EMS and Data Management

An Evolving Standard

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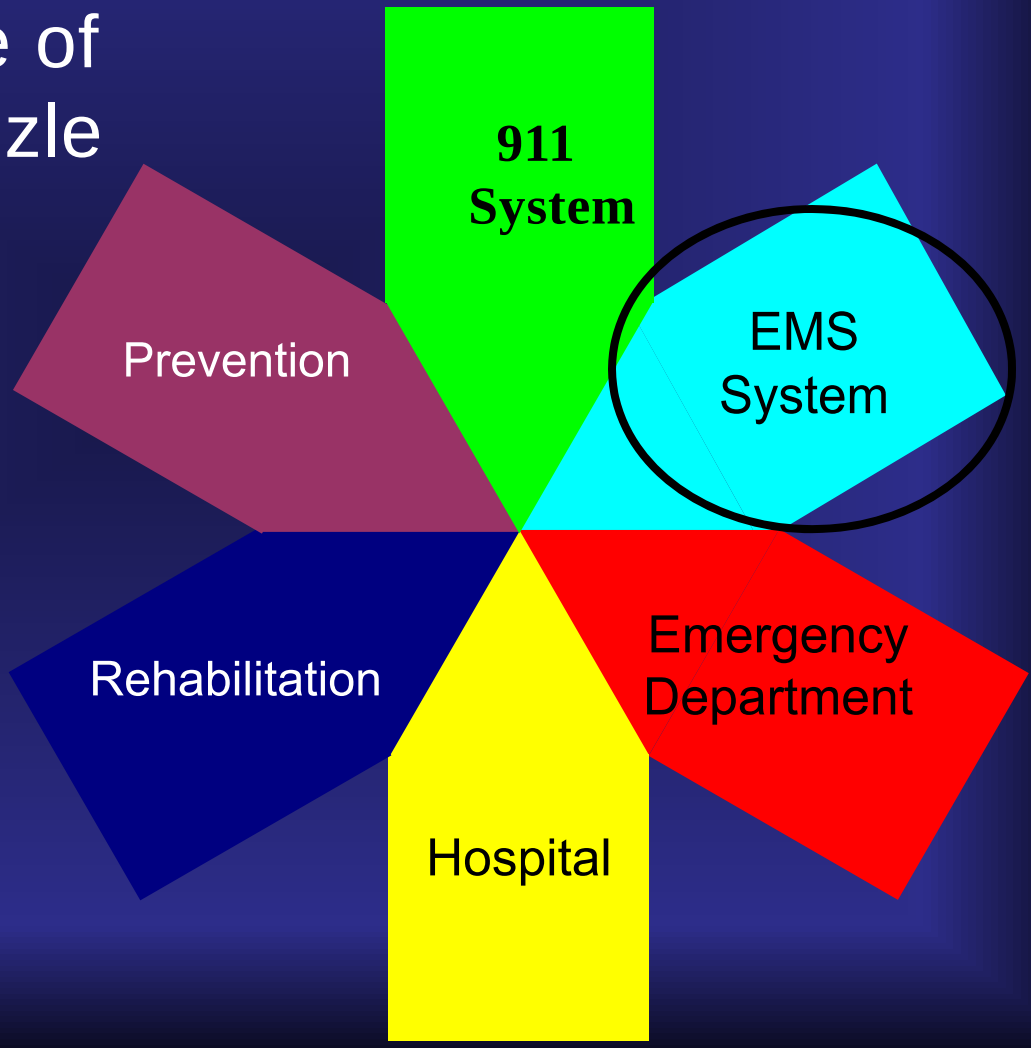
Chief of EMS Operations
Co-Chief in the Section on EMS, Disaster Medicine, and Homeland Security
University of Texas Southwestern Medical Center

Why Data?

- Data drives….
  - Personnel credentialing
  - Complaint investigation
  - Protocol changes
  - Risk management
  - Political “lobbying”
  - EMS research
  - Reimbursement
  - System Design
  - EMS education
  - Injury prevention
- Data drives Quality Improvement!
- Data drives Medical Direction!

Where We Need to Be

- EMS is one piece of a health care puzzle



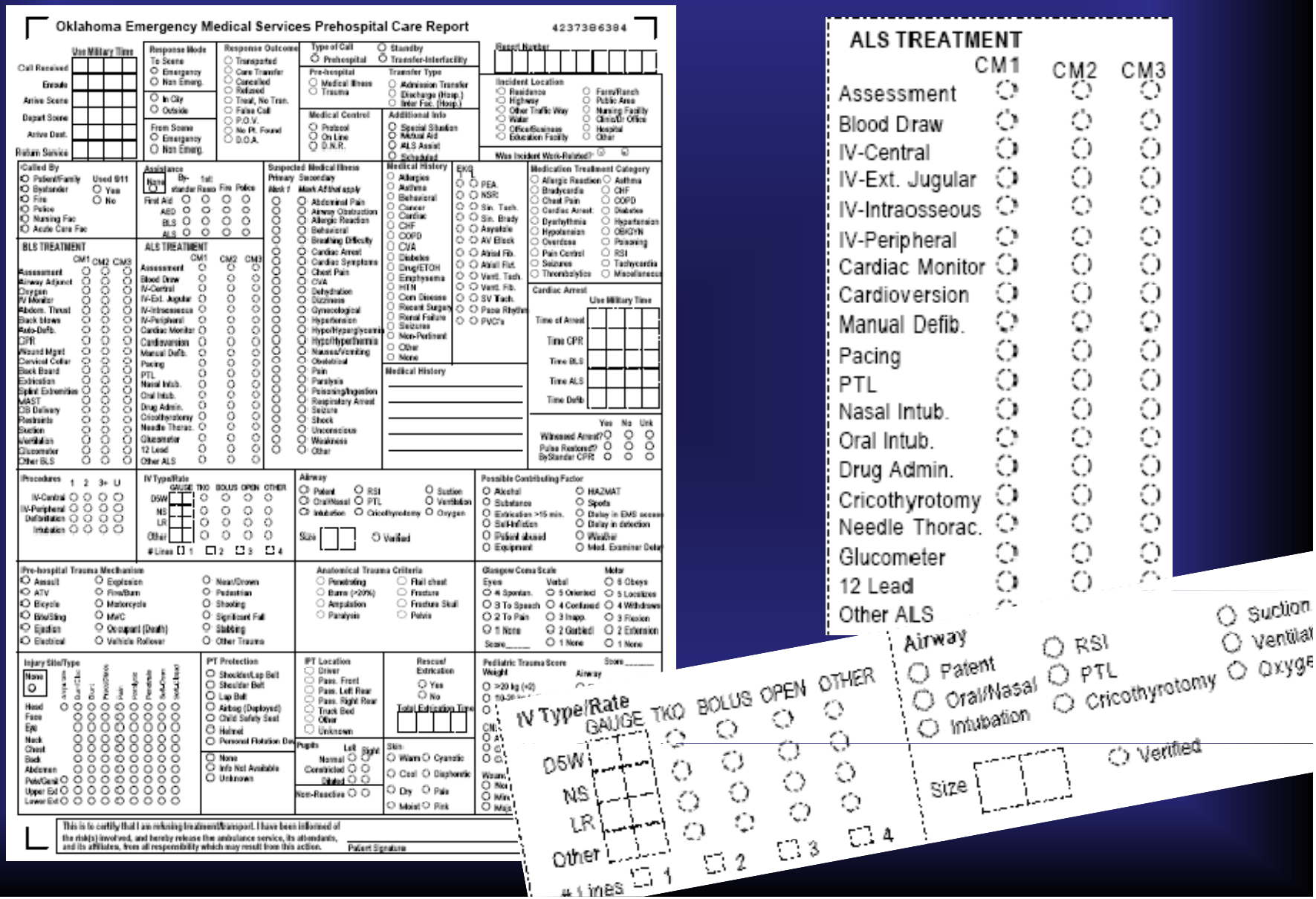
Data Input

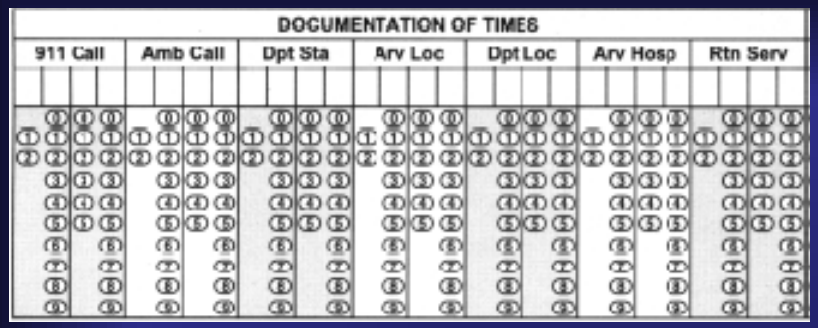
In the beginning there was paper

- and paper was good (?)
- Paper advantages
  - Relatively quick
  - Relatively cheap
- Problems with paper
  - Legibility (=defendability)
  - Insufficient content
  - Manual data entry
  - Manual data analysis
    - Counting “tic” marks

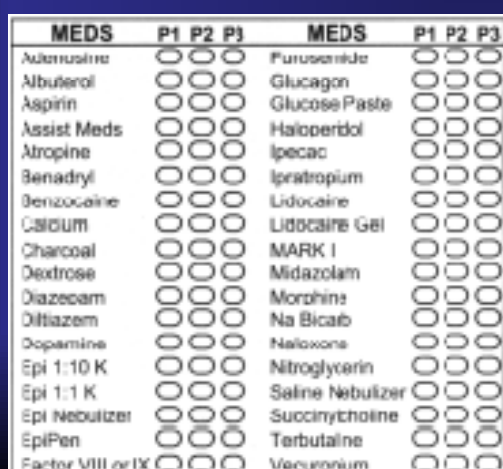
TIME	PULSE	RESP	B/P	LOC	O2 SAT%	EKG	TIME	TREATMENT / RESPONSE
			/					
			/					
			/					

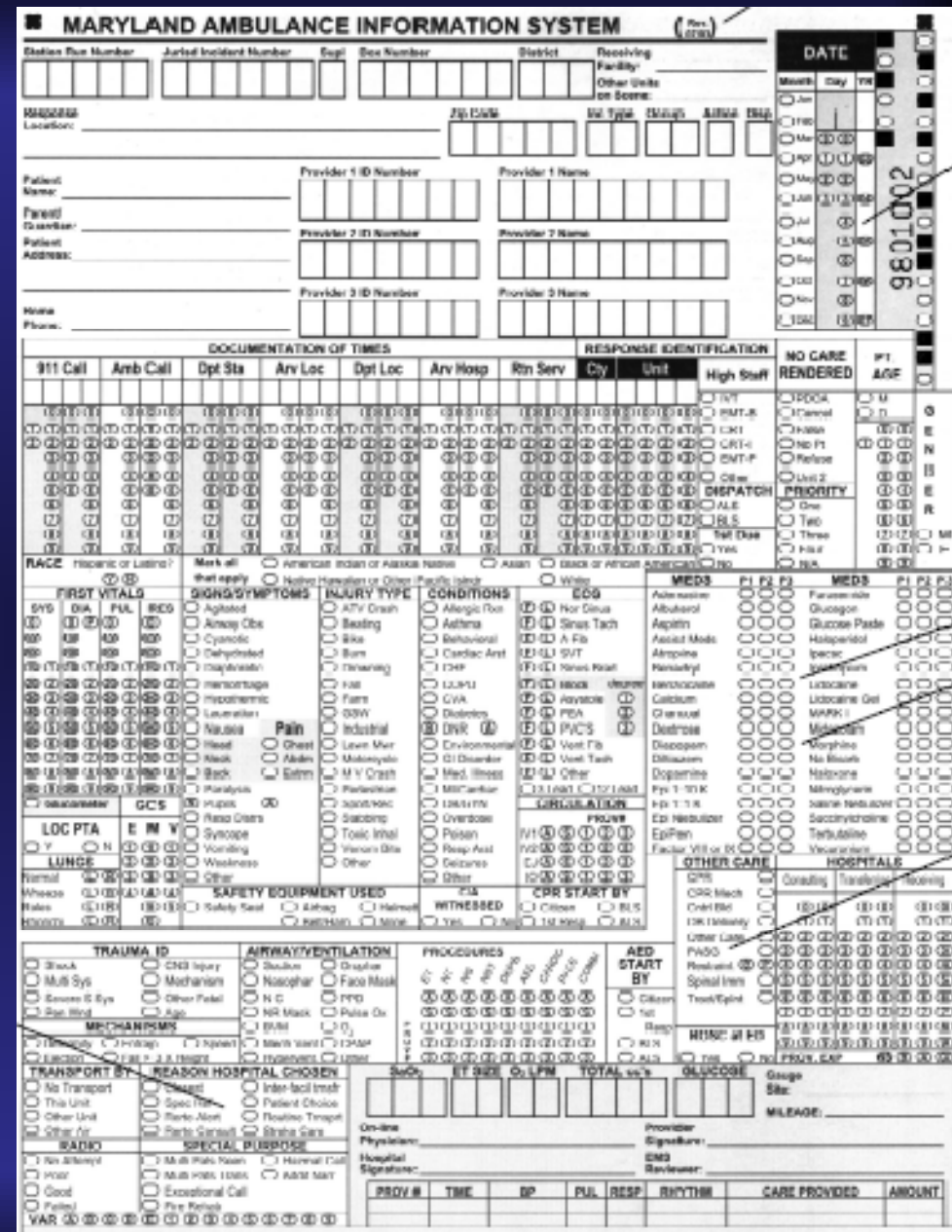
Then There were Optical Scan Forms




DOCUMENTATION OF TIMES
911 Call
Amb Call
Dpt Sta
Arv Loc
Dpt Loc
Arv Hosp
Rtn Serv

SIGNS/SYMPTOMS
Agitated
Airway Obs
Cyanotic
Dehydrated
Diaphoretic
Hemorrhage
Hypothermic
Laceration
Nausea
Head
Neck
Back
Paralysis
Pupils
Resp Distrs
Syncope
Vomiting
Weakness
Other
Pain
Chest
Abdm
Extrm
INJURY TYPE
ATV Crash
Beating
Bike
Burn
Drowning
Fall
Farm
GSW
Industrial
Lawn Mwr
Motorcycle
M V Crash
Pedestrian
Sport/Rec
Stabbing
Toxic Inhal
Venom Bite
Other
CONDITIONS
Allergic Rxn
Asthma
Behavioral
Cardiac Arst
CHF
COPD
CVA
Diabetes
DNR
Environmental
GI Disorder
Med. Illness
MI/Cardiac
OB/GYN
Overdose
Poison
Resp Arst
Seizures
Other
ECG
Nor Sinus
Sinus Tach
A-Fib
SVT
Sinus Brad
Block
Asystole
PEA
PVC'S
Vent Fib
Vent Tach
Other
3 Lead
12 Lead
CIRCULATION
PROV#
IV1
IV2
EJ
IO

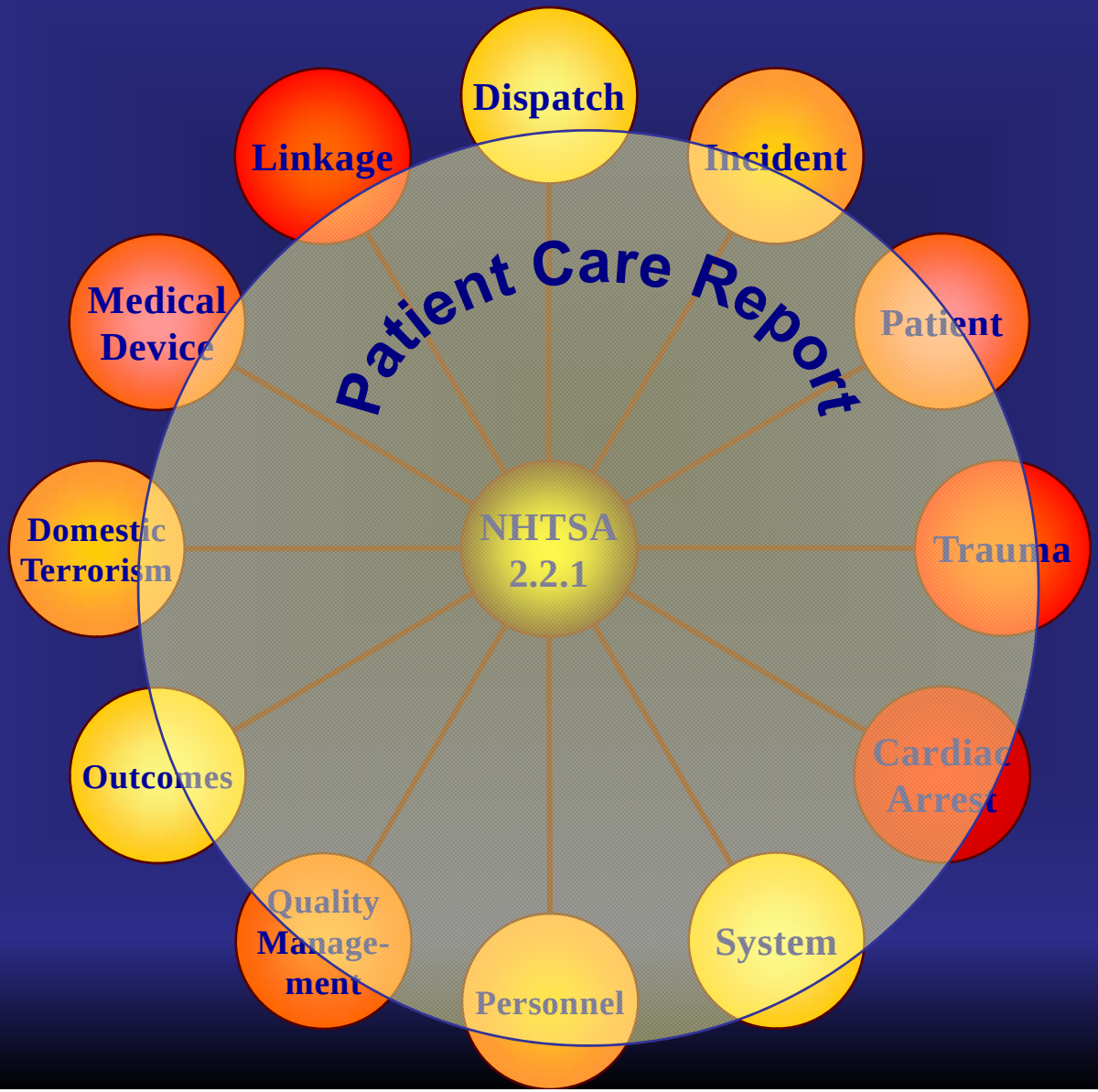

MEDS
P1 P2 P3
Adenosine
Albuterol
Aspirin
Assist Meds
Atropine
Benadryl
Benzocaine
Calcium
Charcoal
Dextrose
Diazepam
Diltiazem
Dopamine
Epi 1:10 K
Epi 1:1 K
Epi Nebulizer
EpiPen
Factor VIII or IX
MEDS
P1 P2 P3
Furosemide
Glucagon
Glucose Paste
Haloperidol
Ipecac
Ipratropium
Lidocaine
Lidocaine Gel
MARK I
Midazolam
Morphine
Na Bicarb
Naloxone
Nitroglycerin
Saline Nebulizer
Succinylcholine
Terbutaline
Vecuronium


