

## Background

Central cancer registries are required to meet quality benchmarks established by the National Program of Cancer Registries (NPCR) and the North American Association of Central Cancer Registries (NAACCR). In addition, as a participant in the Surveillance, Epidemiology and End Results (SEER) Program, the New Jersey State Cancer Registry must meet benchmarks set forth by SEER. The NJSCR relies on data submitted by hospitals to provide the information necessary to form high quality central registry abstracts. The NJSCR processes over 350,000 individual reports each year, 21% of which are from hospitals, resulting in over 55,000 new cancer diagnoses. Reporting delays have significant impacts on processes at the central registry and on our ability to meet NPCR, NAACCR and SEER quality and completeness benchmarks. As of July 1, 2014, 34 out of 62 (55%) New Jersey hospitals had submitted less than 90% of their expected cases to NJSCR for the 2013 diagnosis year. Just 34% of records received from hospitals for the 2013 diagnosis year were submitted within 6 months. The significant proportion of cases submitted with unknown or non-specific values, particularly Social Security number, year of diagnosis, race and ethnicity, also impeded NJSCR's ability to identify unique cases, prevent duplicate cases and meet quality benchmarks.

## Methods

In 2014, NJSCR convened a Quality Control Workgroup aimed specifically at assessing and addressing issues with data submitted by hospital registries. The mission of the Workgroup was to improve the completeness, timeliness and quality of hospital-reported data through regular feedback to hospital registrars. The Workgroup developed the Quarterly Hospital Quality and Completeness Report (QuaCR) as a means of communicating this information on a regular basis. The QuaCR is also used to determine eligibility for the NJCSR Award for Excellence at three levels: gold, silver and bronze. A facility must meet the benchmarks in all three areas of the QuaCR in order to receive an award (Table 1).

Table 1. Award for Excellence benchmarks

	Completeness	Timeliness	Quality
Bronze	90%	90%	**
Silver	95%	95%	**
Gold	98%	98%	**

\*\*Refer to Table 2 for quality benchmarks

### Completeness

Completeness is defined as the percent of cases expected to be submitted by the facility that have been submitted for the current reporting year:

$$\text{Completeness} = \frac{\# \text{ Cases submitted for current reporting year}}{5\text{-year weighted average caseload}}$$

The number of expected cases is calculated as the weighted average of the number of cases submitted over the previous five years. Recent reporting years are weighted more heavily than earlier years in order to account for recent variations in caseload due to changes to facility services, catchment area, or other characteristics that may affect patient volumes.

### Timeliness

Timeliness is defined as the percent of cases that are submitted to NJSCR within 6 months of the date of first contact, on a month-to-month basis. For example, a case with a date of first contact of February 12, 2015 must be submitted to NJSCR by August 31, 2015 in order to be counted as timely.

## Methods (cont'd)

### Quality

Quality is measured as adherence to benchmarks for each of 10 measures at either the bronze, silver or gold level (Table 2). Benchmarks were established based on the data quality standards of SEER, NPCR, and NAACCR and include the percent of cases submitted with unknown or non-specific values in data elements that impact registry operations.

Table 2. Ten quality benchmarks

Measure	Bronze	Silver	Gold
% Unknown Social Security number	<3%	<2%	<1%
% Unknown year of diagnosis	<1.5%	<1%	<0.5%
% Unknown/other race (99, 98)	<5%	<4%	<3%
% Unknown/other Spanish origin (9,8)	<5%	<4%	<3%
% Unknown class of case (99)	<1%	<0.5%	<0.2%
% Unknown sex (9)	<3%	<2%	<1%
% Unknown/ill-defined primary site (C80_, C76_)	<2.5%	<2%	<1.5%
% Unknown laterality (9,3)	<6%	<4%	<2%
% Non-specific histology (8000, 8001)	<3%	<2.5%	<2%
% Unknown county at diagnosis (999)	<3%	<2%	<1%

All cases (including non-analytic) are included in the calculation of completeness, timeliness and quality, with few exclusions as noted in Table 3.

