

# Carilion Clinic

Automates the Transmission of ePCR Data into Their EHR



## About Carilion Clinic

Carilion Clinic is a not-for-profit healthcare organization headquartered in Roanoke, Virginia with seven hospitals and 225 clinics. Carilion serves about 1 million residents in southwest Virginia and utilizes Epic as their electronic health record system.



**700+**  
physicians

**76**  
specialties

**300**  
residents and fellows



**13,230**  
employees

**10,026**  
beds



**980,000**  
outpatient visits

**170,000**  
ED visits

**50,000**  
admissions

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## The Challenge

Carilion Clinic recognized interoperability deficiencies and sought ways to improve the transmission of data between **EMS agencies and emergency departments**. They wanted to reduce the time needed for ePCRs to become available for the ED staff and to increase the accuracy and completeness of their patient care records.

At the time, the EMS agencies serving Carilion needed to connect to a printer in the ED and generate a paper report to leave with the patient. The patient report was placed with other paper documents to be scanned into the “Chart Review-Media” tab in Epic following discharge. The report was then boxed and shipped to a third-party scanning service, adding costs and delaying processing.

### Technical difficulties in printing led to:



*Lost or misplaced documents and excess third-party scanning costs*



*Delays caused by the scanning of paper documents into patient charts*



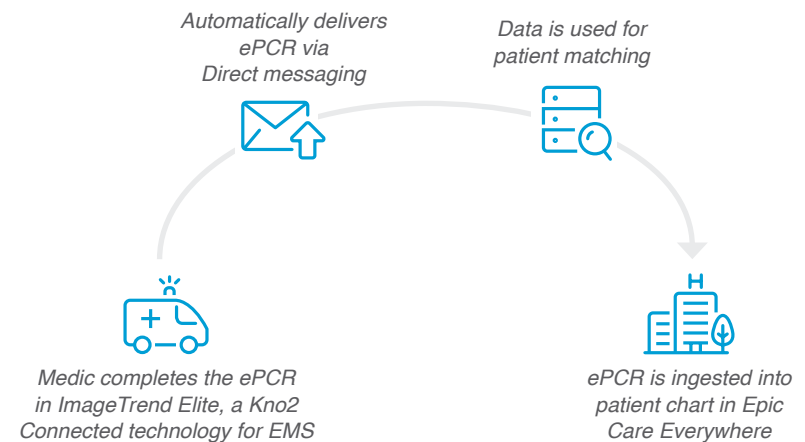
*Difficulty in easily or quickly accessing paramedic notes during patient visits or stays*

**In addition**, the HIM group was spending days or weeks following up on errors or missing reports.

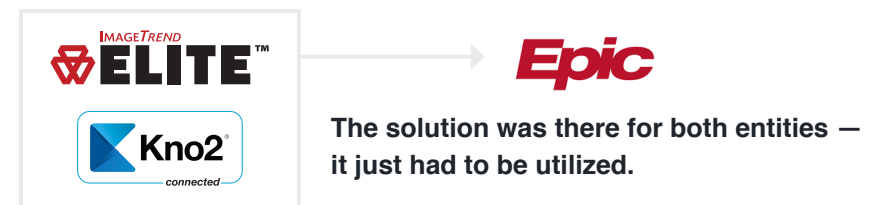
**And, most importantly**, the ePCR information was not being used during the patient's stay.

## The Approach

Carilion simplified the transmission of ePCR data by leveraging an existing standard for electronic patient exchange. They were already using Direct secure messaging for transitions of care to providers in the community. It was determined this inherent functionality would be the most efficient way to get records into their EHR.



Many of their high-volume agencies were already using ImageTrend Elite, which is connected by Kno2 leveraging this same standard. Carilion now had immediate access to ePCR data in the patient's chart through the Epic Care Everywhere solution, enabling real-time treatment decisions by their care teams in the ED.



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## The Results

Once the system was turned on and tested, Carilion realized a number of significant benefits:

**Made pre-hospital care data** immediately available to ED staff.

**Eliminated manual labor** of printing and submitting ePCRs at the hospital.

**Improved the reliability** of attaching ePCRs to the correct patient's chart.

**Reduced labor and stress** for the HIM department.

**Streamlined reconciling of unmatched records** through Epic's Incoming Message Report.

**Eliminated searching** the "Media" tab for PCRs.

In the first year of use, more than **20,000 EMS reports** were received and available in Care Everywhere within Carilion's Epic system.

## How It was Accomplished

Implementation went very quickly – completed in less than one month. There was no heavy lifting for the hospital IT team or the ED at Carilion since they were already using Epic Care Everywhere to share millions of patient records.



**The work began with a rapid evaluation and planning process:**

- **Validated Direct secure messaging approach** – Care Everywhere, the inherent functionality in Epic, was the most efficient way to get records into the EMR. So, connectivity on the hospital side was already in place.
- **Linked to EMS agencies through direct secure messaging** – Carilion established local EMS contacts through their clinic emergency departments and learned that many high-volume agencies in their region utilized ImageTrend's ePCR solution, Elite. ImageTrend Elite connects to direct secure messaging through Kno2.
- **Simplified testing** – Carilion set up a test patient record and had each agency send a test message from their ImageTrend Elite account to ensure successful exchange prior to going into production. The test worked the first time for each agency, demonstrating the benefit of using a standards-based exchange in healthcare.
- **Went live quickly** – Once the testing was complete, they were able to simplify training on the new automated ePCR workflows and roll them out in a couple of weeks.

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## Next Steps

Establishing electronic records from EMS in the hospital EMR was just the first step in Carilion's plans.

"Ultimately, we will establish bi-directional exchange with EMS and patient lookup so the paramedic can query Carilion's Epic system on dispatch, pull the patient's chart into the system, and know what medications they may have been on, their allergies or care history," remarked Walt Fisher, application analyst at Carilion.

Both Carilion and the EMS agencies have benefited from this standards-based exchange of patient information. By enabling interoperability between EMS and hospitals via ImageTrend and Kno2, Carilion was able to drastically improve the availability of patient care records and matching of patient identification. EMS agencies also benefit from faster turnaround at patient handoff. Most importantly, patient care is positively impacted because information is accessible by the entire care team in the right place and at the right time.



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Walt Fisher | Application Analyst | Carilion Clinic

## About Kno2

Kno2® is leading healthcare's path to interoperability across every patient care setting with the capability to send, receive, find and use patient information with everyone. Through Kno2's Interoperability as a Service™, common exchange methods including cloud fax, Direct secure messaging using the DirectTrust™ framework, patient information query with providers live on Carequality, including those connected through CommonWell Health Alliance®, IHE profiles, HL7 messaging, Fast Interoperability Healthcare Resources (FHIR), patient care networks (referrals, ACOs, HIEs), and other forms of exchange are standardized into simple send and receive workflows, from virtually any source. The innovative technology is smart enough to determine the most interoperable form of exchange to ensure that content flows freely between systems and providers. All this functionality is available to providers and technology vendors through a simple set of REST-based APIs or through a Kno2 portal.

To discover your path to interoperability, please visit <http://www.kno2.com> or call 888.390.6394.