2021 NPCR NORTH CAROLINA SUCCESS STORY

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The Hospital Discharge Dataset and Its Impact on Death Certificate Only Cases

National Program of Cancer Registries
SUCCESS STORY

SUMMARY

Death Clearance (DC) is a labor- and time-intensive project. The North Carolina Central Cancer Registry (NCCCR) has tested and implemented several processes that seek to improve the success rate of follow-back efforts for the DC process and to reduce the Death Certificate Only (DCO) percentage in its annual submission to CDC's National Program of Cancer Registries (NPCR). In addition, linkages with the Hospital Discharge Dataset (HDD) have proven invaluable over the past several years, and continuous improvement steps are taken to maximize the benefit of this resource.

CHALLENGE

Reducing the percentage of DCO cases using HDD data and evaluating the impact over time.

SOLUTION

The HDD contains a massive amount of information. As a result, any practical use of the data requires it pared down to a subset of the cancer population. Therefore, we decided to test its value by using the portion of the HDD that matched with cases in the annual DC list.

In 2018, a linkage was completed between the 2016 DCO cases, a subset of the 2016 DC caseload, and the 2016 HDD. Of the 578 DCO cases, 65% (378) matched to at least one visit in the 2016 HDD regardless of diagnosis. The entire 2017 DC list was linked, with promising results, to the HDD for 2014-2017.

However, there was a large volume of matches using four (4) years of data, over 3,000. As a result, we decided to limit matches to those with a cancer-related diagnosis (783). We added the 378 cases from 2016 and 783 cases from 2017 to our follow-back efforts for 2017 death certificates and sent them to the corresponding hospitals. We requested that missed cases, according to our expanded reportability requirements for DC cases, be reported. The response was good for an initial test—34% for 2016 and 37% for 2017 DC cases.

Considering the response to and the success rate of the first run, we integrated the HDD linkage into our annual DC process for 2018 and 2019 death certificates. Near the start of the DC process each year, linkages are performed with the HDD for that death year and the three years prior. The resulting matches for all linkages are filtered down to cancer-related diagnoses only, duplicates are removed, and the resulting list of cases with visit information is disseminated to the matching hospitals. This is done as early in the DC cycle as possible to maximize the time allowed for hospitals to research and abstract the cases.

RESULTS

Overall results of the first four years have been good. The first year had the lowest percentage of returned abstracts, with marked increases after that, as shown in Table 1 below:

Table 1: Cases Requested v. Submitted

Year of Follow Back/ DC Processing	Death Year	# of HDD Matched Cases Included in Follow Back	% of Cases Reported by the Facility with the HDD visit
2019*	2016	378	34%
2019*	2017	783	37%
2020	2018	506	64%
2021	2019	422	57% (preliminary) 64% (expected)**

* Test year
** Follow back ongoing. Additional cases expected.

There has been positive feedback from hospitals despite the initial challenges. The list of requested cases helps some review their case-finding procedures. In addition, case-finding refinements lead to increased numbers of submitted cases, which over time results in a drop in the number of cases that fall into the DC process at all. A reduction in DC cases needing investigation translates into fewer requests sent to the hospitals in future years, so these improvements continue to benefit both hospital and central registries as time goes on.

There have been positive results for the CCR as well. Cases received from hospitals tend to be more complete than those received from other sources, and the percentage of submitted requested cases has increased over time. The associated diagnosis information that is tied to the hospital in the HDD is especially helpful in targeting the best sources of information. Sometimes multiple hospitals are matched to a single DC case. When this is the case, we request a review by each hospital involved, resulting in a more complete abstract once consolidated in the registry database. This means that some DC cases had two or more hospital-based follow-back leads at the onset—the HDD facility and the facility recorded as the place of death—increasing the chance for successful follow-back and streamlining the follow-back effort. Also, since we are no longer relying solely on the limited information on the death certificate, our chances of successfully disposing cases on the DC list have improved dramatically.

Successful disposition of the case from DC means a lower DCO percentage overall, which is a factor in the completeness of the central registry's data. Our submissions to NPCR have had consistently lower DC percentages since we started using the HDD data, as shown in Table 2 below:

Table 2: DCO Percentages: 2015-2019 Deaths

Year of Follow Back/DC Processing	Death Year	DCO %
2017	2015	0.93
2018	2016	0.96
2019	2017	0.84
2020	2018	0.72
2021	2019	TBD

SUSTAINING SUCCESS

After four years' worth of data showing that the linkage with the HDD has had a significant impact on DCO percentages, it has become part of our routine in the DC process. The success of the HDD efforts may lead us to consider using other sources of information that might be used to improve case finding and completeness in the future.

REGISTRY CONTACT INFORMATION

919-792-5946
https://schs.dph.ncdhhs.gov/units/ccr/

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention