

# Interoperating Death Registration and Electronic Health Record Systems for More Timely Mortality Surveillance

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# Utah's EDRS: EDEN Overview

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- ❑ Electronic Death Entry Network introduced in 2006
  - ❑ Vital Event Volume: 50,000 Births, 15,000 Deaths
  - ❑ 100% FD users
  - ❑ 60% of dc's "all-electronic"
  - ❑ Local participation in registration process
  - ❑ Legal record is born-electronic
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# EDRS Performance Requirements

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## Legal Requirement

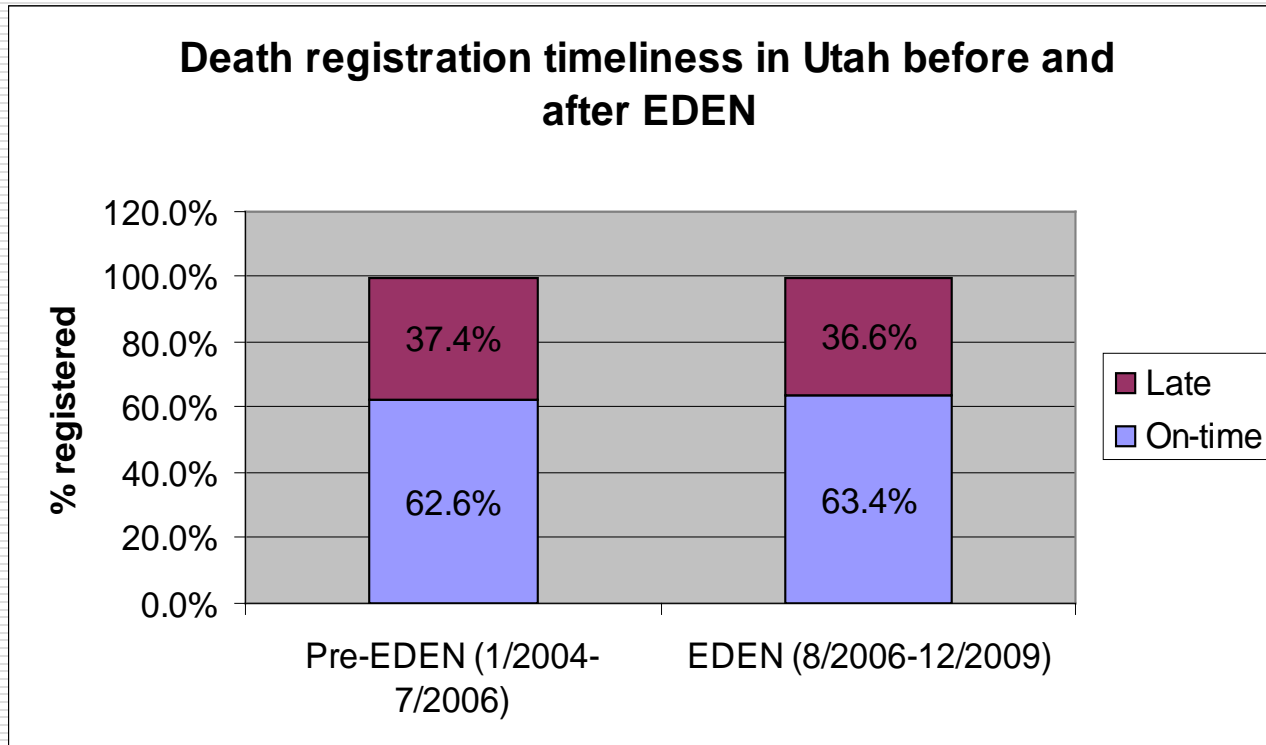
- In Utah, 72 hours to certify
- 5 days to register

## Public Health Requirement

- 60 % literal cause-of-death availability in 5 days currently useful for H1N1 surveillance in Utah
  - Goal: real time mortality surveillance
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# Death Records Registered < 5 Days

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# What Determines EDRS Timeliness?

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- Since the EDEN Rollout in 2006:
    - 87% of deaths certified on time (<72 hrs) were registered on time
    - 67% of deaths certified late were registered late.
  
