

Implementation of the ICD-10 CM/PCS Coding System and Implications for the National Health Care Surveys

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Abstract

In October 2015, the U.S. healthcare industry adopted the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) for diagnoses, and the Procedure Coding System (ICD-10-PCS) for procedures. This change significantly affects how the National Center for Health Statistics (NCHS) collects, processes and reports data on the National Health Care Surveys, a family of nationally representative surveys of health care providers. This paper discusses major initiatives that the NCHS' Division of Health Care Statistics (DHCS) is taking in response to the implementation of this change. The DHCS ICD-10-CM/PCS Transitional Committee was convened to establish new coding and operational procedures to facilitate swift, efficient adaptation to ICD-10-CM/PCS. Extensive training was conducted with field representatives on how to abstract detailed information from medical records, and with coding staff to understand new coding logic to assign correct codes. Studies are underway to determine how to group ICD-10-CM codes into meaningful categories and ensure comparability with ICD-9-CM codes for national benchmarking and trend analyses. These efforts are important for producing valid and reliable statistics.

Key Words: National Health Care Surveys; ICD-10-CM; health care utilization; nationally representative statistics; trend analyses

1. Background

The Division of Health Care Statistics (DHCS) conducts the National Health Care Surveys, a family of nationally representative surveys of health care providers including hospitals, physician offices, community health centers, and long term care providers. These surveys collect health care encounter data on demographic and administrative characteristics of patients, and on the diagnoses of their sampled visit, and the procedures (surgical and non-surgical) that they receive.

From 1979 through most of 2015, the data DHCS gathered on diagnoses and procedures were coded using the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) coding system. On October 1, 2015 the U.S. healthcare industry adopted the Tenth Revision for both coding systems.

2. Differences between the ICD-9-CM and the ICD-10-CM/PCS Coding Systems

ICD-10-CM/PCS is much more detailed and comprehensive than ICD-9-CM. The differences for diagnosis codes are presented in Table 1, and for procedure codes in Table 2. Particularly notable is that the number of diagnosis codes went from about 3,800 to almost 72,000, and the number of procedure codes grew from about 14,000 to close to 30,000. The first character in ICD-9-CM is alpha or numeric. The first character in ICD-10-CM is alpha, and the second character is numeric. This difference has implications for grouping codes into more general categories for programming and analyzing the data.

Table 1. Differences between ICD-9-CM and ICD-10-CM diagnosis codes

| ICD-9-CM | ICD-10-CM |
|-------------------------------------|---|
| 3,824 codes | 71,924 codes |
| 3-5 characters | 3-7 characters |
| First character is numeric or alpha | First character is alpha Second character is numeric |
| Characters 2-5 are numeric | Characters 3-7 are alpha or numeric |

SOURCE: National Center for Health Statistics

Table 2. Differences between ICD-9-CM and ICD-10-PCS procedure codes

| ICD-9-CM (Vol. 3) | ICD-10-PCS |
|--------------------------------------|--|
| 14,025 codes | 29,823 codes |
| 3-4 characters | 7 characters |
| All characters are numeric | Alpha or numeric |
| All codes have at least 3 characters | Numbers 0-9, letters A-H, J-N, and P-Z |

SOURCE: National Center for Health Statistics

This paper will discuss the preparation required to facilitate the transition from the ICD-9-CM to the ICD-10-CM diagnosis coding system.

3. Preparation for the Transition from ICD-9 to ICD-10 Coding Systems

The changeover from ICD-9-CM to ICD-10-CM/PCS presented numerous challenges for survey data collection, coding, processing, editing, analysis, and reporting. A DHCS ICD-10 Transition Committee was assembled and met monthly in the years leading up to this change to determine what actions had to be taken to prepare for ICD-10 CM/PCS. Trainings for different types of employees had to be designed and conducted.

Survey field representatives had to be taught the similarities and differences between ICD-9-CM and ICD-10-CM/PCS and how important it was for them to abstract the more detailed verbatim information from medical records needed for ICD-10-CM/PCS. Medical coders had to be trained to understand the new coding logic and to correctly assign new codes drawing on the more detailed information that field representatives gathered from medical records.

DHCS analytic staff received training so that they could understand how their analyses, and those of data requestors, would be affected by the changeover. It was important for them to know the differences between the old and new systems, and to learn to use the General Equivalence Mappings (GEMs), which is a tool to assist with the conversion of codes from ICD-9-CM to ICD-10-CM/PCS and vice versa. Analysts would have to use the GEMs for their own research, and would also be expected to assist outside researchers who needed to update the diagnoses and procedure codes they have been following over time.

