

From Backlog to Distinction: Vermont Cancer Registry's Path to Advanced Standards

Linda Blosschies, ODS-C; Jennifer Kachajian, MA, MPH; Michael Flaherty, MA, MPH; Holly Maynard

Background

The Vermont Cancer Registry (VCR), supported by the CDC National Program of Cancer Registries (NPCR), collects and reports statewide cancer incidence data. To meet National and Advanced Data Quality Standards, VCR must ensure timely, complete, and accurate reporting. The goal of this effort was to eliminate processing backlogs and restore compliance with NPCR Advanced Data Quality Standards.

Following pandemic-related disruptions and operational backlogs, VCR faced significant challenges in maintaining reporting timeliness and completeness, prompting a comprehensive redesign of quality assurance and case processing workflows.

Methods

- The goal of this effort was to eliminate processing backlogs and restore compliance with NPCR Advanced Data Quality Standards.
- Prior to 2019, VCR relied on full visual review of all cases, ensuring high data quality but contributing to processing and consolidation backlogs. In 2019, a Systems Thinking analysis guided redesign of workflows, shifting to targeted review of core data items.
- Additional efficiencies were achieved through quarterly post-processing review based on reportability, coding patterns, and emerging quality issues. Automated quality assurance using regular expressions (regex) in R enabled validation of text-supported data elements, efficient case grouping, and reduced processing time.
- To address consolidation backlogs, VCR trained additional staff and prioritized 12-month consolidation. Hospital reporting practices were strengthened through reinstated Quality Indicator Reports (QIRs), and Inter-Registry Data Exchange (IRDE) was improved through enhanced collaboration with neighboring states.

AHS.VDHHSICancerRegistry@vermont.gov
HealthVermont.gov
[@HealthVermont](https://www.instagram.com/HealthVermont)

Results

The VCR faced significant barriers to meeting the NPCR Advanced Data Quality Standard, including an unmanageable QA review process, case consolidation backlogs, hospital delays in meeting the 180-day reporting requirement, and late receipt of Inter-Registry Data Exchange (IRDE) submissions. In response (Figure 1), VCR implemented a new QA system using automation, prioritized 12-month consolidation, reinstated quarterly QIRs to strengthen reporting compliance, and enhanced collaboration with neighboring states.

