

Lessons Learned from the Transition to ICD-10-CM: Redefining Syndromic Surveillance Case Definitions for NC DETECT

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Objective

To describe lessons learned from the transition to ICD-10-CM.

Introduction

NC DETECT receives ICD-9-CM codes for emergency department (ED) visits and uses these codes in case definitions for syndromic surveillance (e.g. infectious disease, injury, etc.). Hospitals will begin using ICD-10-CM codes on October 1, 2015. As a result, preparations have been made to accommodate ICD-10-CM codes in NC DETECT for data transmission, receipt, processing and use in the NC DETECT Web Application.

Methods

Staff from the Carolina Center for Health Informatics (CCHI) at the University of NC at Chapel Hill (UNC-CH), the Injury Prevention Research Center (IPRC) at UNC-CH, and the NC Division of Public Health (NC DPH) reviewed existing case definitions. While other systems are planning to map ICD-10-CM codes *back* to ICD-9-CM codes, the approach in NC was to add ICD-10-CM codes to existing definitions.¹ A variety of resources have been used for updating case definitions including: mapping resources, CDC input, and input from subject matter experts.² The prioritization of case definitions was based on perceived need, frequency of usage, and ease with which the definitions could be updated. Case definition review has also provided the opportunity to streamline definitions where possible, rename definitions for clarity, add new definitions, and archive those that are no longer useful. In addition, once the transition to ICD-10-CM has taken place, NC DETECT ED data will be monitored for consistency in reporting. If needed, case definitions will be revised to meet surveillance goals.

Results

To date, 15 case definitions have been updated with ICD-10-CM codes, one new definition has been created, and one definition is awaiting approval from a content expert. Table 1 displays the updated case definition for heroin overdose and describes key differences between ICD-9-CM and ICD-10-CM. The original ICD-9-CM case definition contains one diagnosis code and one External Cause of Injury code (E-code). The ICD-10-CM case definition contains eight codes, all of which begin with the letter "T". In ICD-10-CM, the last digit contains an "A", "D", or "S". These letters indicate whether the visit was the initial encounter, subsequent encounter, or sequela, respectively. Another difference between ICD-9-CM and ICD-10-CM, is the magnitude of codes available. While ICD-9-CM contains ~14,000 individual codes, ICD-10-CM contains ~70,000.³⁻⁴ Since ICD-10-CM codes contain many codes that are not found in ICD-9-CM, direct mapping is difficult. Using the example displayed in Table 1, the ICD-10-CM case definition includes the code T40.1X3, "Poisoning by heroin, assault." There is no direct match with this code in ICD-9-CM; the closest approximation would be E962.0, "Assault by drugs and medicinal substances."

Since the transition does not take place until October 1, 2015, results are not available for assessing the utility of the updated

case definitions. Preliminary results will be discussed during the presentation.

Conclusions

The transition from ICD-9-CM to ICD-10-CM required extensive preparation prior to the implementation to ICD-10-CM on October 1, 2015, and equally extensive monitoring after the date of implementation. It is important that local, state, and national organizations involved in syndromic surveillance share lessons learned from the transition to assist other organizations that may be struggling with how to adapt to the coding changes.

Table 1. Example of a NC DETECT Case Definition: ED Visits Related to Heroin Overdoses

Case definition	Author	No. of ICD-9-CM diagnosis codes and E-codes	ICD-9-CM diagnosis codes and/or E-codes	No. of ICD-10-CM diagnosis codes	ICD-10-CM diagnosis codes ¹	Key differences in ICD-10-CM
Heroin overdose	NC IVPB in collaboration with CCHI	2	965.01 and/or E850.0	8	T40.1X1A, T40.1X1D, T40.1X2A, T40.1X2D, T40.1X3A, T40.1X3D, T40.1X4A, T40.1X4D	<ul style="list-style-type: none"> No separate diagnosis code versus E-code More ICD-10-CM codes Requires coder to assign intent: (e.g. unintentional, intentional, undetermined); no code equivalent to 965.01 (poisoning due to heroin) Codes are in consecutive order Option for heroin overdose due to assault, self-harm, and undetermined intent (not available in ICD-9-CM) 7th digit indicates whether the ED visit was the (A) initial encounter, (D) subsequent encounter, or (S) sequela

Abbreviations: NC, North Carolina; IVPB, Injury and Violence Prevention Branch; CCHI, Carolina Center for Health Informatics; ED, emergency department

No. number

¹ED visits due to the sequela following heroin overdose were not included in the final case definition (e.g. 7th digit ends in "S")

Table 1. Example of a NC DETECT Case Definition: Heroin Overdoses

Keywords

Syndromic surveillance; Lessons learned; Definitions

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References

- Hicks, P, et al. Preparing for the Impact of the ICD-9/10 Transition on Syndromic Surveillance." *Online Journal of Public Health Informatics*; 2014; 7(1).
- Annest JL, et al. *Proposed Framework for Presenting Injury Data Using ICD-10-CM External Cause of Injury Codes*. NCIPC & NCHS, CDC. Atlanta (GA): 2014.
- CDC. The ICD-10 transition and public health surveillance - What you need to know. CDC; 2013 [cited 2015 Aug 26]. www.cdc.gov/nchs/icd/data/CDC_ICD-10_Transition_FactSheet_12_2013.pdf.
- NCIPC. *Recommended Actions to Improve External-Cause of Injury Coding in State-Based Hospital Discharge and Emergency Department Data Systems*. CDC. Atlanta (GA); 2009.

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