

# Quality Improvement: Practical Pointers and Pitfalls



Ron Roth, MD FAEMS  
Professor of Emergency Medicine  
University of Pittsburgh  
Medical Director  
City of Pittsburgh, Department of  
Public Safety

# About me.....

- EMT in 1977
- Attending Physician UPMC Presby ED
- Medical Director City of Pittsburgh DPS
- Medical Director of Allegheny Co. 911
- APD EMS Fellowship
- Team Physician Pittsburgh Steelers
- EM Consultant for Pittsburgh Penguins



# Lecture Summary

Begin with the  
End in Mind

Potential Pitfalls

Audits / Pt Care Bundles

Initiating a QI Program

Understand Barriers

# Quality Improvement



## QA - Retrospective

## Q1 - Prospective/Retrospective

# CQI - Everything, all the time



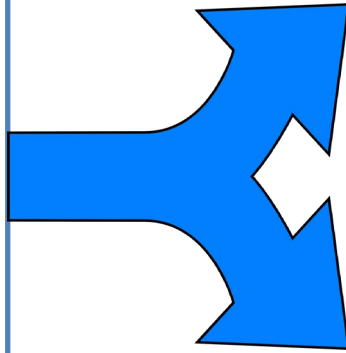
# Quality Improvement



“Many people say that we have the best EMS agency...”

# EMS Quality Improvement

Challenges to  
initiating a Quality  
Improvement  
program



Lack of:

- Interest
- Understanding
- **Manpower**

Fear of the unknown!

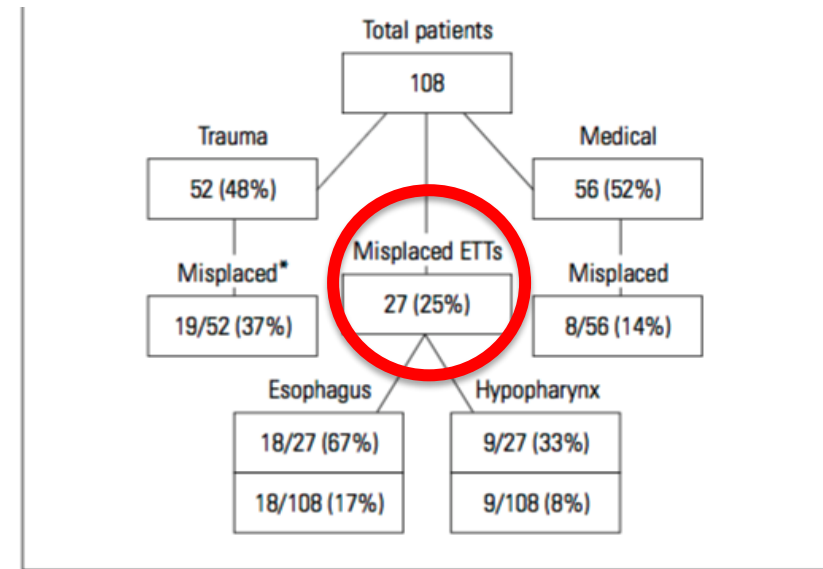


# Why do QI?

## Misplaced Endotracheal Tubes by Paramedics in an Urban Emergency Medical Services System

Steven H. Katz, MD<sup>\*</sup>  
Jay L. Falk, MD<sup>‡</sup>

See editorial, p. 62.



**“Every error is a treasure!”**

Every burden is a blessing.



