

MISCLASSIFICATION OF THE UNDERLYING CAUSE OF DEATH

Since 2008, the Office of Vital Records (OVR) of the Arizona Department of Health Services has been implementing a new online death registration system. In the death certificate database some of the 2008 records originated with the old and some with the new registration systems. All of the 2009 death records were registered using the new system.

We have been testing our computer programs re-written to deal with the peculiarities of the new system (new variables, changed variable names and formats, etc.), before downloading the 2009 death certificate data for analysis by the end of April, 2010.

We were astonished to find out that a surprisingly large number of deaths in 2009 (2,692) had the ICD-10 codes 'R00-R99' (*Symptoms, signs, and abnormal findings*) for the underlying cause of death. A single ICD-10 code 'R99' (*Unknown cause of mortality*) was used on 2,372 death records. A more in-depth analysis proved that the **underlying cause of death was misclassified** on a great majority of these records. In fact, one out of three miscoded deaths was related to misuse of, abuse of or dependence on drugs (mostly unintentional overdoses but also suicides).

Unfortunately, similar misclassification applies to (a smaller number) of the 2008 death records; those registered using the new registration system.

According to the explanation we received from the Office of Vital Records the misclassified records initially had a "pending" cause of death which was coded as 'R99'. When the records were updated and the cause of death was no longer "pending", they were not picked up in the medical export for re-coding. A request was made by OVR to the contractor to modify the software so that it will pick up these updated records.

The misclassified records will be corrected in the death certificate database for both 2008 and 2009. While it is not too late to use the corrected cause-of-death data in the analysis of 2009 mortality statistics; our already published mortality statistics for 2008 are incorrect. Once the Office of Vital Records corrected the miscoded cause of death information for 2008, we decided to take the time to **re-run the data and revise** all cause-specific reports and data products available online. They include chapter 2 on "[Trends and Patterns in Mortality, Arizona Residents, 1998-2008](#)", chapter 5 on "[Trends and Patterns in Health Status and Vital Statistics by County of Residence in Arizona](#)", and chapter 9 on "[Community Vital Statistics, Arizona, 2008](#)" in the "[Arizona Health Status and Vital Statistics 2008](#)" report; as well as statistics on [suicide](#), [drug-related deaths](#), [unintentional injury deaths](#), [homicide](#), [injury deaths by intent or manner](#), [injury deaths due to events of undetermined intent](#), and [drowning](#) deaths.

In my 24 years as Arizona Vital Statistician I have never experienced (and my professional work has not been impacted by) an error of this magnitude in coding the causes of mortality. We are reputed to publish accurate and timely health statistics and we pride ourselves that we do.

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