



MICHIGAN DEPARTMENT OF HEALTH & HUMAN SERVICES

# A Partnership Among States and Industry to Advance Interoperability

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*Putting people first, with the goal of helping all Michiganders lead healthier and more productive lives, no matter their stage in life.*

# Leading Causes of Death, 2020

15 Leading Causes of Death ↓	→ Deaths ↑↓
#Diseases of heart (I00-I09,I11,I13,I20-I51)	696,962
#Malignant neoplasms (C00-C97)	602,350
#COVID-19 (U07.1)	350,831
#Accidents (unintentional injuries) (V01-X59,Y85-Y86)	200,955
#Cerebrovascular diseases (I60-I69)	160,264
#Chronic lower respiratory diseases (J40-J47)	152,657
#Alzheimer disease (G30)	134,242
#Diabetes mellitus (E10-E14)	102,188
#Influenza and pneumonia (J09-J18)	53,544

Source: CDC Wonder (<https://wonder.cdc.gov>)

# Cause of Death Classification

- ❖ International Classification of Disease (ICD10) since 2000

Covid-19  
Coronavirus-19  
Covdi-19  
SARS-CoV-2  
COVID disease  
Covid-related pneumonia  
Suspected COVID 19  
Covid 19 Infection  
Complications of COVID-19  
Covid19 Sepsis



Machine Processing

U07.1

# Assigning ICD10 codes

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- ❖ Data submitted by to the National Center for Health Statistics (NCHS) in a **BATCH PROCESS**
- ❖ Machine learning and natural language processing algorithms code ~90% of deaths
- ❖ Underlying cause of death is selected from all causes listed according to standard rules

# Data Modernization

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## ❖ CARES Act of 2020

- ❖ \$77M to modernize the National Vital Statistics System (NVSS)

- ❖ \$1.35 M to each of 57 vital statistics jurisdictions to:

*“Support **FHIR-based (Fast Healthcare Interoperability Resources) interoperability between jurisdiction Electronic Death Registration Systems and the National Center for Health Statistics (NCHS).** This modernization will allow for faster, more automated sharing of vital statistics between state and national levels”*

# FHIR is great but how do we do it?

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- ❖ Nearly all jurisdictions have Electronic Death Registration Systems (EDRS)
  - ❖ 57 Jurisdictions (50 states , 5 territories, DC, NYC)
  - ❖ 3-4 Key Vendors in multiple states
  - ❖ Many states have homegrown systems
  
- ❖ Michigan is transitioning to a new EDRS system in 2023

# Rhapsody

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## What is Rhapsody?

- ❑ Rhapsody is an integration engine from Lyniate (<https://lyniate.com>)
- ❑ A Swiss Army Knife for integration that supports HL7 v2, v3, CCDa and FHIR standards
- ❑ Many state health departments already have Rhapsody for immunizations, syndromic surveillance, lab reporting, communicable disease reports

LYNIATE RHAPSODY

# Altarum Institute

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- Altarum is a nonprofit organization active in healthcare and public health policy and operations at state and federal levels
- Altarum is Michigan's vendor for public health interoperability
- Altarum manages the MDHHS Rhapsody instance



# NVSS Community of Practice

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- ❖ NCHS Staff convened a Community of Practice (COP) that predates this funding
- ❖ COP offerings:
  - ❖ Monthly COP virtual meetings
  - ❖ Monthly Technical Subgroup calls—for technical and vendor staff
  - ❖ Weekly Office Hours for ongoing Technical Assistance
  - ❖ Quarterly organized testing events
  - ❖ Connecting implementers across jurisdictions
  - ❖ Sub-communities focused on specific problems or solutions

# NVSS Rhapsody User Group

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## Who?

