

Integrating EMS Data Collection & Trauma Registry

- ▣ Joe Moreland, EMT-P, RN, MPA
 - Kansas Board of EMS
 - EMS Data Manager

Project Objectives

- ▣ Improve data accuracy
- ▣ Reduce data entry time for hospitals
- ▣ Provide data in a more timely manner
- ▣ Utilize web services vs. batch file upload
- ▣ Solve the missing EMS run form problem
- ▣ Return hospital information to EMS

Project Management

- ▣ Joe Moreland, EMS data manager
- ▣ Rosanne Rutkowski, Trauma program manager from KDHE
- ▣ Joe Hennes, Director DISC
- ▣ Carey Brown, Director KITO
- ▣ Dan Russell, KDHE database manager
- ▣ Norma Schaeffer, CITO KDHE
- ▣ Bob Sachs, Purchasing

Trauma Registry - Collector

- ▣ 100 hospitals used web based version
- ▣ 25 hospitals use client version
- ▣ Mandatory that all hospitals participate
- ▣ KDHE does hosting and runs reports
- ▣ Hospitals unable to run reports
- ▣ National repository hosted by Digital Innovations
- ▣ Core (web based) 80 elements
- ▣ Optional (client) 300 elements

Trauma Registry Statistics

- ▣ 2009 Trauma Registry Data
 - 11,000 patients
 - 6,000 transported by EMS (2% of EMS transports)

Collector Uploads

- ▣ Hospitals upload monthly or quarterly
 - Upload to KDHE
 - ▣ 45 elements
 - ▣ Patient identifiers stripped
- ▣ Hospitals upload to the NTDB
- ▣ Data do not go from hospitals to KDHE to NTDB

EMS Statistics

- ▣ 250,000 annual EMS responses
 - 180,000 emergency responses
 - 70,000 non-emergency responses
- ▣ 200,000 patients transported
- ▣ 140,000 transported to hospitals
- ▣ 60,000 transported to other destinations
- ▣ 100,000 are medical emergencies
- ▣ 40,000 are injuries/trauma
- ▣ 6,000 (2.4%) entered into the trauma registry

KEMISIS Participation

- ▣ 58 of 170 services participating
- ▣ Next effort (begin Jan 2011) is to import data from 20-30 services using NEMISIS software other than ImageTrend (6 vendors)
- ▣ 80% of state call volume

KEMIS Report breakdown based upon call volume

2006 Data							
Group	# Services	Low range	High range	Range Factor	% Call volume	Level of Care	Full time Director
1*	5	12,001	45,000	3.75	46	ALS	Y
2**	12	3,001	12,000	4.00	20	ALS	Y
3	31	1,001	3,000	3.00	19	ALS	Y
4	24	501	1,000	2.00	6	BLS	Y
5	44	251	500	2.00	5	BLS	Y
6	52	1	250	NA	4	BLS	N
Total	168				100		

*Range is 12,001 to 29,000 then skips to 45,000

**Range is 3,000 to 7,500 then skips to 12,001

KEMISIS Data Cleanup

- ▣ Needed before we progress
- ▣ ImageTrend will export validity rules
- ▣ Other vendors implement
- ▣ Clean data upon export and prior to import

Data Import

- ▣ Time frame 12 months
- ▣ ImageTrend works with vendors
- ▣ \$40,000 contract
 - ImageTrend pays other vendors' expenses

KEMESIS

- ▣ 425 data elements available to local EMS
- ▣ State requires 192 elements for KBEMS, Trauma Program, EMS for Children & KDOT
- ▣ KBEMS has access to all 425 elements
- ▣ KBEMS has patient identifiers

Existing National Data Exchanges

- ▣ Not frequently done at a state level with disparate vendors
- ▣ North Carolina with PREMIS (IBM developed system) pre-hospital system and Collector exchange data
- ▣ Mississippi using ImageTrend and Collector exchange data
- ▣ Patient identifiers on both systems and hosted by respective states

