

Dan Smiley, Chief Deputy Director, California EMS Authority

CORE MEASURE CONCEPTS



For this morning...

- Related activities & participant roles
 - Authority
 - Reports to legislature
- Quality improvement
 - Tools for any EMS systems
 - The case for standardization
- Data
 - Next steps for CEMISIS



Your Core Measures Experience...

Will depend on...



who you are the activity the audience

Person by Jens Nilsson and *Group* by Amar Chadgar from The Noun Project



Activities Related to Core Measures

	EMSA	Local EMS Agencies	EMS Provider Agencies
Statewide integration	✓		
Regional assessment	✓	✓	
Plan, implement, evaluate systems		✓	
Quality improvement guidelines	✓	✓	
Data collection & evaluation	✓	✓	✓
Quality improvement program	✓	✓	✓



Statutory Authority

	EMSA	Local EMS Agencies	EMS Provider Agencies
Statewide integration	HS 1797.1		
Regional assessment	HS 1797.102		
Plan, implement, evaluate systems		HS 1797.204	
Quality improvement guidelines	HS 1797.174		
Data collection & evaluation	HS 1797.103	HS 1797.103	22 CCR
Quality improvement program	HS 1797.103		

REGULATORY AUTHORITY
CCR, Title 22, Division 9, Chapters 4 and 12



Legislative Mandate

Annual report to the Legislature:

- effectiveness of EMS systems
- impact on death and disability (HS 1797.121)



AN EMS PATIENT CARE EVENT




Core Measures as quality improvement tools

Quality improvement is NOT a destination!

Core Measures as quality improvement tools

It's a continuous process...

Core Measures as quality improvement tools

It's a continuous process...

... with rapid cycles of improvement.

Quality Improvement Frameworks

Donabedian's Quality of Care Framework

- 1980s
- Conceptualized three quality-of-care dimensions
 - **Structure** (Attributes of Setting)
 - **Process** (Good Medical Practices)
 - **Outcome** (Impact of Care)

Quality improvement frameworks

IOM's Six Aims for Improvement

1	Safe	Avoiding injuries to patients from the care that is intended to help them
2	Effective	Services based on scientific knowledge to all who could benefit
3	Patient Centered	Care that is respectful of and responsive to individual patient preferences, needs and values.
4	Timely	Reducing waits and harmful delays
5	Efficient	Avoiding waste of equipment supplies, ideas, and energy
6	Equitable	Care does not vary in quality because of gender, ethnicity, geographic location or income.



Quality Improvement Frameworks

PDCA Cycle

- Plan** Plan a change or test how something works
- Do** Carry out plan
- Check** Look at results
- Act** Decide actions for improvement

Quality Improvement Frameworks

Six Sigma

DMAIC model

- Define
- Measure
- Analyze
- Improve
- Control

Our EMS System needs Standardized Core Measures.

Our EMS System needs Standardized Core Measures.

Our EMS System needs Standardized Core Measures.



California EMS Core Measures

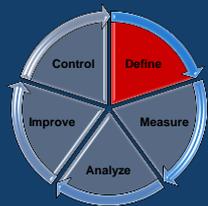
10 Sets
 28 Measures total
 21 Measures in 2013
on Data Years (2009), 2010, 2011, (2012)
submissions due to EMSA by May 31, 2013
 7 Additional Measures in 2014
on Data Year 2012



Our EMS System needs Standardized Core Measures.



Our EMS System needs Standardized Core Measures.



Now we have defined measures.



Our EMS System needs Standardized Core Measures.



Now we have defined measures.

What about our EMS system data?



What is CEMSIS?

California EMS Information System
 3 Parts
 1. Concept of having a Statewide Data System
 2. Data Dictionary
 3. Software Platform that we use to collect/analyze data



Data system gaps

From CHCF project,

we learned:

Analysis: Core Measure data requirements + CEMSIS dictionary



- CEMSIS insufficient to answer priority questions

Analysis: Current CEMSIS data quality



- Data quality varies greatly across state
- Fragmented adoption and implementation



Additional EMS data system gaps

ePCR systems LEMSA level Provider level	ePCR device at point-of-service EMS data systems at the LEMSA level NEMSIS 3 compliance
Real-time HIE between hospital and field	NEMSIS 3 → HL7 standards Bidirectional communication pathways
eTracking patients across jurisdictional boundaries	Wrist-band identifiers at patient registration

Future of CEM SIS

Vision

Shared Implementation:

EMSA	LEMSAs	EMS Providers	Hospitals
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NEMSIS 3

New Data Elements Definitions

Not compatible with CEM SIS/NEMSIS 2.2.1

Transformation to V3 may require a separate database

The Case for NEMSIS 3 | Detail & Clarity

NEMSIS 2.2.1	NEMSIS 3
Patient Care Events	Patient Care Events
Injury/disease event	Injury/disease event
911 first contact	911 first contact
EMS dispatch	EMS dispatch
Arrival on scene	Arrival on scene
Patient care	Patient care
Transport	Transport
Arrival at destination	Arrival at destination
Inpatient care	Inpatient care
Sub-acute recovery	Sub-acute recovery

The Case for NEMSIS 3 | Enhanced "Structure" Data

Processes Injury/disease event 911 first contact EMS dispatch Arrival on scene Patient care Transport Arrival at destination Inpatient care Sub-acute recovery	Structure
	Hospitals Providers LEMSAs Locations Policies
	OUTCOMES!

The Case for NEMSIS 3 | One Standard for Everyone

The entire NEMSIS 3 data dictionary



The Case for NEMSIS 3 | One Standard for Everyone

Your Data Dictionary Requirements depend on:

who you are your activities your audience

"Person" by Jens Tillmig and "Group" by Amar Chadgar from The Noun Project

The Case for NEMSIS 3 | One Standard for Everyone

The entire NEMSIS 3 data dictionary

Providers collect the most data but they may not need every single NEMSIS 3 element.