MARYLAND AMBULANCE INFORMATION SYSTEM
DATE
9801002
DOCUMENTATION OF TIMES
911 Call
Amb Call
Dpt Sta
Arv Loc
Dpt Loc
Arv Hosp
Rtn Serv
RESPONSE IDENTIFICATION
NO CARE RENDERED
PT AGE
FIRST VITALS
SIGNS/SYMPTOMS
INJURY TYPE
CONDITIONS
ECG
MEDS
LOC PTA
LUNGS
SAFETY EQUIPMENT USED
CIRCULATION
CPR START BY
OTHER CARE
HOSPITALS
TRAUMA ID
AIRWAY/VENTILATION
PROCEDURES
AED START BY
MECHANISMS
TRANSPORT BY
REASON HOSPITAL CHOSEN
RADIO
SPECIAL PURPOSE
TOTAL cc's
GLUCOSE
PROV #
TIME
BP
PUL
RESP
RHYTHM
CARE PROVIDED
AMOUNT

Electronic Data and CQI

- Provides more effective retrospective CQI
  - Detailed data analysis
  - Addressing questions not contemplated
  - Allows for benchmarking
  - Decreases the time for retrospective CQI
- Allows a shift in emphasis to concurrent and prospective CQI
- In 2009, can you ethically provide proper EMS medical oversight without access to essential system information?

The Big Picture



The Fire Service has had a standardized data set for a generation

National Fire Incident Reporting System

Where EMS Needs to Be!

Describe the EMS Events

- Number of total events
- Number and % of injuries
- Number and % of cardiac arrests
- Number and % of non-injuries
- Time of day
- Day of week

Describe the EMS System Response

- Average and 90% fractile times
  - Call center time
  - Chute and turn-out time
  - Dispatch time
  - Response
  - Scene
  - Transport
  - Total call time
- Delays
  - Dispatch
  - Response
  - Scene
  - Transport

Describe the EMS Patient

- Comparing “EMS Events” & “Patient Situation”
  - Comparison by age
  - Comparison by sex
  - Comparison by race/ethnicity

Describe the Injured Patient

- Type event by demographics
- Frequency/mass casualty incidence
- Injury locations
- Cause of injury
- Drug and alcohol use
- Hospital outcomes

Describe the Cardiac Patient

- Events and incidence (adult vs. pediatric)
- Rates by population
- Hospital outcomes

Describe EMS Care Provided

- Protocols used
- Medications administered
- Procedures performed

Performance of EMS Personnel

- Procedure use by personnel over time
- Procedures performed by patient situation
- Procedure success rate

The National Perspective
A Brief History

- 1991 Utstein Style Reporting of Cardiac Arrests
- 1993 NHTSA Uniform Prehospital Data Set
- 1996 EMS Agenda for the Future
- 1997 Data Elements for Emergency Depts.
- 1999-01 National EMS Database Prep.
- 2002-Present NEMSIS Development
- 2006 Few states begin submitting data to NEMSIS Database

The National EMS Information System

"No local, state, or federal databases were suitable for use due to inconsistent data definitions, inconsistent data formatting, and variation in inclusion criteria."

– 2003: The EMS Outcomes Evaluation Project (Page 8)

The National EMS Information System

Development partners:

NHTSA

HRSA

CDC

University of Utah

University of North Carolina

NEMSIS Project

- Project Impetus
  - National Association of State EMS Officials (Directors)
- Federally Funded
  - NHTSA and HRSA / Trauma & EMS System
- Project Coordination
  - Universities of Utah & North Carolina

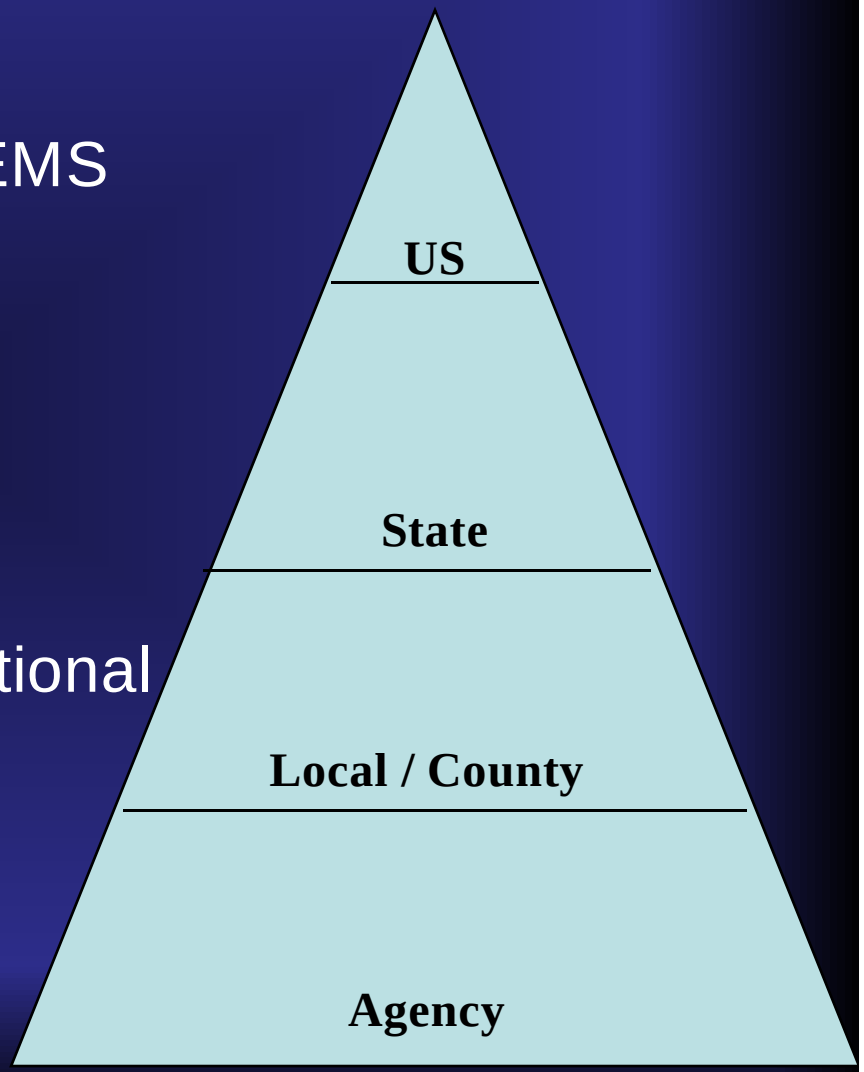
- Acknowledgement: Many slides in this presentation are from the NEMSIS Project

The National EMS Information System

A Standardized Dataset of over 400 data elements

National, State and Local Data Subsets

- National Data Subset
  - Both agency demographic & EMS data
  - 84 data elements
  - Transmitted from states
- State Data Subset
  - Determined by the states
  - Likely more elements than National
- Local Data Subset
  - Determined by local system
  - More elements than State
  - Essential for system analysis



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Home > Support > Dataset Dictionaries

Dataset Dictionaries

20-Sep-2007

NHTSA Version 2.2.1 Data Dictionary

The NEMSIS NHTSA Version 2.2.1 DataDictionary provides **over 400 definitions** that can be implemented by an EMS system.

National data elements are defined that should be collected for the National EMS Database, but additional data elements should be considered for use at the state and local levels depending on each state or local EMS system's need.

- NEMSIS_Data_Dictionary_v2.2.1.pdf (pdf)
- NEMSIS_Data_Dictionary_v2.2.1.doc (doc)
- NEMSIS_Data_Elements_and_Values_v2.2.1.xls (xls)
- NEMSIS_Data_Elements_Definitions_v2.2.1.xls (xls)
- NEMSIS_Data_Elements_Definitions_v2.2.1.xls (xls) **contains National Elements Only**

Table of Contents

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CARDIAC ARRESTS

E11_01

Data [combo] single-choice *National Element*

Definition

Indication of the presence of a cardiac arrest at any time associated with the EMS evert.

XSD Data Type *xs:integer* **XSD Domain (Simple Type)** *CardiacArrest*
Multiple Entry Configuration No **Accepts Null Values** Yes
Required in XSD Yes

Field Values

-25 Not Applicable	-20 Not Recorded
-15 Not Reporting	-10 Not Known
-5 Not Available	0 No
2240 Yes, Prior to EMS Arrival	2245 Yes, After EMS Arrival

Additional Information

- If answered YES, all other data points in the Situation/CPR should be addressed

Uses

- A component of the EMS Medical Record: Patient Care Report
- Allows data to be sorted based on the occurrence of a cardiac arrest
- Allows data to describe the number of cardiac arrests within the EMS patient population

Data Collector

- EMS personnel

Other Associated Elements

E00 Common Null Values
E01_01 Patient Care Report Number

References to Other Databases

- NFIRS 5.0 EMS Module; Title: Cardiac Arrest; Pick-List: Pre-Arrival Arrest = 1, Post-Arrival Arrest = 2
- UTSTEIN Title: Confirmed Cardiac Arrests Considered for Resuscitation

PROCEDURES

D04_04

Data [combo] multiple-choice

Definition

A list of all procedures that the agency has implemented and available for use.

XSD Data Type *xs:decimal* **XSD Domain (Simple Type)** *DemographicProcedure*
Multiple Entry Configuration Yes, via structure **Accepts Null Values** No
Required in XSD No **Minimum Constraint** 0 **Maximum Constraint** 1,000
XSD Structure: D04_04 and D04_05 are members of D04_04_0 Demographic Procedure Structure

Field Values

89.820	12 Lead ECG	93.930	Airway-Bagged
93.931	Airway-BVM	97.230	Airway-Change Tracheostomy Tube
98.130	Airway-Cleared	96.051	Airway-Combitube
93.900	Airway-CPAP	96.030	Airway-EOA/EGTA
96.991	Airway-Intubation Confirm CO2	96.992	Airway-Intubation Confirm Esophageal Bulb
96.052	Airway-Laryngeal Mask	96.010	Airway-Nasal
96.041	Airway-Nasotracheal Intubation	93.940	Airway-Nebulizer Treatment
31.110	Airway-Needle Cricothyrotomy	96.020	Airway-Oral
96.040	Airway-Orotracheal Intubation	96.790	Airway-PEEP
96.042	Airway-Rapid Sequence Induction	93.910	Airway-Respirator Operation (BLS)
98.150	Airway-Suctioning	31.120	Airway-Surgical Cricothyrotomy
96.700	Airway-Ventilator Operation	96.701	Airway-Ventilator with PEEP
38.910	Arterial Access-Blood Draw	89.610	Arterial Line Maintenance
89.700	Assessment-Adult	89.701	Assessment-Pediatric
38.995	Blood Glucose Analysis	89.391	Capnography
89.510	Cardiac Monitor	99.624	Cardiac Pacing-External
99.626	Cardiac Pacing-Transvenous	99.623	Cardioversion
99.640	Carotid Massage	34.041	Chest Decompression
34.042	Chest Tube Placement	73.590	Childbirth
1.181	CNS Catheter-Epidural Maintenance	1.182	CNS Catheter-Intraventricular Maintenance
99.600	CPR	99.601	CPR by External Automated Device
86.280	Decontamination	99.621	Defibrillation-Automated (AED)
99.622	Defibrillation-Manual	99.625	Defibrillation-Placement for Monitoring/Analysis
100.200	Extrication	99.290	Injections-SQ/IM
37.611	Intra-Aortic Balloon Pump	93.580	MAST
96.070	Nasogastric Tube Insertion	89.590	Orthostatic Blood Pressure Measurement
89.702	Pain Measurement	89.392	Pulse Oximetry
100.100	Rescue	99.841	Restraints-Pharmacological
99.842	Restraints-Physical	93.591	Spinal Immobilization
93.540	Splinting-Basic	93.450	Splinting-Traction
89.703	Temperature Measurement	89.704	Thrombolytic Screen
57.940	Urinary Catheterization	38.990	Venous Access-Blood Draw
89.620	Venous Access-Central Line Maintenance	39.997	Venous Access-Discontinue
38.991	Venous Access-Existing Catheter	38.993	Venous Access-External Jugular Line
38.992	Venous Access-Extremity	38.994	Venous Access-Femoral Line
39.995	Venous Access-Internal Jugular Line	41.920	Venous Access-Intraosseous Adult

PROTOCOL

D04_08

Data [text] multiple-entry

Definition

A list of all of the medical treatment protocols that the agency has in place and available for use. Specific Adult or Pediatric Protocols should be mapped to one of these topics if possible.

XSD Data Type *xs:string* **XSD Domain (Simple Type)** *DemographicProtocolsUsed*
Multiple Entry Configuration Yes, via structure **Accepts Null Values** No
Required in XSD No **Minimum Constraint** 2 **Maximum Constraint** 30
XSD Structure: D04_08 and D04_09 are members of D04_08_0 Demographic Protocol Structure
XSD Attributes: Status (Active or In-active) and Date are included as attributes

Field Values

6720 Abdominal Pain	6730 Airway
6740 Airway-Failed	6760 Airway-RSI
6770 Allergic Reaction/Anaphylaxis	6780 Altered Mental Status
6785 AltitudeSickness	6790 Asystole
6791 Atrial Fibrillation	6800 Back Pain
6810 Behavioral	6820 Bites and Envenomations
6830 Bradycardia	6840 Burns
6850 Cardiac Arrest	6860 Cardiac Chest Pain
6870 Childbirth/Labor	6875 Cold Exposure
6880 Dental Problems	6881 Device Malfunction
6885 Diarrhea	6890 Drowning/Near Drowning
6892 Diving Emergencies	6900 Electrical Injuries
6910 Epistaxis	6911 Exposure-Airway Irritants
6912 Exposure-Biological/Infectious	6913 Exposure-Blistering Agents
6914 Exposure-Cyanide	6915 Exposure-Nerve Agents
6916 Exposure-Radiologic Agents	6917 Exposure-Riot Control Agents
6920 Extremity Trauma	6925 Eye Trauma
6930 Fever	6935 Gynecologic Emergencies
6940 Head Trauma	6945 Hyperglycemia
6950 Hypertension	6960 Hyperthermia
6965 Hypoglycemia	6970 Hypotension/Shock (Non-Trauma)
6980 Hypothermia	6990 IV Access
7000 Trauma-Multisystem	7010 Newly Born
7020 Obstetrical Emergencies	7030 Overdose/Toxic Ingestion
7040 Pain Control	7130 Post Resuscitation
7140 Pulmonary Edema	7150 Pulseless Electrical Activity
7160 Respiratory Distress	7170 Seizure
7175 Spinal Cord Trauma	7180 Spinal Immobilization
7190 Supraventricular Tachycardia	7200 Stroke/TIA
7210 Syncope	7214 Trauma-Arrest
7215 Trauma-Amputation	7220 Universal Patient Care
7230 Ventricular Fibrillation	7232 Ventricular Ectopy
7240 Ventricular Tachycardia	7251 Vomiting

Additional Information

- Can be used as a qualifying measure to compare care provided to protocol guidance

NEMSIS
TECHNICAL ASSISTANCE CENTER
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Home > Software Developers
Software Developers
This section is geared towards vendors and software developers who are looking at ways to become NEMSIS compliant.
National Element
XSD Domain (Simple Type) FirstName
Field Values
-25 Not Applicable
-5 Not Available
1 Yes
Definition
The First Name of the Agency's Medical Director
Data Collector
• EMS personnel
Required in XSD
xs:string
Data Format
In This Section
Dataset Components & Requirements
An overview of the components and requirements of the NEMSIS data collection system.
Becoming Compliant
The how-to-source for becoming NEMSIS compliant, inluding:
- The Compliance Policy
- The Compliance Process
- The Compliance Testing Schedule
- Compliance Testing Software
Downloads
Download the following tools and helps:
- Dataset Dictionaries
- Demographic Dataset Schemas (XSDs)
- EMS Dataset Schemas (XSDs)
- Database Scripts
- Test Cases & XML Samples
- Archive of Past Releases

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Home > Compliant Software > Gold Compliant

Gold Compliant

01-Oct-2007

The National EMS Information System Technical Assistance Center is please to announce that the EMS Software Packages listed below, have achieved **NEMSIS Gold Compliance!** It is important to acknowledge the significant effort required to **obtain NEMSIS Compliance**.

