



Healthcare - Education

Daily Use

- Remote medical care
- Patient /doctor communication
- Distant learning
- Speech therapy

Solution

- Polycom® HDX™ 8000 room telepresence solution
- Polycom RMX® 2000 conference bridge
- Polycom CMA™ 4000 conference management solution
- Polycom CMA™ Desktop solution
- Polycom RSS™ 2000 recording and streaming server

Results & Benefits

- Remote rehabilitation of patients
- Less travel time
- Improved medical care
- Increased student benefits

The Institute of Physiology and Pathology of Hearing in Warsaw revolutionizes healthcare and teaching with the Polycom solutions

The Institute of Physiology and Pathology of Hearing in Warsaw is a leading scientific research and development unit in Poland providing complex care for people with hearing, voice, speech and balance disorders. Professor Henryk Skarżyński is Director of the Institute. Every year over 12,000 patients are hospitalized and more than 15,000 surgical procedures are carried out at the Institute. Particularly noteworthy is the fact that more than 2,500 patients have been provided with cochlear implants at the Institute. A cochlear implant is a surgically implanted electronic device that provides a sense of sound to a person who is profoundly deaf or severely hard of hearing. The cochlear implant is often referred to as a bionic ear. Unlike hearing aids, the cochlear implant does not amplify sound, but works by directly stimulating any functioning auditory nerves inside the cochlea with an electric field.

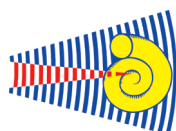
The otolaryngologists, audiologists, phoneticians, speech therapists, psychologists, educators and bio-clinical engineers consult more than 200,000 patients in outpatients clinics located across Poland in Ciechocinek, Krakow, Łeba, Radom, Katowice, Olsztyn, Rzeszów, Szczecin and Gdansk.

Polycom providing a new way of treatment and rehabilitation

Providing an organized and coordinated postoperative rehabilitation program is necessary for implanted patients to obtain hearing benefits. Hearing through a cochlear implant is different from normal hearing and takes time to learn or relearn. Measurements and fittings of cochlear implant system are performed during patients' visits to the clinics. The Polycom® Stereo Surround technology, using 22 kHz audio, delivers crisp, natural voice clarity, and the quality of sound necessary to allow the telefitting of the implants to be possible. Post implantation rehabilitative therapy is critical to ensuring successful outcomes. This new method of using video conference solution to provide services for patients closer to their home area was introduced and developed in 2008. The project was operational in 2009 when the Polycom HDX™ 8000 telepresence solutions were installed and enabled the revolutionary start of "Remote Fitting of Cochlear Implant System". The coordinator of this project was Mr. Arkadiusz Wąsowski.

"The Polycom video conferencing solutions were the only equipment that provided the quality required for the application."

Henryk Skarzynski, Professor, Director of Institute of Physiology and Pathology Hearing



“The cochlear implant recipient, the audiologists, and the monitoring clinicians all appreciate using the Polycom video conferencing solutions.”

Henryk Skarzynski, Professor, Director of Institute of Physiology and Pathology Hearing

Unique features of the Polycom solutions

Today 6 polyclinics are equipped with Polycom HDX 8000, and 12 more Polycom solutions will soon be installed in outpatient clinics. The National Program of Hearing Tele-rehabilitation will include 20 centers spread across the country. Today experienced specialists from the Institute of Physiology and Pathology of Hearing are able to perform necessary treatments of measurement and cochlear implant system fittings for the 2,500 patients that have cochlear implants. Trained support specialists provide basic technical tasks and help in the communication process using the Polycom solutions. Patient follow-up treatments are insured remotely, near their homes, avoiding travel to the Institute. The system of remote fitting is possible using an Internet connection, which makes the rehabilitation process cost effective, and time efficient both for patients and for medical staff. Emergency and critical procedures have also proven to be successful using the video conference solutions. For instance, when implant processors are damaged or the parameters are changed, an immediate intervention of a clinical engineer is required. Such interventions often take no more than few minutes, and no longer require the patient to travel to the Institute. Using the Polycom solutions, the patients can go to the nearest satellite center, reach the specialized clinical engineers directly, and receive the care required.

The Polycom solutions were chosen for the characteristic that made this project possible. It is the only available system that transmitted voice in higher frequency than a human ear. The voice over the microphones is naturally clear, which is necessary for patient in the first stage after surgery, since they do not always understand, and hear the human voice properly. Polycom terminals are transmitting sound on a 22kHz frequency and the picture in full HD (1080p). Post-implantation rehabilitative therapy is critical to ensuring successful outcomes. Being able to provide the therapy using the Polycom technology has made a significant increase in patients well-being.

According to the head of IT at the Center, Paweł Kochanowicz, Polycom Lost Packet Recovery™ (LPR™) technology, which helps achieve a consistently high-quality video experience even over public broadband networks susceptible to packet loss and congestion is a very important function. Without this function the picture is blurred.

The Institute of Physiology and Pathology of Hearing purchased 23 Polycom HDX 8006 XL systems, with 32-inch LCD monitors, video conference server Polycom RMX® 2000 video conference server, and a Polycom CMA™ 4000 routing server. This equipment enables a connection between several people in several centers at the same time. This functionality is used either for rehabilitation purposes as well as for staff training. The Polycom CMA 4000 solutions allow remote management and monitoring of the equipment throughout the country.

Teaching application

The Polycom video conference capabilities of the Institute were also deployed to serve as an education tool. The video conference sessions are recorded using the Polycom RSS™ 2000 recording and streaming server. This is a central part of the Polycom solution, and used as a key teaching tool. Lectures of the Institute professors are recorded and can be seen from the students' personal computers. Students can also assist in training sessions, and to watch live surgical procedures using the video solutions. The recorded sessions are also available to students through live streaming or as archive materials.

Plans for cooperation between Polycom and the Institute

Institute plans further development of its activities based on cooperation with Polycom. By the end of this year most of the satellite centers will offer the hearing telerehabilitation program.

It is important for the companies and firms planning implementation of similar system to note that introduction of new technologies to clinical practices in every possible medical field (like telemedicine, used with otolaryngology patients) requires wide and thorough scientific studies.

Learn more

Polycom, Inc. is the global leader in telepresence, video, and voice solutions and a visionary in communications that empower people to connect and collaborate everywhere. Visit www.polycom.com to find out how Polycom solutions can benefit your organisation.

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