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. A variety of resources have been used for updating case definitions including: mapping resources, CDC input, and input from subject matter experts. 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.

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 approach 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: Heroin Overdoses

<table>
<thead>
<tr>
<th>Code Definition</th>
<th>Author</th>
<th>HICP/ICD-9-CM diagnosis code and E-codes</th>
<th>HICP/ICD-10-CM diagnosis codes and E-codes</th>
<th>Key differences in ICD-10-CM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heroin overdose</td>
<td>CCHI</td>
<td>T40.1X3</td>
<td>T40.1X3</td>
<td>The last digit contains an “A”, “D”, or “S”.</td>
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</table>

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Keywords
Syndromic surveillance; Lessons learned; Definitions

Acknowledgments
We would like to acknowledge NC DPH, IPRC, and UNC-CH. This project is supported by the CDC as part of its Core Violence and Injury Prevention Program.

References
4. 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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