States: Michigan, Virginia, Wisconsin, Idaho, North Dakota, South Dakota, Colorado, NYC

Vendors: Altarum Institute

## Why Rhapsody?

- Health departments already own and use
- Lower implementation time and costs
- Flexibility

## Why a User Group?

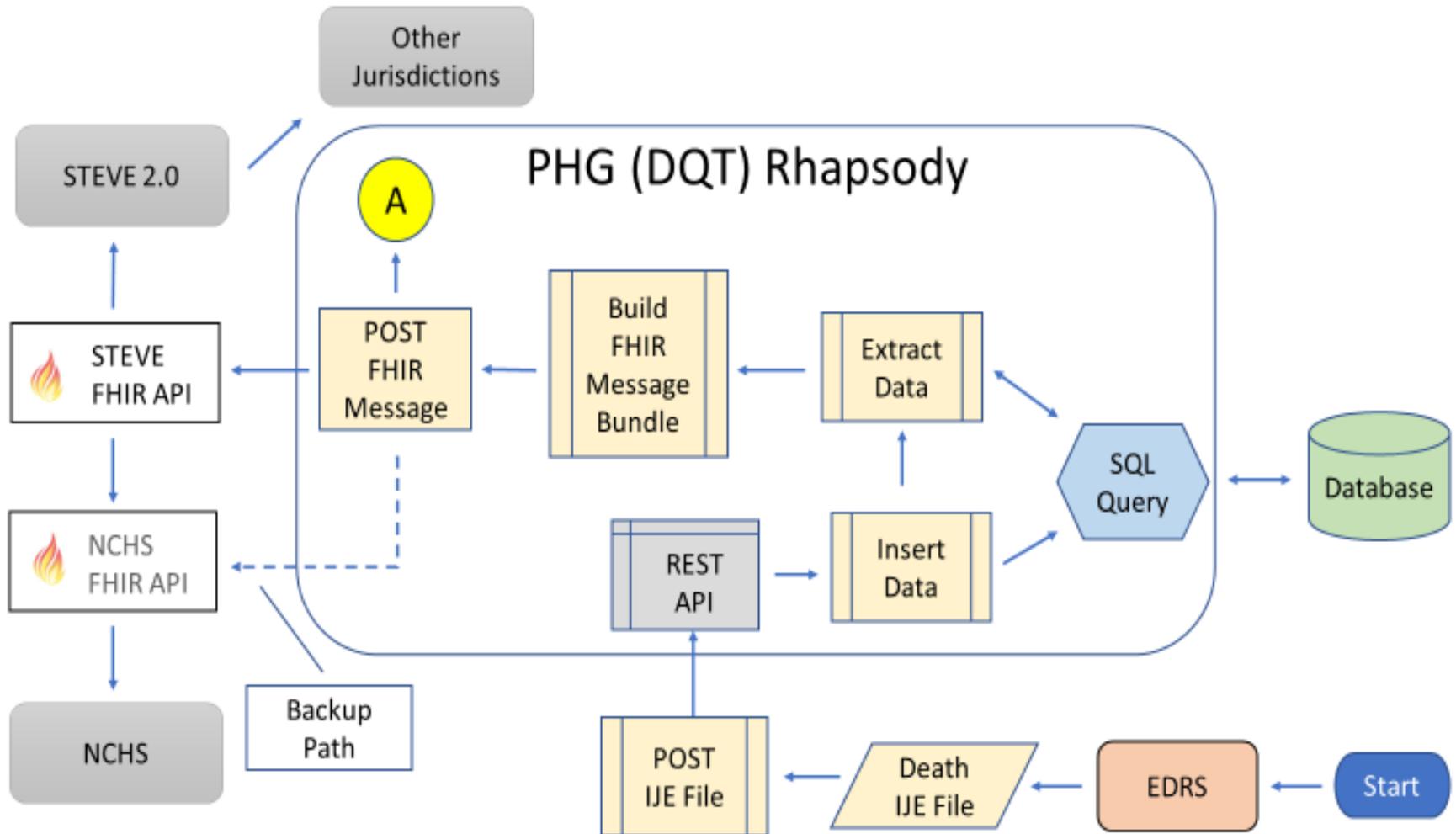