The Case for NEMSIS 3 | One Standard for Everyone

The entire NEMSIS 3 data dictionary

LEMSAs may not need quite as much data because they have different roles and responsibilities.

The Case for NEMSIS 3 | One Standard for Everyone

The entire NEMSIS 3 data dictionary

The state may require less data than a LEMSA chooses to collect, but not less than what's required for state-level activities and submission to NEMSIS

The Case for NEMSIS 3 | NEMSIS is phasing out Version 2

January 1, 2015	NEMSIS will no longer accept Version 2.2.1 data
January 1, 2014	NEMSIS will begin accepting Version 3 data

"The Ask"

- LEMSAs begin work on NEMSIS 3 adoption **ASAP**
- EMS Providers work to implement ePCR, using NEMSIS 3 data standards and tools
- Assess local capability for HIE
- "One Patient, One Record"



Craig Stroup, Contra Costa County EMS Agency

TRANSFORMING DATA INTO INFORMATION AND QUALITY PROCESSES



Some Important Distinctions About Continuous Quality Improvement

- Soft vs. hard evidence
- Sometimes close is good enough
- Blame the process not the person
- The process is "perfectly designed" to get the outcome.

Why the sport of baseball...



...is a really good quality improvement program:

Quality indicators (attributes) of a baseball system

Structure	+	Process	=	Outcome
Things	+	Activities	=	Results
Field, Players	+	Hits, Outs	=	Score
AEDs	+	Defibrillations	=	Survival

"He who has data is king"



Quality Indicator

Asking the question

Answering the question

- Customers
- Patients
- Clinicians
- Subject Experts

- Data Specialists
- IT Support
- Technical Experts
- Interface Experts



The ISS Part I | **What is the question?**

Customers
Patients
Clinicians
Subject Experts

CONSENSUS →

Definitions

- Name
- Description
- Type of measure
- Numerator
- Denominator
- Final value
- Reporting format
- Benchmarking
- References

The ISS Part II | **How will it be answered?**

Customers
Patients
Clinicians
Subject Experts

COLLABORATION →

Standardized Data Approach

- Inclusion/exclusion criteria
- Source
- Purpose & rationale
- Query & sampling
- Aggregation

Testing

- Statistical, trending, process

Reports

- Formulas, values, formats

The Indicator Spec Sheet (ISS)

Going from brain to paper...



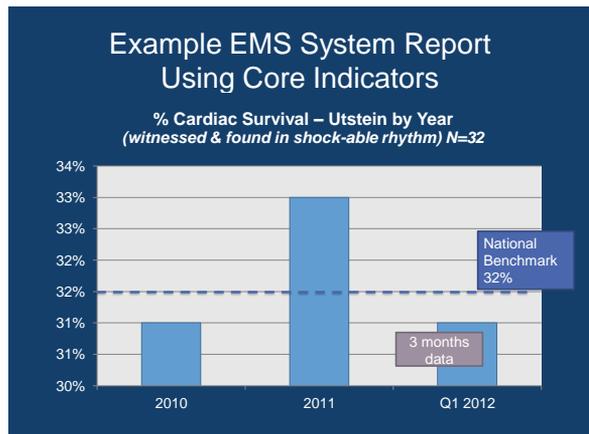
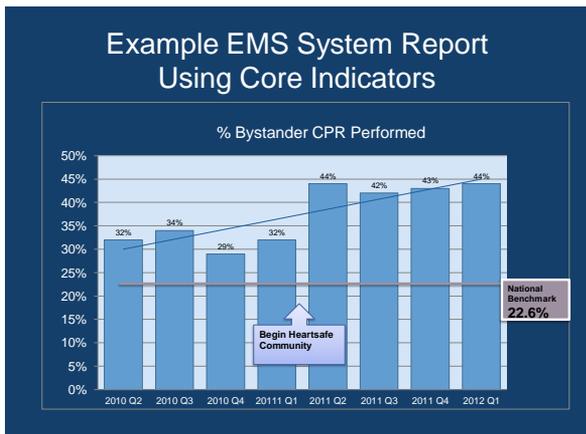
Better Data
Davis Balestracci

There are four key questions to any data collection that should always be clarified prior to beginning:

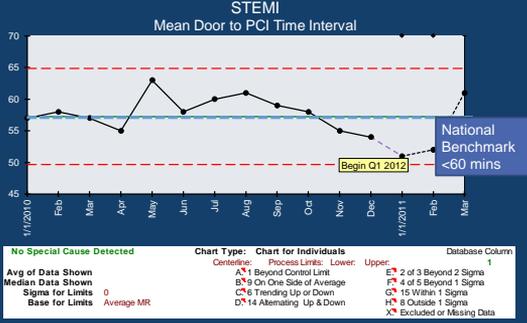
1. Why collect the data?
2. What methods will be used for the analysis?
3. What data will be collected?
4. How will the data be measured?

There are four more questions relating to the logistics of the data collection process.

1. How often will the data be collected?
2. Where will the data be collected?
3. Who will collect the data?
4. What training is needed for the data collectors?