  - Reduced certification time a key to improved EDRS surveillance capacity
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# Partners in CDC-funded Demonstration of EMR/EDR Interoperability

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- Office of Vital Records and Statistics
    - Modified EDEN to Accept HL7 message
  
  - Intermountain Healthcare
    - Cause-of-Death module in Help2 EMR
  
  - Utah State University
    - Developed matching algorithm
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# Intermountain Market Share

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- ❑ Provides healthcare to approximately one-half the Utah population.
  - ❑ During 2007-2009, Intermountain physicians certified 39 % of Utah deaths.
  - ❑ 52 % of Electronic certifications (within EDEN) come from Intermountain physicians.
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# Use of EDRS by Intermountain Physicians Grouped by Number of Deaths Certified per Month

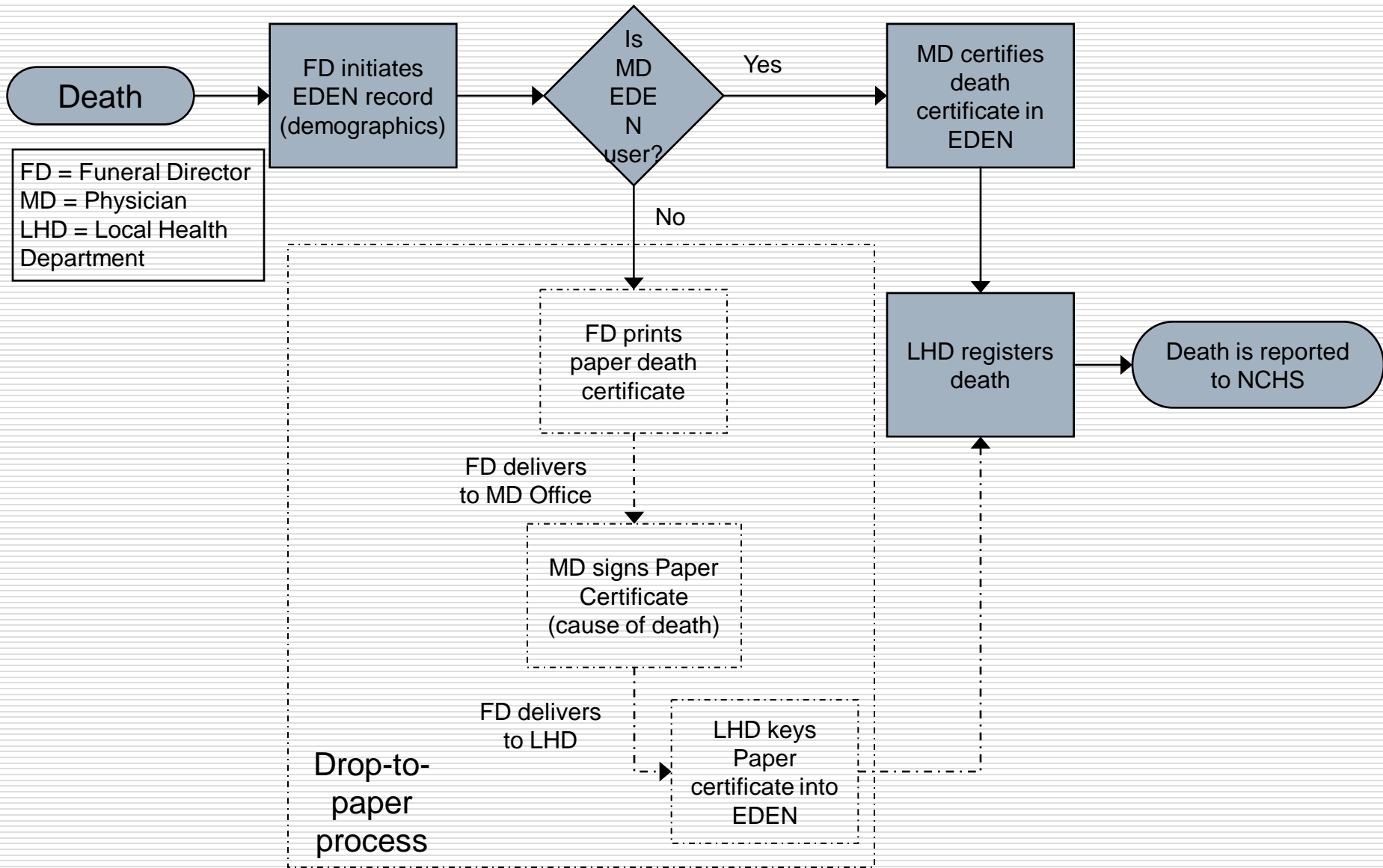
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<b>Death Certs./Month</b>	<b>% of All Death Certifiers</b>	<b>% of All Death Certs.</b>	<b>% Certified Electronically</b>
<1	96.5%	35.4%	28.0%
1-2	1.8%	11.7%	89.8%
2-3	0.4%	4.7%	98.6%
3-4	0.4%	6.6%	99.6%
4-5	0.1%	1.1%	99.3%
>5	0.7%	40.5%	99.9%