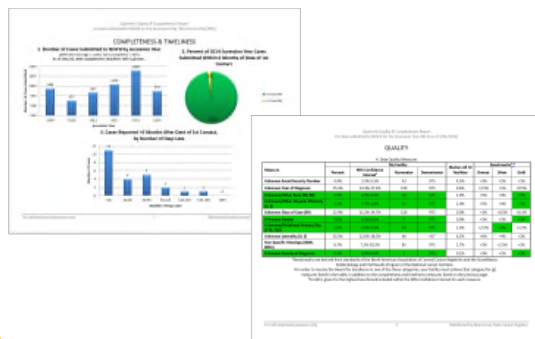
Table 3. Cases excluded from quality measure calculations

Measure	Exclusion
% Unknown Social Security number	Cases for which there is documentation that no Social Security number exists (e.g., foreign residents)
% Unknown laterality	Non-paired primary sites
% Non-specific histology	Non-microscopically confirmed cases

### QuaCR

NJSCR staff presented the QuaCR to hospital registrars at a meeting of the Oncology Registrars Association of New Jersey (ORANJ) in March 2015, and the report was fully implemented in April 2015 for the 2014 accession year. In January, April, July, October, a report is generated for each facility using data submitted by that facility. Facilities are encouraged to correct and resubmit cases in order to improve performance on the ten quality measures.

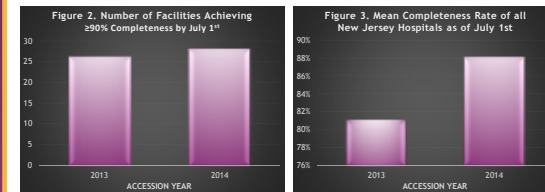
Figure 1. Excerpts from the QuaCR



## Results

### Completeness

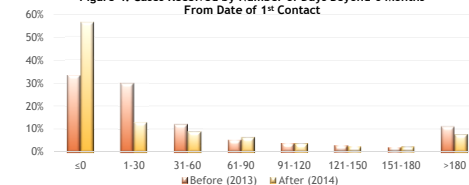
While the number of facilities achieving at least 90% completeness by July 1<sup>st</sup> did not change notably from 2013 to 2014 (Figure 2), the mean completeness for all facilities increased from 81% in 2013 to 88% in 2014 (Figure 3).



### Timeliness

The percent of cases received within 6 months from date of first contact increased from 34% in 2013 to 56% in 2014 ( $p < 0.01$ ) (Figure 4).

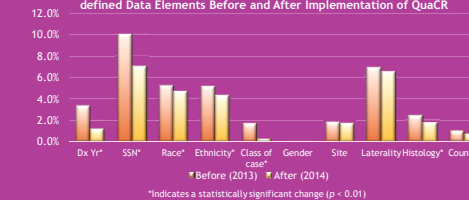
Figure 4. Cases Received by Number of Days Beyond 6 Months From Date of 1<sup>st</sup> Contact



### Quality

The percent of unknown or non-specific values decreased in 7 of the 10 key data quality measures: diagnosis year, Social Security number, race, ethnicity, class of case, histology, and county at diagnosis (Figure 5).

Figure 5. Percent of Records Submitted with Unknown or Ill-defined Data Elements Before and After Implementation of QuaCR



## Conclusion

By providing regular feedback to reporting hospitals on the data they submit to the central cancer registry and offering awards for high performance, the NJSCR has been able to improve the completeness, timeliness and quality of the data it receives. While the improvement in completeness was not significant, improvements in timeliness indicate we can expect continued progress toward complete submissions by July 1<sup>st</sup> of each year.

### Acknowledgements

The authors would like to thank NJ cancer registrars for their thoughtful contributions to developing and implementing the Quarterly Hospital Quality and Completeness Report as well as for their dedication to supplying timely, accurate and complete cancer data to the New Jersey State Cancer Registry in an effort to address important issues surrounding cancer, its causes and effects on the people of New Jersey.

The Environmental and Occupational Health Surveillance Program – Cancer Surveillance Unit is funded by the State of New Jersey, and the New Jersey State Cancer Registry is funded by the NCI SEER Program HHSN261201300021, the CDC National Program of Cancer Registries (NPCR) 5U58DP003931-02, and the State of New Jersey, with additional support from the Rutgers Cancer Institute of New Jersey.