Example EMS System Report Using Core Indicators



Example of Completed ISS Exercise #1

Indicator ID	Acute Coronary Syndrome (ACS-2)	
Indicator Name	12 Lead ECG Performance	
Description	Acute Coronary Syndrome (ACS) Patients who receive 12 Lead ECG by Paramedics	
Type of Measure	Process	
Reporting Value Units	[%] Percentage by month Jan to Dec 2011	
Numerator Statement (population)	Number of patients creating a provider impression of chest pain or discomfort	
Denominator Inclusion Criteria	Criteria	Data Elements
	• Chest Pain/Discomfort	
	• Cardiac chest pain	
Numerator Statement (sub-population)	Number of patients who have a 12 lead ECG performed by paramedics	
Numerator Inclusion Criteria	Criteria	Data Elements
	• Procedures	
	• 12 lead ECG	
Exclusion Criteria	Criteria	Data Elements
	• none	
Indicator Formula Numeric Expression	The formula is to divide (I) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value. Indicator is expressed numerically is ND ±% per each month	
Example of Final Reporting Values (number and units)	Jan = 90% Feb = 92% Mar = 89%	Apr = 87% May = 88% Jun = 90% Jul = 90% Aug = 90% Sep = 92% Oct = 92% Nov = 90% Dec = 89%

Lessons Learned

- Indicators have to be formed by consensus of the stakeholders and subject experts
- Consensus among stakeholders is the key to trust
- Trust is the key to having meaningful indicators and data
- The more you know what is wrong with your data the more useful it becomes.
- Many times close is good enough
- It's the third or fourth time, that you start to get good
- The discussion is often more important than the outcome
- Cutting costs does not eliminate the cause of costs

Looking at "Our Stuff" A Four Step CQI Decision-Making Process

- Visualize
- Analyze
- Compromise
- Actualize

Three Primary Domains of Evaluation



Process Analysis

Evaluation of data by using graphic representations of activities which show trends and variations over time.



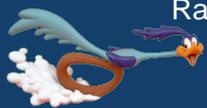
Evaluation of Trauma On-Scene Interval Indicator

1. Was the process safe and in control?
2. Is there an opportunity to increase patient safety?
3. Did it meet performance expectations?
4. Is there an opportunity to increase performance levels?
5. Is there an opportunity to institute a cost saving initiative?
6. Is there an opportunity to institute an operational efficiency initiative?
7. Was an Action Plan Initiated?

Taking Action



- by far the weakest link in process
 - takes the most energy
 - developing the "Action Plan"



Rapid Cycle Improvement (RCI) for EMS

What is rapid cycle improvement?

- Traditional quality improvement (PDCA) process, except...
- Work accelerated for implementation within 90 day cycle

When should RCI be initiated?

- Most applicable to system issues which require timely resolution due to high risk or high frequency attributes
- Highly suitable for EMS

Checking Action



- what it is?
- how it is measured?
- what is the benchmark or end point?
- how will it be reviewed?

Example of Completed ISS Exercise #1

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Numerator Inclusion Criteria	Criteria	Data Elements
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	Jul = 90% Aug = 90% Sep = 92%	Oct = 92% Nov = 90% Dec = 89%

*"Coming together is a beginning.
Keeping together is progress.
Working together is success."*

Henry Ford



Core Measures Task Force Members

REVIEW OF CORE MEASURE SETS



TRAUMA

- TRA-1 Scene time for severely injured patients
- TRA-2 Direct transport to trauma center for severely injured patients



TRA-1 Scene time for severely injured patients

TYPE	process
REPORTED IN	minutes
CALCULATION	90th percentile of distribution in ascending order

- Type of service requested is 911 response to scene
- Response mode is lights and sirens



TRA-1 Scene time for severely injured patients

TYPE	process
REPORTED IN	minutes
CALCULATION	90th percentile of distribution in ascending order

- Type of service requested is 911 response to scene
- Response mode is lights and sirens
- Responding EMS vehicle travels by ground
- Impression is blunt or penetrating injury
- specific vital sign indicators
- logical times available
- Date of incident is 2009 [2010, 2011]



TRA-2 Direct transport to trauma center for severely injured patients

TYPE	process
REPORTED IN	percentage
CALCULATION	numerator divided by denominator

- All denominator criteria
- Receiving hospital is trauma center
- Type of service requested is 911 response to scene
- Response mode is lights and sirens
- Impression is blunt or penetrating injury
- specific vital sign indicators
- patient transported to hospital
- Date of incident is 2009 [2010, 2011]



ACUTE CORONARY SYNDROME

- ACS-1 Aspirin administration for chest pain/discomfort
- ACS-2 12 lead EKG performance
- ACS-3 Scene time for suspected heart attack patients
- ACS-4 Advance hospital notification for suspected acute coronary syndrome (2014)
- ACS-5 Direct transport to PCI center for patients meeting criteria




ACS-1 Aspirin administration for chest pain/discomfort

TYPE	process
REPORTED IN	percentage
TO CALCULATE	divide numerator by denominator

All denominator criteria

Patient given aspirin by EMS personnel

Age is 35 years or older

Provider impression is chest pain / discomfort

Date of incident is within 2009 [2010, 2011]



ACS-2 Performance of 12-Lead EKG

TYPE	process
REPORTED IN	percentage
TO CALCULATE	divide numerator by denominator

All denominator criteria

Patient received 12 Lead EKG by paramedic

Age is 35 years or older

Provider impression is chest pain / discomfort

Date of incident is within 2009 [2010, 2011]



ACS-3 Scene time for suspected heart attack patients

TYPE	process
REPORTED IN	minutes
TO CALCULATE	Arrange values in ascending order, take 90 th percentile of distribution

Emergency medical service is requested

Responding EMS vehicle travels by ground

Response mode to scene is lights and sirens

Date of incident is 2009 [2010, 2011]

Scene times are available and logical



ACS-4 Advance hospital notification for suspected acute coronary syndrome

To be developed for 2014




ACS-5 Rate of direct transport to PCI center for patients meeting criteria

TYPE	process
REPORTED IN	percentage
TO CALCULATE	divide numerator by denominator

All denominator criteria

Patient transported directly to interventional cardiac cath. lab facility

Age is 35 years or older

ECG by paramedic indicates STEMI

Date of incident is within 2009 [2010, 2011]



CARDIAC ARREST

CAR-1 AED prior to EMS arrival

CAR-2 Return of spontaneous circulation after out-of-hospital cardiac arrests

CAR-3 Out-of-hospital cardiac arrest survivals to ED discharge

CAR-4 Out-of-hospital cardiac arrest survivals to hospital discharge




CAR-1 AED prior to EMS arrival

To be developed for 2014

CAR-2 Return of spontaneous circulation for out-of-hospital cardiac arrests

All denominator criteria	TYPE	process
Patient has return of spontaneous circulation	REPORTED IN	percentage
	TO CALCULATE	divide numerator by denominator