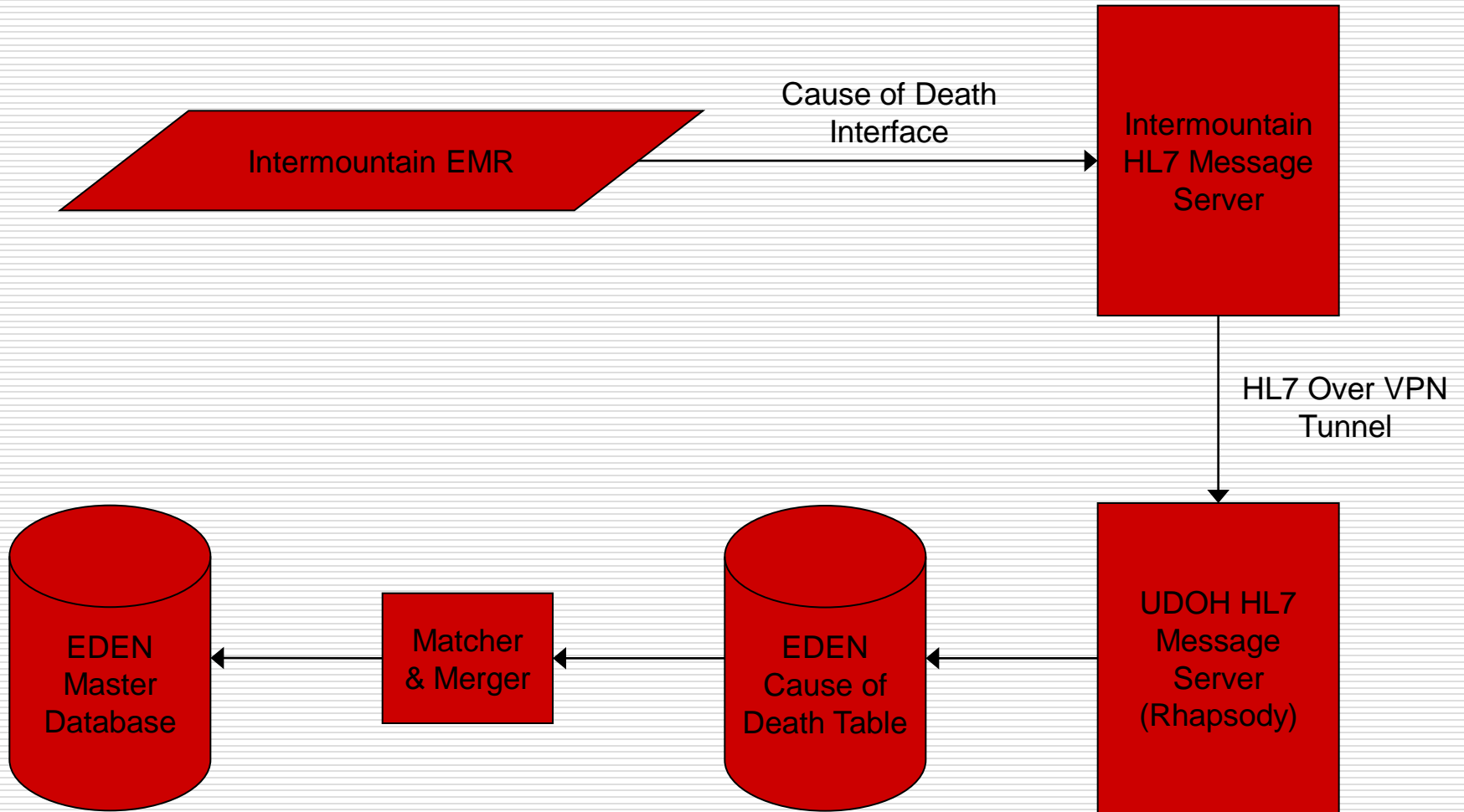
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# Current Death Registration Workflow





