

Using the NPCR-PEI to Assess Data Completeness and Quality within the NPCR-CSS

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Background

- NPCR-Program Evaluation Instrument (PEI) is a web-based survey designed to evaluate the operational attributes of NPCR-funded central cancer (CCR) registries.
- NPCR-Cancer Surveillance System (CSS) receives, processes, and disseminates cancer incidence data submitted to CDC.
- This study linked NPCR-PEI data (2007-2011) with NPCR-CSS data (2005-2010) to assess completeness of certain variables in NPCR-CSS and their association with CCR operational attributes.

Methods

- Each year's NPCR-PEI data was linked to the NPCR-CSS data from the previous 24 months.
- Data elements relevant to registry administration were studied.
 - data quality
 - reporting completeness
 - e-reporting
 - data content
 - data exchange
 - registry workload

- Scores were calculated for the above data elements based on work by Chapman, et al.
- Data completeness rates for vital status, type of reporting source, primary site, date of diagnosis, and date of last contact were calculated and previously reported (not shown here).
- Frequencies were performed on the registry attribute scores by calendar year and U.S. State.
- Correlation analyses were performed on all registry attribute scores and data completeness rates by calendar year.

Results and Discussion

Scores by U.S. State, 2005-2010

State	Data Quality	Reporting Completeness	e-Reporting	Data Content	Data Exchange	Registry Workload
Median	72	56	20	66	80	4
1	82	38	6	34	70	4
2	82	68	40	100	90	2
3	72	68	60	66	60	2
4	40	18	40	34	70	7
5	78	56	74	66	70	3
6	72	82	26	66	80	3
7	78	18	14	66	90	0
8	72	32	14	34	70	4
9	68	56	34	66	90	6
10	72	32	26	66	80	4
11	60	76	14	66	70	3
12	86	26	26	66	80	5
13	72	32	14	66	80	4
14	72	56	14	34	80	6
15	82	6	20	66	50	2
16	64	56	20	66	90	6
17	82	62	60	34	70	4
18	72	32	14	100	80	3
19	68	76	20	66	80	3
20	64	56	14	66	70	6
21	86	88	6	34	20	4
22	72	18	34	66	90	1
23	82	44	20	100	90	2
24	50	62	14	0	70	5
25	68	26	6	66	70	6
26	68	56	20	66	70	2
27	72	50	26	66	90	3
28	64	82	40	66	70	4
29	86	88	14	66	90	3
30	50	76	6	34	70	4
31	86	44	26	66	80	2
32	78	26	6	66	80	8
33	68	26	26	66	90	3
34	78	38	14	34	80	6
35	72	68	40	66	70	4
36	78	88	26	34	70	9
37	64	6	20	66	90	3
38	54	62	46	100	60	4
39	46	18	14	100	70	2
40	72	56	80	66	80	4
41	78	100	6	34	70	5
42	82	32	20	100	80	0
43	64	38	14	34	60	6
44	64	62	14	66	60	4
45	68	88	54	34	70	3
46	40	18	0	66	80	2

CCRs with a score above the median have higher:

- Data quality
 - Completeness of case ascertainment
 - e-Reporting
 - Enhanced data content
- and are more likely to:
- Meet NPCR data exchange requirements
 - To have a higher workload.

Trend analyses for 2005-2010 show:

- 10% increase in the use of e-Reporting systems
- 3% increase in the use of registry-specific edits sets
- ~8% increase in the use of Registry-Plus software.

- No correlations exist among registry scores and data completeness rates.
- An association exists between data exchange and data content overall by calendar year (Pearson co-efficient 0.2995, p-value 0.0004).

Conclusions

- There have been improvements in the use of e-Reporting systems and data quality assurance procedures.
- Improving/enhancing data content results in improvements in the quality of data exchanged among CCRs.
- PEI data is useful for studying CCR attributes related to improving data content, data exchange, and quality.
- This study provides more recent information about data quality/assurance and informs CDC where technical assistance may be needed.

References

Chapman SA, Mulvihill L, Herrera C. Workload and time management in central cancer registries: baseline data and implication for registry staffing. *J of Reg Management* 2012, vol. 39, no. 4.

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