Patient experiences cardiac arrest (before or after EMS arrival)

Cardiac arrest etiology is presumed cardiac

CPR attempted

Date of incident is within 2009 [2010, 2011]

CAR-3 Out-of-hospital cardiac arrest survivals to ED discharge

All denominator criteria	TYPE	outcome
ED disposition is hospital admission, transfer, or discharge home	REPORTED IN	percentage
	TO CALCULATE	divide numerator by denominator

Patient experiences cardiac arrest (before or after EMS arrival)

Cardiac arrest etiology is presumed cardiac

CPR attempted

Date of incident is within 2009 [2010, 2011]

CAR-4 Out-of-hospital cardiac arrest survivals to hospital discharge

All denominator criteria	TYPE	outcome
Hospital disposition is transfer or discharge home	REPORTED IN	percentage
	TO CALCULATE	divide numerator by denominator

Patient experiences cardiac arrest (before or after EMS arrival)

Cardiac arrest etiology is presumed cardiac

CPR attempted

Date of incident is within 2009 [2010, 2011]

STROKE

STR-1 Identification of suspected stroke in the field

STR-2 Glucose testing for suspected stroke patients

STR-3 Scene time for suspected stroke patients

STR-4 Advance hospital notification for suspected stroke

STR-5 Direct transport to stroke center for patients meeting criteria

STR-1 Identification of suspected stroke in the field (2014)

To be developed for 2014



STR-2 Glucose testing for suspected stroke patients

All denominator criteria	TYPE	process
Patient received glucose testing by EMS	REPORTED IN	percentage
	TO CALCULATE	divide numerator by denominator

Provider impression is neurological deficit secondary to CVA/TIA

Patient age is 18 years or older

Date of incident is within 2009 [2010, 2011]



STR-3 Scene time for suspected stroke patients

Emergency medical service is requested	TYPE	process
Responding EMS vehicle travels by ground	REPORTED IN	minutes
Provider impression is neurological deficit secondary to CVA/TIA	TO CALCULATE	Arrange values in ascending order, take 90 th percentile of distribution

Date of incident is 2009 [2010, 2011]

Patient is age 18 years or older

Scene times are available and logical



STR-4 Advance hospital notification for stroke

To be developed for 2014




STR-5 Direct transport to stroke center for patients meeting criteria

All denominator criteria	TYPE	process
Patient received glucose testing by EMS	REPORTED IN	percentage
	TO CALCULATE	divide numerator by denominator

Provider impression is neurological deficit secondary to CVA/TIA

Patient age is 18 years or older

Date of incident is within 2009 [2010, 2011]



RESPIRATORY

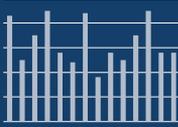
RES-1 CPAP given for patients with respiratory distress (2014)

RES-2 Beta2 agonist administration



RES-1 CPAP given for patients with respiratory distress

To be developed for 2014





RES-2 Beta2 agonist administration

TYPE	process
REPORTED IN	percentage
TO CALCULATE	divide numerator by denominator

All denominator criteria

Patient received bronchodilator or beta2 agonist by EMS

Provider impression is respiratory distress

Patient age is 14 years or older

Date of incident is within 2009 [2010, 2011]



PEDIATRIC

PED-1 Pediatric asthma patients receiving bronchodilators

PED-2 Transport to pediatric trauma center



PED-1 Pediatric asthma patients receiving bronchodilators

TYPE	process
REPORTED IN	percentage
TO CALCULATE	divide numerator by denominator

All denominator criteria

Patient received bronchodilator or beta2 agonist by EMS

Provider impression is respiratory distress

Patient age is less than 14 years

Date of incident is within 2009 [2010, 2011]



PED-2 Transport to pediatric trauma center

To be developed for 2014




PAIN INTERVENTION

PAI-1 Pain intervention

PAI-2 Results of pain intervention (2014)



PAI-1 Pain intervention

TYPE	process
REPORTED IN	percentage
TO CALCULATE	divide numerator by denominator

All denominator criteria

Patient given accepted intervention recognized for pain relief

Record indicates intervention occurred after pain scale

Recorded pain value of 7 or greater

Patient age is 14 years or older

Date of incident is within 2009 [2010, 2011]




PAI-2 Results of pain intervention

To be developed for 2014

PERFORMANCE OF SKILLS

SKL-1 Endotracheal intubation success rate

SKL-2 End-tidal CO₂ performed on any successful endotracheal intubation

SKL-1 Endotracheal intubation success rate

All denominator criteria

- Number of endotracheal intubation attempts is 1 or 2
- At least one ET attempt was recorded as successful

TYPE	process
REPORTED IN	percentage
TO CALCULATE	divide numerator by denominator

Patient received attempted endotracheal intubation by EMS

Date of incident is within 2009 [2010, 2011]

SKL-2 End-tidal CO₂ performed on any successful endotracheal intubation

All denominator criteria

- Number of endotracheal intubation attempts is 1 or 2
- At least one ET attempt was recorded as successful

TYPE	process
REPORTED IN	percentage
TO CALCULATE	divide numerator by denominator

Patient received attempted endotracheal intubation by EMS

Date of incident is within 2009 [2010, 2011]

RESPONSE AND TRANSPORT

RST-1 Ambulance response times by zone (emergency)

RST-2 Ambulance response times by zone (non-emergency)

RST-3 Transport of patients to hospital

RST-1 Ambulance response time by ambulance zone (Emergency)

Type of service requested is 911 response to scene

Primary role of the unit is transport

Response mode to scene is lights and sirens

Date of incident is 2009 [2010, 2011]

Related times are available and logical

Events occurred in ambulance zone of interest

TYPE	process
REPORTED IN	minutes
TO CALCULATE	Arrange values in ascending order, take 90 th percentile of distribution