Figure 1. Average Case Processing Time (Days) by Year of Diagnosis, 2015–2025

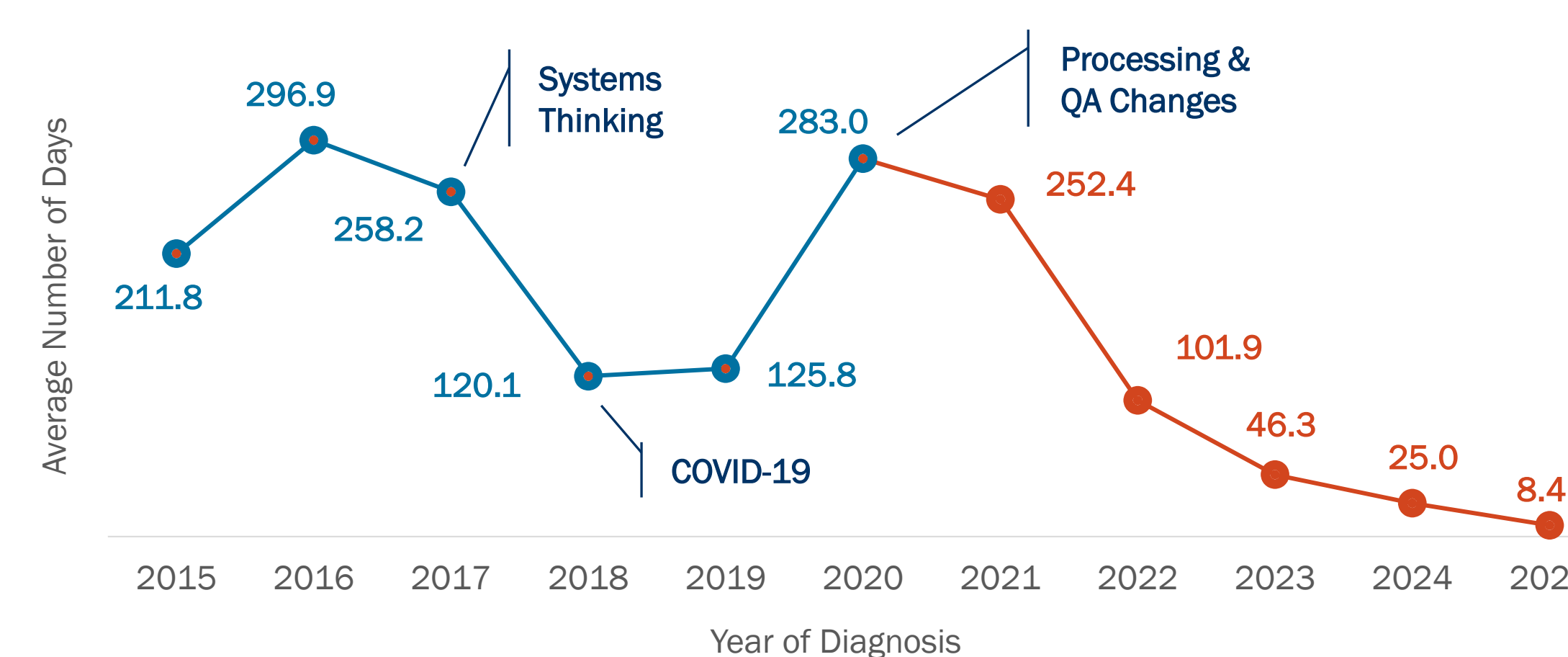
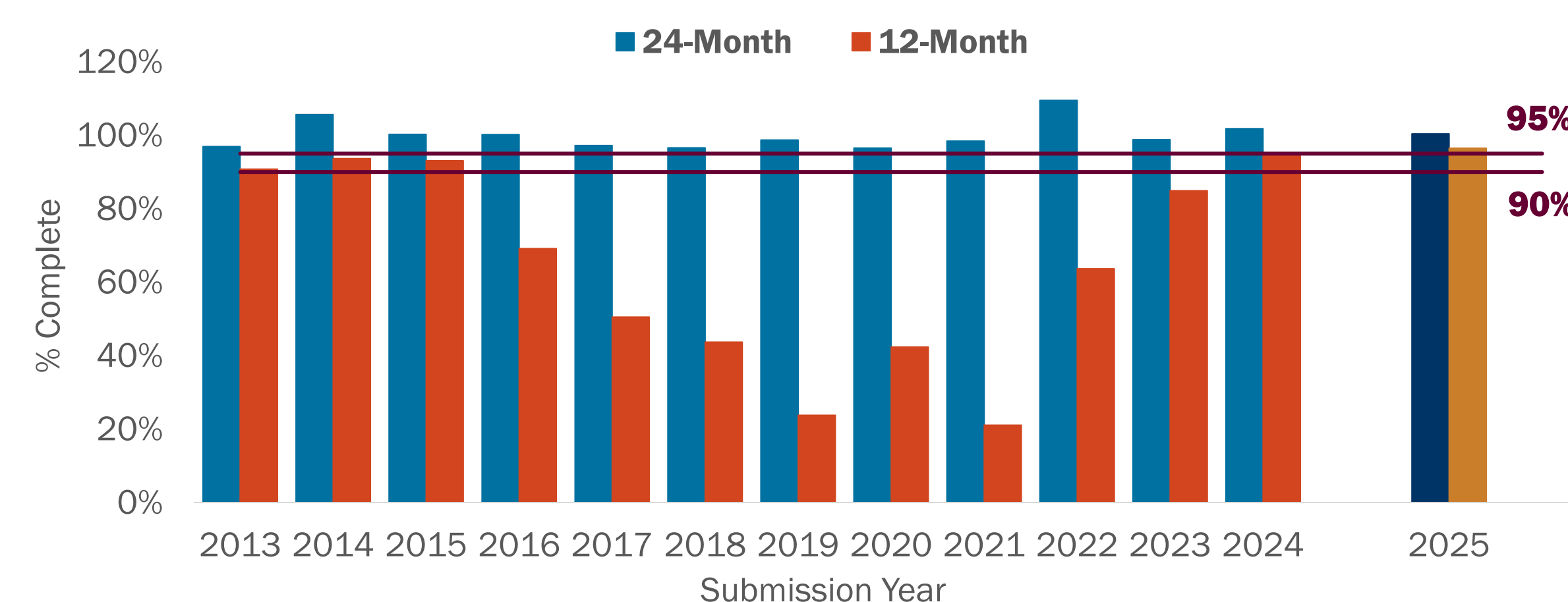