- No experience with FHIR in Rhapsody

# What can we share?

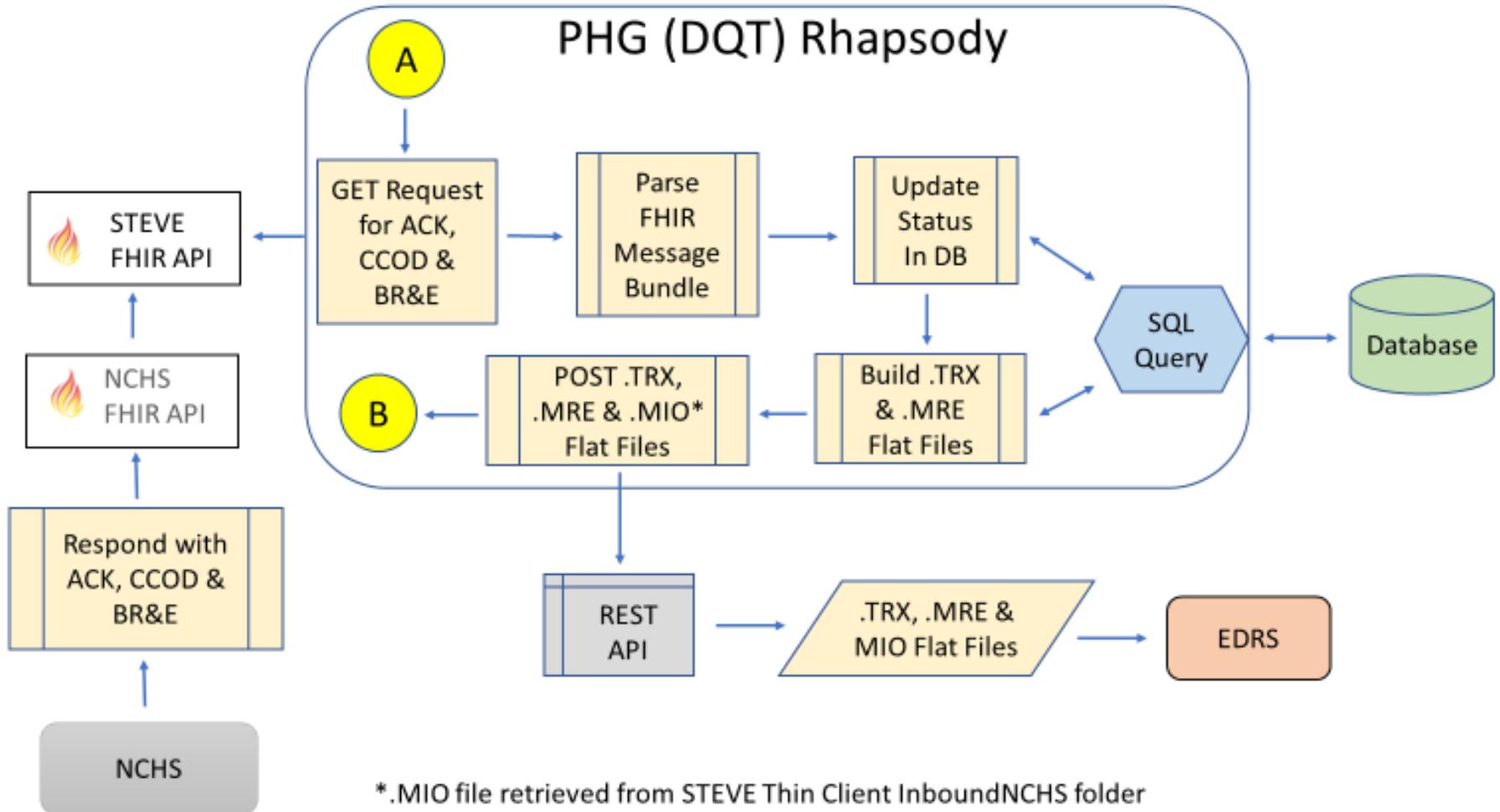
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- Statement of Work
- Architecture and design characteristics
- Test Cases
- Test Experience
- Other Use Cases