RST-2 Ambulance response time by ambulance zone (Non-emergency)

Type of service requested is 911 response to scene	TYPE	process
Primary role of the unit is transport	REPORTED IN	minutes
Response mode to scene is NO lights and sirens	TO CALCULATE	Arrange values in ascending order, take 90 th percentile of distribution
Date of incident is 2009 [2010, 2011]		
Related times are available and logical		
Events occurred in ambulance zone of interest		

RST-3 Transport of patients to hospital

All denominator criteria	TYPE	process
Destination is General Acute Care Hospital	REPORTED IN	percentage
Type of service requested is 911 response to scene	TO CALCULATE	divide numerator by denominator
Primary role of the unit is transport		Unit is BLS, LALS, or ALS ambulance with Basic Permit
Response mode is lights and sirens		Related times are logical
Date of incident is within 2009 [2010, 2011]		Events occurred in ambulance zone of interest

CARDIOPULMONARY RESUSCITATION

PUB-1 Out-of-hospital cardiac arrests receiving bystander CPR (2014)

PUB-1 Out-of-hospital cardiac arrests receiving bystander CPR

To be developed for 2014

Tom McGinnis, EMS Systems Division Chief, California EMS Authority

SUBMITTING AND PUBLISHING CORE MEASURES

Ways to submit and publish Core Measures depends on.....



who you are



the activity



audience

*Person by Jettis Tarring and *Group by Amir Chadgar from The Noun Project



Submitting and Publishing Core Measures

- Core Measures are a good thing for the EMS System in California
- The use and development of Core Measures is truly long overdue



Submitting and Publishing Core Measures

- The data received from the local EMS agencies will be reviewed by the Core Measures Task Force prior to publication



Submitting and Publishing Core Measures

- Information that has a high confidence level (good/accurate) will be published by local EMS agency name
- Illogical (bad/poor/misleading) information will not be published



Submitting and Publishing Core Measures

- Notes/explanations/caveats will be included with published information to describe the results received
- Local EMS agencies are encouraged to provide explanations for situations where the Core Measures do not populate well/at all



Submitting and Publishing Core Measures

- Future Core Measures (i.e.: 2014 data year) will be noticed in advance to the local EMS agencies



Submitting and Publishing Core Measures

- If individual Core Measures (i.e.: Skill 1: ET Tube Success) are not valid based on the information received, that Core Measure will not be published
- An explanation that the measure did not yield valid information will be noted on the summary of Core Measures placed on the EMSA Website



Submitting and Publishing Core Measures

- The information EMSA prepares for its website will be shared with the local EMS agencies prior to publication



SUBMITTING CORE MEASURES



Core Measures submission to EMSA by Local EMS Agencies

- Local EMS Agencies have good information about their systems
- Data currently provided to CEMSIS only comes from 17 local EMS agencies
- Data in CEMSIS is not populating well



Ways to submit Core Measures

Provider Agency
Local EMS Agency
EMSA

- Send a data file to Local EMS Agency
- Login to a website to submit values



Ways to submit Core Measures

Provider Agency
Local EMS Agency
EMSA

- Fill out provided reporting tool for submission to EMSA



Ways to submit Core Measures

Provider Agency
Local EMS Agency
EMSA

- Submit summary to CHCF
- EMS Commission



Step 1 | Identify the requirements

Measure Set ID	Denominator Value (Population)	Numerator Value (Count)	Type of Reporting	
			Percentage	Time
TRA-1				
TRA-2				

Reporting form



Specifications

Step 2 | Calculate the measure

TRA-2 Direct transport to trauma center for severely injured patients

Measure Set ID	Denominator Value (Population)	Numerator Value (Count)	Type of Reporting	
			Percentage	Time
TRA-1				
TRA-2				

Step 2 | Calculate the measure

TRA-2 Direct transport to trauma center for severely injured patients

- All denominator criteria
- Receiving hospital is trauma center
- Type of service requested is 911 response to scene
- Response mode is lights and sirens
- Impression is blunt or penetrating injury
- specific vital sign indicators
- patient transported to hospital
- time period of interest

Measure Set ID	Denominator Value (Population)	Numerator Value (Count)	Type of Reporting	
			Percentage	Time
TRA-1				
TRA-2	140			

denominator

Step 2 | Calculate the measure

TRA-2 Direct transport to trauma center for severely injured patients

- All denominator criteria
- Receiving hospital is trauma center
- Type of service requested is 911 response to scene
- Response mode is lights and sirens
- Impression is blunt or penetrating injury
- specific vital sign indicators
- patient transported to hospital
- time period of interest

Measure Set ID	Denominator Value (Population)	Numerator Value (Count)	Type of Reporting	
			Percentage	Time
TRA-1	140	124		
TRA-2				

numerator

Step 2 | Calculate the measure

Measure Set ID	Denominator Value (Population)	Numerator Value (Count)	Type of Reporting	
			Percentage	Time
TRA-1				
TRA-2	140	124	89%	

calculate

Step 2 | Calculate the measure

Measure Set ID	Denominator Value (Population)	Numerator Value (Count)	Type of Reporting	
			Percentage	Time
TRA-1				
TRA-2	140	124	89%	