Patient Identification/Matching

- ▣ KDHE & KBEMS do not have the staff or \$\$\$ for probabilistic linkage
- ▣ Hospital trauma registry inclusion more lenient than state requirements
 - Hospital may have 24 hour admission
 - State says 48 hour admission

Expectations

- ▣ Inexpensive
- ▣ Easy for EMS attendants & hospital staff
- ▣ Accurate
- ▣ Secure
- ▣ Work
 - Missing patients
 - Missing data elements
 - Data elements out of range
 - Client & web based trauma registry software

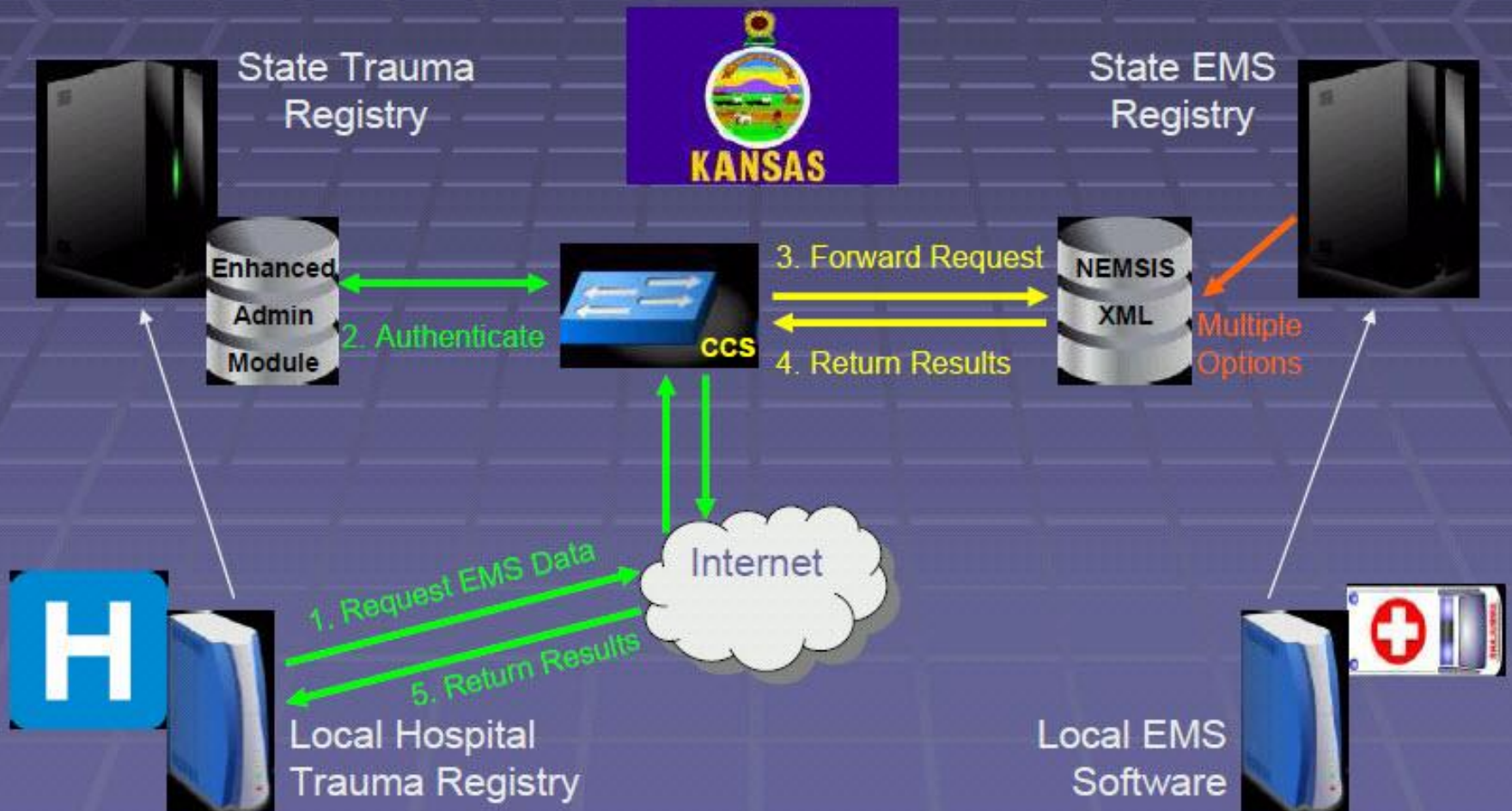
Options

- ▣ Six months of thinking/brainstorming
- ▣ What other states do?
- ▣ Successful
- ▣ Unsuccessful
- ▣ Consistency
- ▣ Missing patients
- ▣ Trauma band & tag
 - Logistics
 - Cost

