Center for Vital Records Data Modernization Initiative
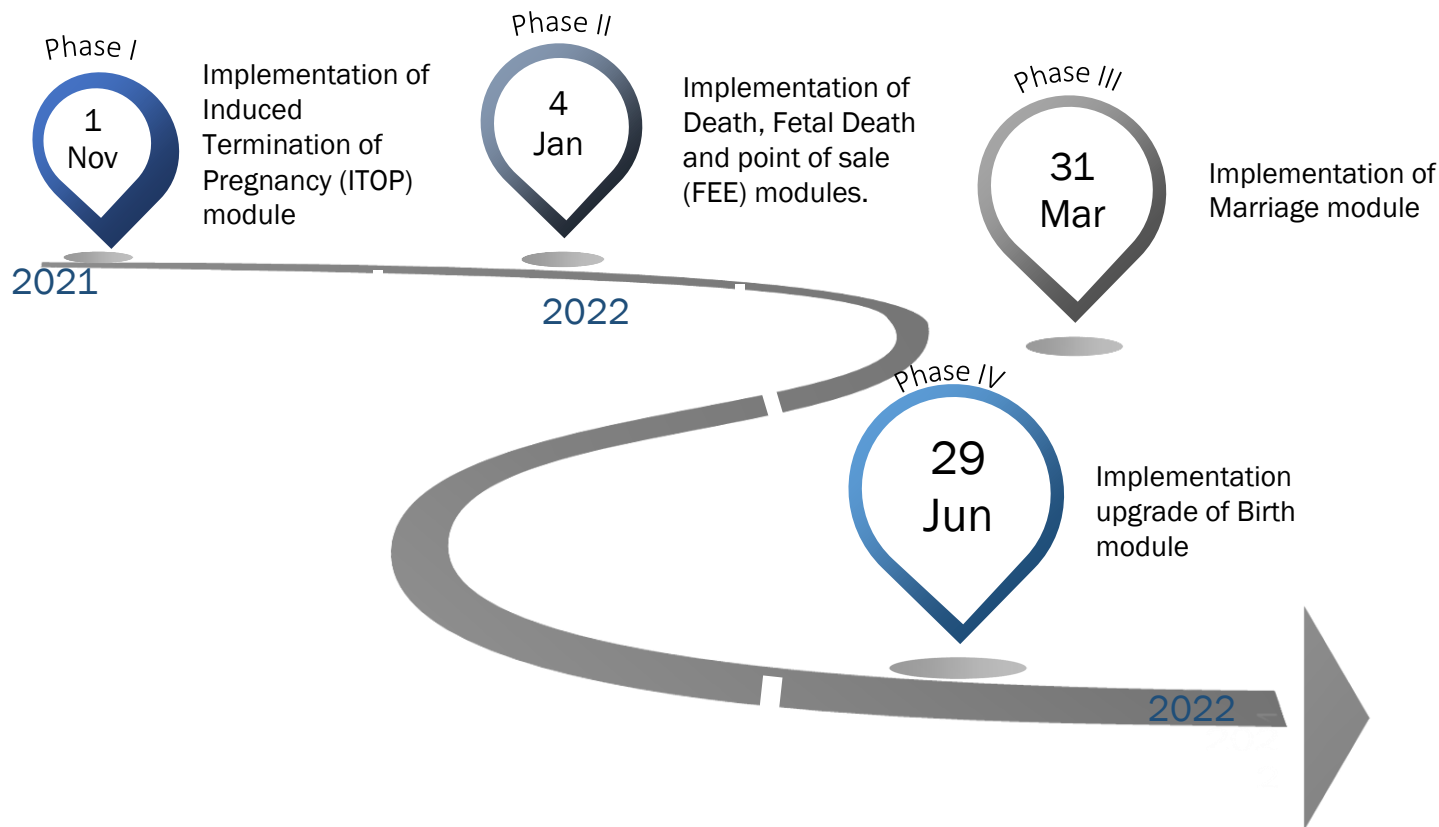## Implementation of the Rhode Island Vital Events Registration System

February 16, 2023

Rhode Island Vital Events Registration System (RIVERS) Go-Live Dates

Phase I

1 Nov

Implementation of Induced Termination of Pregnancy (ITOP) module

2021

Phase II

4 Jan

Implementation of Death, Fetal Death and point of sale (FEE) modules.