calculate



Step 3 | Complete 2010 calculations

Measure Set ID	Denominator Value (Population)	Numerator Value (Event)	%	Type of Reporting		Year To Be Measured
				Time	Numeric Value	
TRA-1	100	120	85%	120		2010
TRA-2	100	120	85%			2010
ASC-1	100	120	85%			2010
ASC-2			No data available			2010
ASC-3				120		2010
ASC-4						2010
ASC-5	100	120	85%			2010
ASC-6	100	120	85%			2010
ASC-7	100	120	85%			2010
ASC-8	100	120	85%			2010
ASC-9	100	120	85%			2010
ASC-10	100	120	85%			2010
ASC-11	100	120	85%			2010
ASC-12	100	120	85%			2010
ASC-13	100	120	85%			2010
ASC-14	100	120	85%			2010
ASC-15	100	120	85%			2010
ASC-16	100	120	85%			2010
ASC-17	100	120	85%			2010
ASC-18	100	120	85%			2010
ASC-19	100	120	85%			2010
ASC-20	100	120	85%			2010
ASC-21	100	120	85%			2010
ASC-22	100	120	85%			2010
ASC-23	100	120	85%			2010
ASC-24	100	120	85%			2010
ASC-25	100	120	85%			2010
ASC-26	100	120	85%			2010
ASC-27	100	120	85%			2010
ASC-28	100	120	85%			2010
ASC-29	100	120	85%			2010
ASC-30	100	120	85%			2010
ASC-31	100	120	85%			2010
ASC-32	100	120	85%			2010
ASC-33	100	120	85%			2010
ASC-34	100	120	85%			2010
ASC-35	100	120	85%			2010
ASC-36	100	120	85%			2010
ASC-37	100	120	85%			2010
ASC-38	100	120	85%			2010
ASC-39	100	120	85%			2010
ASC-40	100	120	85%			2010
ASC-41	100	120	85%			2010
ASC-42	100	120	85%			2010
ASC-43	100	120	85%			2010
ASC-44	100	120	85%			2010
ASC-45	100	120	85%			2010
ASC-46	100	120	85%			2010
ASC-47	100	120	85%			2010
ASC-48	100	120	85%			2010
ASC-49	100	120	85%			2010
ASC-50	100	120	85%			2010
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ASC-52	100	120	85%			2010
ASC-53	100	120	85%			2010
ASC-54	100	120	85%			2010
ASC-55	100	120	85%			2010
ASC-56	100	120	85%			2010
ASC-57	100	120	85%			2010
ASC-58	100	120	85%			2010
ASC-59	100	120	85%			2010
ASC-60	100	120	85%			2010
ASC-61	100	120	85%			2010
ASC-62	100	120	85%			2010
ASC-63	100	120	85%			2010
ASC-64	100	120	85%			2010
ASC-65	100	120	85%			2010
ASC-66	100	120	85%			2010
ASC-67	100	120	85%			2010
ASC-68	100	120	85%			2010
ASC-69	100	120	85%			2010
ASC-70	100	120	85%			2010
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ASC-75	100	120	85%			2010
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ASC-79	100	120	85%			2010
ASC-80	100	120	85%			2010
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ASC-83	100	120	85%			2010
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ASC-85	100	120	85%			2010
ASC-86	100	120	85%			2010
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ASC-88	100	120	85%			2010
ASC-89	100	120	85%			2010
ASC-90	100	120	85%			2010
ASC-91	100	120	85%			2010
ASC-92	100	120	85%			2010
ASC-93	100	120	85%			2010
ASC-94	100	120	85%			2010
ASC-95	100	120	85%			2010
ASC-96	100	120	85%			2010
ASC-97	100	120	85%			2010
ASC-98	100	120	85%			2010
ASC-99	100	120	85%			2010
ASC-100	100	120	85%			2010

Step 4 | Repeat for 2011 (and/or 2012)

M	Measure Set ID	Denominator Value (Population)	Numerator Value (Event)	%	Type of Reporting		Year To Be Measured
					Time	Numeric Value	
	TRA-1	100	120	85%	120		2011
	TRA-2	100	120	85%			2011
	ASC-1	100	120	85%			2011
	ASC-2			No data available			2011
	ASC-3				120		2011
	ASC-4						2011
	ASC-5	100	120	85%			2011
	ASC-6	100	120	85%			2011
	ASC-7	100	120	85%			2011
	ASC-8	100	120	85%			2011
	ASC-9	100	120	85%			2011
	ASC-10	100	120	85%			2011
	ASC-11	100	120	85%			2011
	ASC-12	100	120	85%			2011
	ASC-13	100	120	85%			2011
	ASC-14	100	120	85%			2011
	ASC-15	100	120	85%			2011
	ASC-16	100	120	85%			2011
	ASC-17	100	120	85%			2011
	ASC-18	100	120	85%			2011
	ASC-19	100	120	85%			2011
	ASC-20	100	120	85%			2011
	ASC-21	100	120	85%			2011
	ASC-22	100	120	85%			2011
	ASC-23	100	120	85%			2011
	ASC-24	100	120	85%			2011
	ASC-25	100	120	85%			2011
	ASC-26	100	120	85%			2011
	ASC-27	100	120	85%			2011
	ASC-28	100	120	85%			2011
	ASC-29	100	120	85%			2011
	ASC-30	100	120	85%			2011
	ASC-31	100	120	85%			2011
	ASC-32	100	120	85%			2011
	ASC-33	100	120	85%			2011
	ASC-34	100	120	85%			2011
	ASC-35	100	120	85%			2011
	ASC-36	100	120	85%			2011
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	ASC-40	100	120	85%			2011
	ASC-41	100	120	85%			2011
	ASC-42	100	120	85%			2011
	ASC-43	100	120	85%			2011
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	ASC-45	100	120	85%			2011
	ASC-46	100	120	85%			2011
	ASC-47	100	120	85%			2011
	ASC-48	100	120	85%			2011
	ASC-49	100	120	85%			2011
	ASC-50	100	120	85%			2011
	ASC-51	100	120	85%			2011
	ASC-52	100	120	85%			2011
	ASC-53	100	120	85%			2011
	ASC-54	100	120	85%			2011
	ASC-55	100	120	85%			2011
	ASC-56	100	120	85%			2011
	ASC-57	100	120	85%			2011
	ASC-58	100	120	85%			2011
	ASC-59	100	120	85%			2011
	ASC-60	100	120	85%			2011
	ASC-61	100	120	85%			2011
	ASC-62	100	120	85%			2011
	ASC-63	100	120	85%			2011
	ASC-64	100	120	85%			2011
	ASC-65	100	120	85%			2011
	ASC-66	100	120	85%			2011
	ASC-67	100	120	85%			2011
	ASC-68	100	120	85%			2011
	ASC-69	100	120	85%			2011
	ASC-70	100	120	85%			2011
	ASC-71	100	120	85%			2011
	ASC-72	100	120	85%			2011
	ASC-73	100	120	85%			2011
	ASC-74	100	120	85%			2011
	ASC-75	100	120	85%			2011
	ASC-76	100	120	85%			2011
	ASC-77	100	120	85%			2011
	ASC-78	100	120	85%			2011
	ASC-79	100	120	85%			2011
	ASC-80	100	120	85%			2011
	ASC-81	100	120	85%			2011
	ASC-82	100	120	85%			2011
	ASC-83	100	120	85%			2011
	ASC-84	100	120	85%			2011
	ASC-85	100	120	85%			2011
	ASC-86	100	120	85%			2011
	ASC-87	100	120	85%			2011
	ASC-88	100	120	85%			2011
	ASC-89	100	120	85%			2011
	ASC-90	100	120	85%			2011
	ASC-91	100	120	85%			2011
	ASC-92	100	120	85%			2011
	ASC-93	100	120	85%			2011
	ASC-94	100	120	85%			2011
	ASC-95	100	120	85%			2011
	ASC-96	100	120	85%			2011
	ASC-97	100	120	85%			2011
	ASC-98	100	120	85%			2011
	ASC-99	100	120	85%			2011
	ASC-100	100	120	85%			2011