# Causes of Death to NCHS



# ICD10 Codes From NCHS



# The community approach...

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## Rhapsody User Group

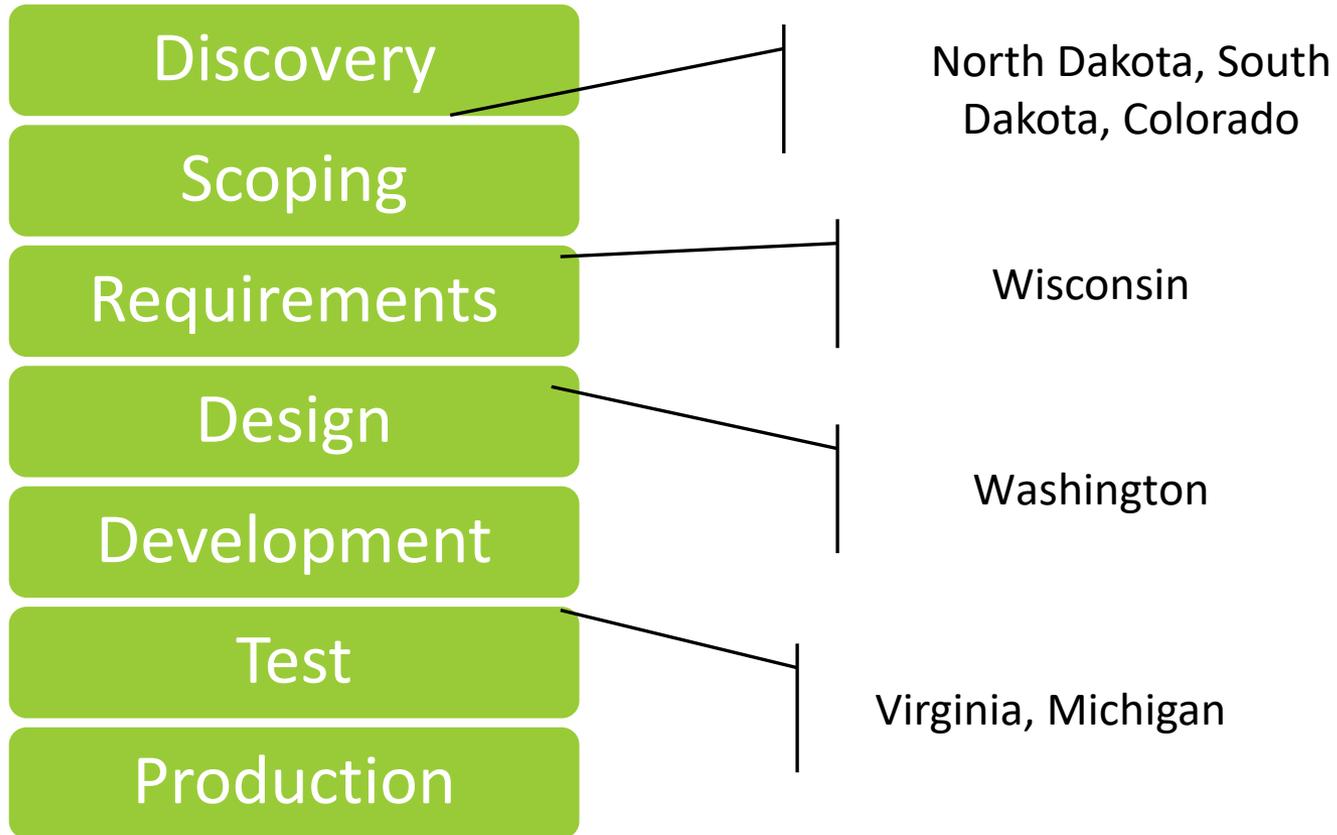
- Frequent Collaboration
- Best Practices
- Problem Solving
- Test Scenarios

## NCHS Community of Practice

- Frequent Collaboration
- Quarterly organized test events
- Technical Office Hours
- Test Support

# Current Status

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# Looking Forward

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More public health use cases for Rhapsody and FHIR—

- ❑ ME/Coroner to EDRS Integration
- ❑ EDRS to Disease Surveillance System
- ❑ Death data to immunization registry, data warehouse, local health departments

# Thanks!

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**JURISDICTIONS : Michigan, Virginia, New York City, Colorado, South Dakota, North Dakota, Washington, Idaho, Oklahoma**

**VENDORS: Altarum Institute, Mitre Corporation**

**Other: National Center for Health Statistics (NCHS)**

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

Questions?

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