eHealth TECHNOLOGIES

CASE STUDY

CRISP

Chesapeake Regional Information System for our Patients

Saving Time, Saving Lives: CRISP Pioneers Emergent Workflow for Stroke Care

The figures are stark. According to the National Institutes of Health, there are more than 795,000[1] strokes in the United States every year, and the Centers for Disease Control cites it as the third leading cause of death. Factor in the serious long-term disabilities among some survivors, and the toll is even more staggering, putting an enormous mental and fiscal strain on families and rehabilitation facilities.

There's no debate that minutes matter for stroke care. Accelerating the triage process, treatment planning and care delivery can substantially change the outcomes. Chesapeake Regional Information System for our Patients (CRISP), the health information exchange that serves Maryland and the District of Columbia, is pioneering technology that shears time from the process, increasing the prospects of survival and recovery.

"Medical imaging is central to diagnosing and treating stroke. The challenge we face has been how to make those imaging studies work more effectively for the health care community when the clock is ticking," said Gary Larson, executive vice president & general manager, HIE Solutions, eHealth Technologies. "CRISP's utilization of emergent imaging workflow for its stroke network is extraordinary. This new approach is poised to quickly become a national model."

CRISP operates in an environment not unlike other HIEs. The 48 connected hospitals represent a broad spectrum of capacity and specialties. While many are rural with modest staffing, others are globally known, such as Johns Hopkins and the University of Maryland Medical Center. Three stroke centers also operate in the region.

Until recently, the realities of distance and technology continued to present obstacles in the race against the clock. A stroke patient imaged at 2 a.m. might trigger a call to a neurologist, waking her to review the studies. Minutes would be spent remotely logging into the local PACS and looking up the patient, if the login even worked. At times, these already overworked specialists would find it easier to get dressed and drive in. Time was passing, and with it the chances of success.

CRISP spotted that gap and set out to find a solution.

Using eHealth Connect® Image Exchange and the Emergent Workflow solution, CRISP is now able to consolidate and present stroke imaging (e.g., CT angiography) for its users within moments of a procedure, even before preliminary readings and results reporting have occurred. Those studies are rapidly and securely made available on a central repository, which qualified neurologists within the CRISP stroke network can remotely access with a single click. Full fidelity images appear in seconds, enabling swift assessment and care planning.

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That translates to multiple benefits for the providers and patients alike:

- **Improved diagnosis**, such as determining if an ischemic or hemorrhagic stroke occurred, means the difference between treating the patient locally or transferring him/her to a stroke center. The right decision accelerates care and reduces cost.
- **Duplicate imaging studies are eliminated**, which commonly occurs after a patient transfer if original images were trapped on another hospital's local PACS. Being able to call them up in moments from the eHealth Connect Image Exchange reduces radiation exposure, speeds treatment, and removes the associated costs of new workups.
- **Productivity increases among clinical and administrative staff**, who can spend more time on patient-centered needs instead of logging into disparate systems, chasing records and troubleshooting connectivity issues with IT.

While the CRISP-led solution can be implemented across the whole of Maryland, it also takes into account hospital-specific policies and processes.

"Many participating hospitals are choosing to automatically push stroke studies to the CRISP Image Exchange. They're then presented on a consolidated HIE-wide worklist for neurologist review through the HIE," said Larson. "There's flexibility within the system to respect and incorporate local decision-making—something we know is critical for this type of collaboration. Whether there's auto-routing to the stroke network or manually triggered uploads, the result is the same."

Those results are clear. Between 2018 and 2019, the views of medical images in the CRISP stroke network nearly doubled. It's that type of data—and the patient outcomes—that are driving continued adoption throughout the region and gaining notice from other forward-looking health care systems across the nation.

eHealth Technologies' Emergent Workflow option is attracting notice beyond stroke care, as the process has similar benefits in trauma where fast CT and MRI image reviews by remote specialists are also essential. In the cases of smaller community hospitals without on-site specialists, one-click viewing of full fidelity images by physicians operating remotely speeds the treat-or-transfer decision, bringing with it similar patient care, cost and administrative benefits.

"There are certainly other ways to share images," noted Larson. "But once you compare the more traditional methods with an Emergent Workflow solution adopted by CRISP, the advantages are clear. Asking someone to locate an image on a remote PACS, push it to the cloud, walk someone else through logging in and retrieving it, and then dealing with re-integrating into a patient record is time-consuming and open to error. HIE-based, fully-automated access saves time and saves lives."

1 Benjamin EJ, Blaha MJ, Chiuve SE, et al. on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2017 update: a report from the American Heart Association. Circulation. 2017;135:e229-e445.