Step 5 | E-mail the files to EMSA



teri.harness
@emsa.ca.gov

PUBLISHING CORE MEASURES

Why publish Core Measures

- Show the value of EMS
- Transparency of health care
- Potential reimbursement requirements
- System evaluation with like EMS participants

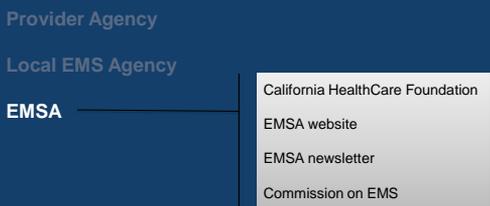
Ways to publish Core Measures



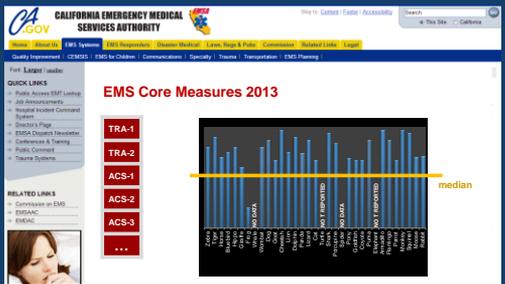
Ways to publish Core Measures



Ways to publish Core Measures

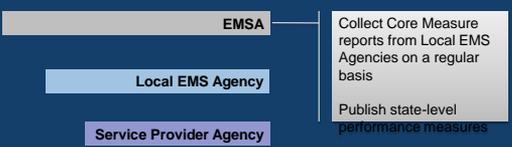


EMSA Core Measure Publishing Consideration

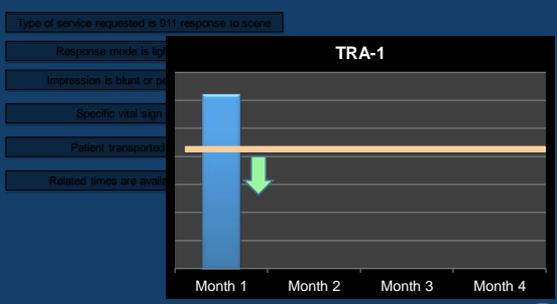


Hailey Pate, Data Program Analyst, California EMS Authority
CORE MEASURES IN ACTION

Core Measure Usage Scenarios



TRA-1 Scene time for severely injured trauma patients



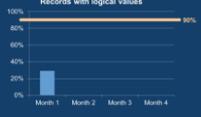
TRA-1 Scene time for severely injured trauma patients

- Type of service requested is 911 response to scene
- Response mode is lights and sirens
- Impression is blunt or penetrating injury
- Specific vital sign indicators
- Patient transported to hospital
- Related times are available and logical ← Time unit left scene



Time unit left scene

Records with logical values

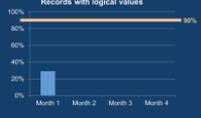


N _{records} = 1300	Freq	% total
23:57	100	7.7%
18:33	200	15.4%
06:10	50	3.8%
[null]	250	19.2%
Not Documented	400	30.8%
Not Applicable	300	23.1%



Time unit left scene

Records with logical values

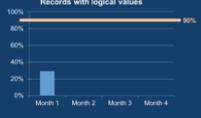


N _{records} = 1300	Freq	% total
23:57	100	7.7%
18:33	200	15.4%
06:10	50	3.8%
[null]	250	19.2%
Not Documented	400	30.8%
Not Applicable	300	23.1%



Time unit left scene

Records with logical values

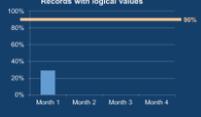


N _{records} = 1300	Freq	% total
Logical times	350	26.9%
[null]	250	19.2%
Not Documented	400	30.8%
Not Applicable	300	23.1%



Time unit left scene

Records with logical values

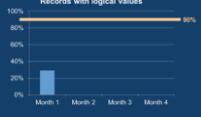


N _{records} = 1300	Freq	% total
Logical times	350	26.9%
[null]	250	19.2%
Not Documented	400	30.8%
Not Applicable	300	23.1%



