

A Customer Success Story

LifeSize[®] Results

Telemedicine Brings Life-Saving Expertise into Patients' Homes via HD Video Collaboration



Clark Clinic teams up with LifeSize[®], for remote monitoring and expert diagnosis through high-definition video conferencing.

Organization

Clark Clinic / Children's Heartbeat Trust, Northern Ireland

The Clark Clinic is part of the Royal Belfast Hospital for Sick Children (RBHSC) and is world-renowned for its specialist work with children suffering from congenital heart disease. The clinic provides in-

patient care for young people from all over Northern Ireland with cardiac conditions and works closely with the regional neonatal unit. It collaborates with other paediatric specialist and medical genetics units, as well as the adult cardiology and cardiac surgery services.



Challenge

 Provide excellent patient care to young children with complicated heart conditions who are dispersed over a wide geographic area and improve the efficiency of the on-call system for doctors.

Solution

 Clark Clinic rolled out video conferencing to its on call doctors and out-patients. This allowed doctors to monitor patients and scans in a new more responsive way.

Results

 As well as offering patients a better service and less travel disruption, the clinic estimated that the service had a mean saving of £728 per patient.

Challenge



Every year, more than 200 infants are born in Northern Ireland with heart disease. As an organization specializing in paediatric cardiology, Clark Clinic deals with the majority of these cases.

The clinic faced a number of challenges which it hoped video communication technology could solve.

Primarily, the clinic needed a way to provide outpatient care to those children with the most complicated heart conditions. Once a child is discharged from the clinic, they will often need follow-up consultancy and face time with a doctor. However, the clinic is the only antenatal and pediatric cardio specialist clinic in Northern Ireland and the homes of patients are dispersed over a large geographical area. This means either the patient or the doctor has to spend significant time and money traveling for simple check-up appointments. In the same vein, the clinic knew that many other hospitals could benefit from their knowledge base and expertise, but it was impossible for the doctors to be in two places at once.

Finally, the clinic aimed to make the 'on-call' system more efficient. As it stood, the on-call doctor would receive calls at all hours of the day and night and try to assist the less-experienced doctor over the phone. Naturally, without the ability to see the patient or any scans, this proved to be a difficult task

Clark Clinic required a communication tool that would be simple to use so that clinical and non-clinical



staff could easily master it. At the same time, the solution would have to cover a wide range of tasks from parents calling via a laptop in their own home to hospital-to-hospital conversations via a boardroom video conferencing suite.

“Reliability, ease of use and a friendly interface are all really important. People would get fed up with it very quickly if it was too hard to use or if it was unreliable. That’s why we adopted the LifeSize system and now use it for most of our purposes.”

- Dr. Frank Casey, consultant pediatrician at Clark Clinic

Solution



After piloting several different video conferencing tools, the clinic had the opportunity to trial LifeSize technology through its partnership with Questmark.

Dr. Frank Casey, a consultant pediatrician who has worked at Clark Clinic for 18 years, said it was an easy choice. "We have nurses, doctors and patients using it," he said. "Reliability, ease of use and a friendly interface are all really important. People would get fed up with it very quickly if it was too hard to use or if it was unreliable. That's why we adopted the LifeSize system and now use it for most of our purposes."

Outpatients who have recently been discharged but require ongoing monitoring are given a laptop equipped with in-built video conferencing technology. The parents then use this solution for regular appointments or if they notice worrying symptoms to contact the clinic in emergencies.

"It means we can keep a very close eye on these children with complex heart problems who are perhaps at risk of deteriorating quickly," said Dr. Casey. "We are alerted to things much earlier than we otherwise would be. We can visualize data such as their oxygen levels on the screen as we talk to the children."

"The parents really like the home monitoring because they get a point of contact. And it's a physical image so they can see the consultant on the screen talking to them in their own house," he continued. "Also, the child doesn't have to go through the stress of coming in to the hospital as often, since we can evaluate their health in their own environment."

"Once you've seen the child via the video conference, you can usually decide very quickly whether or not that child needs to come back into hospital. Of course, we do advise the parents to come in immediately if they feel like it is very urgent, but many issues can be dealt with remotely."

However, the clinic uses telemedicine for more than just remote monitoring. A LifeSize program has been set up that links Clark Clinic with other hospitals in the region.

For example, if a baby is born in another hospital the local pediatrician can now scan the baby's heart and then transmit that information via video conference, giving doctors at Clark Clinic a chance to provide expert consultancy.

"For children with heart problems, this is a very important development because making a diagnoses within the first 24 to 48 hours is often crucial to the outcome," explained Dr. Casey. "Those who really need to come to Clark Clinic can come to us much earlier and those who don't need to come can have the diagnoses excluded at a very early stage."

LifeSize has also been instrumental in assisting on-call physicians.

"I actually have a link into my home laptop via LifeSize® Passport™," added Dr. Casey. "If a junior doctor calls me up at night, he or she can discuss the case with me and easily share any scans or cardiograms. I can then assist with the diagnosis from my own house. Obviously, it's a much better situation for the on-call doctor to be able to receive assistance in this way."



Results



Video conferencing solutions have proven to be extremely successful in helping Clark Clinic with a number of different tasks. Patients, nurses and doctors have all been using it with great results. The home monitoring system is in constant demand from parents who appreciate having a consultant's presence just a click away.

"Overall cost savings definitely outweigh the expenditure of buying the system, but there's more to it than that," said Dr. Casey. "It gives us a chance to share our expertise across more than just our own hospital. We have a surgeon who lives in Dublin. He only works with us two or three days a week, but every Friday we can arrange a meeting with his team."

"Video conferencing is perfect for sharing and discussing how to proceed on difficult cases. We can show the other team scans, X-rays and records across the data-sharing application. It's like we have two teams on the case rather than one," he said.

To quantify its results, the clinic published a paper on its work entitled, "Remote diagnosis of congenital heart disease: the impact of telemedicine." In the report, the clinic found that telemedicine care was substantially cheaper than standard care and each use of the service had a mean saving of £728 per patient.

Using video conferencing helped the consultants find major congenital heart disease in 36 percent of cases that the study looked at with a further 41 percent being diagnosed with minor congenital heart disease.

Unnecessary transfer during the study was avoided in 75 percent of cases. This statistic alone would save hours of doctors' time and thousands of pounds.

In the modern era of medicine where there can't be experts in every small hospital, telemedicine is an excellent way of transmitting and sharing expertise.



However, Dr. Casey believes telemedicine is still underused in modern healthcare. "For Clark Clinic, we still want to build on our network with other hospitals and plan to extend our connections to other regional hospitals, where there might be pediatric expertise but not pediatric cardiology expertise," he said.

"We want to do more with our home monitoring system in terms of its sophistication. Hopefully, we can add even more physiological monitoring to go along with the laptop that would give us considerably more information about the patient. I'm sure the technology will develop even further in this area."

"We have already begun some work on this, but children who are at home with a very serious condition and are on home ventilation are another group of children who I think could benefit from telemedicine. To bring children in that situation into hospital can be difficult so being able to monitor them remotely can make a huge difference."

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