Figure 2. Vermont Cancer Registry Completeness Trends (NPCR Data Evaluation Reports (DERs) 2013–2024; VCR Estimate 2025)



Although formal recognition of Advanced Standards was suspended for 2024, these results (Figure 2) demonstrate how a small registry can embrace change, achieve sustained improvements in data quality and completeness, and meet rigorous national expectations.

One important lesson learned throughout VCR's path to attaining NPCR's Advanced Data Standards was the value of stepping back to assess barriers. This process enabled VCR to identify effective strategies for addressing challenges and sustaining improvements.

Conclusions



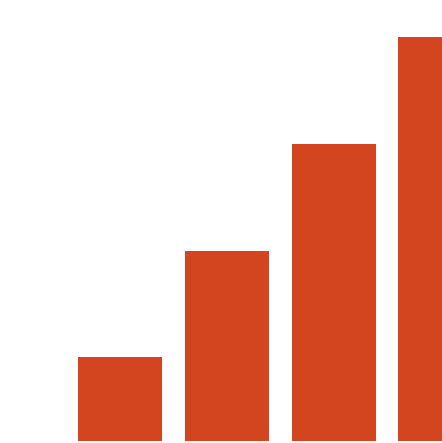
Process Redesign

System-wide barriers were addressed through automation, consolidation, facility engagement, and improved IRDE timeliness.



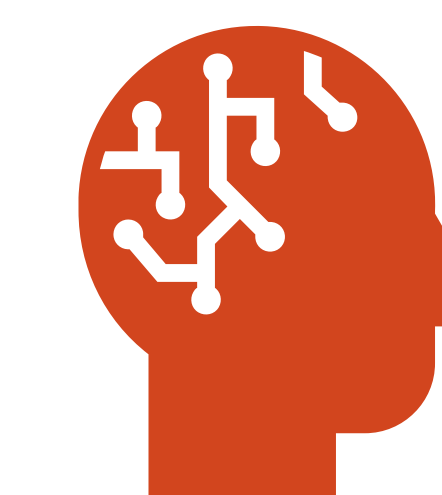
Performance Improvements

12-month completeness increased from 21% in 2021 to 94% in 2024, meeting National and Advanced Standards, with preliminary 2025 estimates indicating continued progress.



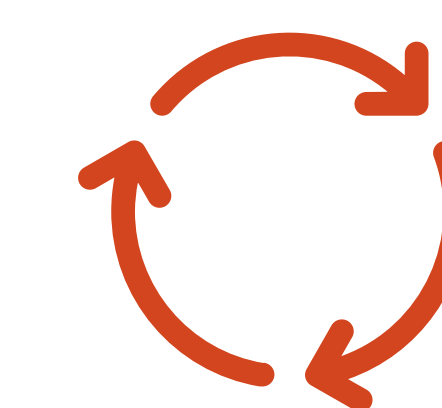
Validation and Sustainability

CDC evaluation results and ongoing monitoring confirm consistent improvements in data quality.



Flexible Systems

Targeted QA and automation eliminated backlogs and enabled rapid response to emerging quality concerns.



Continuous Improvement

Ongoing assessment and willingness to embrace change support sustained success.

Acknowledgments

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Data Sources: Vermont Cancer Registry (VCR) and National Program of Cancer Registries (NPCR)

