

# Early Implementation of Encounter Notification Service Demonstrates Reduction in Hospital Readmissions

A Case Study Developed in Collaboration with  
Johns Hopkins Community Physicians

November 2014

Johns Hopkins HealthCare LLC (JHHC) has entered into an agreement with Audacious Inquiry as of November 2014 to assist with the enhancement of the clinical and operational effectiveness of the Encounter Notification Service (ENS). JHHC is paid an annual consulting fee and receives royalties on sales of ENS products and services. Johns Hopkins Community Physicians began using ENS in September 2012.

For more information on ENS, visit [www.ainq.com/ens](http://www.ainq.com/ens)

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## Introduction

Maryland's statewide HIE  
(CRISP) provides over

**350,000**

monthly electronic  
hospitalization  
notifications using Ai's  
Encounter Notification  
Service (ENS).

The Chesapeake Regional Information System for our Patients (CRISP) is the statewide Maryland Health Information Exchange (HIE) that is providing over 350,000 electronic hospitalization notifications per month to hundreds of subscribing organizations such as hospitals, physician practices, and payers in Maryland and Washington D.C. CRISP provides this service using Audacious Inquiry's Encounter Notification Service, or "ENS". Johns Hopkins Community Physicians (JHCP), a leader in providing and advancing comprehensive patient and family-centered care as a part of Johns Hopkins Medicine, has implemented ENS to help them achieve lower readmission rates for patients that have been seen within seven days of discharge.

JHCP has had a number of other successes that can be attributed to ENS and its ability to immediately notify caregivers when, where, and why hospitalizations are occurring. Prompt receipt of encounter notifications has helped to improve patient satisfaction, improve communication with patient's primary care providers (PCP) upon discharge from the hospital, provide PCP's with insight into real-time hospital events, and improve satisfaction of PCP's related to care transitions and communications with hospitals.

Annual cost of  
readmissions for  
Medicare patients:

**26 Billion**

of which

**17 Billion**

are avoidable  
readmissions.

## Challenges in Reducing Readmissions

According to the Maryland Hospital Association, from July 2012 through July 2013, there were 45,244 readmissions among 235,532 Medicare admissions in Maryland, for an all-cause readmission rate of 19.2%. The current U.S. national average is 17.4%, which is expected to continue decreasing at a steady rate. Current calculations estimate that Maryland will need to improve 5-10% per year, every year, to meet the U.S. national average by 2018. (Boutwell, 2014)

Lavizzo-Mourey, R. (2013, March 14).  
Health Affairs Blog. Retrieved from  
Health Affairs:  
[http://healthaffairs.org/blog/2013/03/14/  
the-human-face-of-hospital-  
readmissions/](http://healthaffairs.org/blog/2013/03/14/the-human-face-of-hospital-readmissions/)

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Typical causes of preventable readmissions include gaps in planning for transitions to other caregivers, failures in communication, delays in scheduling post-hospitalization care, and medication discrepancies during transitions. Historically, these causes have been difficult to gain control of because caregivers are often uninformed about patient's hospitalizations. By the time a caregiver or PCP learns of a hospitalization, it might be too late and a readmission is inevitable.

Further complicating readmission trends is the poor communication between hospital-based and primary care physicians. As patients transition out of the hospital, it is critical for the hospital to share information with the post-acute care provider and primary care physician to coordinate patients' care (Rodak, 2013). One study estimated that poor care coordination, including inadequate management of care transitions, was responsible for \$25 to \$45 billion in wasteful spending in 2011 through avoidable complications.

A key aspect of the Affordable Care Act that is meant to address this are medical homes, which are practices that closely manage and coordinate care for patients with chronic conditions (Health Affairs, 2012). JHCP participates in several Patient Centered Medical Home (PCMH) programs, including a state-wide multi-payer pilot and payer-based PCMH programs. JHCP has 11 sites that are recognized by the National Council for Quality Assurance (NCQA) as a PCMH at level 3, which is the highest level of recognition. The use of technology and coordinating care are key components to achieve success in a medical home.

#### *JHCP successes with ENS:*

- > Improved patient and provider satisfaction with communication and care transitions;*
- > Real time, actionable healthcare clinical and data exchange among care providers and team;*
- > Implementation of best practices to reduce readmissions.*

## The Solution

CRISP launched its ENS service in early 2012 as a tool that could be leveraged to inform caregivers that hospitalizations were taking place for patients under their care. As part of a comprehensive and cross-disciplinary care team approach to reducing readmissions, JHCP began using the ENS system in September of 2012. Using ENS, JHCP has been able to successfully impact a number of recommended best practice to reduce readmissions, including:

- Timely communication at handoff at discharge from the hospital
- Early post-acute follow up with the PCP
- Early post-discharge phone calls
- Improved transfer between facilities
- Effective medication management

## How Does ENS Work?

ENS notifications are triggered from real-time ADT (admit, discharge, transfer) messages that originate from hospital registration systems. ENS compares the ADT message to a patient panel that is provided by each subscriber. If matched, the ADT message is routed to that subscriber based on their preferences for notification types (inpatient or emergency department admits or discharges), delivery frequency (real-time or daily summaries), and delivery method (HL7 interface, Direct secure message, secure folder). The content of an ENS message can be robust and include clinical data points such as reason for visit, discharge diagnosis, discharge disposition and discharge to location.

