DEATH CLEARANCE - Design and implementation of an interface to automate vital statistics data collection in a population-based cancer registry.

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The Plan

To build an HL7 interface to allow for the automated upload and validation of provincial monthly death data from BC Vital Statistics Agency (VSA) to the BC Cancer Registry (BCCR).

Who We Are

We are British Columbia's provincial cancer registry:
• established in 1969.
• we register ~21,000 new cancer cases annually.
• our case ascertainment is through attendance at BC Cancer Centre or by pathology, diagnostic reports from hospital labs.
• the death lists are received monthly from the BC Vital Statistics Agency in Victoria, BC.
• our six cancer centres are located across the province (Vancouver, Victoria, Fraser Valley, Abbotsford, Kelowna and Prince George agencies in 2010).
• the province land size is 936,492 km² (361,581 mi²).

Until September 2010, death clearance at the BC Cancer Registry was carried out using a series of complex, labour intensive, manual processes shared by staff in two geographically separate departments; Population Oncology and Data Quality & Registry.

Funding

Funding from the Canadian Partnership Against Cancer's National Staging Initiative permitted the design and construction of an automated vital statistics interface.

Numbers

The approximate annual statistics are as follows:
• 34,650 total death records received from BC Vital Statistics Agency.
• 17,600 matched records in Cancer Agency Information System (CAIS).
• 1,650 unmatched records but with cause of death listed as cancer.
• 230 duplicate records in CAIS that require manual review.

What Is Death Clearance?

Death clearance is a critical component of cancer registration, allowing for:
1. linkage of vital statistics data
2. ascertainment of new cases from death certificates
3. more accurate survival analyses

What We Did Before

1. BC Vital Statistics Agency sent a monthly encrypted data file of all deaths occurring in BC to a secure File Transfer Protocol (FTP) server accessible to the Population Oncology (PO) analyst team.
2. PO analyst reviewed file and generated a monthly cancer death listing for manual checking of duplicates, new records and updates.
3. Listing was sent to Data Quality & Registry (DQ&R) analysts who manually compared death listing to the registry database (in CAIS) and generated death clearance reports.
4. DQ&R staff created new registry records from Death Certificate Only (DCO) cases.

What We Do Now

A detailed current state business analysis of the procedures for accomplishing death clearance was undertaken, including process owner, subject matter experts, workflows, data flows, volumes, frequencies, complexities and outcomes.

Based on the requirements document, a technical strategy to automate the process was developed, culminating in the design implementation of an HL7 integration broker type interface.

What We Do Now

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History

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Amazing Results

User acceptance testing confirmed that development efforts were consistent with business requirements. In initial processing of 1 year of retrospective vital statistics data, 94.3% of records were automatically processed and 5.7% of records generated exception reports requiring manual processing. Analysis of automated record handling over next 4 month period showed that 96.1% of records were automatically processed and 3.9% of records generated exception reports.

Exciting Conclusions

Automation of the death clearance process has resulted in a significant increased efficiency of processing vital statistics data in terms of time and staff resources resulting in a vast improvement in complete, timely and accurate vital statistics data in the BC Cancer Registry.

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