2022

Phase III

31 Mar

Implementation of Marriage module

Phase IV

29 Jun

Implementation upgrade of Birth module

2022

Keys to Successful Implementation

Pre-Vendor Preparation Phase Prior to Implementation

Allowed Vital Records to plan for implementation ahead of the actual activities

- Establishing timelines
- Organizing workflow and business requirements
- Identifying business partners/stakeholders
- Identifying end-user training needs

Positioned Vital Records to "hit the ground running" once RIVERS system vendor was in contract

- Reports, imports, extracts for all modules
- Forms, certificates, letters for all modules
- Requirements based on Rhode Island's statutes
- Swimlane process flows that captured current workflow
- Communication plan for stakeholder involvement and to bring awareness to project

Keys to Successful Implementation Cont.

Strong and Collaborative Project Management

- Overall PM by QuantumMark
- Vendor PM by Genesis
- Dedicated Project Lead from Vital Records
- In-House (DOIT) Information Technology Steering Committee
- Rhode Island Department of Health Leadership

Dedicated User Acceptance Testing Team

- Fully devoted to UAT
  - Vital Records
  - CHDA (VNA nurses)
  - Facility Resources
  - Funeral Directors
  - Municipalities
- Writing use cases and test scripts
- Testing requirements, workflow, and bug fixes

Communication with Stakeholders

- End-Users
  - Rhode Island Certifiers and Pronouncers
  - Facility Administrators and staff
  - Medical Examiners and staff
  - Funeral Directors and staff
  - Municipalities

Keys to Successful Implementation Cont.

Communication Efforts

Emails sent to all stakeholder groups prior, during and after implementation

Attended the RI Funeral Directors Association meeting early in the process and received feedback that was incorporated into the implementation

Offered stakeholders "Sneak Peeks"

Training schedules were posted on the RIDOH website, allowing stakeholders to register at their convenience

Frequently Asked Questions (FAQ's) were created

Training materials and resources are posted on RIDOH's website

Processes That Lead to On-time and On-Budget Implementation

Successful 18-Month Implementation Because of…

- Dedicated development and testing teams at Genesis allowed for parallel development and testing of modules
- Additional resources requested for UAT
- Meetings to check-in consistently for progress and bug reports
- Utilized entrance and exit criteria for each phase of project
- End users were included in JAD sessions
- Dedicated help desk in Vital Records during working hours as well as the vendor technical support line 24/7
- Additional training opportunities offered including 1:1 sessions pre and post go-live

Key Insight

- Consistent communication
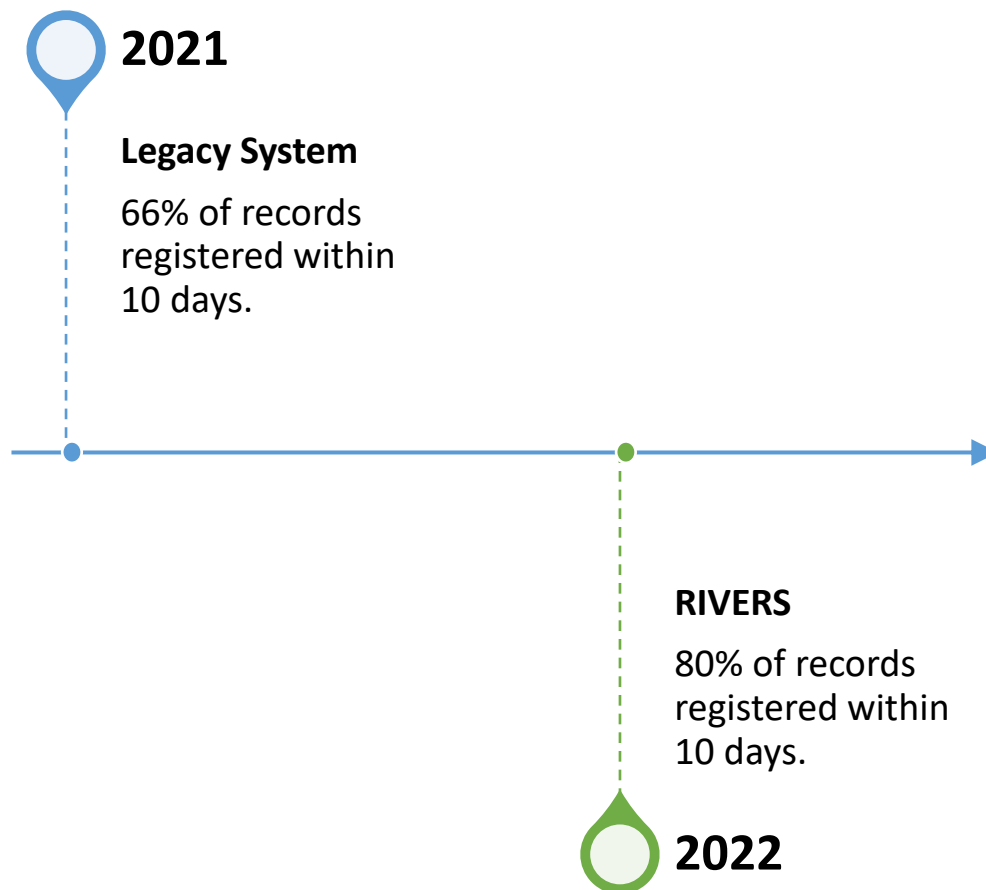- COTS system only customize to RI Statutes

Challenges

- Resistance to change from end users
- Communication

Death Records Registered with the State Office of Vital Records

Timeliness of Mortality Data

2021

Legacy System

66% of records registered within 10 days.