*JHCP has seen a lower hospital readmission rate within 30 days post discharge for their self-insured patients who are seen in 7 days by their PCP, compared to those not seen within 7 days.*

JHCP receives these notifications centrally and notifies the office clinical staff and the PCP of the patient's admission and discharge from hospitals in Maryland, Washington D.C. and Delaware. The staff at the PCP office contact the patient right after discharge and perform 3 key functions: (1) schedule a follow up appointment with the PCP within 7 days of discharge, (2) address immediate needs of the patient, and (3) reconcile the patient's medications after discharge from the hospital.

## The Results

JHCP has seen a lower hospital readmission rate in 30 days post discharge for their self-insured patients that are seen in 7 days by their PCP, compared to those that are not seen in 7 days. Because PCPs are notified in a timely manner about hospitalizations and thus get the scheduling process started sooner, patients are able to be seen within the 7 day window after discharge.

Additionally, in 2013, JHCP's Medicare readmission rate was 15.3%, which is lower than the Maryland and national average.

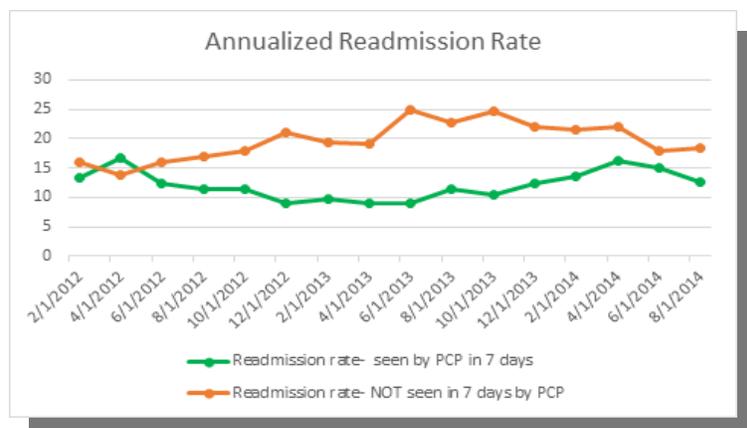


Figure 1: JHCP's lower rate of readmissions for patients seen by their PCP within 7 days of discharge vs. those that were not from 2012 – 2014.

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## Conclusion

ENS notifications are a valuable tool that JHCP uses to drive measurable improvements in quality, outcomes, and care coordination for their patients and for their stakeholder community. Further, ENS plays a valuable role in helping eligible hospitals meet the Stage 2 Meaningful Use measure which requires hospitals that transition a patient to another setting to provide a summary of care record for more than 50% of transitions of care. Per FAQ #10660, which was recently published by the Centers for Medicare and Medicaid Services, summary of care documents are permitted to be delivered by third parties, such as an ENS service, that play a role in determining the next provider of care. ENS is able to route C-CDA documents (Consolidated-Clinical Document Architecture) to the same providers that are already subscribing to patients. ENS then provides the necessary reports to the eligible hospital so they can calculate the numerator required to meet the measure for Meaningful Use (Centers for Medicare & Medicaid Services, 2014). The interfaced ENS notifications can be coupled with the C-CDA format from the eligible hospital, thus allowing the summary of care to also serve as the notification.

In summary, the timely and reliable notifications enabled by ENS have reduced unnecessary readmissions, and significantly improved communication after a hospitalization to enable better transitions of care for the patient.

*ENS continues to be integrated into JHCP's operational workflows. For example, JHCP is building an interface to receive notifications into their EHR, thereby optimizing processes involved with getting notifications to the office staff, stakeholders of care, and PCP.*

## About Audacious Inquiry (Ai)

Currently in its tenth year of operations, Ai leverages domain expertise in health information systems, policy and enterprise IT to offer bold technology solutions that are leading the way to smarter delivery of health care. Government, private and nonprofit organizations have turned to Ai to rethink how health information is shared, managed, leveraged, and protected. Our collaborative strategy, policy, and engineering teams have a reputation for taking on complex technical challenges. Our implementation of master data-management tools to enable health information exchange has set the standard for state HIEs throughout the nation. The development of the encounter notification service (ENS), Ai's technology for providing reliable, real-time notifications to health care stakeholders of patient admissions, offers a more efficient and cost-effective way to coordinate care.

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