DHCS programmers had to modify computer programs used in each step of the data processing and preparation of the data for release. This was made more complicated by the introduction of the alpha numeric characters in ICD-10CM/PCS. The documentation and the layout of public use data files had to be modified to include changes to the coding system.

To summarize patient diagnoses and procedures, clinically meaningful reporting categories were developed for the various health care surveys. For example, for the ambulatory care surveys, grouped diagnostic data are reported for about 150 categories, which include many of the most common ambulatory care diagnoses. The categories are updated to reflect major changes in medical practice and utilization. Each category contains a unique set of codes, and the categories are mutually exclusive.

The clinically meaningful categories mentioned above form the basis for the data released to the public in web tables and summary reports. To continue to produce similar products after ICD-10-CM was implemented, our coding specialists had to convert each of the categories to the appropriate ICD-10-CM codes. Producing data tables with the same or similar clinically meaningful categories as in prior years was very time-consuming, but will benefit our many data users who do not run data themselves but who do track medical diagnoses and procedures over time.

For data users who want to find out what the ICD-10-CM codes are for one or a few conditions not included in published or posted tables, we will provide information on our website about using GEMS to convert the codes from ICD-9-CM to ICD-10-CM and vice

versa. The level of specificity being so much greater in ICD-10-CM means that there will often not be a direct one-to-one code matchup.

4. Comparability between ICD-9-CM and ICD-10-CM Coding Systems

There may be significant differences between what the data looked like when coded using ICD-9-CM codes, compared to what they would look like when coded using ICD-10-CM/PCS. The Office of the Assistant Secretary for Planning and Evaluation (ASPE), of the Department of Health and Human Services, funded a study to determine how to group the ICD-10-CM diagnoses and procedure codes into clinically meaningful reporting categories. The study examines the extent to which the clinically meaningful categories developed using ICD-9-CM data could be used with ICD-10-CM data. Comparability of data before and after ICD-10-CM/PCS implementation is important for national benchmarking and trend analyses.

In the first phase of this study, DHCS staff used physicians' office data from the 4th quarter of the 2014 National Ambulatory Medical Care Survey (NAMCS) from about 21,000 patient visit records. These records were coded in both ICD-9-CM and ICD-10-CM using verbatim text from the medical records and then the estimates of these diagnoses were compared. Preliminary findings indicated that the same reporting categories used with ICD-9-CM data could be used with ICD-10-CM data in a number of instances. This was an important finding for those concerned with the continuity of estimates of health care utilization for particular conditions.

Three major reasons emerged from the analysis explaining why in certain cases diagnoses were not coded to the same category using ICD-10-CM coding as they had been using ICD-9-CM:

- (1) Inadequacy of the verbatim text - There was a lack of sufficient detail in the text abstracted from the medical records, which made correct coding impossible.
- (2) Coding errors - The verbatim text was sufficient, but the coders chose the incorrect code in either ICD-9-CM or the ICD-10-CM. This meant that the condition was coded to a different category when, if correctly coded, it would have been coded to the same category.
- (3) Concept changes between ICD-9-CM and ICD-10-CM - Some conditions were moved in ICD-10-CM from their previously assigned chapter, or section of a chapter, to another part of the classification system. These were likely to have been re-categorized using very different criteria.

The first two of the issues stated above could be addressed with additional training of the field staff and coders. In the case of concept changes, reporting diagnosis categories using ICD-10-CM likely will need modification. For example, some ICD-9-CM reporting categories which were very general, like "other signs, symptoms and ill-defined conditions," were broken down into several codes in ICD-10-CM. In these cases, new categories based on the new concepts may have to be developed since there would be no close match to the old categories for the diagnoses affected.

5. Next Steps

Work is continuing on the ASPE-funded comparability study. Dual coding of medical records from NAMCS, as well as records from the National Hospital Ambulatory Medical Care Survey (NHAMCS), for the 4th Quarter of 2015, is underway. NHAMCS includes outpatient department and emergency department data. The results will provide information about improvements that can be made in gathering and processing data to improve comparability. After the analysis of these data is completed, decisions will be made about what, if any, diagnosis and procedure reporting categories in the ICD-9-CM coding system will no longer be used, and what new categories in the ICD-10-CM system need to be developed.

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