information about a patient. It signals the alarms, as well. I can see trend lines. I can start a video call. I can start a chat conversation. The nurses can send messages to the doctors who work on a later shift. For instance, a triage nurse might have a particular concern about a patient. She might want the doctor to become involved. She can set a notification. The doctor will see it on his dashboard.

SW: Does this device connect with electronic records?

DD: Yes. We have two systems. One system makes all electronic records available. There also is a dashboard used only to monitor a patient's current status. We do not require the complete electronic medical record for monitoring. The doctor can choose which system to use. He can set up a video call and see relevant information through the same device.

SW: Is this how you filter the information before it is integrated into the system?

DD: Yes. We only present information in our dashboard that is relevant. We do not want the doctor to have to review several years of a patient's blood

pressure readings. He only wants to see this information when it is relevant to him or her, not all the time.

We see a great deal of scientific research. We have a patient put all his data into the system. Perhaps nothing changes. We are interested in more than the application. We also want to change the process. We want to make it more effective and consumer friendly.

SW: Once the patient provides all his data, how does it help him directly? Can he see the data?

DD: Yes. They get feedback from their readings. They can see if their reading was a good one. When something does not look right, they can have a chat or a video call with the doctor or the nurse.

SW: It is instantaneous feedback.

DD: Yes. It is important to the patient to be able to do this, but they also want to feel that there is someone looking over their shoulder saying everything is okay.

SW: The security, the safety, the feedback,

DD: Those are the most important aspects of this service.

SW: How do you provide services to countries that are far away, including India, China or the United States?

DD: At the moment we don't provide these services in these countries.

SW: Where are the key challenges for FocusCura or your applications? What are the future opportunities?

DD: My doctoral dissertation was on the implementation of eHealth. I built a scientifically validated five stage model on how to implement eHealth in homecare. Unfortunately, it is only in Dutch. I need to translate it but in short it means that all the technology will change over time so that is not the real thing. The real thing is embedded the technology in the processes of the care organization and make sure that human services are applied whenever needed. Technology, also eHealth, is not a goal in itself. It is there to make the healthcare system better and to provide patients with certainty, contacts when needed, better care and independency. That's my mission. To realize this in a large scale for all elderly and chronically ill who need it.

We have not publicized our work because we want to have the system perfect before making it available. Opportunities are in scaling to other countries and scaling to other patient groups. On the medical side, there

are opportunities to create more validated monitoring programs. We now have programs for heart failure, chronic obstructive pulmonary disease, hypertension and amyotrophic lateral sclerosis. We want to add more. We work with a doctor at Karolinska on a special disease contracted by lung patients, not chronic obstructive pulmonary disease.

SW: Perhaps programs for diabetes.

DD: Diabetes and obesity would be relevant.

SW: Thank you for taking the time to explain your VideoCare program. I look forward to seeing it adopted.

DD: Thank you, Sofia.