Making the Electronic Case Reporting Transition

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Pushing Paper Aside as eCR Changes HIM's Quality Practices

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Public health agencies across the country continue to face new challenges, from surveilling chronic and infectious diseases such as Ebola and Zika, to managing the anticipated "silver tsunami" of aging baby boomers that will occur within the next few years. In addition, health agencies now find themselves fighting the resurgence of infectious diseases due to an increase in unvaccinated children. According to the Centers for Disease Control and Prevention (CDC), the number of reported measles cases in 2019 surpassed the previous record in 1992. More than 75 percent of the reported cases were linked to areas within New York state and were spread through groups of people who remain unvaccinated.

Measles, a highly contagious virus that lives in mucus in the nose and throat, can spread to others through coughing and sneezing. Additionally, the virus can remain live for approximately two hours in the airspace where the coughing and sneezing occurred. If left untreated, people may experience pneumonia, seizures, and encephalitis, as well as other health issues. When there is an outbreak of this size and scope, it is imperative for state and local public health officials to quickly gather data in an effort to report, evaluate, and monitor information to help form a national perspective. When necessary, public health departments must rapidly respond to outbreak investigations by request of the state health department.

Electronic case reporting (eCR) is the automated generation and electronic submission of reportable diseases and conditions from an electronic health record (EHR) to public health agencies. Each state has public health reporting requirements and relies on healthcare providers to report on certain conditions. Although the increased adoption and implementation of EHRs has dramatically improved the ability of providers to report conditions electronically, paper-based manual reporting remains pervasive.

As the industry transitions toward electronic reporting, health information management (HIM) professionals play a key role in supporting requirements for eCR. It comes as no surprise that the manual approach of individually faxing, emailing, and making phone calls to public health agencies is time consuming, error-prone, and inefficient, which reduces an epidemiologist's ability to investigate potential cases in a timely manner. With improved data capture and transmission speeds, HIM professionals can leverage their unique skillsets to ensure data quality remains consistent throughout the process.

Data quality challenges are widely reported as a detriment to the integration of public health systems and health information exchange (HIE) organizations. Data integrity issues can be caused by incorrect data input, ineffective training, poor system setup and configuration, lack of consistent use of vocabulary standards, and lack of skilled workforce members to oversee and monitor the appropriate use of codes and data integrity prior to submission. To address data integration and quality issues, it is necessary to maintain an accurate and robust master patient index during the launch of health IT systems and HIEs.

It is also important to identify a champion to monitor data and assess data quality prior to reporting so that public health officials can monitor and address public health issues. These challenges will only increase unless appropriately trained workforce members are added and suppliers of the data align and implement consistent use of terminology and standards.

The appropriate use of vocabulary standards continues to present challenges for consistent data capture and reporting at the national level. Codes captured at the local level often do not map to the nationally adopted vocabulary standards. With knowledge and practical experience with vocabulary standards, HIM professionals can tailor the identification and assignment of codes that accurately represent the needs of public health reporting. Should mapping be required for transmission, HIM can ensure the correct mapping occurs for standardized public health information needs.

Document standards also remain a key barrier to successful reporting of incidents. EHRs used by healthcare providers support the continuity of care documents (CCD) for sharing clinical data, but CCDs may not always provide the detailed information necessary for surveillance and other public health reporting needs. There is a need to close the aperture for much needed public health information, and HIM professionals can serve as key stakeholders in the work toward adopting standards that align with those used by public health entities.

Value of Electronic Case Reporting

eCR can dramatically improve the effectiveness of case reporting and overarching health surveillance of communities. Implementing and using interoperable technologies and data standards with a shared infrastructure can safeguard critical communication that is executed during times of potential incidents or outbreaks.1 There are numerous aspects of the value of eCR to consider.

HIM professionals and other healthcare stakeholders require less training time because there is minimal manual data entry involved, which can result in far fewer errors. The ability to identify and select codes that "trigger" automated reporting may derive from Logical Observation Identifiers Names and Codes (LOINC), Systematized Nomenclature of Medicine (SNOMED), and International Classification of Diseases (ICD) for state and local health officials.

Standardization of data elements, vocabularies, and technologies improves compliance with state and local public health reporting requirements for healthcare organizations and public health agencies.

In addition, early detection of cases results in earlier intervention as well as a reduction in disease transmission, which improves clinical efficiencies and patient outcomes through the development of infrastructure that enables the bidirectional collection and sharing of information and provides feedback.2

Challenges to Adoption and Implementation

eCR implementation challenges affect all stakeholders within the process for case reporting and has a significant impact on progress.

