

Extending the Reach of Stroke Care: NHS use of IOCOM in the East of England



About

- The NHS is a publically funded healthcare system that provides for the healthcare needs of UK citizenry
 - IOCOM customer since 2009
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Goals

- The NHS wanted to come up with solution for a stroke patient to be seen by a trained physician remotely
 - The EoE wanted to be able to extend the reach of treatment
 - The EoE hoped to be able to share patient records and radiology instantly while not allowing the receiver to take possession of the files
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Overview

The East of England (EoE) is one of ten Strategic Health Authorities (SHA) that form the National Health Service (NHS) in the United Kingdom. The Stroke Board at the East of England treats hundreds of stroke patients per year.

Challenge

For many stroke patients, there is a procedure called Thrombolysis that can be administered to reverse a stroke caused by a blood clot if it is administered within a certain window of time. If stroke patients that need this treatment do not receive it, they will suffer permanent medical issues and possibly death. In order to prevent mistreatment, stroke patients need to be seen by a trained physician to determine the type of stroke that they are having. However, not all emergency rooms have trained physicians that can determine this.

The Stroke Board at the East of England SHA needed a way for a patient to be seen by a trained physician remotely so that the reach of the treatment could be expanded. They wanted to create a method for enabling a clinician to provide a consultation on the proper treatment for a stroke patient when the clinician is not on-site. In order to achieve this, the clinician will need visual and audio communication with the patient as well as a method to receive patient information.

The following items were required:

- Clear video with clinician controlled camera
- Accurate radiology image that is not altered
- Clear audio between clinician, patient, and attending medical personnel
- A method to share patient data without transferring files (Patient record security)
- Portable system for physician that can be taken home, to the office, or other tested site
- A&E ready mobile system suitable for decontamination
- Scalable, reliable and simple to use

Solution



The East of England investigated a number of options and, after a direct comparison and evaluation by the medical staff that would be using the systems, chose IOCOM. IOCOM offered a simple and secure solution that fit within the current operation of the A&E ward. This was important so as to not disrupt the current workflow and instead expand on practices that were already in place.

The solution consisted of a Medical Grade Cart System that is located in the ward and a laptop that is used by the clinician.

Approach

- IOCOM was installed on the EoE Cart on Wheel
- Patient data and radiology can be transferred safely and securely through IOCOM's data share

Results

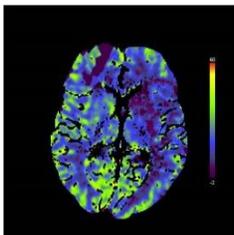
- IOCOM's software has helped the NHS to save the lives of stroke patients, improve their quality of life, and decrease lifelong medical expenses through quick response care
- Off-site specialists for NHS can provide consultation for stroke patients without traveling
- Radiology is not distorted by converting to HD Video

- **Easy to use software:** The IOCOM solution has the same interface and operation regardless of the system it is deployed on which greatly simplified training. IOCOM was able to be deployed on the cart systems already in the A&E departments, reducing support costs without adding another device on the ward.
- **Data capture from the PC:** The consultants at the East of England needed to be able to view patient records, tests, and radiology in order to do a proper evaluation. However, they would most likely not be on staff at the hospital they are working with and do not have permission to access patient records. The solution was for the ER to show the images to the consultant but not allow them to take possession of the information. This was done through IOCOM's desktop share. All IOCOM software has the built-in ability to transmit the computer's desktop using a dedicated data codec that faithfully reproduces the images that sends the image in the original format and color. Other videoconferencing system change the image to an HD feed which distorts the original making diagnosis inaccurate. This feature is used to send the patient's medical information and test results, including PACS images. The clinician then uses these black and white or color radiology images to consult with the medical team at the hospital to determine the correct course of action. No additional connections are required by the hospital and are simply "shown" to the clinician as needed.

*"Thanks to this technology,
many more patients can be
treated..."*

- **High quality video:** The clinician and patient are able to visually communicate during a session, just as they would if in the same room. This allows the clinician to observe the patient as he or she goes through a series of physical tests to determine the effects of the stroke. The clinician has remote control of the camera, enabling the clinician to focus specifically on the area being tested or examined.
- **Multiple items on screen:** The staff at the East of England as well as the clinician can see multiple items at one time and each arrange their system to suit their needs.
- **Tied into the online scheduling system:** A link is embedded in the online scheduling system so that there is a single point with all the information needed to contact the clinician if necessary. The schedule shows which clinician is on call and how to contact him or her. The nurse then calls the clinician to let him or her know that there is an incoming request. A link is created that both parties click on to join the meeting when ready.
- **Patient data is secure:** Only images of the patient data are sent from the hospital and no files are transferred, so the clinician does not retain any of the data after the session ends. This keeps data within the hospital and only needed information is shown to the clinician.
- **Radiology is intact:** During the product trials, it was noted that traditional h.323 videoconferencing systems converted the radiology images to HD video. As HD Video is intended to carry video and not computer data, it would distort the images and change the colors of the data as it “guessed” how it would look in the new format. IOCOM understands and sends data as data so this did not happen. This allowed the EoE to use a single unit for all needs simplifying the process.

Results



IOCOM's collaboration with the East of England has helped to save the lives of many stroke patients and is estimated that this system will continue to save up to 100 lives per year. In many of the cases with stroke patients at the East of England, the absence of the IOCOM solution would have led to long-term quality of life issues or death. As of December, 280 patients were seen by the system and 38% of those patients received Thrombolysis, and a total of 135 lives have been saved.

The use of the IOCOM solution for extending the coverage of neurologists to A&E locations that would otherwise go uncovered has saved patients' lives, improved their long-term standard of living, and saved funds.

Statistics

- “Each patient who is able to live independently after their stroke as a result of timely Thrombolysis saves the NHS £30,000.”
- “If we pick up 10% of the patients with stroke -600- and 15% of them are able to live independently as a result, this will save the NHS £2.7m a year.”

“It will be the largest stroke telemedicine service in the UK...”