Summary

CUSTOMER

Rhodes Group

CHALLENGE

Identify Hepatitis C virus (HCV) infections for early treatment in a siloed healthcare environment

OUTCOME

The Rhodes Group HCV algorithm and communications using InterSystems HealthShare helps New Mexico managed care organizations avoid millions of dollars in penalties for missing HCV treatment targets

Rhodes Group + InterSystems

FHIR-Powered Analytics and Insights Help Improve Hepatitis C Care Across New Mexico

The Hepatitis C virus (HCV) is known as the silent killer, as people may not notice effects of the infection until the liver has suffered irrevocable damage. Since 2012, Hepatitis C infections have accounted for more deaths in the US than all other infectious diseases combined. In 2013, for example, there were 19,368 HCV-related deaths vs 17,915 for all other nationally notifiable infectious conditions[i]. Early identification is the key to successful treatment, but how do you identify HCV-positive patients in a siloed healthcare environment?

New Mexico Has a Plan

New Mexico is one of the five states in the US with the highest HCV infection rates. Given the high social and economic burden of the disease – a liver transplant costs about $250,000 with recovery taking roughly a year – New Mexico created a standardized program to catalyze the process of patient identification and treatment. It includes an HCV checklist for providers, to ensure uniform treatment patterns, a promise of full payment for patients on Medicaid, and automated HCV surveillance. The goal is to wipe out the disease in the state by 2030.

[i] Oxford Academic, Clinical Infectious Diseases, March 1, 2016. https://academic.oup.com/cid/article/62/10/1287/2462772

InterSystems® HealthShare

Rhodes Group Develops a Solution

New Mexico turned to its statewide health information exchange (HIE), SYNCRONYS, with its large data set, as the starting point to identify Hepatitis C cohorts in its population. But SYNCRONYS was unable to deliver the necessary analytics on its own. Instead, the state approached five software vendors, including Rhodes Group, with the challenge of creating a working proof of concept for
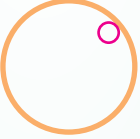
• Automated identification of HCV positive patients across the state

• Right-time communication of Hepatitis C status to clinicians, including the comprehensive laboratory results and medication data required for the HCV checklist

Rhodes Group, an information technology company in New Mexico, welcomed this challenge due to their innovative algorithms that interpret laboratory results. Rhodes Group was the only vendor to deliver a working prototype on time, and without increasing the processing burden on the HIE. Rhodes was ultimately awarded the contract for further development. "A lot of this success was because of the nimbleness and malleability of InterSystems HealthShare, its connectivity and all its tools that allow our algorithm to run," added Rick VanNess, Director of Product Development.

HealthShare and FHIR Deliver When Data and Analytics are Required

The Rhodes Group had performed a similar effort for TriCore, a regional clinical laboratory. TriCore has 11 test codes specific to Hepatitis C. But the SYNCRONYS HIE had nearly all of New Mexico's laboratory results, from 26 labs, using different codes, different reference ranges, and different standards. "We needed something really robust to look at the data, translate it, and allow our algorithm to function in a secure fashion," VanNess said, "as well as to return the results back to the HIE for use by clinicians." When Rhodes Group ran into roadblocks getting access to the required lab data, the company turned to HL7® FHIR® (Fast Healthcare Interoperability Resources). FHIR allowed Rhodes Group to obtain discrete laboratory and clinical data in SYNCRONYS rapidly and transfer it to the HealthShare Unified Care Record. HealthShare normalizes the data and delivers it to the Rhodes Group Hepatitis C identification algorithm, running in the HealthShare Health Insight analytics platform.

Algorithm and the Analytics Turn Data Into Action

The Rhodes Group algorithm looks at lab history, at the current lab data for screening, and at the aggregated medical record in the HIE for diagnoses and treatments related to Hepatitis C, and to determine 12-week sustained virologic response (SRV), indicating a cure. "We calculate APRI [aspartate aminotransferase to platelet ratio index] and FIB [an assessment of liver fibrosis] scores to help doctors determine liver health, and we look for other conditions likely to put the patient at risk for complications," VanNess said. "We also make sure that the pan genotypic drug a patient receives for treatment is the correct one."

If the algorithm determines a diagnosis of Hepatitis C virus for a patient, or that a patient should be screened for Hepatitis C virus, it inserts a prominent HTML link into the SYNCRONYS medical record. When that link is clicked, the Rhodes Group solution again uses HL7 FHIR to deliver a Hepatitis C summary with the algorithm's findings to the clinician. The summary includes the aggregated laboratory results data required for completing the uniform HCV checklist to increase the efficiency among clinicians.

When first deployed, the Rhodes Group algorithm identified about 11,700 people with Hepatitis C infections using TriCore Reference laboratory data, and an additional 22,600 people in the HIE data. **In total, the data covered about 80% of New Mexico's population.**

ROI and a Healthier Population

At the beginning of the project, the Rhodes Group needed to select a foundational solution, and recommended HealthShare to the HIE. "We had to tell them that we needed the robustness of HealthShare to make our algorithms work," VanNess said. "We needed HealthShare connectivity and its ability to make FHIR data accessible with the SQL queries our algorithm used." This clinical analytics system is aimed at returning a tangible ROI for the state in their efforts to eliminate HCV by 2030 by monitoring managed care organizations' (MCO) contract performance pertaining to the treatment of hepatitis C. New Mexico Health and Human Services implemented Delivery System Improvement Targets among each MCO, one of which requires treating a specific number of beneficiaries with hepatitis C and has a total of $14,299,439 in penalties associated with it. Together, Rhodes and SYNCRONYS provide a tool that enables a near real-time identification of compliance with this measure.

Care Improvements Beyond Hepatitis C

Rhodes Group has achieved similar care and economic results for payers looking at other conditions. For example, by combining the Rhodes Group algorithms for diabetes and prenatal care/pre-term birth for one MCO, the savings amount to $13,527,000. "Specific to risk adjustment," VanNess added, "we helped a payer by showing them that there are a lot more conditions among its members than they knew of. The value of doing that is roughly an extra payment that can be collected in risk adjustment per member per month per year."

Learn More

To learn more about InterSytems HealthShare, our advanced interoperability platform, visit **InterSystems.com/HealthShare**. For more about our role and offerings in healthcare, visit **InterSystems.com/healthcare**.

"WE NEEDED THE ROBUSTNESS OF HEALTHSHARE TO MAKE OUR ALGORITHMS WORK."

Rick VanNess, Rhodes Group

InterSystems®
Creative data technology