Challenges that should be addressed include:

- Technical barriers
- Organizational barriers
- Workforce barriers

Technical barriers include the omission of robust technical infrastructure, a lack of data, and missing messaging standards, all of which impede the interoperability of systems necessary for seamless transmission of data.

Organizational barriers include a lack of suitable guidance and assistance for investment in the organizational infrastructure, which is necessary for public health jurisdictions and healthcare providers. Legal and privacy issues also serve as a potential deterrent to the collection of personal, identifiable information for potential cases.

Workforce barriers include the training and awareness needs of health IT professionals, epidemiologists who will be using eCR, and healthcare providers and staff who will be implementing and transmitting eCR data.3

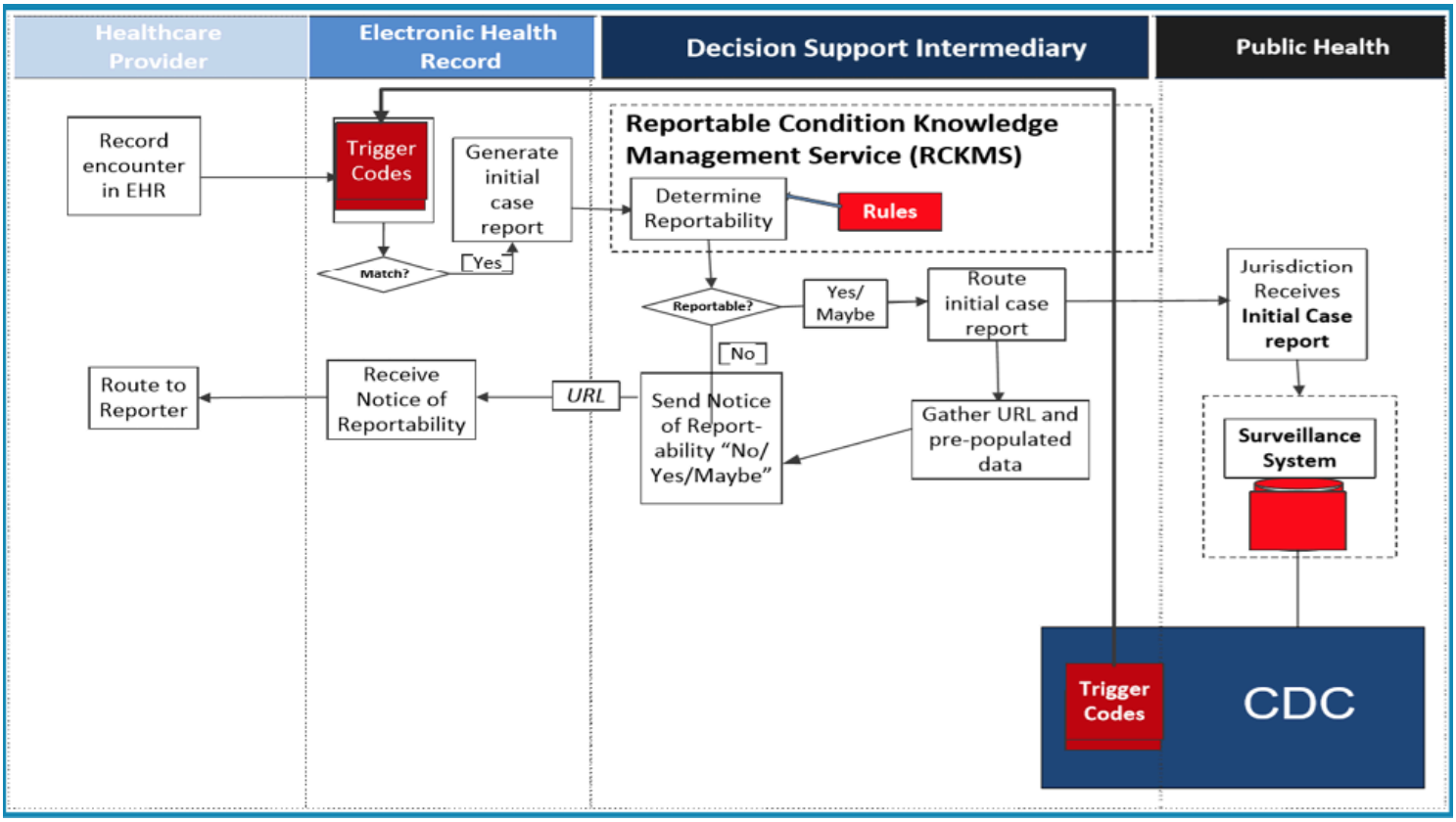
Current Initiatives and Requirements

In 2009 Congress passed the American Recovery and Reinvestment Act (Public Law 111-5), which included the Health Information Technology for Economic and Clinical Health Act (HITECH), meant to promote the adoption and use of interoperable health information technology (health IT). Under HITECH, the "meaningful use" EHR Incentive Program—now known as Promoting Interoperability—was developed to incentivize eligible providers and hospitals to make the transition to EHRs. The Centers for Medicare and Medicaid Services (CMS) and the Office of the National Coordinator for Health IT (ONC) collaborated to develop reporting requirements, which included eCR. The reporting option was initially published in 2015. In 2017, ONC modified the technical requirements in preparation for Stage 3 of the meaningful use program. Initial conditions to be evaluated included chlamydia, gonorrhea, pertussis, salmonella, and the Zika virus.

Seeing a continued need for public health agencies to rely on healthcare providers to share relevant and timely information regarding reportable incidents, a forum was created to bring together key decision-makers in health IT, healthcare delivery entities, public health organizations, and other committed industry leaders. This forum is called the Digital Bridge.

According to an article from the Journal of Law, Medicine and Ethics, "The Digital Bridge initiative is a public-private national effort involving federal and state public health agencies, providers systems, and EHR vendors to accelerate these innovative electronic surveillance methods. Digital Bridge creates a forum for these organizations to collaborate on technical solutions for a nationally standardized, sustainable approach to exchanging and using electronic health data."4 Digital Bridge works to leverage a standards-based approach to bidirectional information exchange among healthcare stakeholders to ease administrative burden as well as enable better informed clinicians regarding population health, environmental risks, and outbreaks. The Digital Bridge's first project was to design a nationally scalable, multi-jurisdictional approach to eCR that would help identify and address the disparate reporting capabilities at the national, state, and local levels.5 The Digital Bridge developed a data and decision flow (see Figure below) for successfully managing case reporting through electronic means. Documenting an accurate trigger code from one of the vocabulary sets is imperative for launching the reportability of a potential case to a surveillance system and, ultimately, the CDC.