# Transmit Cause of Death Certification From EMR to EDEN



- Select Patient
- Clinic Schedule
- Lab
- Micro
- Clinical Notes
- Radiology
- Allergies
- Meds Review
- Problems
- Vital Signs
- Height/Weight
- Demographics
- ECG
- Insurance
- Message Log
- Lab Order Entry
- Alert Review
- Inpatient Reports
- Web Forms
- HELP/Tandem
- POE - Ordersets
- Report Manager
- HotText
- Population View
- Encounters
- DRT
- USIS (WebKIDS)
- Protocols
- Image Acquisition
- EDIS
- Inbox
- Rx
- 4Medica
- CAC INR
- MyLinks
- Death Certs - EDEN
- CAC
- E-Resources
- Need Help?
- Password
- What's New?

## Complete the following fields (\*=Required field)

### Deceased Patient Information

EMPI	<input type="text" value="548029408"/>
*Patient Name	<input type="text" value="XTESTDQ, GLUCOSE NINE"/>
Social Security Number	<input type="text"/>
*Gender	<input type="text" value="Male"/>
*Date of Birth	<input type="text" value="7/21/1978"/>
*Death Date	<input type="text"/> 
*Last Seen by Certifier	<input type="text"/> 

### Cause of Death Information

[Detailed Instructions](#)

**Part I:**

Enter the **Chain of Events** - diseases, injuries or complications - that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest or ventricular fibrillation without showing the etiology. DO NOT abbreviate. Enter only one cause on a line.

*Immediate Cause (Final disease or condition resulting in death)	Time Interval (Number, Unit Type)
<input type="text"/>	<input type="text"/> <input type="text"/>
Sequentially list conditions, if any, leading to the cause listed above	
<input type="text"/>	<input type="text"/> <input type="text"/>
<input type="text"/>	<input type="text"/> <input type="text"/>
Enter the <b>UNDERLYING CAUSE</b> (disease or injury that initiated the events resulting in death)	
<input type="text"/>	<input type="text"/> <input type="text"/>

**Part II** : Enter other **significant conditions contributing to death** but not resulting in the underlying cause given in **PART I**



- Select Patient
- Clinic Schedule
- Lab
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**Additional Information**

\*Autopsy Performed?  Yes  No

Were autopsy findings available prior to completion of the Cause of Death?  Yes  No

\*In your opinion, Tobacco Use by the decedent:

Probably contributed to the cause of death  Was the underlying cause of death  Did not contribute to the cause of death

Is unknown in relation to the cause of death  Non User  Unknown If User

\*Manner of Death?

Natural  Accident  Suicide

Homicide  Could not be Determined  Pending Investigation

If female, decedent was:

Not pregnant within past year  Pregnant at time of death  Not pregnant, but pregnant within 42 days of death

Not pregnant, but pregnant 43 days to 1 year before death  Unknown if pregnant within the past year

**Injury Information**

\*Injury Information Available?  Yes  No

Date/Time of Injury

Injury at Work?  Yes  No  Unknown

Place of Injury

At home, farm, street, factory, office, building, etc. (Specify)

If motor vehicle accident:

Driver  Passenger  Pedestrian  Unknown

Other Specify:

Address of Injury

Street or rural route number City State

- My Health
- Select Patient
- Clinic Schedule
- Lab
- Micro
- Clinical Notes
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Place of Injury

At home, farm, street, factory, office, building, etc. (Specify)

If motor vehicle accident:

Driver  Passenger  Pedestrian  Unknown

Other Specify:

Address of Injury

Street or rural route number City State

County (if in Utah) Country (Type out if not U.S.A. or Canada)

Describe how injury occurred (enter sequence of events which resulted in injury):