What Does Gold Compliant Software Mean to Me as a Potential Customer?

Please remember as a potential customer that this list is just one of many tools you should use to evaluate the **total package** being offered to your organization. Any software package should be evaluated on its overall fit into your organization's needs. The vendor's web page may be accessed by simply clicking on the vendor name. For **sales information**, click on the following **link**.

Gold Compliant Software

Listed in Alphabetical Order

Gold Compliant Software

Listed in Alphabetical Order

Ca 2009

911 EMS Software, LLC
KEMS, Version 6.0, Microsoft Windows

AccuMed Billing, Inc
eMedicReports, Version 3.7, Microsoft

AccuMedWeb, LLC
eMedicReports, Version 4.0, Microsoft

ACS-Firehouse
Firehouse Software, Version 7.0, Micro

Cognitech Corporation
Polaris, Version 1.4, Web-based

Colleton Software
MICS, Version 1.0.5, Microsoft Windo

Corporate Technologies, LLC
ESS/Ambulance, Version 3.0, Microsof

Digital Innovations
Collector EMS Server, Version 4.1, Mic

emsCharts
emsCharts, emsCharts Pocket, emsCha
PocketPC

EmergiData
RescueMedic, Version 1.6, Web-Based

EMSystems
EMRecord Data Vault, Version 2.0, We

ESO Solutions
ESO Pro, Version 3.2, Web-based

FirePrograms Software
FirePrograms, Version 10, Microsoft W

FirstOnScene, LLC
OnSceneRMS with OnSceneEMS Module,

Golden Hour Data Systems
GH Live, Version 1.13, Web-Based

Grayco Systems
EMSIS Rover, Provider, & Server Version 2.1.0 (Rover), 2.7.0
Windows

Healthware Solutions, LLC
Elyxer, Version 6, Microsoft Windows

High Plains Information Systems, Inc.
FireManager,Version 5, Microsoft Windows

Iatroware
IatroChart EMS, Version 1.01, Microsoft Windows, Mac, PC

ImageTrend
EMS State Bridge, Version 3.0, Web-Based

IMC, Inc.
EMS Transport, Version 4.6, Microsoft Windows

Macrologic Inc.
CodeRed EMS, Version 4.0, Web-Based, Microsoft Windows

Med Media
EMStat WebCUR Gold, Version 1.0, Microsoft Windows, Pock

OCI Software
AmbuPro EMS, Version 9.0, Microsoft Windows

Ortivus
Sweet Billing & Field Data with NEMSIS Export Module, Versio

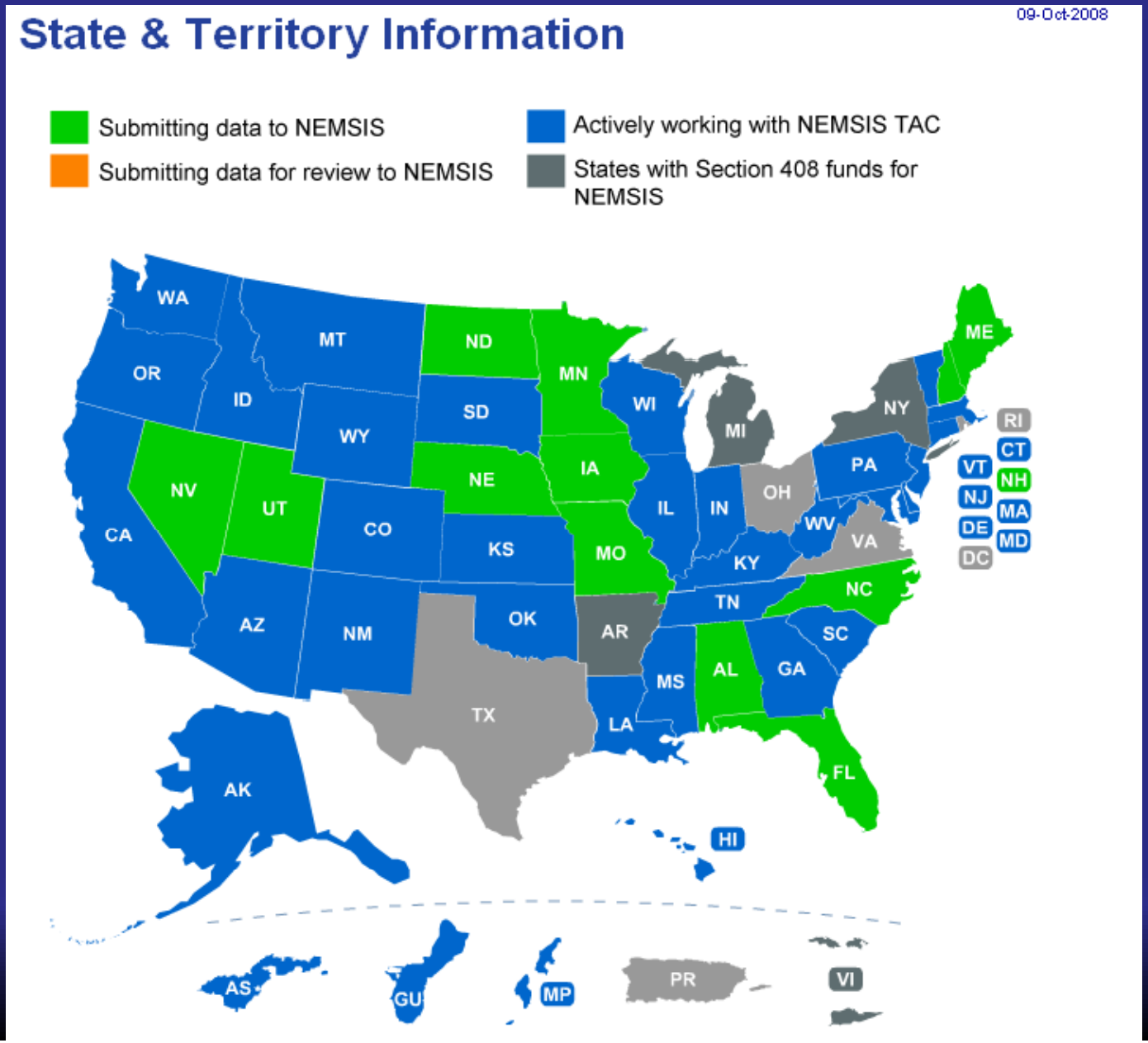
RAM Software Systems, Inc.
AIM Billing & ePCR with NEMSIS Export Module, Version 4.1,

Sansio (Formerly ScanHealth)
HealthEMS™, Version 4.1, Web-Based

ZOLL Data Systems
FireRMS, Version 4.3, Microsoft Windows
RescueNet ePCR Suite, Version 5.1, Microsoft Windows

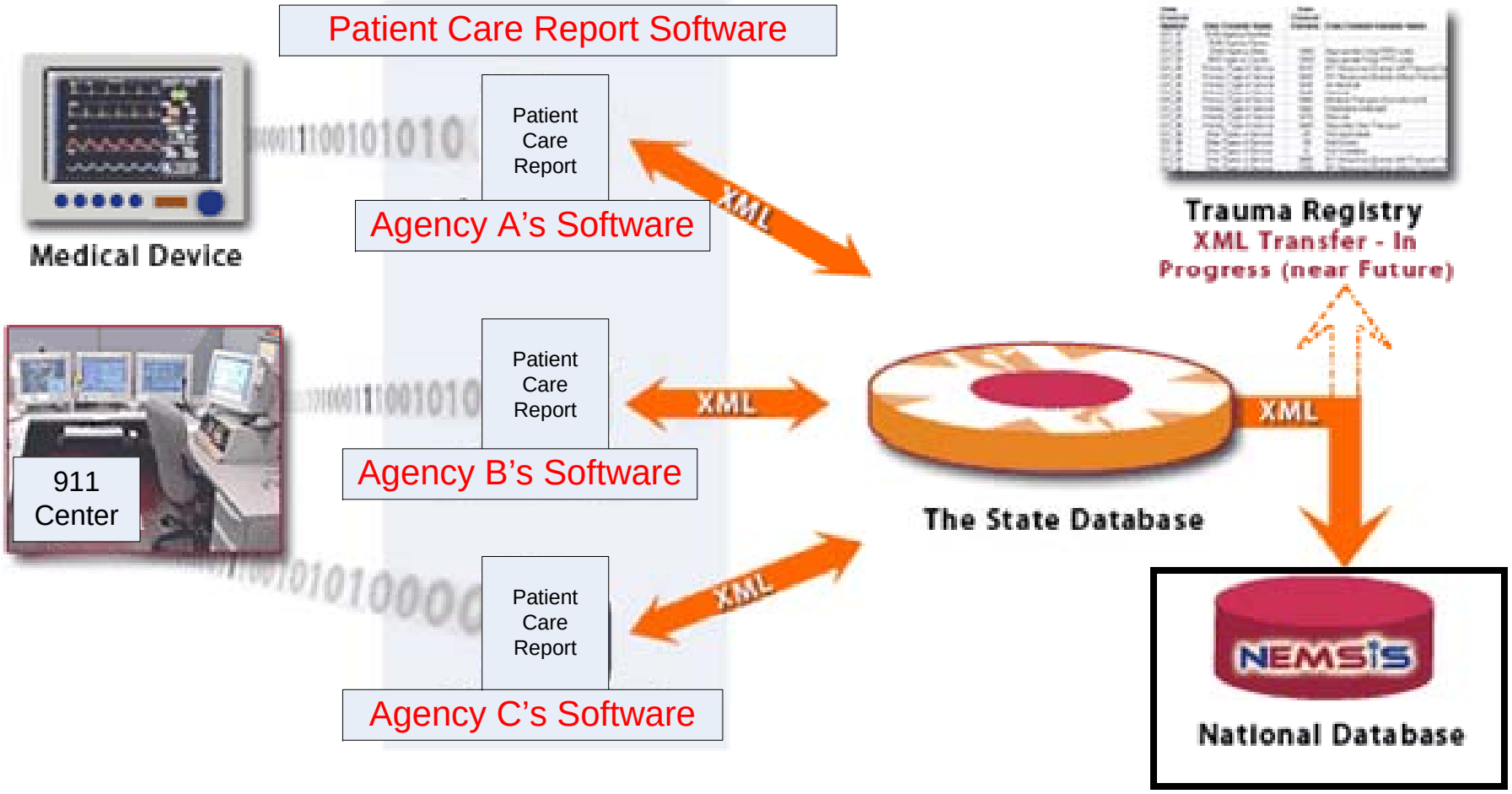
Silver Compliant Software
Listed in Alphabetical Order
Ca 2009
911 EMS
KEMS, Versio
Click here
Accurate
Emergency M
Pocket PC
Click here
AeroMed S
WinAMS, Ver
Click here
Allegheny
EMMA, Versio
Click here
American
Simon, Versi
Click here
American
MEDS, Versio
Click here
Business M
FireTools EMS
Click here
Code 3 So
EMS Express,
Click here
Commerx
Rampart ePC
Click here
Computer
QuickTrip, NE
Click here
Corporate Te
ESS/Ambulance,
Click here to
Documed Sy
Emergency-Pro,
Click here to
Emergency R
ERS, Version 4.
Click here to
Emergency T
Visual EMS, Ver
Click here to
EmergiData
RescueMedic, Ve
Click here to
EMS Consulta
Automated Run
Click here to
EMS Data Sy
EMScan, RMP-2
Click here to
Click here to
ESO Solution
ESO Pro, Versio
Click here to
FATPOT Tech
Enfuego, Versio
Click here to
Gold System
OPIS, Version 1
Click here to
Golden Hour
GH Live, Versio
Click here to
Healthware Solutions
EMS Solution Suite, Version 5.7 with the NEMSIS Export Module, Micros
Click here to see compliant elements
Inspironix, Inc
EMS Outfielder, Version 8.4, Microsoft Windows
Click here to see compliant elements
Intermedix
EMS 2006, Version 1.0, Web-Based
Click here to see compliant elements
Lancet Technology, Inc.
Fire-Rescue One, Version 4.10, Web-Based, Microsoft Windows
Click here to see compliant elements
Medical Cla
EPIC, Versio
Click here
Medusa Me
Siren ePCR, V
Click here
Click here
National R
Medic Resour
Click here
Prologic Inc.
EMS Mobile, Version 1.0, Web-Based, Microsoft Windows
Click here to see compliant elements
Purvis Systems
FDManager, Version 3.2, Microsoft Windows
Click here to see compliant elements
Sungard Public Sector
Fires Management, Version 6.0
Click here to see compliant elements
Zoll Data Systems
RescueNet TabletPCR, Version 4.0.2.81, Microsoft Windo
Click here to see compliant elements
New World Systems
Aegis MSP Fire Records, Version 7.9.49
Click here to see compliant elements
OCI Software
AmbuPro EMS, Version 8, Microsoft Windows
Click here to see compliant elements
OPEN Incorporated
SafetyPAD, Version 2.7, Microsoft Windows
Click here to see compliant elements
PeopleForce
NJSFACts, Version 2.0, Web-Based
Click here to see compliant elements

How's Your State Doing?



Click Below For Map

THE PORTABILITY OF DATA – the NEMSIS STANDARD.



Use of National EMS Data

- Nationwide EMS training curricula
- Evaluating patient and EMS system outcomes
- Facilitating research efforts
- Determining national fee schedules and reimbursement rates
- Addressing resources for disaster and domestic preparedness

Novel Use of NEMSIS Data

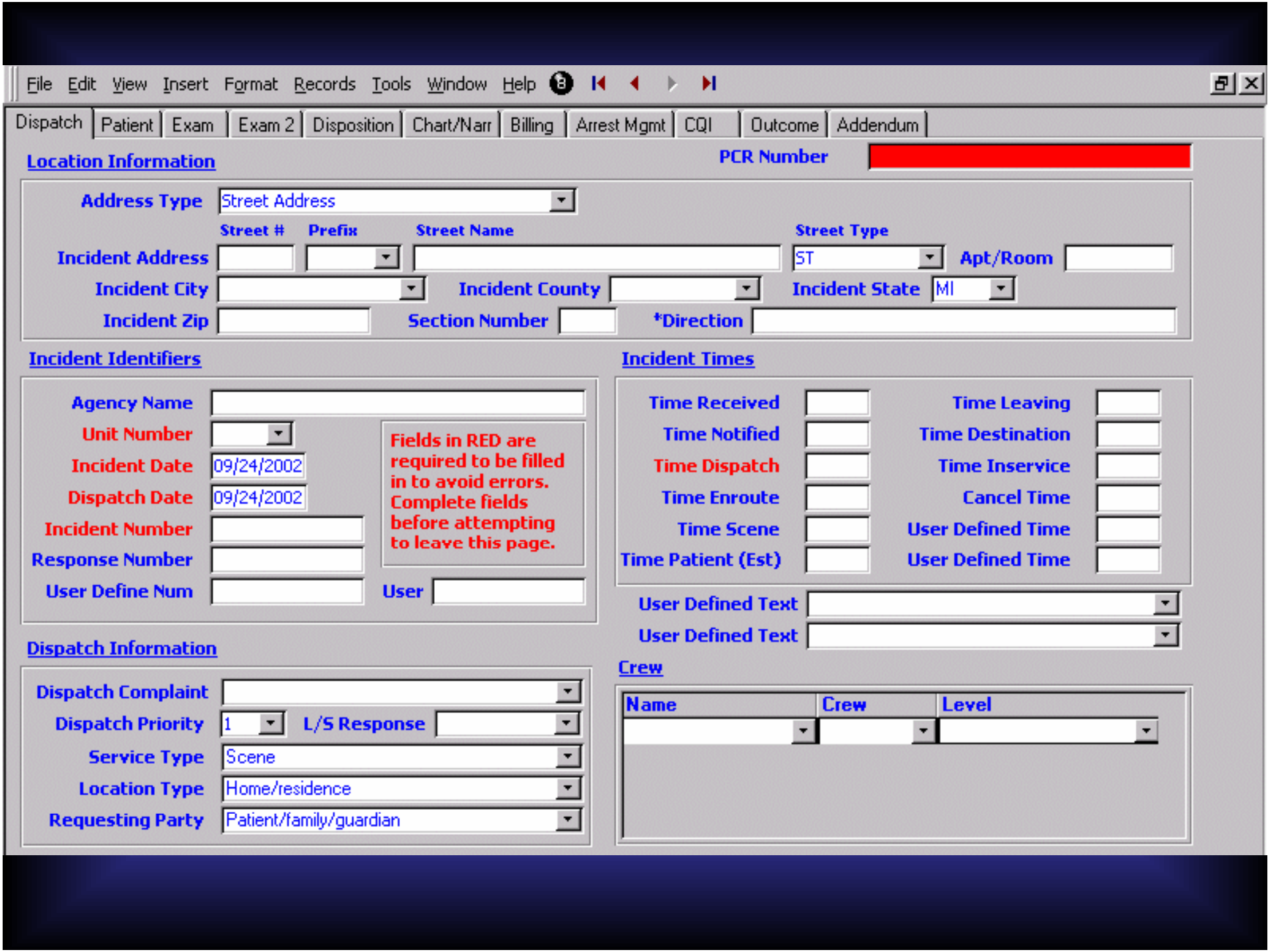
- Collaboration on a MASSIVE SCALE among appropriately-equipped major agencies
- The Eagles Consortium could, hypothetically, export millions of charts per year into a central, HIPAA-compliant dataset for the purposes of state-of-the-art studies in near real-time
- WE ONLY NEED MONEY!!! Oh, and the cities' IT geeks to agree…and an IRB…

