

Sequence Number - Central [NAACCR Item #380] (last reviewed June 2024)

Overview:

Sequence Number - Central [#380] is a standard NAACCR data item that is required by NPCR, SEER, and derived by CCCR. This data item is used to code the sequence of all reportable neoplasms over the lifetime of a person. This is an important research variable to identify the first primary cancer for survival analyses, and it is also a critical data field for single versus multiple primary cancer analyses.

Each neoplasm is assigned a different sequence number in a central cancer registry based on the behavior of neoplasm and the timing of diagnosis. Numeric codes in the 00-59 range are used for neoplasms with *in situ* or invasive behavior (2 or 3), as defined by the standard setters (i.e. SEER/NPCR). If a person has only one *in situ* or one invasive neoplasm, a code of 00 will be assigned to the neoplasm. However, if a person has more than one *in situ* and/or invasive neoplasm, a code of 01 will be assigned to the first neoplasm and 02 for the second neoplasm, and so on. If two primaries are diagnosed simultaneously, the prognosis will define the coding order. The primary with the worse prognosis, based on the primary site, histology, and extent of disease for each of the primaries, will be coded with the lower sequence number. However, if there is no difference in prognosis, the sequence numbers may be assigned in any order.

Numeric codes in the 60-87 range are used for neoplasms with a benign or borderline malignant behavior as defined by the standard setters or for neoplasms that the central registry has defined as reportable for their catchment area only.

Issues:

Researchers need to be aware of the issues and limitations when using this data item for research.

This code can change over time. For instance, if a patient had an invasive cancer diagnosed in 2020, a code value of 00 would be assigned to this case. If this patient then has another primary malignant neoplasm diagnosed in 2021, the first primary cancer would be re-coded from 00 to 01 and the 2021 primary would be coded 02.

This code is assigned based on the reportability and behavior of a neoplasm at the time of diagnosis. Since the reportability or behavior of a particular neoplasm could change throughout the years, this could affect the assignment of sequence numbers. For instance, ovarian cancers with certain histologic types were considered as malignant if diagnosed prior to 2001, but as non-malignant if diagnosed 2001 and after. As a result, two people with the same cancer diagnosis, but at different time periods, might have different sequence numbers assigned.

This code should be assigned based on all reportable neoplasms in a person's lifetime. However, there is a lack of information for tumors diagnosed outside the registry catchment area (such as another state or province) or before the registry reference date (the earliest date of available, population-based data). Therefore, the assigned sequence number may not accurately reflect all

reportable neoplasms over a person's lifetime, depending on the length of operation of the registry and a patient's residential history.

SEER and NPCR use slightly different standards for determining tumors that are reportable and are to be included in registries. Again, two people with the same cancer diagnosis, but in different registries, might have different sequence numbers assigned.

It is also important to note there is the central registry code, Sequence Number – Central [#380], and the facility code, Sequence Number – Hospital [#560]. These codes may differ since the definitions of reportable neoplasms often vary between a hospital and a central registry and because the hospital registry may not be aware of all of the person's prior neoplasms.

Status:

We now have over 20 years of high quality, population-based cancer surveillance data for North America. As we continue to collect additional, and more current, years of data, the impact of missing tumor information from years prior to registry inception years is less significant.

Additionally, in the future, once all US central registries move toward national level deduplication, this data item may improve as the full story of the patient's cancer history can then be documented regardless of residential movement. However, as the Canadian experience shows, this would need thoughtful technical coordination and might require an additional, national-level, sequence number.

While the assigned sequence number currently has some limitations, this data item is appropriate to be used to identify first and multiple primary cancers at both the local and national level. This data item is included in all CiNA data products and is used in CiNA survival and prevalence statistics.