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Streamling Syndromic Surveillance Submission on a Dime: Oregon's Experience

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Objective

To design a low budget process to enroll, track and approve syndromic submitters for ongoing submission of data to the Oregon Public Health Division

Introduction

In 2012, the Oregon Public Health Division (OPHD) took advantage of the opportunity created by Meaningful Use, a Centers for Medicare & Medicaid Services (CMS) Incentive Program, to implement statewide syndromic surveillance. The Oregon syndromic surveillance project, or Oregon ESSENCE, began accepting MU-compliant HL7 2.5.1 data in late 2013. Early onboarding efforts were labor-intensive and led to the creation of a testing queue. As interest in submitting syndromic data increased, Oregon ESSENCE streamlined the onboarding process by creating guidance for HL7 message construction, message testing and submitter business process details (collectively referred to as "onboarding documents"). Oregon ESSENCE also built a project management database to track MU testing statuses and data quality variations. With this system, Oregon ESSENCE collected, tested and approved all 32 eligible health systems (56 hospitals) for production-level submission by mid-2015. One health system (with four hospitals) continued to send non-MU compliant syndromic data for the duration of the project period.

Methods

Initially, Oregon ESSENCE began onboarding syndromic submitters on a first-come-first-served basis. The lack of a clear process for onboarding, a single FTE devoted the endeavor and substantial interest in submitting, led to a testing queue. To streamline the onboarding process and accommodate the testing timelines of all submitters, Oregon ESSENCE created tools to allow for self-paced testing followed by short duration, intensive testing with the project. Oregon ESSENCE-branded onboarding documents incorporated available resources such as the CDC's Public Health Information Network Messaging Guide for Syndromic Surveillance: Emergency Department and Urgent Care Data, Release 1.1 (August 2012) and the NIST 2014 Edition ONC Health IT Certification HL7v2 Syndromic Surveillance Reporting Validation Tool. Submitters began self-paced testing by testing their own messages using the NIST tool and sending successful reports back to Oregon ESSENCE. They then filled out an Oregon ESSENCE Business Process Survey which asked for meta-data and project contact information. Oregon ESSENCE built a project managment database in FileMaker v14 (FileMaker Inc., Santa Clara, CA USA), used to support the statewide communicable disease database, to store information from the Business Process Survey.

After completing self-paced testing, submitters selected a single week for intensive testing with Oregon ESSENCE. Each health system's project staff (registration staff, technical project lead, HL7 translator and data exchange lead) met daily with Oregon ESSENCE to test messages. Oregon ESSENCE used Rhapsody Integration Engine v6.2.1 (Orion Health, Auckland, NZ), already in use at OPHD for electronic lab reporting, to parse test data into a test database and then generated a report for each testing session using SAS v9.4 (SAS Institute Inc., Cary, NC, USA). The report indicated whether or not the submitter had achieved production-level syndromic messaging by the end of this week of intensive testing. The project management database stored notes from each testing session along with MU testing dates.

Results

Oregon ESSENCE developed their onboarding documents between November, 2012 and March, 2013 and achieved 100% syndromic submission from eligible health systems in June, 2015. The average duration of onboarding (from initiation of the testing process to achieving production submission) of a single health system decreased from 23 months in 2012 to 4 months in 2014 (see Duration of Onboarding Syndromic Submitters: Oregon 2012-2015). As interest in the project grew (number of submitters contacting OPHD), the amount of time spent onboarding decreased.

Oregon ESSENCE uses their project management database for ongoing syndromic data quality improvement and to communicate MU dates to submitters (by generating health system-specific emails directly from the database). FileMaker, Rhapsody and SAS are all currently used by OPHD and did not require any additional expense for their use in this testing process. Oregon ESSENCE plans to use this onboarding process to collect urgent care data for Stage 3 MU.

Conclusions

The onboarding process created by Oregon ESSENCE streamlined syndromic data submission without the purchase of additional programs or the hiring of additional project staff. Submitting facilities benefited from this process by testing syndromic messages without waiting in a testing queue. The project management database created for the testing process will continue to benefit submitters by storing MU testing dates and information for ongoing quality assurance evaluations. The success of this project took advantage of existing informatics capabilities at OPHD and speaks to the importance of those skills in public health practice. Oregon ESSENCE will use these methods again in 2017 to collect urgent care data for syndromic surveillance.

Duration of Onboarding Syndromic Submitters: Oregon 2012-2015

Year onboarding initiated	Number of submitters*	Average onboarding time in months (median)
2012	3	23 (23)
2013	5	12 (13)
2014	23	4 (3)
2015	1	1 (1)

*Not eligible for onboarding: 1

Keywords

Syndromic; Onboarding; Meaningful Use

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