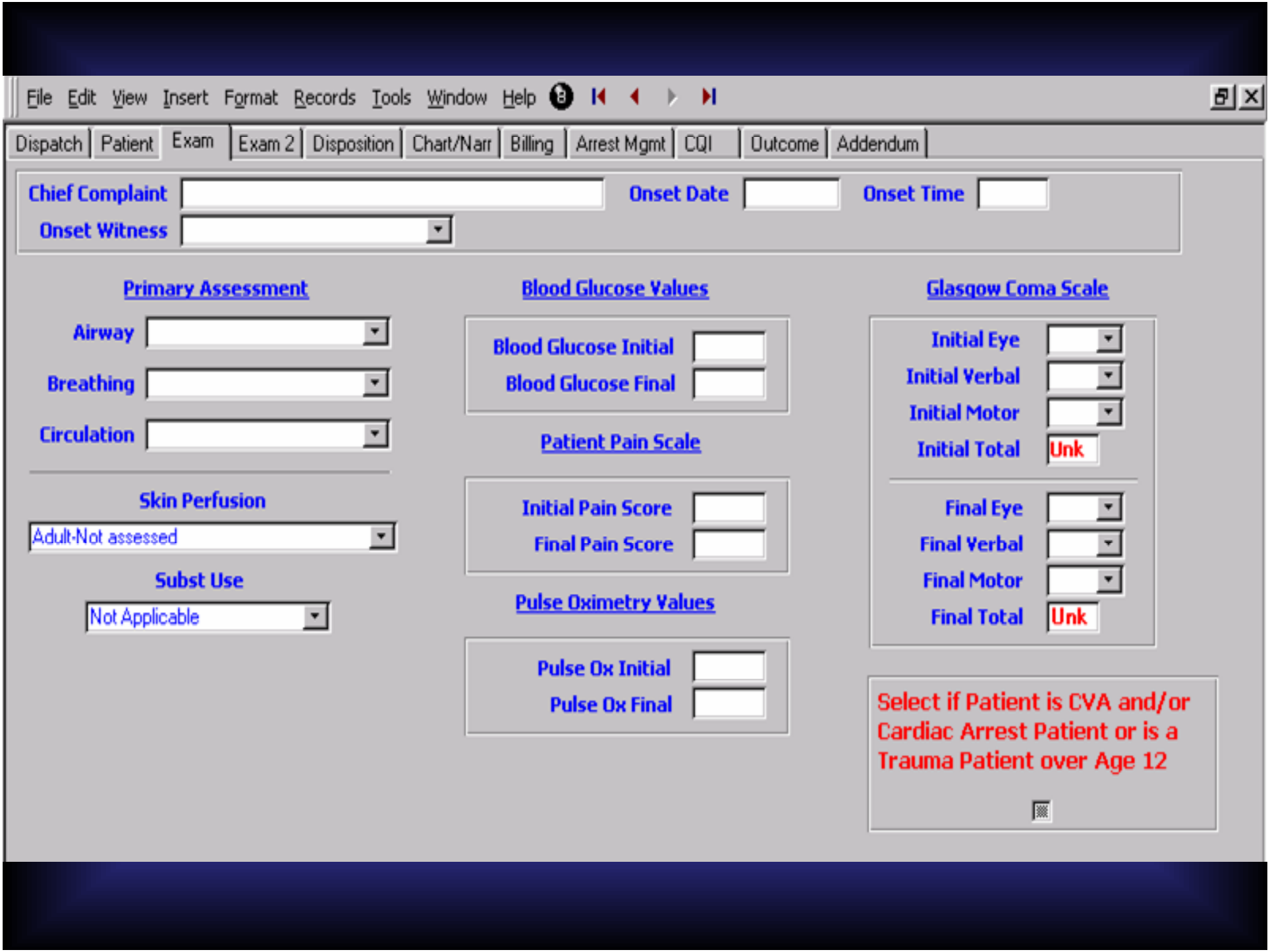
The Advent of the Electronic Medical Record

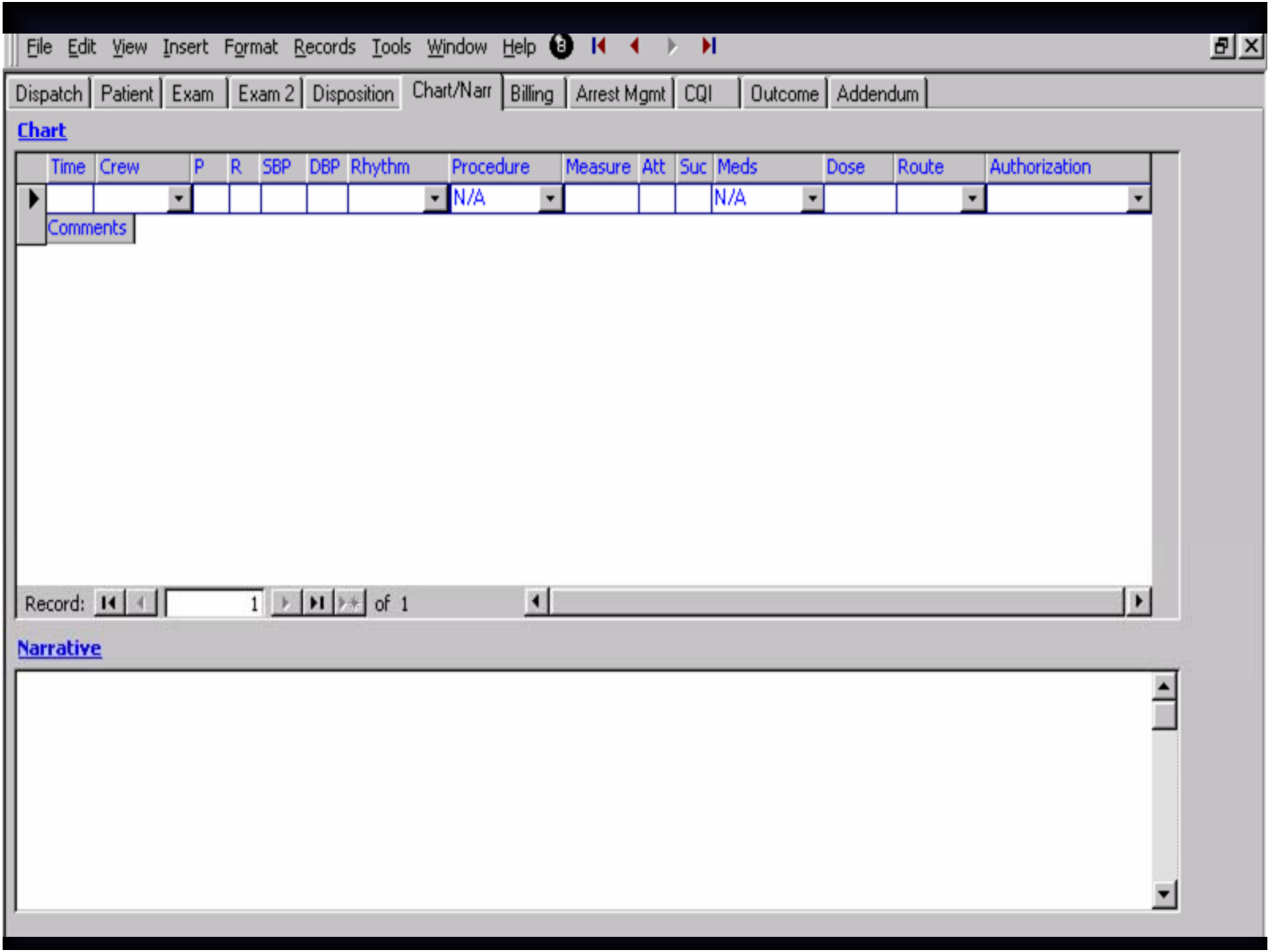
- Standard data fields
- Data goes directly into the organization's data server
- Accessible from remote
- Allows for report generation
- Ease of billing operations
- Other computer assists

Electronic Medical Records

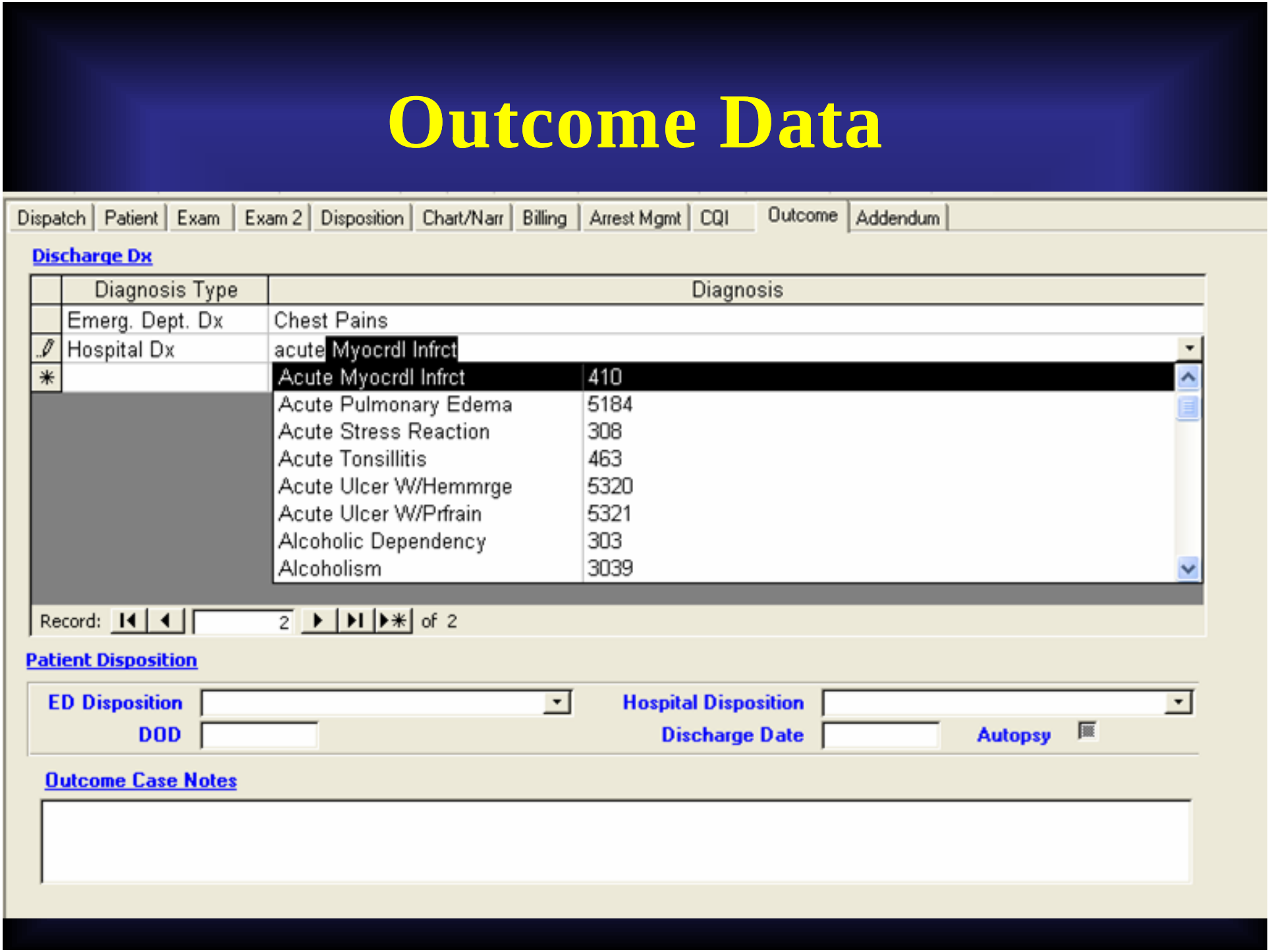
- Many agencies have improved billing success dramatically
- Drastically improved legibility
- Quality report left at the hospital
- State reporting requirements easily met
- Standard reports often very useful


File Edit View Insert Format Records Tools Window Help
Dispatch
Patient
Exam
Exam 2
Disposition
Chart/Narr
Billing
Arrest Mgmt
CQI
Outcome
Addendum
Location Information
PCR Number
Address Type
Street Address
Street #
Prefix
Street Name
Street Type
Incident Address
ST
Apt/Room
Incident City
Incident County
Incident State
MI
Incident Zip
Section Number
*Direction
Incident Identifiers
Agency Name
Unit Number
Incident Date
09/24/2002
Dispatch Date
09/24/2002
Incident Number
Response Number
User Define Num
User
Fields in RED are required to be filled in to avoid errors. Complete fields before attempting to leave this page.
Incident Times
Time Received
Time Notified
Time Dispatch
Time Enroute
Time Scene
Time Patient (Est)
Time Leaving
Time Destination
Time Inservice
Cancel Time
User Defined Time
User Defined Time
User Defined Text
User Defined Text
Dispatch Information
Dispatch Complaint
Dispatch Priority
1
L/S Response
Service Type
Scene
Location Type
Home/residence
Requesting Party
Patient/family/guardian
Crew
Name
Crew
Level

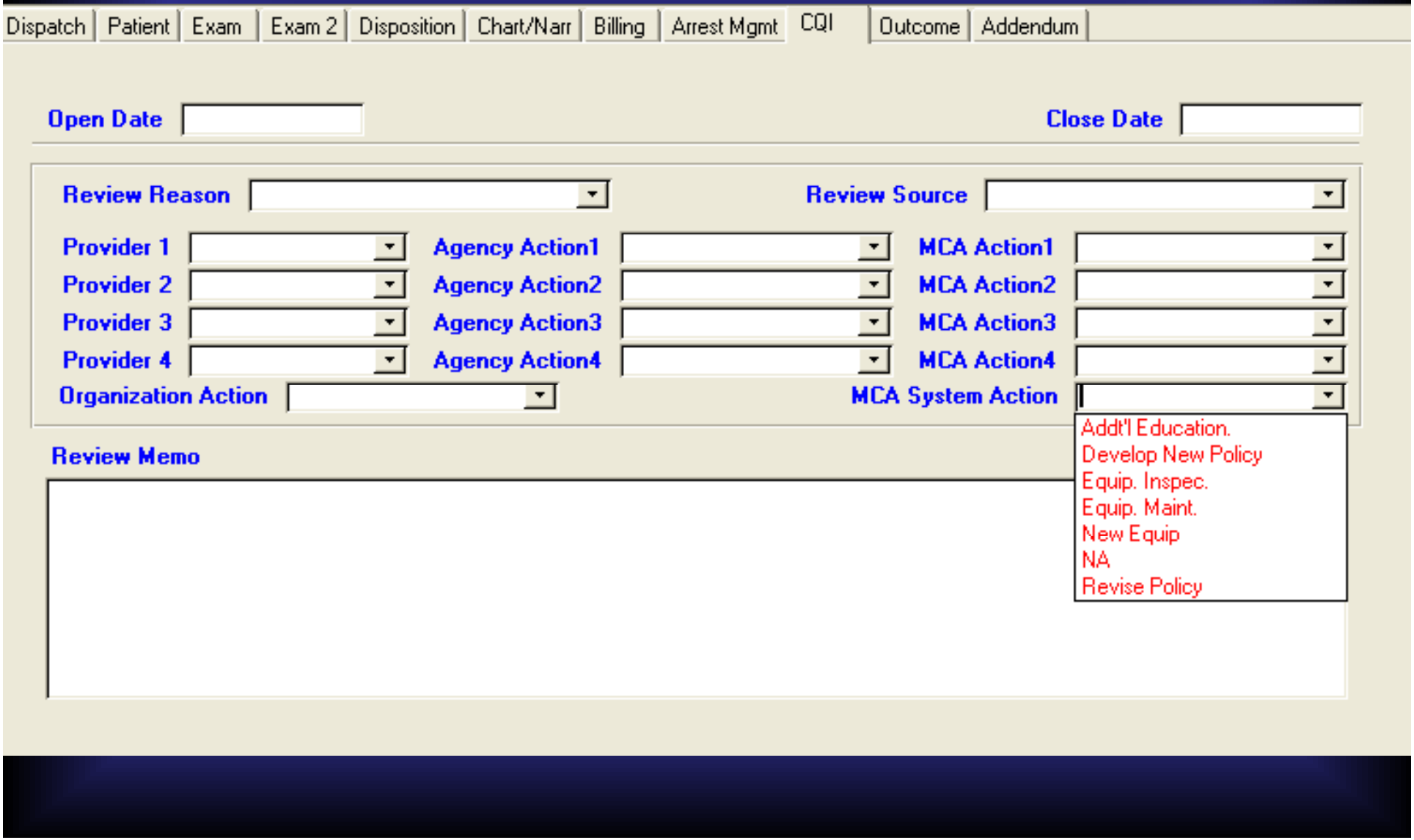

File Edit View Insert Format Records Tools Window Help
Dispatch Patient Exam Exam 2 Disposition Chart/Narr Billing Arrest Mgmt CQI Outcome Addendum
Chief Complaint
Onset Date
Onset Time
Onset Witness
Primary Assessment
Airway
Breathing
Circulation
Skin Perfusion
Adult-Not assessed
Subst Use
Not Applicable
Blood Glucose Values
Blood Glucose Initial
Blood Glucose Final
Patient Pain Scale
Initial Pain Score
Final Pain Score
Pulse Oximetry Values
Pulse Ox Initial
Pulse Ox Final
Glasgow Coma Scale
Initial Eye
Initial Verbal
Initial Motor
Initial Total
Unk
Final Eye
Final Verbal
Final Motor
Final Total
Unk
Select if Patient is CVA and/or Cardiac Arrest Patient or is a Trauma Patient over Age 12


