Learning how to use ICD-10 for cause of death coding

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Abstract Five coders, recently recruited by the Italian National Institute of Statistics were trained on the use of Icd10. After the course they coded a set of death certificates previously coded by senior coders. The agreement of new and senior coders on the underlying cause (UC) selected was used to evaluate the learning process. The study shows the effectiveness of training in increasing the reliability of UC and to correct errors in coding practices. Moreover it suggests that higher inter-coder variability is observed for certificates involving some specific coding topics.

Introduction

In the production of causes of death (CoD) statistics, the introduction of new coders can affect data series. The impact can be limited by an appropriate training. Five research assistants, recently recruited (October 2012) by the Italian National Institute of Statistics (Istat), were trained on the use of Icd10 for CoD coding. The present investigation analyzes the effect of the training course on the reliability of underlying cause of death (UC) coding performed by the recently trained coders.

Methods & Materials

The Icd10 course was scheduled in 13 teaching days (January-February 2013, 6 hours per day) with a following four-month period of training on the job. The course focused on the use of ICD10: rules of multiple cause (MC) modifications; selection and modification rules. Learning material was based on Icd10 volume 2, WHO training tool, USA (NCHS) training.

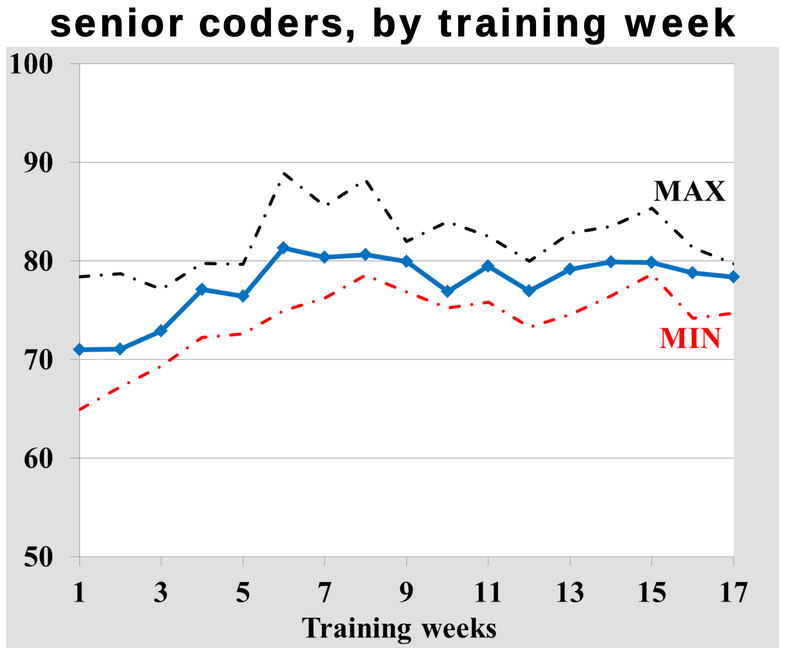
During the training on the job all students coded 4,050 death certificates rejected by the automated coding system and previously coded by senior coders. The coding was computer assisted and requested the completion of MCs. For certificates with complete MC, Acme software was used to select the UC; manual selection was performed on certificates with incomplete MC, certificates containing complications of surgery or external causes.

As indicator of the reliability of CoD coding was used the percentage of certificates in which there is an agreement on the UC between the newly trained and the senior coder.

Results

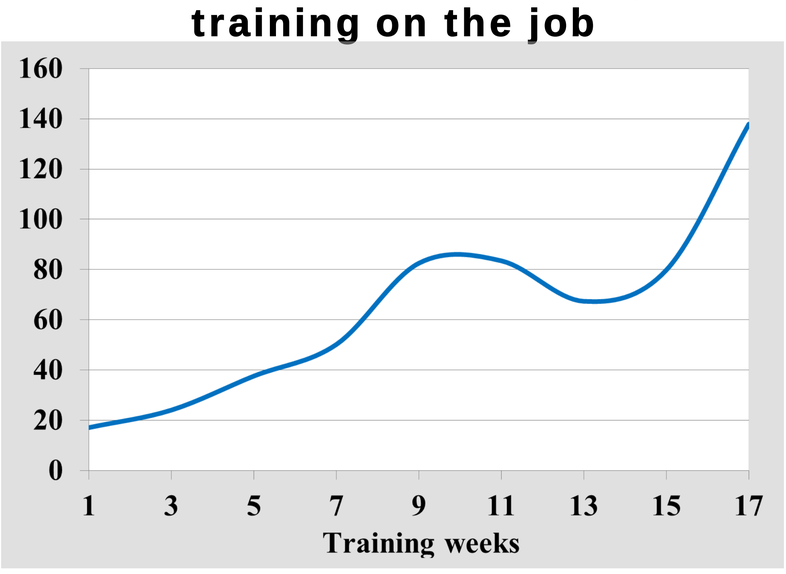
The percentage agreement on CoD coding between the new coders and the senior coders was on average 79% at four digit level, ranging from 76% to 80% by coder (+4% at three digit level). The indicator increased over time, from 71% in the first working week to 80% at the end of training period (Figure 1).