**Certifier Information**

\*Certifying Physician Name

\*License Number

Certifier Address 1

Certifier Address 2

Certifier City/State/Zip

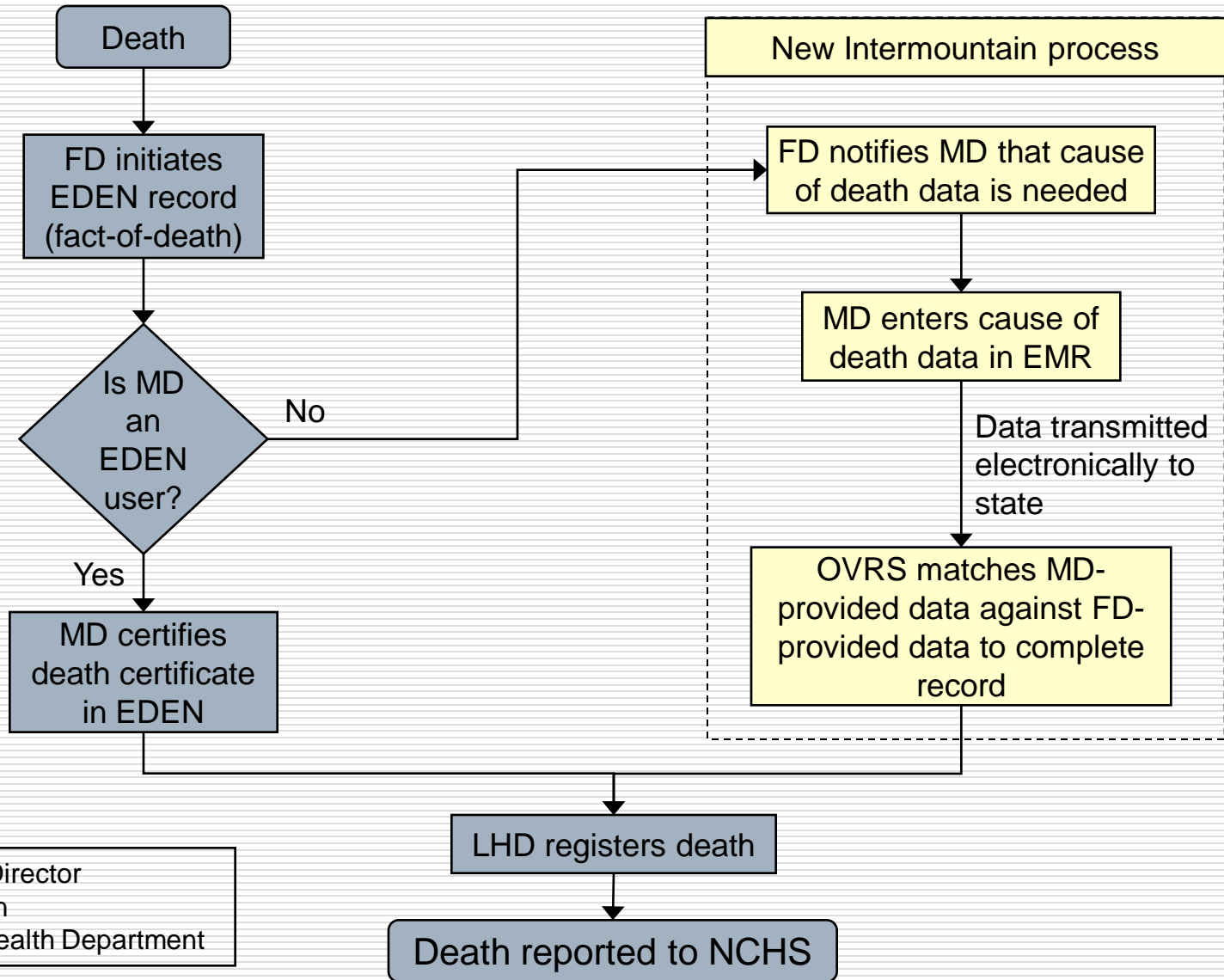
Medical Examiner Contacted?  Yes  No  Unknown