Figure 1
The digital bridge developed a decision flow for successfully managing case reporting through electronic means.



Source: Mac Kenzie, Bill "Electronic Case Reporting (eCR)." http://www.digitalbridge.us/db/wp-content/uploads/2017/04/eCR-Digital-Bridge-webinar-Part-2_0.pdf.

Achieving Comprehensive eCR in the US

The current eCR landscape reflects ad hoc pilots and siloed well-intentioned initiatives. Collaboration and careful planning will be necessary to move forward with comprehensive eCR. This approach will ensure that data is collected in a timely manner, leverages the correct standards, is accurate, and is comparable throughout the public health ecosystem.

To achieve this goal, it is important that HIM professionals:

- Build relationships with providers and community partners: Developing purposeful relationships that help to build trust among providers and community stakeholders that understand the unique needs of public health is critical to the success of eCR implementation.
- Maintain consistent standards: The ability to communicate between public health agencies and healthcare providers is reliant upon the development of consistent data, technical, and messaging standards that support interoperability for the exchange of health information. A lack of consistency in these areas significantly reduces the ability to transmit data seamlessly, ultimately creating more work.
- Adhere to data-driven decision-making: At all levels of care, including public health, data must form the basis for the assessments and informed decision-making at both the individual and community level. A more complete data set of the patient will provide a more accurate and comprehensive understanding of the public health burden. A more complete representation of the potential situation will enable better resource allocation and timely support.
- Educate policymakers and legislatures about the benefits: Improving the infrastructure and implementing the workforce training needed for eCR success requires funding. To allocate and support funding for eCR, policymakers and legislative bodies first need to understand the ways in which eCR is critical for dealing with public health emergencies and potential disease outbreaks.6 Ultimately, eCR data has the potential to help shape changes in public health policy for the better.

Notes

1. Hamilton, Janet et al. “Electronic Case Reporting (eCR).” Technical report 16-SI-02. Council of State and Territorial Epidemiologists, 2016. https://cdn.ymaws.com/www.cste.org/resource/resmgr/2016PS/16_SI_02.pdf.
2. Ibid.
3. ASTHO. “Leading Public Health Practice Though Health Informatics and Technology.” 2019. https://www.astho.org/generickey/GenericKeyDetails.aspx?contentid=20399&folderid=5156&catid=7203.
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5. Ibid.
6. ASTHO. “Leading Public Health Practice Though Health Informatics and Technology.”

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