File Edit View Insert Format Records Tools Window Help
Dispatch Patient Exam Exam 2 Disposition Chart/Narr Billing Arrest Mgmt CQI Outcome Addendum
Chart
Time Crew P R SBP DBP Rhythm Procedure Measure Att Suc Meds Dose Route Authorization
N/A
N/A
Comments
Record: 1 of 1
Narrative

Outcome Data



CQI Data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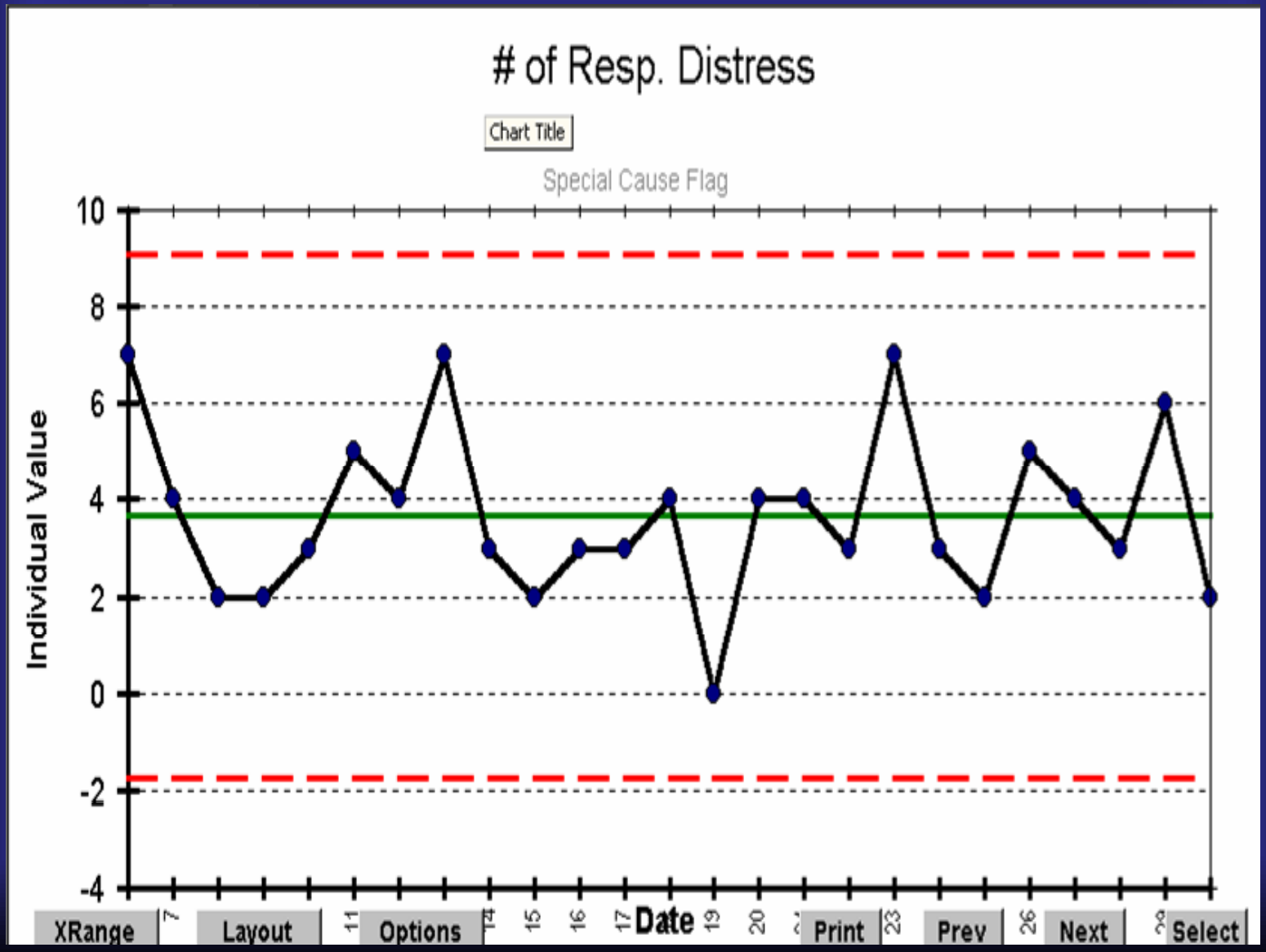
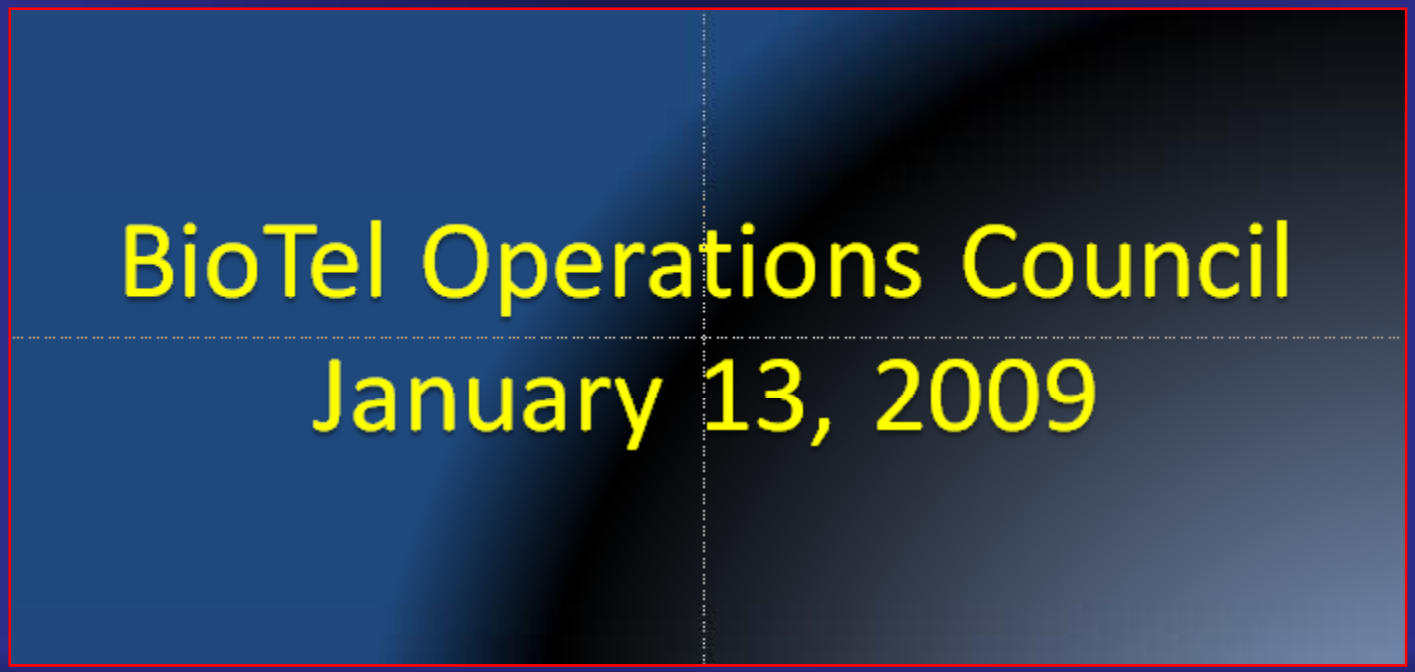
Patient
Exam
Exam 2
Disposition
Chart/Narr
Billing
Arrest Mgmt
CQI
Outcome
Addendum
Open Date
Close Date
Review Reason
Review Source
Provider 1
Provider 2
Provider 3
Provider 4
Agency Action1
Agency Action2
Agency Action3
Agency Action4
MCA Action1
MCA Action2
MCA Action3
MCA Action4
Organization Action
MCA System Action
Addt'l Education.
Develop New Policy
Equip. Inspec.
Equip. Maint.
New Equip
NA
Revise Policy
Review Memo

EMSIS Data for Public Health



EMSIS Data for Treatment Monitoring



Clinical Credentialing
and
Quality Control

20% of the time
we could not verify
that the patients
were stable for
non-transport!!!!

The shortest book ever written

Promises Kept by Software Vendors!!

Examples

“Oh, we’re going to add that report right away”

“We’ll have those reports sent to you by email whenever you want them”

The “20+ Issues”

- What kind of laptop?
- Who will service/repair them?
- Wireless communication? $$$
- Will you include the ECG file?
- Do you want 12 lead transmission?
- Where will you print?
- Will you FAX back?
- Who will buy and maintain
- the printer(s)?
- Who will provide IT support?
- What reports do you want?
- Are reports included in the purchase?
- Is there an “ad hoc” reporting tool?

Oh!!!!

And by the way, will the LCD screen tolerate having 400^{+} lb Bertha being lowered down onto it when the head of the stretcher is let down accidentally???

All that being said…

Reports can be wonderful

“List incident numbers for all chest pains 40 or above that did not receive NTG and ASA”

“…or monitor and oxygen…”

“…or (GASP) were non-transported”

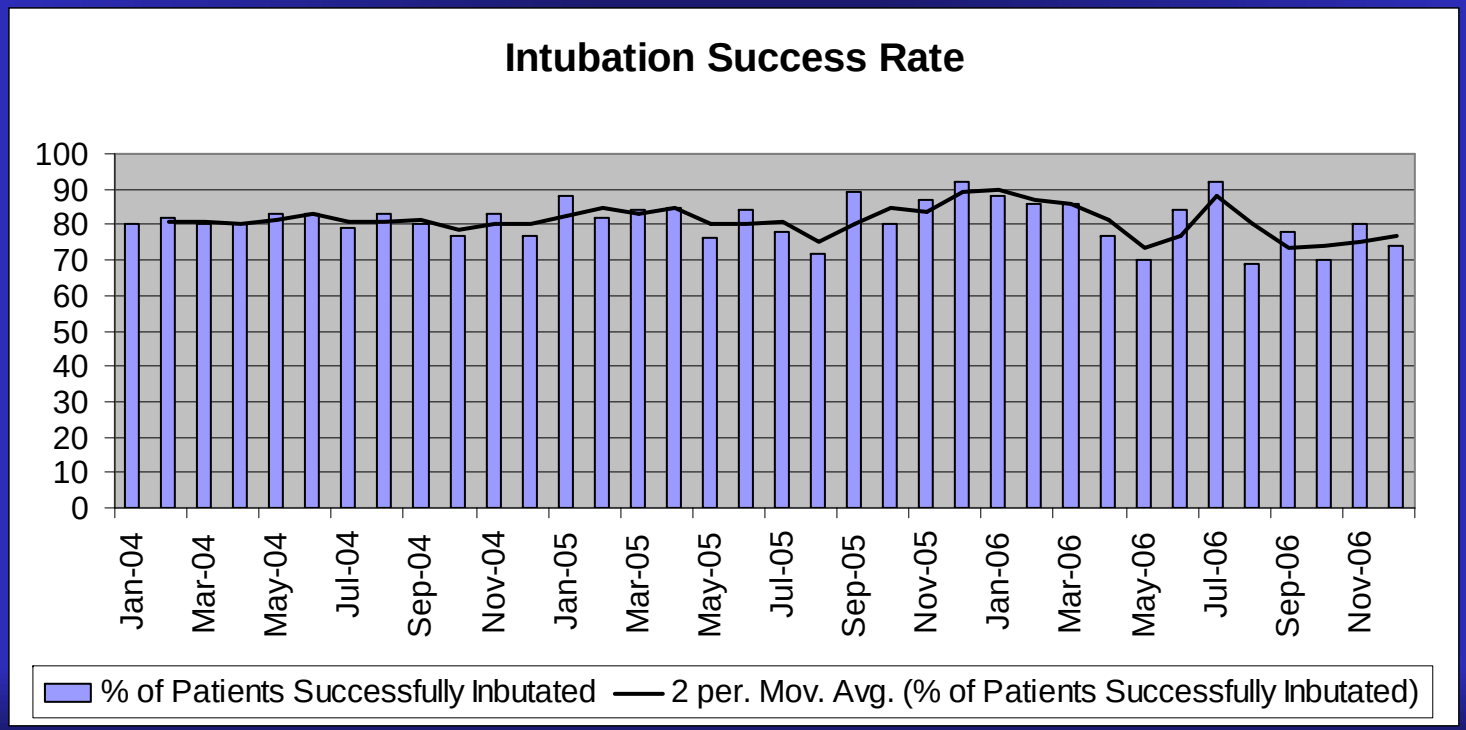
…and even more being said…

More wonderful reports…

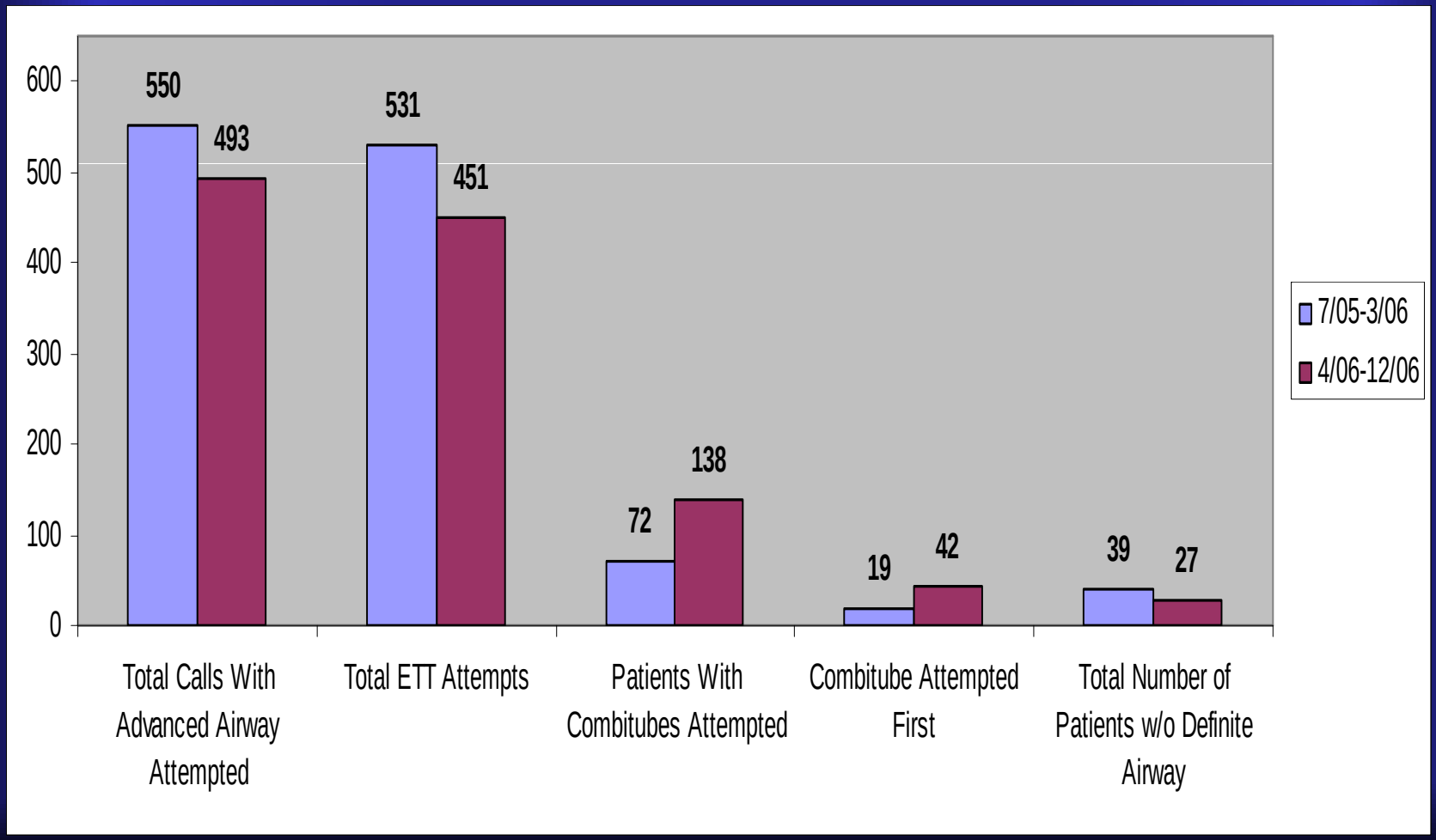
“List all ET attempts for capnography not used”

“List incident numbers for patients meeting Level 1 trauma criteria by destination”

