

Improving CDR
Data Quality



Guidance for Improving Child Death Review Data Quality

National Center for Fatality
Review and Prevention



October 2017

INTRODUCTION

The Child Death Review - Case Reporting System (CDR-CRS) was developed in 2005 by the National Center for Fatality Review and Prevention (NCFRP) to provide states with a standard format for collecting, summarizing, and reporting the information shared during the Child Death Review process so it can be used at the local, state and national levels to improve child safety and prevent future deaths. This web-based system contains important details of the circumstances of child deaths, uniquely capturing child, family, risk factor, and death investigation information not available in any other mortality database.

As of 2017, 45 states use the CDR-CRS, and there are more than 2,100 individual registered users who enter data into the system. With the large number of data elements and complexity of information being entered, a focus on data quality is critical to ensuring the usefulness of the data for informing prevention and system improvements at the local, state, and national levels. For example, a focus on consistently and accurately completing data elements in the CDR-CRS at the local level permits monitoring trends in risk factors and cause of death within and across local jurisdictions. This is imperative for developing and evaluating the effectiveness of risk reduction strategies. The goal of this guidance is to serve as a resource to state Child Death Review programs for monitoring and improving the quality of their data entered into the CDR-CRS.

What is Data Quality?

The four dimensions of data quality most relevant for monitoring data entered into the CDR-CRS are:

1. **Completeness**

There are two components of data completeness in the CDR-CRS:

- 1) All deaths meeting the state's criteria for review are reviewed.
- 2) All expected information from the reviewed deaths is entered into the CDR-CRS with no missing data and few responses marked "unknown."

2. **Consistency**

Consistency refers to the uniformity and agreement of data elements across cases. Consistency should be monitored in two ways. First, within the data on each death (i.e., for the death of an infant, are all the infant questions in section A answered?). Secondly, consistency should be monitored across deaths with similar circumstances (i.e., are all motor vehicle crash deaths due to risky teen driving behaviors documented in the same way?).

3. **Accuracy**

Accuracy refers to the extent to which the entered data reflect the known facts about the child, family and circumstances surrounding the death. For example, is the child's age accurately recorded in the CDR-CRS? Checking accuracy often requires another source of information. Often the Narrative (Section N) can be used to assess accuracy (and consistency) of information in other sections of the CDR-CRS.

4. **Timeliness**

Timeliness refers to the extent to which the data are up-to-date. Several components of timeliness might be measured in the CDR-CRS – time from death to review, time from review to data entry, time from death/review/initial data entry to data entry marked complete. Different components of timeliness might be important to different states.

What is the Difference Between “Missing” and “Unknown” in the CDR-CRS Data?

When a new record is opened to start data entry into the CDR-CRS, all the fields are blank (text fields) or 0 (numeric fields); that is, they are set to “missing.” As information from the review is entered, the response in each field entered is changed from missing to the chosen response. A missing response indicates the question was skipped during data entry or not discussed/mentioned during the review.

The response option of “unknown” should be used in situations when the team has discussed the question but the information necessary to answer it was not available to anyone. For example, in question C2, “How long before incident did supervisor last see child?,” the response options are: child in sight of supervisor, minutes, hours, days, unknown. If the

review team attempted to obtain this information but was not able to obtain it, marking unknown is the correct response.

Strategies for Developing an Effective Data Quality Monitoring Program at the State Level

Below is a list of suggested strategies that have proven to be effective in improving data quality in various states. Layering multiple strategies can result in the greatest improvements in data quality.

- Engage local teams in the planning process
- Use the list of priority variables developed by the NCFRP Data Quality workgroup; identify key variables to monitor for data quality
- Identify priorities for monitoring consistency (e.g., by section, by cause of death)
- Set a goal for completeness (i.e., % missing and unknown) for each key variable and time frame for meeting the goal
- Set a goal for monitoring timeliness and time frame for meeting the goal
- Determine the frequency for monitoring data quality
- Develop a framework for providing data quality feedback to local teams
- Incorporate data quality monitoring results into team training

Components of an Effective Data Quality Monitoring Program

- Link death certificates to CDR-CRS and directly import data from vital records to CDR-CRS
- Choose key variables to monitor based on state priorities and available resources
- Provide local teams with a list of potential information sources to improve data accuracy (e.g., birth and death certificates, hospital records, death investigation interviews, police and child welfare records)
- Set high goals for completeness, consistency, timeliness
- Make use of CDR-CRS Data Dictionary (https://www.ncfrp.org/wp-content/uploads/NCRPCD-Docs/Data-DictionaryV4_1.pdf)
- Have local teams use “data entry complete” check box (located in the “Form Completed By” Section O of the CDR-CRS) and assess data quality once this is checked
- Use computer coding programs to run data quality checks (for completeness, inconsistencies, timeliness). Check with NCFRP to see what code already exists.
- Query teams for missing or inconsistencies in key variables
- Use the Narrative (Section N) to assess accuracy of information entered
- Assess “other” responses for key variables to determine if more appropriate response indicated
- Develop one-page infographics to provide feedback to local teams and publish these on a regular schedule
- Create summary reports of data quality monitoring and share them with local teams

Strategies for Incorporating Data Quality into the Local Review Meeting

- Ensure local teams are informed about the goals of the data quality program and the key variables being monitored
- Provide resources for accurately and consistently completing key variables identified for monitoring data quality
- Engage local teams in dialogues about accessing data sources to ensure consistency across teams
- Encourage discussion to reach consensus on potentially challenging questions or sections
- If available sources contain conflicting information, team should complete based on team consensus and note conflicting information in Narrative (Section N).

Resources Available from NCFRP

In July 2015, the NCFRP began its Data Quality Initiative. The goal of this initiative is to improve the quality and consistency of data entered into the CDR-CRS in an effort to improve the usefulness of the data for identifying prevention strategies and monitoring the effectiveness of prevention measures that have been implemented at both the state and national levels.

Components of the Data Quality Initiative include:

- Convene a Data Quality workgroup consisting of CDR coordinators from at least 7 states. This workgroup identified the priority variables for monitoring data quality and provides feedback on all other components of the data quality initiative.
- Identify priority variables for monitoring data quality
- Develop written guidance for completing the priority variables. This guidance includes detailed definitions, clarification and examples for the priority variables.
- Develop a data quality summary report and disseminate this report to state CDR coordinators annually
- Develop data quality training webinars
- Upon request, NCFRP will provide assistance with developing or improving a state's data quality program.

Links to all these resources are available on the Data Quality Initiative page of the NCFRP website (<https://www.ncfrp.org/resources/data-quality-initiative/>).

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The National Center for Fatality Review & Prevention is a program of the Michigan Public Health Institute. The Center is supported in part by Grant No. UG7MC28482 from the Maternal and Child Health Bureau (Title V, Social Security Act), Health Resources and Services Administration, Department of Health and Human Services.