

BACKGROUND

- In order to improve data quality and completeness, cancer registries perform various tasks including death clearance (DCL) process. Each registry must meet minimum requirements and choose additional tasks for conducting DCL as established by NAACCR's Death Clearance Manual of January 2015.
- The Puerto Rico Demographic Registry (PRDR) is responsible for registration, correction, custody, and protection of vital events in Puerto Rico. For this reason, the Puerto Rico Central Cancer Registry (PRCCR) established a collaboration agreement with the PRDR to share annually the electronic mortality file with up to four causes of death.
- PRCCR performs additional tasks to evaluate additional causes of death and make comparisons at tumor level, which represents a challenge to reach acceptable percentage of death certificate only (DCO) (< 3%).
- Performing follow-back of deaths occurring in non-clinical sources becomes challenging, since these cases represent potential DCOs.
- A main concern of PRCCR is seeking a more effective way to reduce the percentage DCOs and improve the quality of data.

PURPOSES

- Assess the reliability of all causes of death coded in the electronic death certificates (DC) and compare them against paper DC to measure its impact in the DCO percentage for the period 2012-2013.
- Identify possible reasons of discrepancies in order to improve the quality of the mortality data file.

METHODS

PRDR

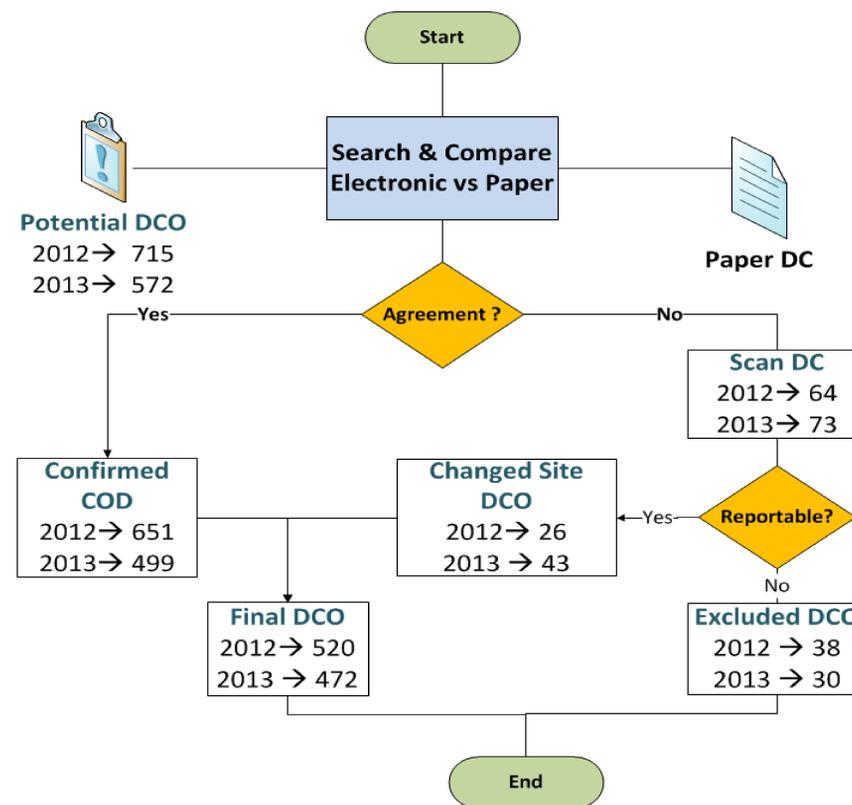
- There are 54 local offices around the island responsible of collecting all the DC forms and entering all information of DC, except the causes of death, on PRDR system.
- Every two weeks the paper DC forms are collected from the local offices and sent to PRDR main office, where a registrar enters the causes of death in words using SuperMICAR software. Each week PRDR main office sends a file to the National Center of Health Statistics (NCHS).
- NCHS, using ACME/TRANSAX software, applies WHO rules to determine the underlying and contributing causes of death and assigns ICD10 codes.
- NCHS sends the resulting file from SuperMICAR to PRDR, to be integrated into the PRDR system.

PRCCR

- PRCCR uses an in-house program called Death Tracking System (DTS) to import, match, and follow-back electronic DCs.
- A list of potential DCOs are generated to perform a manual review. Original paper DCs are scanned at PRDR for further evaluation by the PRCCR.
- Identify discrepancies and findings are categorized for analysis. A final report is shared with PRDR.

RESULTS

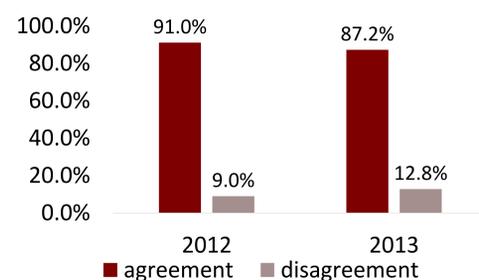
Process Diagram Electronic vs Paper DC Revision 2012-2013



Analysis of DC 2012-2013

Dx Year	NPCR incidence	All deaths	Cancer Cause of death	Potential DCO	Agreement	Disagreement			DCO			
						Excluded DCO	Different site	Total	Previous	%	Final	%
2012	15,483	29,890	5,901	715	651	38	26	64	584	3.77	520	3.36
2013	15,698	29,368	5,761	572	499	30	43	73	545	3.47	472	3.01

Reliability of Electronic vs Paper DC 2012-2013



Excluded DCO by Category 2012-2013

Category	2012 (N = 38)		2013 (N = 30)	
	N	%	N	%
Illegible	4	10.5	2	6.7
Terminology	16	42.1	7	23.3
Data Entry	14	36.8	16	53.3
Borderline	4	10.5	5	16.7

RESULTS

- For the period 2012-2013, a total of 1,287 paper DCs were reviewed from which approximately 10.6% (137) were found to be discrepant.
 - 5.0% (64) had no cancer related causes of death, and
 - 5.7% (73) had different primary sites.
- The main possible reasons for DCs disagreement were:
 - Terminology: 42.1% for 2012 and 23.3% for 2013. These disagreements can be explained as medical terminology misknowledge (e.g. chronic liver disease coded as liver cancer).
 - Data entry: 36.8% for 2012 and 53.3% for 2013. The coded causes of death were different from the electronic DC (e.g. Cardio respiratory arrest coded as lung cancer).
- For 2012, the DCO percentage was reduced from 3.8% to 3.4% and for 2013, from 3.5 % to 3.01% (Silver vs Gold).

DISCUSSION

- The reporting of vital records is a cornerstone for public health statistics including cancer statistics.
- This strategy reduced the percentage of DCO allowing us to achieve the DCO criteria requirement established by NAACCR and NPCR.
- In addition, this collaboration resulted as an audit project for PRDR in the improvement of its data.
- This strategy established a more rigorous method to improve the quality and completeness of the PRCCR data.
- Also, it allows PRDR to improve its data quality by identifying possible weaknesses during data entry processes.

Recommendations

- Continuing and foster the collaboration among PRCCR and PRDR is imperative to improve quality and completeness, as well as public health policies.
- The PRDR should identify challenges that vital record registrars confront during the process of data entry and develop training opportunities.
- The PRDR should implement audits to demographic registrars to evaluate the text sent to SuperMICAR and compare it to original DC causes of death.
- Further research is needed to better understand this findings.

ACKNOWLEDGEMENT

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