

IOCOM Whitepaper:

Extending the Reach of Stroke Care



IOCOM[®]

EXTENDING THE REACH OF STROKE CARE

GOAL

Recognizing that timely consultation is essential in preventing death or long-term effects on the quality of life in stroke patients, the UK's National Health Service (NHS) initiated a program to reduce the number and effects of stroke on patients and to increase the footprint of coverage. If a patient with a stroke caused by a clot blocking blood to the brain is administered a clot-busting drug within three hours of first symptoms, the long-term effects of the stroke are greatly reduced or eliminated. These long-term effects range from slight muscle impairment and the need to re-learn specific tasks to death. The decision to administer the drug must be made by a qualified clinician, as administering the drug to a patient with a bleeding stroke would result in increased severity or possibly death. As a patient with a stroke is transported to the nearest A&E, there is no guarantee that a clinician with the proper expertise will be on hand, so a method to bring the two together, regardless of location, was needed.

OBJECTIVES

Create a method for enabling a clinician to provide consultation on the proper treatment for a stroke patient when the clinician is not on-site. In order to do 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
- Clear audio between clinician, patient and attending medical personnel
- A method to share patient data without transferring files (Patient record security)
- Portable system for clinician that can be taken to home, office or other tested site
- A&E ready mobile system suitable for decontamination
- Reliable
- Simple to use
- Scalable

The East of England's Strategic IM&T Directorate was tasked with evaluating the products available and developing a solution that would meet the objectives.

SOLUTION

The team 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,

flexible and robust 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 within the ward and a laptop that is used by the clinician.

- **Easy to use software.** The IOCOM solution utilizes software running on a desktop computer. The software has the same interface and operation regardless of the system it is deployed on which greatly simplified training. The system was able to be deployed on the cart systems that are already in place in the A&E departments, reducing support costs and not adding another device on the ward
- **Data capture from the PC.** All IOCOM software has the built-in ability to transmit the computer's desktop using a dedicated data codec that faithfully reproduces the images. 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 staff and the patients data resides in the hospital and is simply "shown" to the clinician as needed.
- **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 test to determine the affects 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 A&E staff 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 the data within the hospital and only the needed information is shown to the clinician.

OUTCOME

Within the first two weeks of the pilot, the system was used to treat a woman who had stroke symptoms. The clinician determined that she was a candidate for the clot-busting agent, which was subsequently administered. This had the desired affect and the woman left the hospital the next day with no long term repercussions. The woman was later interviewed and was very pleased with the system and surprised that she was the first to have used it. She assumed that this would be available in all hospitals and would be normal course of action. That she was able to see and talk with the clinician was very comforting and made her feel at ease during the consultation. She gave the system high marks.

The NHS also calculated that the savings from the potential long-term care of this single stroke patient covered the cost of the pilot on its own. It is estimated that this system as it is now would save up to 100 lives per year.

Since this initial patient, the pilot has continued, helping to save additional patients. These have been cases where a patient was administered the clot-busting drug and also cases where the initial call was to give the patient the drug but upon review of the information, it was decided that the drug should not be administered. In all of these cases, the absence of the IOCOM solution would have lead to long-term quality of life issues or death.

CONCLUSION

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