Underlying Conditions ICD-10 Code List Methodology

BACKGROUND

Certain medical conditions are associated with severe COVID-19 outcomes (hospitalization, ICU admission, mechanical ventilation, and death) and are noted on CDC's webpages (1, 2, 3). In order to be categorized as having a "higher risk (conclusive)", an underlying medical condition had to have a published meta-analysis or systematic review confirming the association, or to have been confirmed during the CDC systematic review process. The evidence had to demonstrate good or strong support, depending on the quality of the studies in the review or meta-analysis, for an increase in risk for at least one severe COVID-19 outcome.

One way underlying medical conditions are identified is through medical records. Codes from the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) are used to identify specific conditions from electronic medical records, billing data, and insurance claims. Published reports assessing the association between underlying medical conditions and severe COVID-19 outcomes have described different sources for included underlying medical conditions; some used ICD-10-CM underlying medical conditions codes (2), but most have not used the same conditions or code lists (3, 4). Some code lists have similar but not identical codes, some lists include disabilities (4), but there is no comprehensive code list available that includes codes for all the underlying medical conditions, including disabilities, cited on CDC's webpage as being associated with "higher risk" of severe COVID-19 outcomes.

The purpose of this document is to describe development of and make available a list of ICD-10-CM codes for the underlying medical conditions listed on the CDC Underlying Conditions COVID-19 website associated with severe COVID-19 outcomes.

METHODS

First, a preliminary list of ICD-10-CM codes was generated for conditions classified on the CDC Underlying Medical Conditions website as "higher risk (conclusive)" through a review of peer-reviewed literature (2, 5, 6) and subject matter expert (SME) input.

Second, a revised code list was generated taking into account the ICD-10-CM codes from the Centers for Medicare and Medicaid Services (CMS) Chronic Conditions Data Warehouse (CCW) condition algorithms (7, 8). The CMS CWS did not include all COVID-19 underlying medical conditions; when the CMS CWS did include a condition algorithm for the same or similar COVID-19 underlying medical condition, the CCW either had more codes (a broader definition) or fewer codes (a narrower definition) for the specified condition that were taken into consideration.

Third, subject matter experts at CDC reviewed the revised ICD-10-CM code list for COVID-19 underlying medical conditions in their area of expertise and the code list was finalized based on their feedback. Fourth, prevalence estimates for the COVID-19 underlying medical conditions were generated using the final code list among outpatient and inpatient samples and shared with the relevant CDC SMEs for concurrence.

For immunosuppressive underlying medical conditions, academic partners and CDC subject matter experts generated a list of immunosuppressive medications that were included in the list of codes.

MAINTAINING THE LIST

The four-step process described above will be repeated when any changes or additions are made to the list of "high risk (conclusive)" underlying medical conditions on the CDC Underlying Conditions webpage.

References

1. Underlying Medical Conditions Associated with Higher Risk for Severe COVID-19: Information for Healthcare Professionals | CDC
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6. Wortham JM, Lee JT, Althomsons S, et al. Characteristics of Persons Who Died with COVID-19 – United States, February 12-May 18, 2020. MMWR Morb Mortal Wkly Rep. Jul 17 2020;69(28):923-929. doi:10.15585/mmwr.mm6928e1
7. https://www2.ccwdata.org/web/guest/home/
8. https://www2.ccwdata.org/web/guest/condition-categories

For a list of the underlying conditions ICD-10 codes, please email CORVDComms@cdc.gov.