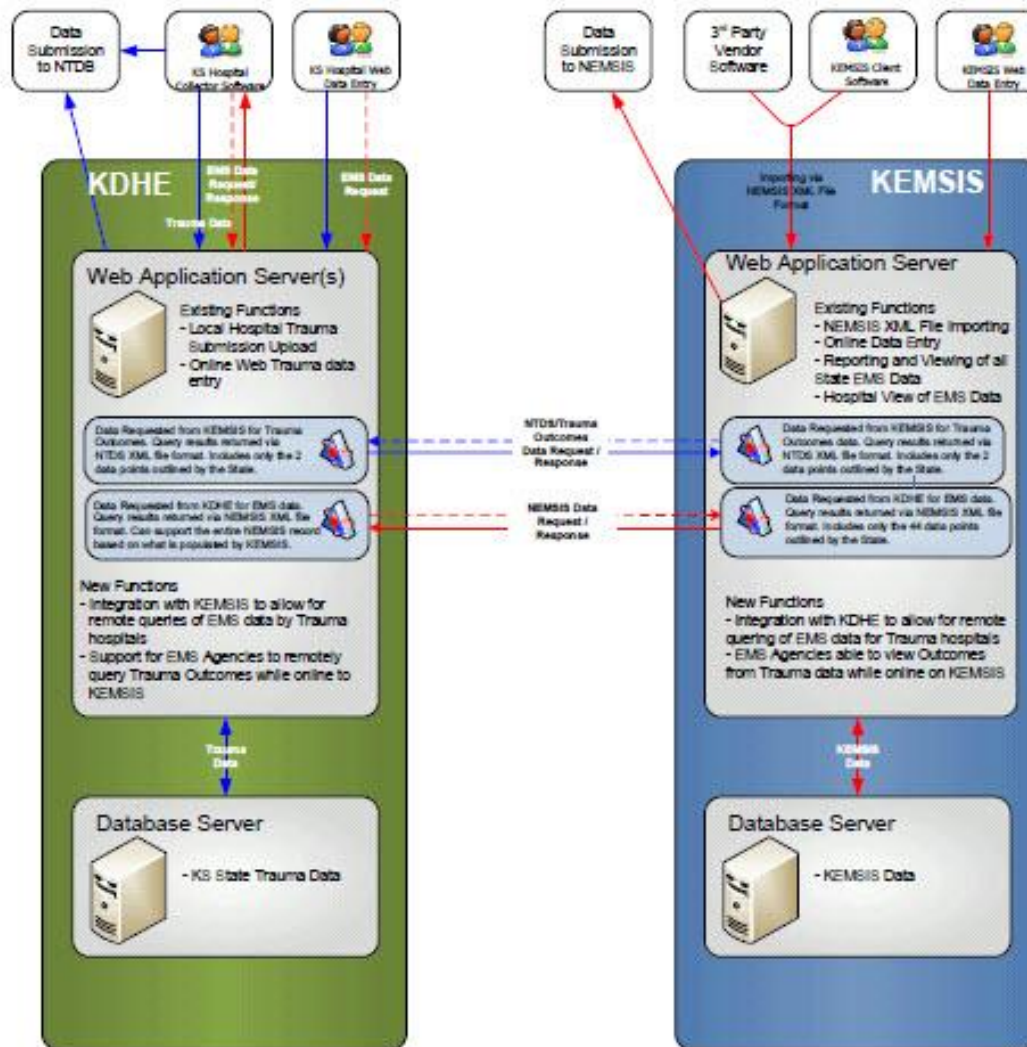
Solution

- ▣ ImageTrend and Digital Innovations (DI)
- ▣ DI Continuum of Care Server (CCS)
- ▣ Software hosted at KDHE
- ▣ Patient matching & data exchange will be done at the hospital
 - ▣ Hospital has relevant identifiers for patient match
- ▣ CCS checks to see if the EPCR is seeking is available

Basic Web Service Interface Model



KEMESIS and KDHE Data Integration



Solution

- ▣ Trauma registrar identifies patient & pushes a button to import EPCR data
 - Editable
- ▣ 61 EMS elements to Collector at hospitals
- ▣ 2 Hospital elements to EMS
 - ED disposition, E22_01
 - Hospital disposition, E22_02
- ▣ Above items are part of NEMESIS & NTDB
- ▣ Adding EMS medications and procedures
- ▣ \$10,000 to ImageTrend
- ▣ \$40,000 to Digital Innovations

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	KBEMS - KDHE Bridge Application												
2						Technical Phase							
3						Clinical Phase							
4													
5	Phase ID: Project Phase:		Est. Phase Duration:		Predecessors								
6	0	Project Initialization											
7	1	Project Kick-off	3 Weeks		PhaseID 0								
8	2	Information Tech Planning	2 Weeks		PhaseID 1								
9	3	Final Design Planning	2 Weeks		PhaseID 2								
10	4	Development of DI EMS Services Interfaces to ImageTrend	3 Weeks		PhaseID 3								
11	4B	Development of ImageTrend Web Service Interfaces for DI Collector	8 Weeks		PhaseID 3								
12	5	Specification of Clinical Mappings from KEMIS Elements to KS Windows Trauma Collector	8 Weeks		PhaseID 4 Overlap								
13	6	Development of Auto-Mappings for Item #5	4 Weeks		PhaseID 5 Overlap								