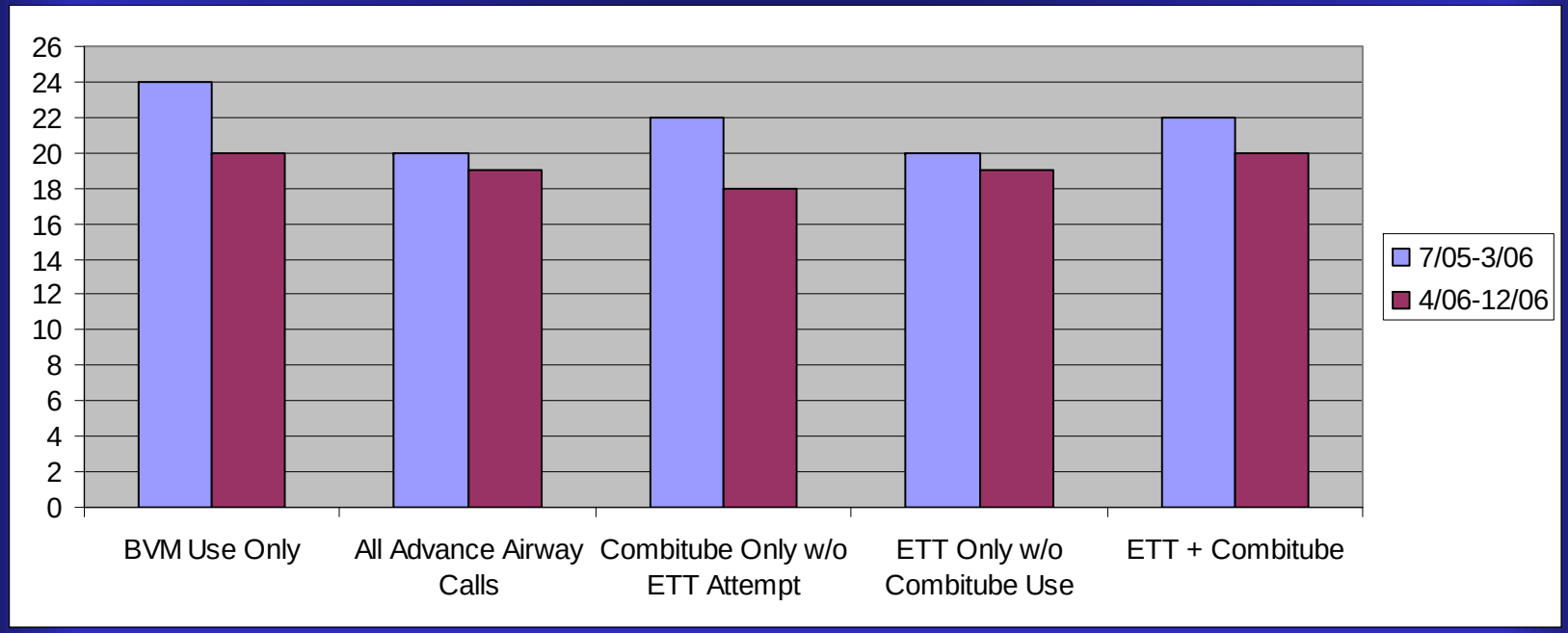
MedStar
ET Intubation Success Rates
2004 - 2006



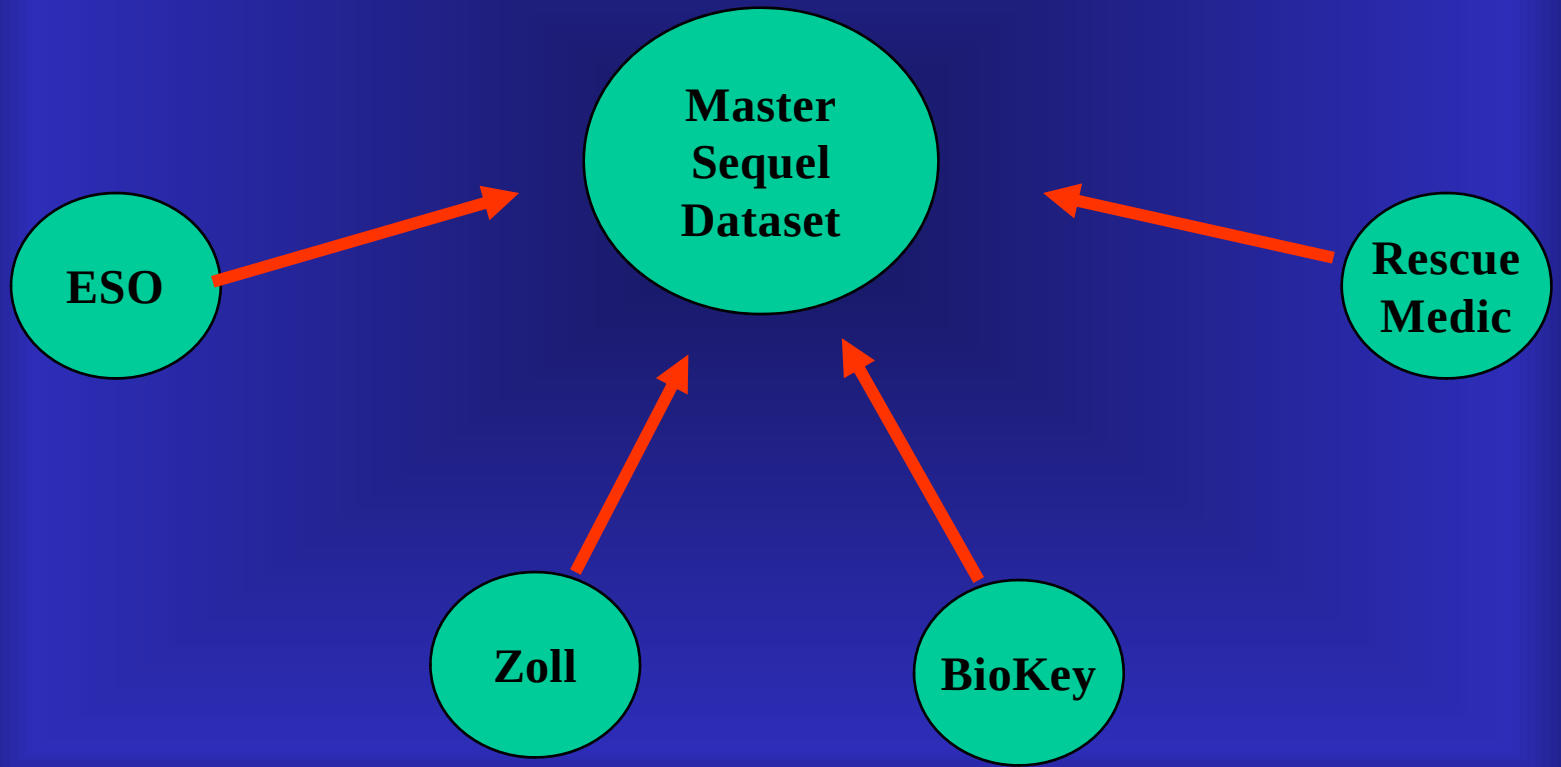
Advanced Airway Attempts July 2005 – December 2006

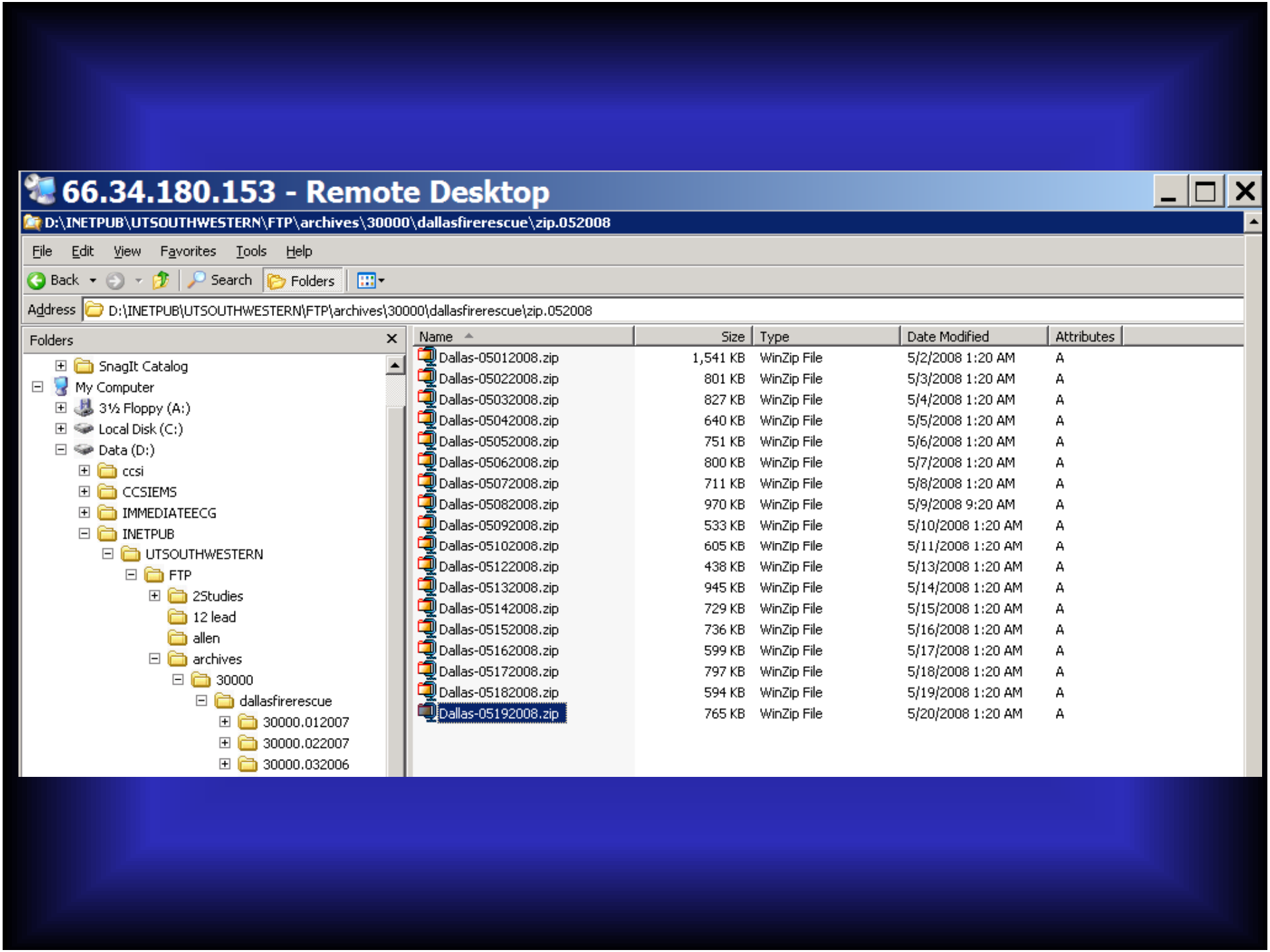


Scene Times vs. Types of Airway Used



Data Merging Project

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Folders
SnagIt Catalog
My Computer
3½ Floppy (A:)
Local Disk (C:)
Data (D:)
ccsi
CCSIEMS
IMMEDIATEECG
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FTP
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12 lead
allen
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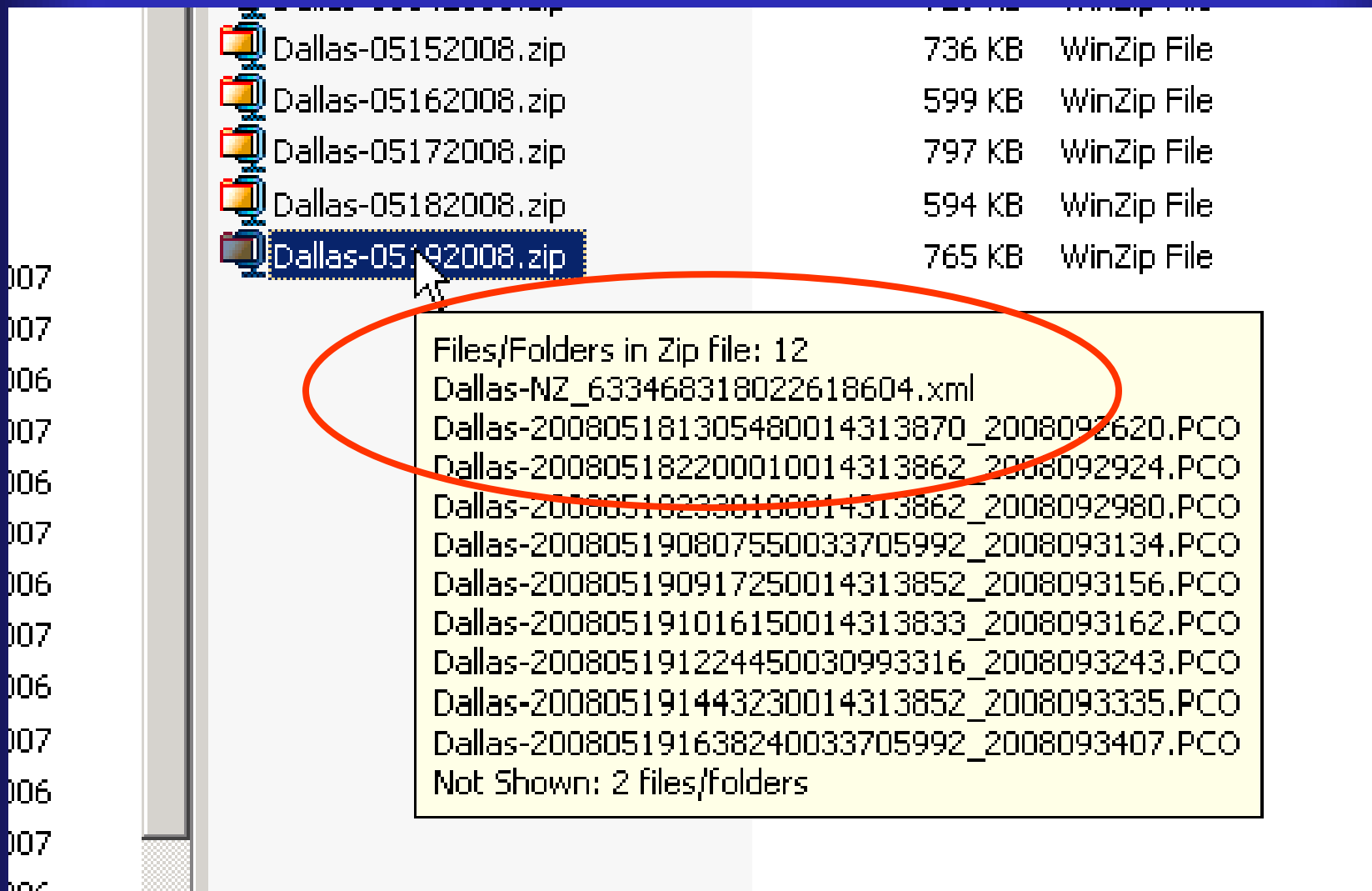
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Dallas-200805191016150014313833_2008093162.PCO
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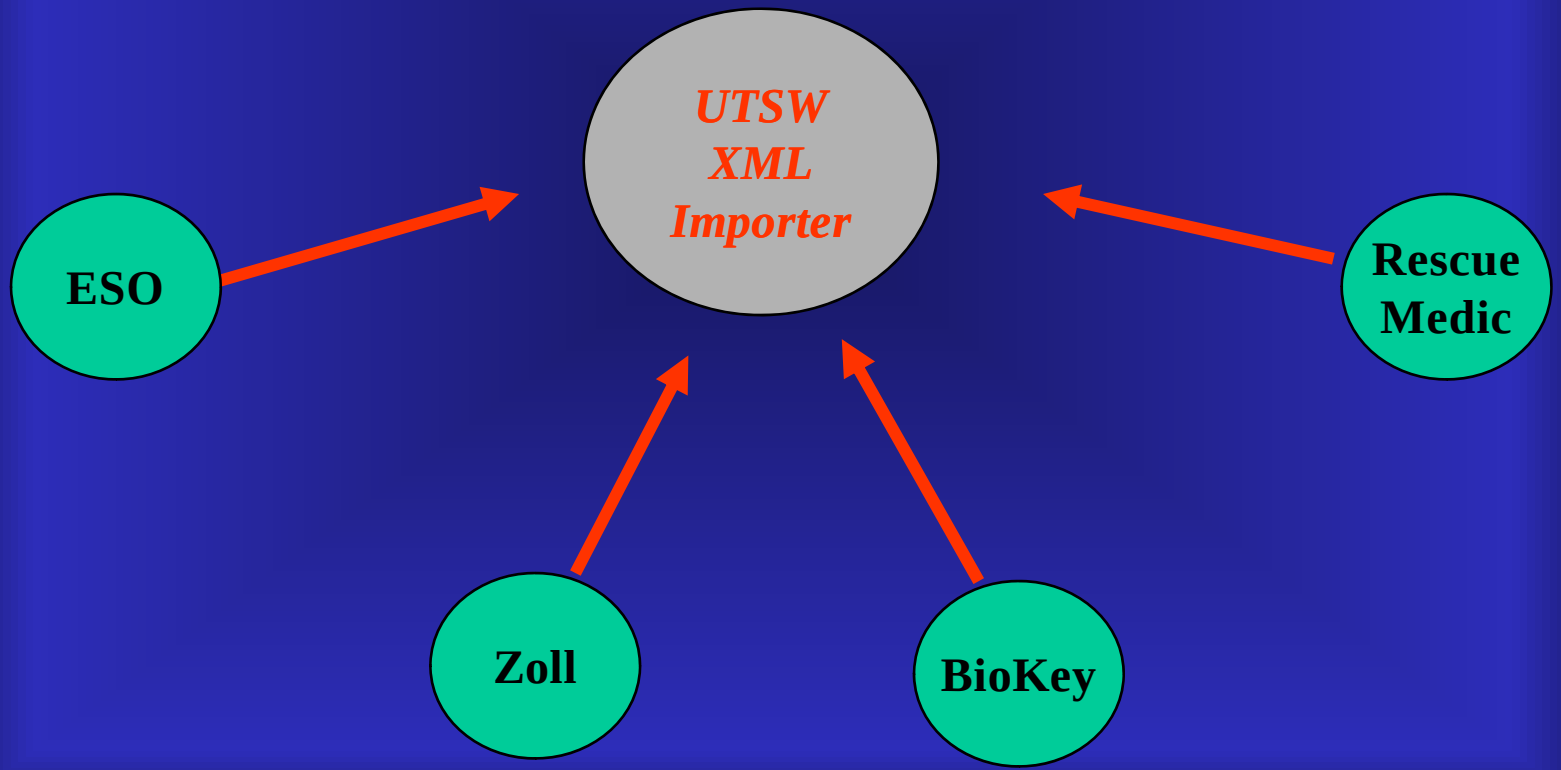
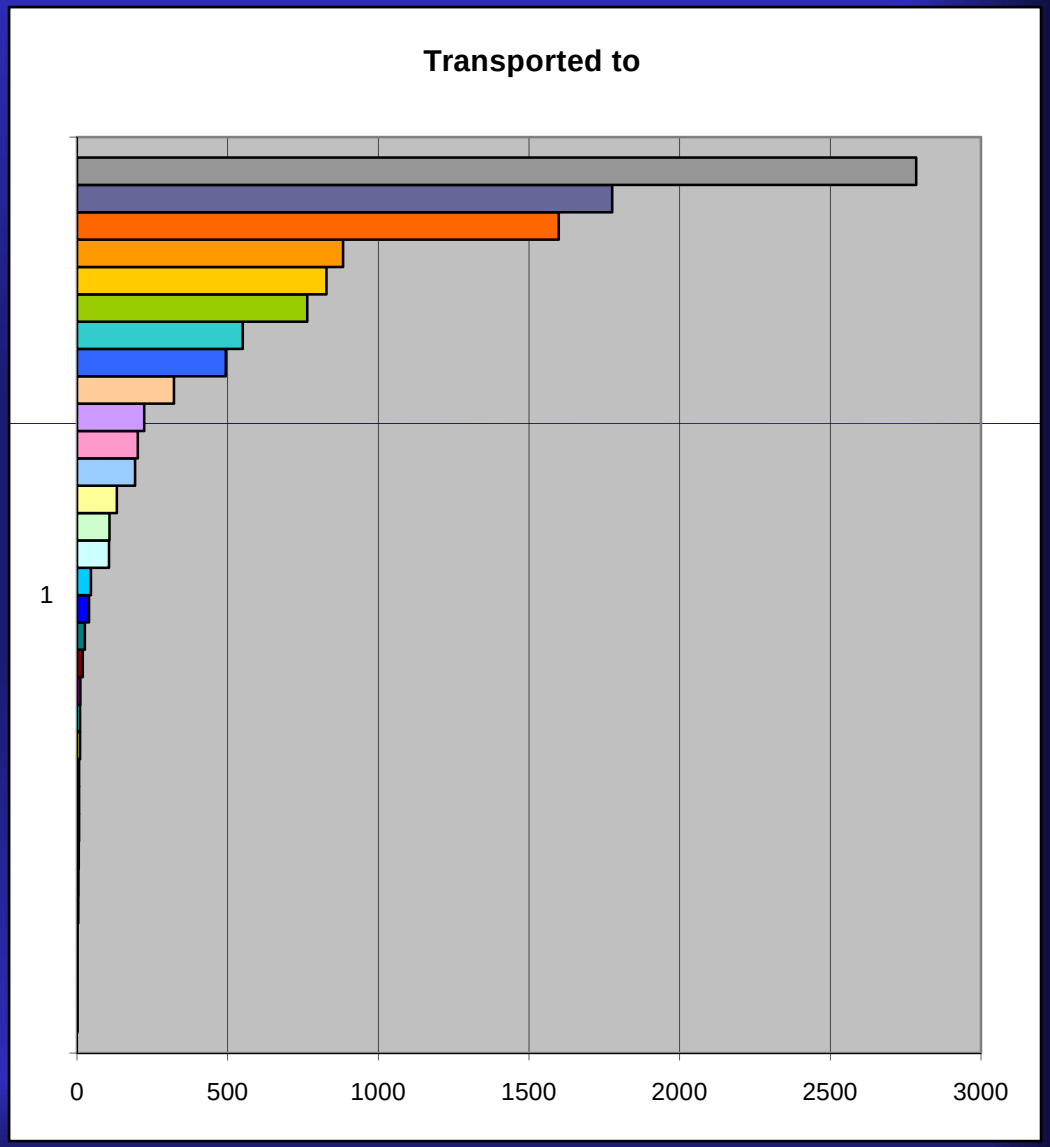
Not Shown: 2 files/folders