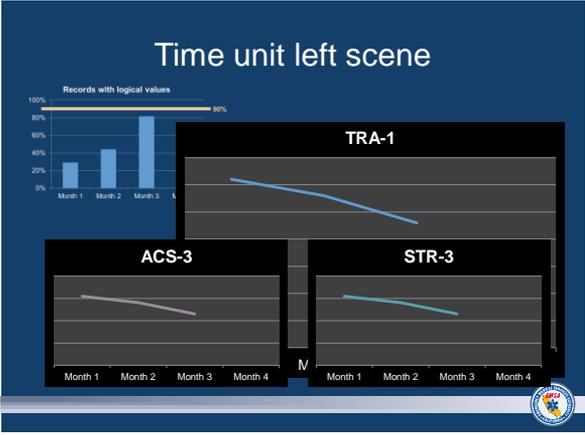
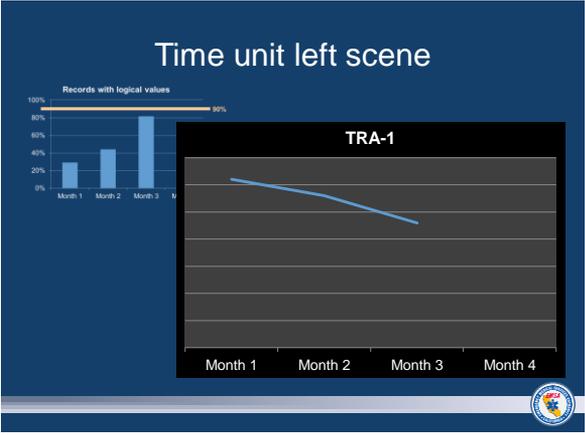
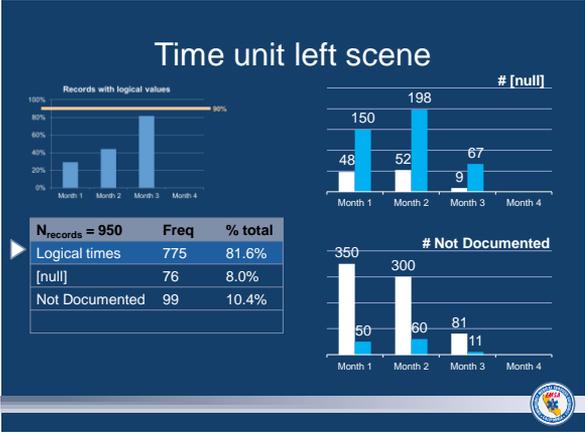
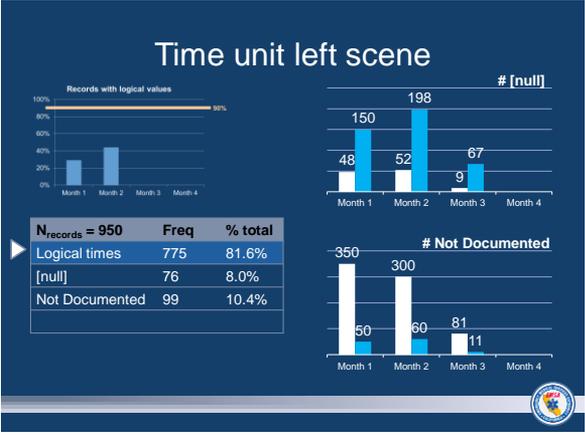
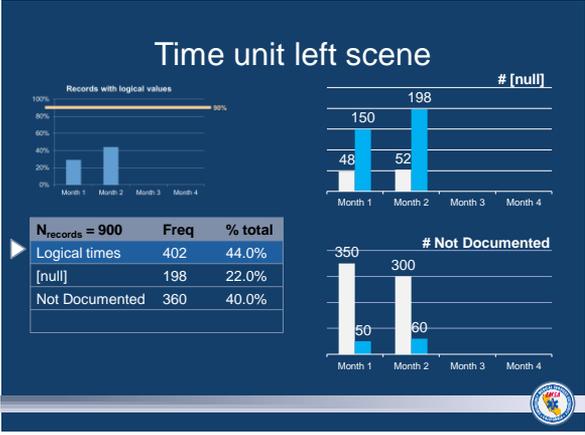
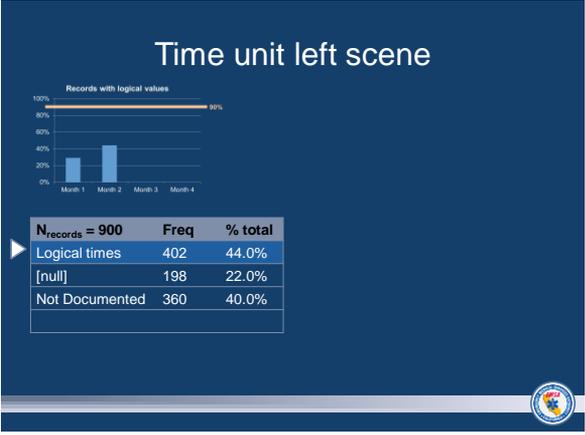
Time unit left scene

Records with logical values

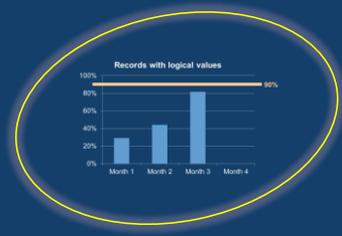
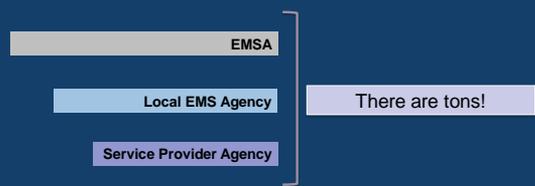


N _{records} = 1000	Freq	% total
Logical times	350	35.0%
[null]	250	25.0%
Not Documented	400	40.0%



Core Measure Usage Scenarios



Core Measures will improve California's EMS data quality.



Acknowledgements

California HealthCare Foundation

Joe Barger • Louis Bruhnke • Dennis Carter • David Chang
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 Dan Smiley • Howard Backer
 Contra Costa EMS • Los Angeles County EMS Agency

... and all of our local partners who attended!



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