Notes on Contact

M.E. Case Number

Medical Examiner Type

# New Death Certificate Workflow With Electronic Interface to Intermountain EMR



# HL7 Message Segments Used to Report Cause of Death

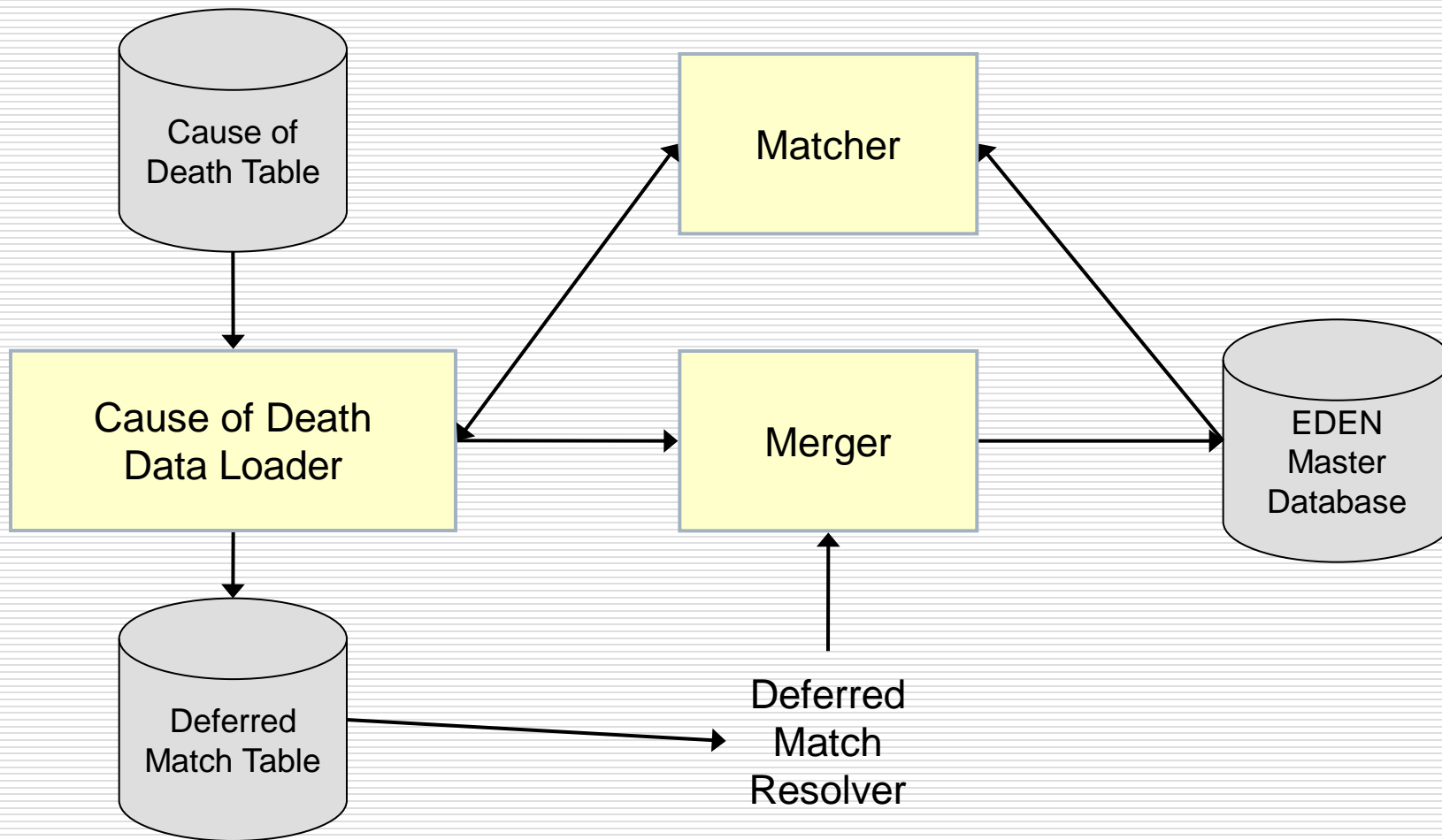
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- Message Type is ADT^08 with following segments:

MSH  
PID  
PD1  
NK1  
PV1  
PV2  
OBX  
AL1  
DG1  
DRG  
ACC  
PDA  
OBX

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# Workflow Among Matcher, Merger, and Deferred Match Resolver





# Pilot Program: Oct-Nov 2010

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- ❑ Beta testing at Merrell Gappmeyer clinic, Provo UT
  - ❑ Clinic does 2 deaths per month
  - ❑ 60 % EDEN certifications last year
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# Thank You

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