RIVERS

80% of records registered within 10 days.

2022

Modernization Efforts

ELC Grant

- In 2021 the National Center for Health Statistics (NCHS) awarded each Jurisdiction with $1.3 million for data modernization efforts
- Timeline: September 2021 – June 2023; with 1-year no-cost extension through June 2024

$ Planned Integration with ELC Funds

- Interoperability with the National Center for Health Statistics (NCHS)
  - FHIR enable API for record level exchange in real time
- Medical Examiner's Office
  - Bi-directional API feed from RIVERS to the Medical Examiner's Case Management System to support permits and amendments
- Hospital Electronic Medical Records
  - Exploring API options to allow hospitals to feed RIVERS information directly from their existing EMR systems

Definitions and Benefits

1 **What are APIs?**

- Application Programming Interface
- Enables two software components to communicate with each other
- Improve timeliness of data
- Eliminates duplicate data entry

2 **What is FHIR?**

- Fast Healthcare Interoperability Resources
- International standard - Health Level Seven (HL7) designed for the electronic exchange of health information

3 **Benefits of FHIR for Vital Records**

- Automate communication between systems
- Improves timeliness of data
- Enables secure data exchange
- Eliminates duplicate data entry

Modernization Efforts

Previous Interoperability Work

- Collaboration with Care New England and Lifespan during RIVERS implementation for Genesis to demonstrate EMR to RIVERS interoperability.

- Launched planning sessions with facilities.

- Paused interoperability efforts to prioritize successful implementation of RIVERS.

New Integrations in RIVERS

Medical Examiner's Office

- Joined forces with VertiQ to create an API that feeds the Case Management System into the Death Module of RIVERS.

Social Security Administration

- Implemented the Online Verification System (OVS) to verify real time social security numbers to provide timely, better-quality data reporting.

- Timeliness of mortality data reported to SSA

Year	Mortality	Records	Revenue
2021	Non-EDR reported within 120 days	100%	$ 9,902
2022	EDR Records reported within 30 days	81%	$ 30,170
	Year1 revenue increase		$ 20,268

Note: 60% of records reported in 6 days

Modernization Efforts

Challenges

- FHIR BFDR (birth fetal death reporting) standards are in-progress

- FHIR VRDR (vital records death reporting) standard final – unknown how EMR's capture cause of death fields

- EMR participation requires input and support from facilities leadership

- Facilities have concerns around data security

Next Steps

- Engagement with facilities – February 2023
    - Establish timelines and project charter with facility partners
    - Create MOUs with each partner facility
    - Data mapping between EDRS/EBRS and EMR
    - Test plans and UAT
    - Pilot plans and parallel pilot
    - Go-live
- Project charter and kick off with SME

Modernization Efforts – Partners

QuantumMark Experience

- 20+ years in vital records

- 7 full jurisdictional vital records system implementations

- Project Managed implementation of first FHIR enabled interoperability between ME case management system and jurisdictional death registration system

Other public health industry work:

- Cancer Registry

- Infant Hearing Registry

- Women Infant Children (WIC)

- Substance Abuse Prevention and Treatment Agency (SAPTA)

- Immunization Registry

- Public and Behavioral Health

- Environmental Public Health Tracking

- Adult Mental Health and Treatment Malls

National and other industry work:

- Centers for Disease Control (CDC)

- NAPHSIS (National Association for Public Health Statistics and Information Systems)

- National Cancer Institute

- Rural Home Visiting Programs

- Recreational and Medical Marijuana

Modernization Efforts – Partners

Genesis Systems, Inc Experience

- Genesis has been testing connection to NCHS since 2013 with its Genesis Interoperability Module (GIM).

- Genesis has tested multiple HL7 versions in communications with NCHS. Started with HL7 2.5.1, then HL7 2.6, then CDA, and now FHIR.

- Genesis has tested multiple iterations of connections with NCHS from SAMS to PhinMS and now STEVE 2.0.

- Recently, Genesis has tested the NCHS connection for the State of Rhode Island and passed all 4 use cases and is working with NCHS to finalize the Birth and Fetal Death standard.

How the Genesis Interoperability Module Works