Data Merging Project



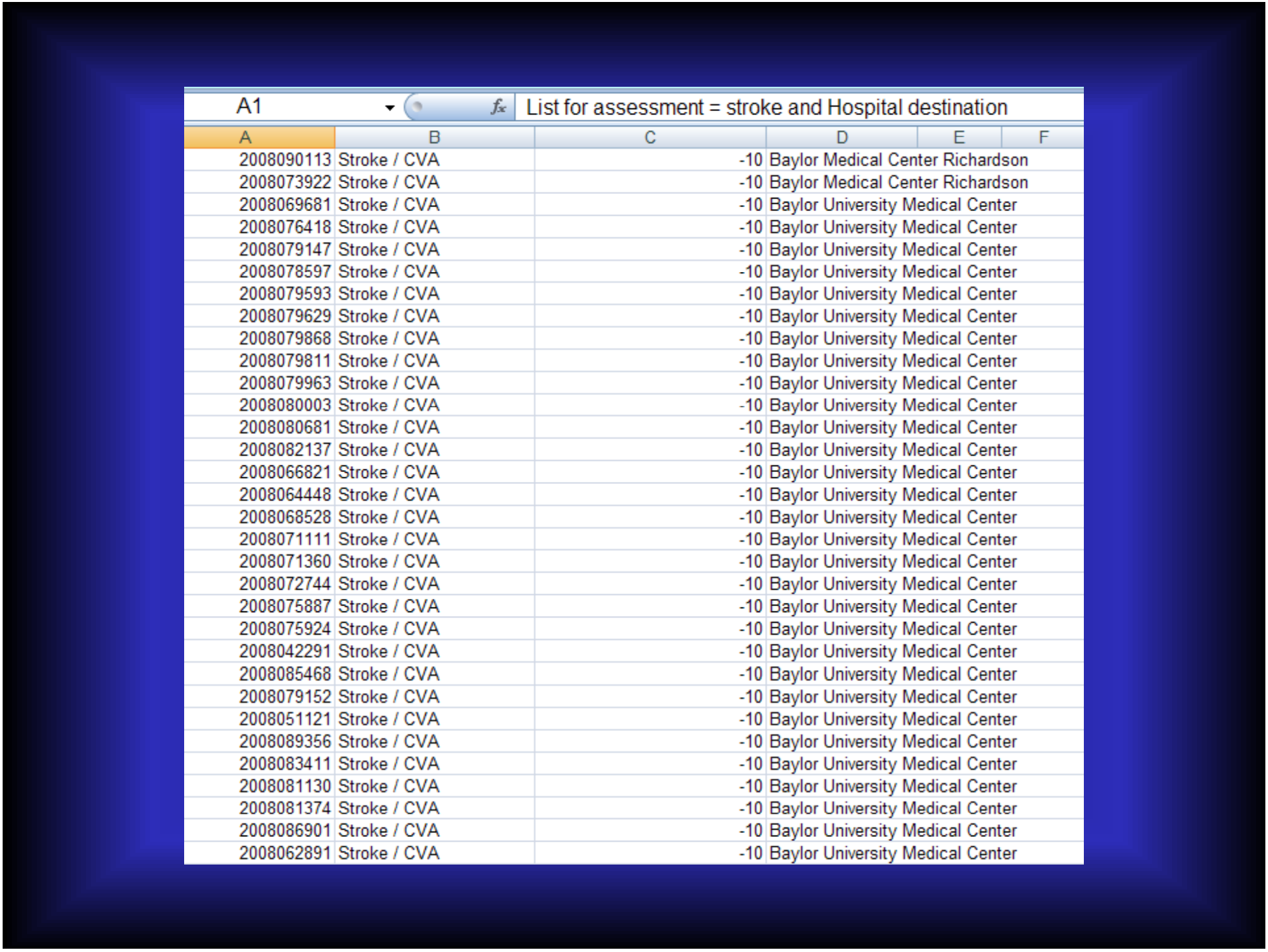
Count for 'Transport=Yes sorted by Destination	
Total	Destination
1	Baylor Medical Center of Grapevine
1	Methodist Central Hospital
1	Richardson Regional Medical Center
1	St. Paul Medical Center
4	Medical Center of Lewisville
5	Baylor Medical Center Richardson
6	Baylor Medical Center of Dallas
7	Baylor - Plano
7	Baylor Medical Center of Plano
7	Medical Center at Los Colinas
10	Baylor Medical Center of Irving
10	Childrens Medical Center
11	Saint Paul Medical Center
19	Dallas Regional Medical I 30
26	Trinity Medical Center
40	Medical Center of Plano
46	Baylor Medical Center Garland
106	Veterans Medical Center
108	Presbyterian Hospital of Plano
132	RHD Memorial Medical Center
193	Dallas Regional Medical Galloway
202	Renaissance Hospital
223	RHD Memorial Hospital
322	UTSW - St. Paul
494	Childrens Medical Center of Dallas
550	Doctors Hospital
764	Charlton Methodist Hospital
828	Medical City Dallas
883	Presbyterian Hospital of Dallas
1599	Methodist Medical Center
1776	Parkland Memorial Hospital
2785	Baylor University Medical Center



List Incident Number for chief complaint=Seizure and Patient not transported and Age <=3

Incident No	Agency	Chief Complaint	Transport Code	Age
2008050997	xxxxx	Seizure	4835	1
2008089508	xxxxx	Seizure	4835	2
2008043986	xxxxx	Seizure	4835	1
2008044066	xxxxx	Seizure	4835	1
2008044862	xxxxx	Seizure	4835	1
2008045048	xxxxx	Seizure	4835	1
2008045621	xxxxx	Seizure	4835	2
2008044004	xxxxx	Seizure	4835	1
2008050318	xxxxx	Seizure	4835	2
2008052835	xxxxx	Seizure	4835	1
2008057467	xxxxx	Seizure	4835	2
2008058948	xxxxx	Seizure	4835	1
2008060175	xxxxx	Seizure	4835	1
2008062776	xxxxx	Seizure	4835	2
2008063504	xxxxx	Seizure	4835	1
2008065033	xxxxx	Seizure	4835	1
2008066372	xxxxx	Seizure	4835	1
2008067453	xxxxx	Seizure	4835	1
2008069788	xxxxx	Seizure	4835	1
2008073564	xxxxx	Seizure	4835	1
2008079496	xxxxx	Seizure	4835	1
2008079817	xxxxx	Seizure	4835	1
2008083597	xxxxx	Seizure	4835	1

Incident number for Chief complaint = Chest Pain and patient not transported, by age > 35				
Incident number	**Agency**	**Chief Complain**	**Transport Code**	**Age**
2008081535	xxxxx	Chest Pain (Medical)	4835	43
2008081533	xxxxx	Chest Pain (Medical)	4835	50
2008081465	xxxxx	Chest Pain (Medical)	4835	46
2008081913	xxxxx	Chest Pain (Medical)	4835	43
2008081924	xxxxx	Chest Pain (Medical)	4835	53
2008082931	xxxxx	Chest Pain (Cardiac)	4835	43
2008083033	xxxxx	Chest Pain (Medical)	4835	56
2008083067	xxxxx	Chest Pain (Medical)	4835	77
2008083141	xxxxx	Chest Pain (Cardiac)	4835	73
2008083224	xxxxx	Chest Pain (Medical)	4815	50
2008050476	xxxxx	Chest Pain (Medical)	4835	49
2008051070	xxxxx	Chest Pain (Medical)	4835	54
2008051143	xxxxx	Chest Pain (Medical)	4835	67
2008051293	xxxxx	Chest Pain (Medical)	4835	43
2008051695	xxxxx	Chest Pain (Medical)	4835	59
2008043147	xxxxx	Chest Pain (Cardiac)	4835	44
2008043160	xxxxx	Chest Pain (Medical)	4830	51
2008043843	xxxxx	Chest Pain (Medical)	4835	55
2008043922	xxxxx	Chest Pain (Medical)	4830	43
2008044084	xxxxx	CHEST PAIN WHEN STERN	4835	36
2008044105	xxxxx	Chest Pain (Medical)	4835	67



A1 | List for assessment = stroke and Hospital destination

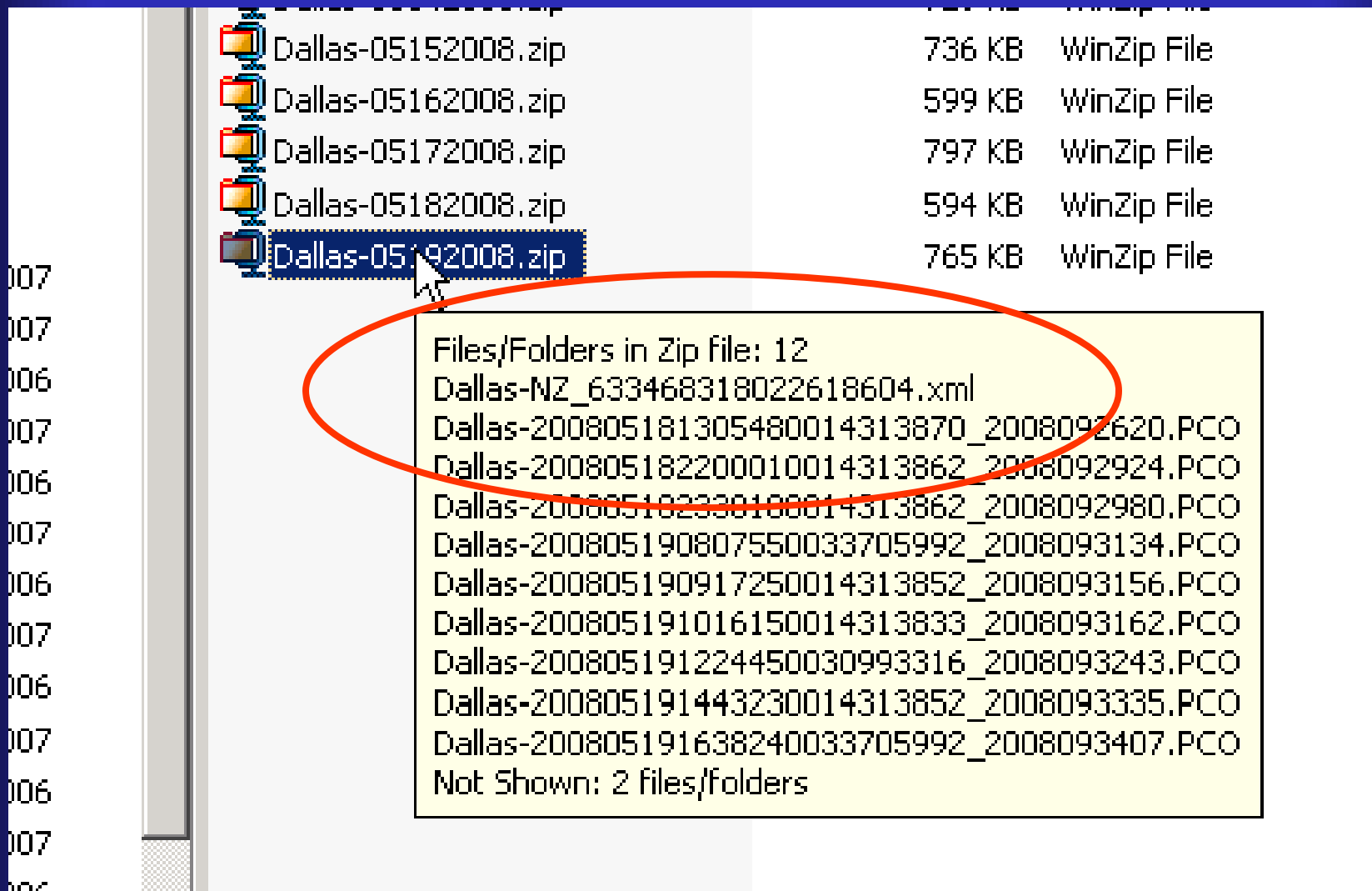
A	B	C	D	E	F
2008090113	Stroke / CVA	-10	Baylor Medical Center Richardson		
2008073922	Stroke / CVA	-10	Baylor Medical Center Richardson		
2008069681	Stroke / CVA	-10	Baylor University Medical Center		
2008076418	Stroke / CVA	-10	Baylor University Medical Center		
2008079147	Stroke / CVA	-10	Baylor University Medical Center		
2008078597	Stroke / CVA	-10	Baylor University Medical Center		
2008079593	Stroke / CVA	-10	Baylor University Medical Center		
2008079629	Stroke / CVA	-10	Baylor University Medical Center		
2008079868	Stroke / CVA	-10	Baylor University Medical Center		
2008079811	Stroke / CVA	-10	Baylor University Medical Center		
2008079963	Stroke / CVA	-10	Baylor University Medical Center		
2008080003	Stroke / CVA	-10	Baylor University Medical Center		
2008080681	Stroke / CVA	-10	Baylor University Medical Center		
2008082137	Stroke / CVA	-10	Baylor University Medical Center		
2008066821	Stroke / CVA	-10	Baylor University Medical Center		
2008064448	Stroke / CVA	-10	Baylor University Medical Center		
2008068528	Stroke / CVA	-10	Baylor University Medical Center		
2008071111	Stroke / CVA	-10	Baylor University Medical Center		
2008071360	Stroke / CVA	-10	Baylor University Medical Center		
2008072744	Stroke / CVA	-10	Baylor University Medical Center		
2008075887	Stroke / CVA	-10	Baylor University Medical Center		
2008075924	Stroke / CVA	-10	Baylor University Medical Center		
2008042291	Stroke / CVA	-10	Baylor University Medical Center		
2008085468	Stroke / CVA	-10	Baylor University Medical Center		
2008079152	Stroke / CVA	-10	Baylor University Medical Center		
2008051121	Stroke / CVA	-10	Baylor University Medical Center		
2008089356	Stroke / CVA	-10	Baylor University Medical Center		
2008083411	Stroke / CVA	-10	Baylor University Medical Center		
2008081130	Stroke / CVA	-10	Baylor University Medical Center		
2008081374	Stroke / CVA	-10	Baylor University Medical Center		
2008086901	Stroke / CVA	-10	Baylor University Medical Center		
2008062891	Stroke / CVA	-10	Baylor University Medical Center		