14	7	Specification of Clinical Mappings from KEMIS Elements to KS Web Trauma Collector	3 Weeks		PhaseID 5 Overlap								
15	8	Development of Auto-Mappings for Item #7	4 Weeks		PhaseID 7 Overlap								
16	9	Testing and Deployment of DI EMS Web Service Interface with ImageTrend System	3 Weeks		PhaseID 4, 4B								
17	10	Connection of DI EMS Web Service to StandAlone and Web Collectors	3 Weeks		PhaseID 6,8,9								
18	11	Commence Pilot Testing: StandAlone and Web	4 Weeks		PhaseID 10								
19	12	Final Modifications	2 Weeks		PhaseID 11 Overlap								
20	13	DI Trauma Web Service Release			PhaseID 12								
21													

NEMSIS Section ID	Section Name	NEMSIS Element Code	Data Element	National	BEMS	Trauma Reg.	Registry Tab-Field	Notes
D01	Agency General Information	D01_01	EMS Agency Number	National Element	BEMS			Combination of Agency number (E02_01), agency state (D01_03), unit call sign (E02_12), patient number (E01_01) and date (E05_04) combine to create a unique identifier. No direct match in Registry data.
D01	Agency General Information	D01_02	EMS Agency Name		BEMS	Trauma	Prehospital/Transport Provider - Agency	
D01	Agency General Information	D01_07 (E04_03)	Level of Service	National Element	BEMS	Trauma	Prehospital/Transport Provider - Level	Should correspond to the highest crew member in NEMSIS element E04_03. This element represent the level of crew members actually responding to the call and not the overall Agency Level.
E01	Record Information	E01_01	Patient Care Report Number	National Element	BEMS	Trauma	Prehospital/Transport Provider - Report Number	

Kansas & NHTSA

- ▣ Kansas one of four states working with Kathy Gotchall
- ▣ Data
- ▣ Process

Questions?

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