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

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Utah's EDRS: EDEN Overview

- 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

EDRS Performance Requirements

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

Death Records Registered < 5 Days



What Determines EDRS Timeliness?

□ 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

Partners in CDC-funded Demonstration of EMR/EDR Interoperability

- 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

Intermountain Market Share

- 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.

Use of EDRS by Intermountain Physicians Grouped by Number of Deaths Certified per Month

Death Certs./Month	% of All Death Certifiers	% of All Death Certs.	% Certified Electronically
<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%

Current Death Registration Workflow



Transmit Cause of Death Certification From EMR to EDEN





v0.2.7 Death Certs - EDEN My Health Select Patient Complete the following fields (*=Required field) Clinic Schedule Lab Deceased Patient Information Micro Clinical Notes EMPI 548029408 Radiology Allergies Meds Review XTESTDO, GLUCOSE NINE *Patient Name Problems Vital Signs Social Security Number Height/Weight Demographics *Gender Male ECG Insurance *Date of Birth 7/21/1978 Message Log Lab Order Entry *Death Date 12 Alert Review Inpatient Reports *Last Seen by Certifier 12 Web Forms HELP/Tandem POE - Ordersets Report Manager Detailed Instructions HotText Cause of Death Information Population View Encounters Part I: DRT 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. USIIS (WebKIDS) Protocols Image Acquisition EDIS Time Interval (Number, Unit Type) *Immediate Cause (Final disease or condition resulting in death) Inbox 4Medica CAC INR Sequentially list conditions, if any, leading to the cause listed above MyLinks. • Death Certs - EDEN CAC E-Resources Need Help? Enter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) Password

What's New? Suggestions

Rx

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

HELP clinical desktop	* XTESTDQ, GLUCOS	SE NII Room:	N908 DOB:07/21/1978 A	ge:31Y Sex:M EM	PI: 548029408 M	RN: 7293982
My Health	Additional Information					
inoundi	*Autopsy Performed?	🔿 Yes 🛛 No				
Select Patient Clinic Schedule	Were au	utopsy findings av	vailable prior to completion of the	Cause of Death?	O Yes O No	
Lab Micro Clipical Notae	*In your opinion, Tobac	co Use by the dec	cedent:			
Radiology Allergies		O Probably con	tributed to the cause of death	\bigcirc Was the underly	ing cause of death	C Did not contribute to the cause of death
Meds Review Problems		O Is unknown i	in relation to the cause of death	C Non User		C Unknown If User
Vital Signs Height/Weight	*Manner of Death?					
Demographics ECG		O Natural	C Accident	C Suicide		
Insurance Message Log		C Homicide	C Could not be Determined	O Pending Investigat	tion	
Alert Review	If female, decedent wa	is:				
Web Forms HELP/Tandem		Not pregnan	t within past year 🧖 Pregn	ant at time of death	Not pregnant, but	t pregnant within 42 days of death
POE - Ordersets Report Manager		Not pregnan	t, but pregnant 43 days to 1 year	before death	Unknown if pregn	ant within the past year
HotText Population View	Injury Information					
Encounters DRT	*Injury Information Av	/ailable? O Ye	es O No			
Protocols	Date/Time of Injury		12 12			
EDIS Inbox	Injury at Work?	O Yes O No	O Unknown			
Rx 4Medica	Place of Injury	At home form	streat faster, office building of	tr (Enocify)		
CAC INR MyLinks		At nome, farm,	, street, ractory, onice, building, e	tc. (Specity)		
Death Certs - EDEN CAC	If motor vehicle accide	ent:				
E-Resources		C Driver C	Passenger C Pedestrian (🖯 Unknown		
Need Help? Password		C Other Spe	ecify:			
What's New?	Address of Injury	Character and a				
Suggestions		Street or rural r		State		

HELP clinical desktop	* XTESTDQ, GLUCOS	E NII Room: N908 DOB: 07/21/1978 Age: 31Y Sex: M EMPI: 548029408 MRN: 7293982
My Health	Place of Injury	At home, farm, street, factory, office, building, etc. (Specify)
Select Patient Clinic Schedule Lab	If motor vehicle accider	nt:
Micro Clinical Notes Radiology		O Driver O Passenger O Pedestrian O Unknown
Allergies Meds Review Problems Vitel Signs	Address of Injury	
Height/Weight Demographics ECG		Street or rural route number City State
Insurance Message Log Lab Order Entry Alert Review	Describe how injury occ	County (if in Utah) Country (Type out if not U.S.A. or Canada) curred (enter sequence of events which resulted in injury):
Inpatient Reports Web Forms HELP(Tandem		
POE - Ordersets	Certifier Information	
Report Mapager		
Report Manager HotText	*Certifying Physician Name	TRIPP, JACOB S
Report Manager HotText Population View Encounters DRT	*Certifying Physician Name *License Number	TRIPP, JACOB S TEST1234
Report Manager HotText Population View Encounters DRT USIIS (WebKIDS) Protocols	*Certifying Physician Name *License Number Certifier Address 1	TRIPP, JACOB S TEST1234
Report Manager HotText Population View Encounters DRT USIIS (WebKIDS) Protocols Image Acquisition EDIS	*Certifying Physician Name *License Number Certifier Address 1 Certifier Address 2	TRIPP, JACOB S TEST1234
Report Manager HotText Population View Encounters DRT USIIS (WebKIDS) Protocols Image Acquisition EDIS Inbox Rx	*Certifying Physician Name *License Number Certifier Address 1 Certifier Address 2 Certifier City/State/Zip	TRIPP, JACOB S
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Report Manager HotText Population View Encounters DRT USIIS (WebKIDS) Protocols Image Acquisition EDIS Inbox Rx 4Medica CAC INR MyLinks Death Certs - EDEN CAC E-Resources Need Help? Password	*Certifying Physician Name *License Number Certifier Address 1 Certifier Address 2 Certifier City/State/Zip Medical Examiner Contacted? Notes on Contact M.E. Case Number	TRIPP, JACOB S
Report Manager HotText Population View Encounters DRT USIIS (WebKIDS) Protocols Image Acquisition EDIS Inbox Rx 4Medica CAC INR MyLinks Death Certs - EDEN CAC E-Resources Need Help? Password What's New?	*Certifying Physician Name *License Number Certifier Address 1 Certifier Address 2 Certifier City/State/Zip Medical Examiner Contacted? Notes on Contact M.E. Case Number Medical Examiner Type	TRIPP, JACOB S

New Death Certificate Workflow With Electronic Interface to Intermountain EMR



HL7 Message Segments Used to Report Cause of Death

Message Type is ADT^08 with following segments:

MSH PID PD1 NK1 PV1 PV2OBX AI 1 DG1 DRG ACC PDA OBX

Workflow Among Matcher, Merger, and Deferred Match Resolver



Pilot Program: Oct-Nov 2010

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

Thank You

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