Figure 1. Percentage agreement on UC between new coders and senior coders, by training week



The average number of certificates coded (Figure 2) per day by younger coders improved progressively from 17 to 138.

Figure 2. Average daily number of certificates coded during the training on the job



The analysis by cause of death category (Figure 3) showed the highest inter-coder agreement for certificates with congenital malformations or neoplasms as UC. Lowest agreement for infectious diseases, blood diseases, skin and muscoloskeletal diseases, as well.

Figure 3. Percentage agreement on UC with 95% confidence intervals, by group of CoD

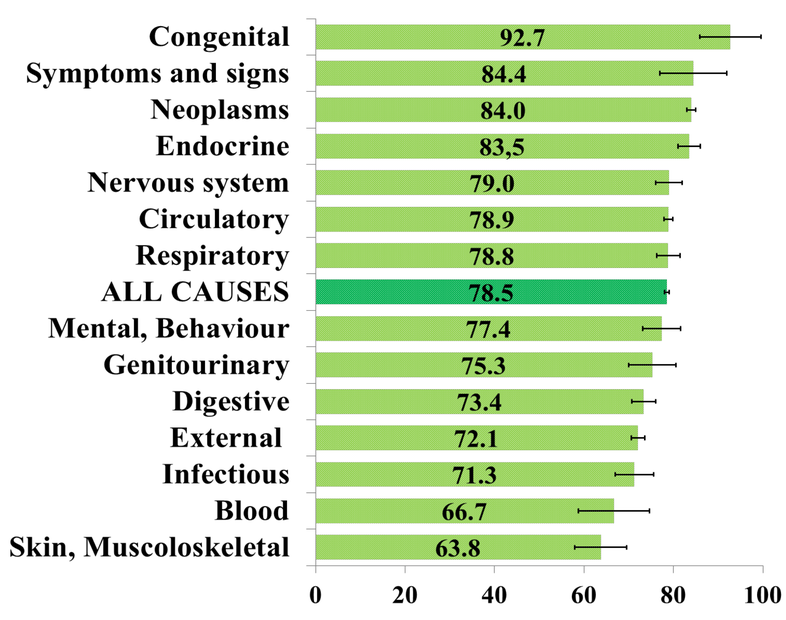
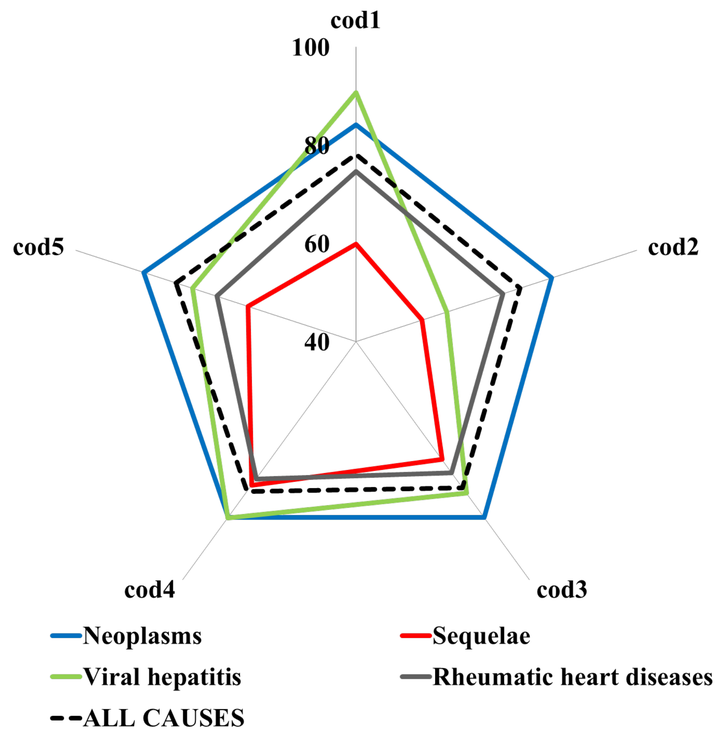


Figure 4 shows the agreement for some specific underlying causes by coder. A certain amount of variability especially for viral hepatitis and sequelae can be observed.

Figure 4. Percentage agreement on UC by coder, selected CoD.



Conclusions

The study shows the effectiveness of the training on the job period in increase the agreement of UC with the standard. The analysis of the inter-coder variability on specific coding topics highlights the needs of clearer instructions on some particular fields like sequelae and viral hepatitis.

References

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