XML Importer for NEMSIS Dataset

Contact me at UT Southwestern if you need to be able to link the dataflow from multiple NEMSIS-compliant ePCR's

ECG Importing

This database also allows linked archived ECG files to be entered into the dataset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Dallas-05182008.zip 594 KB WinZip File
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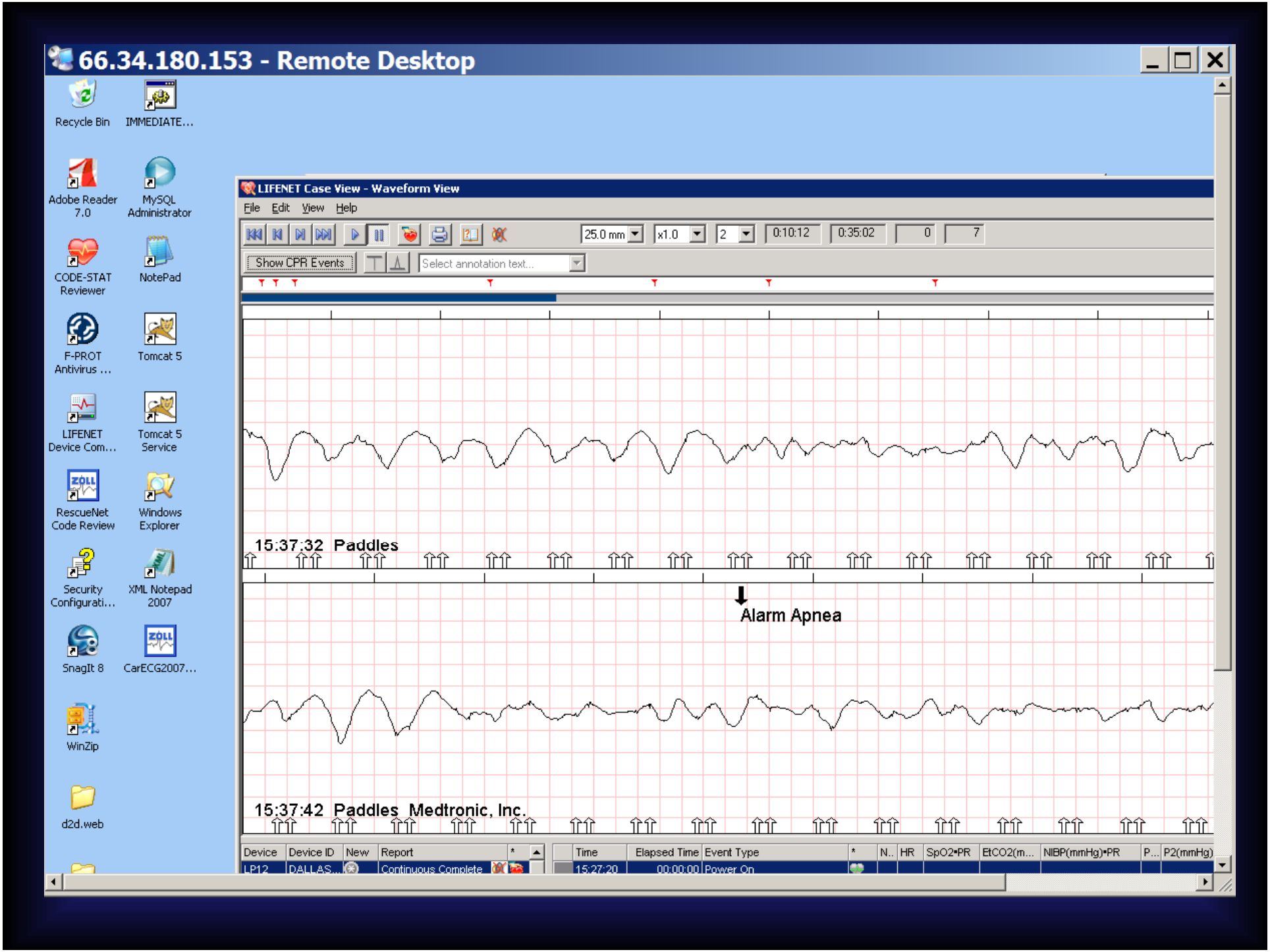
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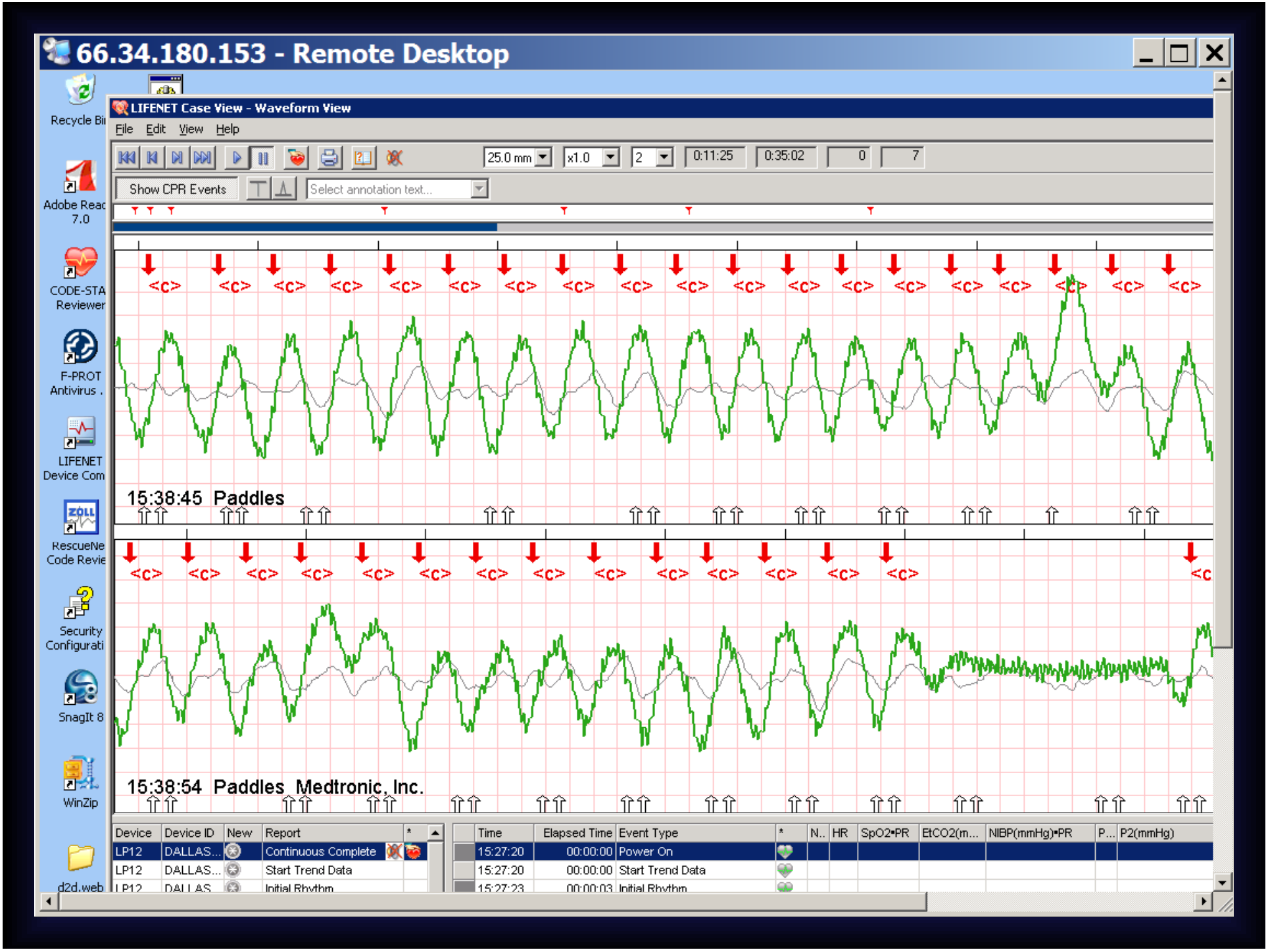
Recycle Bin
IMMEDIATE...
Adobe Reader 7.0
MySQL Administrator
CODE-STAT Reviewer
NotePad
F-PROT Antivirus ...
Tomcat 5
LIFENET Device Com...
Tomcat 5 Service
RescueNet Code Review
Windows Explorer
Security Configurati...
XML Notepad 2007
SnagIt 8
CarECG2007...
WinZip
d2d.web
LIFENET Case View - Waveform View
File Edit View Help
25.0 mm
x1.0
2
0:10:12
0:35:02
0
7
Show CPR Events
Select annotation text...
15:37:32 Paddles
Alarm Apnea
15:37:42 Paddles Medtronic, Inc.
Device
Device ID
New
Report
Time
Elapsed Time
Event Type
N..
HR
SpO2•PR
EtCO2(m...
NIBP(mmHg)•PR
P...
P2(mmHg)
LP12
DALLAS...
Continuous Complete
15:27:20
00:00:00
Power On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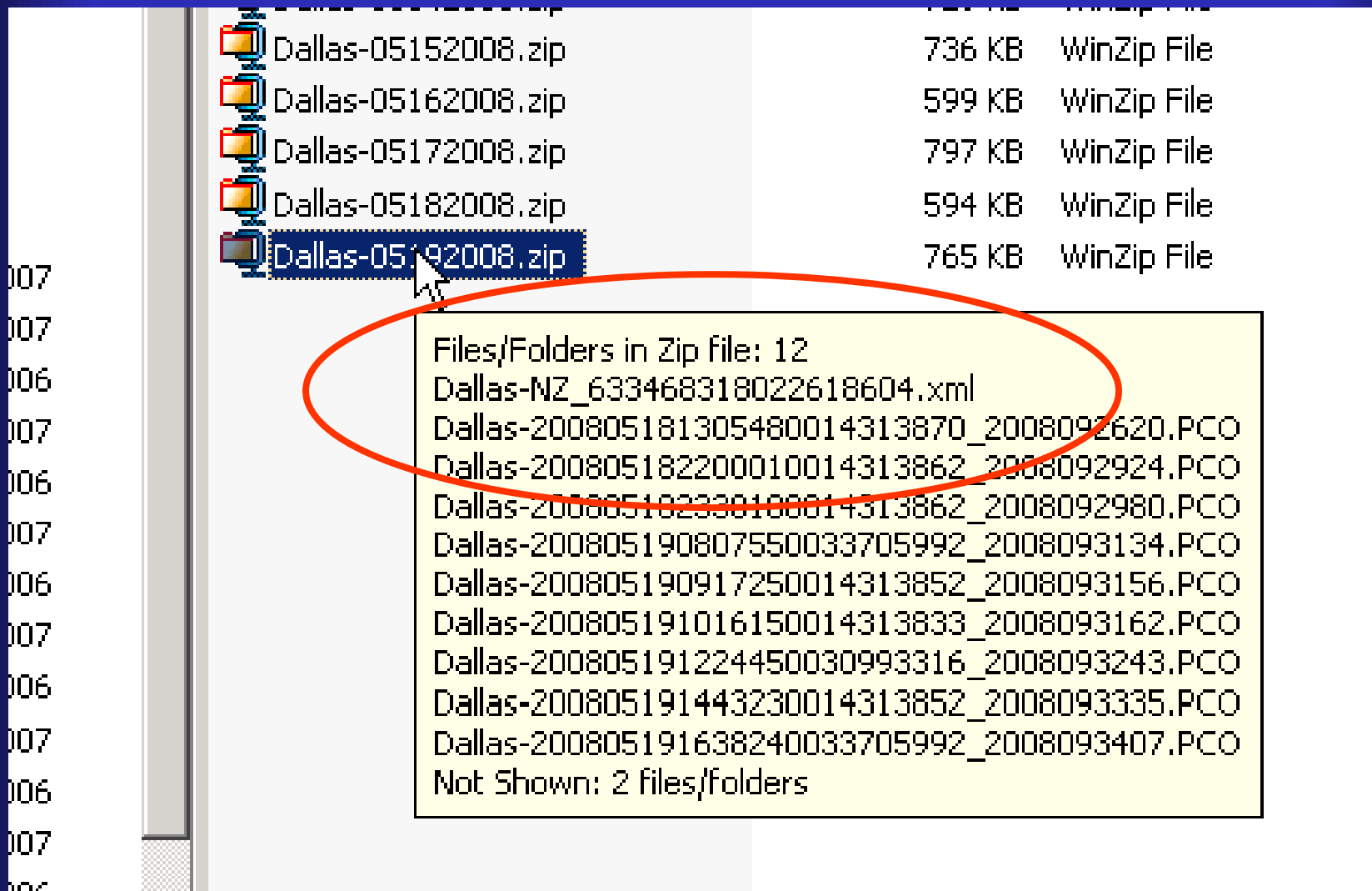
LIFENET Case View - Waveform View
File Edit View Help
25.0 mm
x1.0
2
0:11:25
0:35:02
0
7
Show CPR Events
Select annotation text...
15:38:45 Paddles
15:38:54 Paddles Medtronic, Inc.
Device Device ID New Report
LP12 DALLAS... Continuous Complete
LP12 DALLAS... Start Trend Data
Time Elapsed Time Event Type
15:27:20 00:00:00 Power On
15:27:20 00:00:00 Start Trend Data
HR SpO2•PR EtCO2(m... NIBP(mmHg)•PR P... P2(mmHg)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Dallas-200805181305480014313870_2008092620.PCO
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Dallas-200805191016150014313833_2008093162.PCO
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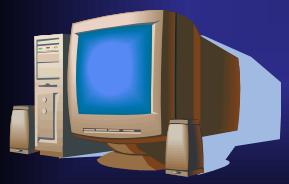
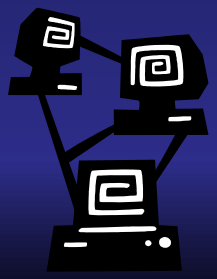
Dallas-200805191443230014313852_2008093335.PCO
Dallas-200805191638240033705992_2008093407.PCO
Not Shown: 2 files/folders

Electronic EMSIS
Components

- Hardware
  - Desktop
  - Notebook
  - PDA / Handheld
  - Tablet PC
- Software
  - Free
  - Commercial

- Data Transfer
  - Network
  - Internet
    - Web-Based
    - E-Mail
  - Transfer Media
    - Floppy discs
    - Compact Flash Card
    - USB Drive (Thumbdrive)





Electronic EMSIS
System Options

- Fixed vs. Mobile
- Desktop vs. Portable PC
- Regular or Ruggedized

Data Ownership

- General principle
  - The EMS agency owns the data
- HIPPA issues
  - Mandatory reporting
  - Business Associate agreement
- Protection from civil discovery
  - State-specific professional standards review laws
- Freedom of Information Act (FoIA)
  - Exemption for release of certain information
- EMS Medical Directors must know how their state's laws protect data

Outcome Data

- Essential component of effective EMSIS
  - Are we making a difference?
  - Correlate EMS impression to ED diagnosis
- Hospital and EMS data sharing
  - Hospitals increasingly desire EMS information
    - Trauma registry, MI / stroke process improvement
- Manual vs. automated linkage
  - Start simple
    - Selected sentinel events
    - All cardiac arrests, major traumas, etc.

External EMSIS Applications

- Public Health
  - Syndromic surveillance
- Injury Control
  - Linkage to crash data
- Research
  - Uniform data definitions
  - Multi-system studies
- Reimbursement
  - Support enhancements to rate schedules

Summary Thoughts

- Choose your software very carefully
- Know your IT support going in
- See the hardware and software work
- **BEFORE YOU BUY IT**
- Think about the hardware
- thoroughly **BEFORE** you commit

Remember!!!

…uh…and

may NEVER!!!

ONE MILLION DOLLARS
THE UNITED STATES OF AMERICA
1,000,000
1,000,000
G75302645A
ATLANTA, GA
1,000,000
G75302645A
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ONE MILLION DOLLARS

…and above all…

Steal good ideas freely from people who have already figured things out and have it working

Acknowledgement

Much of the content
of this presentation
is from the work of
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…among us geeks, the word "geek" is a high compliment!

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