# Methods of initiating a QI program



Sell Job



DIY



Sneak it in



# Quality Improvement Opportunities



Training



Ride-a-longs



ED Feedback

# Quality Improvement Opportunities



## Complaints

- Rude behavior
- Questionable care
- Vehicle crash



## Audits

- Intubation
- Chest pain
- Refusals



## Triggers

- Use of CPAP
- CPR
- BP < 90

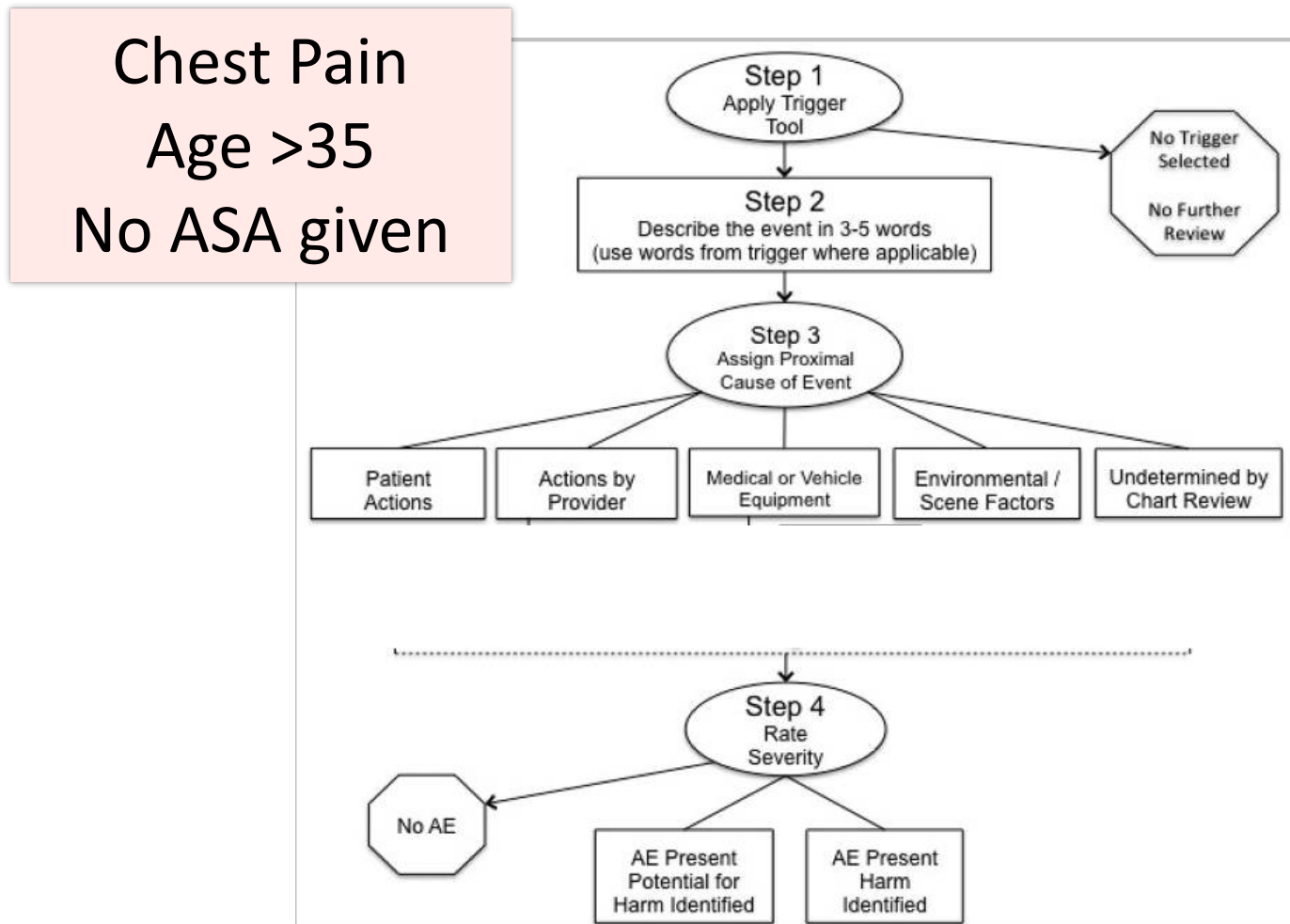


Anonymous  
reporting



# Audits

- Audit categories
  - Structure
    - Response times
    - Equipment
    - Deployment
  - Process
    - Protocols
    - Med administration
    - Transport
  - Outcome
    - Pain control
    - Patient satisfaction
    - Survival
- Reviewer
  - Medical Director
  - QI interest group
  - Supervisor



AE = Adverse Event

Patterson PEC 2014

# Choosing Audits – Performance Indicators

- Low hanging fruit
  - Cardiac arrest/Intubations
  - Refusals
- Low volume high risk
- High volume difference makers
- Complaints
- Non Clinical



Don't reinvent the wheel



# Cardiac arrest audits

- Do-able
- High risk
- Procedures
- Measureable (ROSC, survival)
- “Recorded”
- Benchmark-able
  - CARES
- “Life Changing”





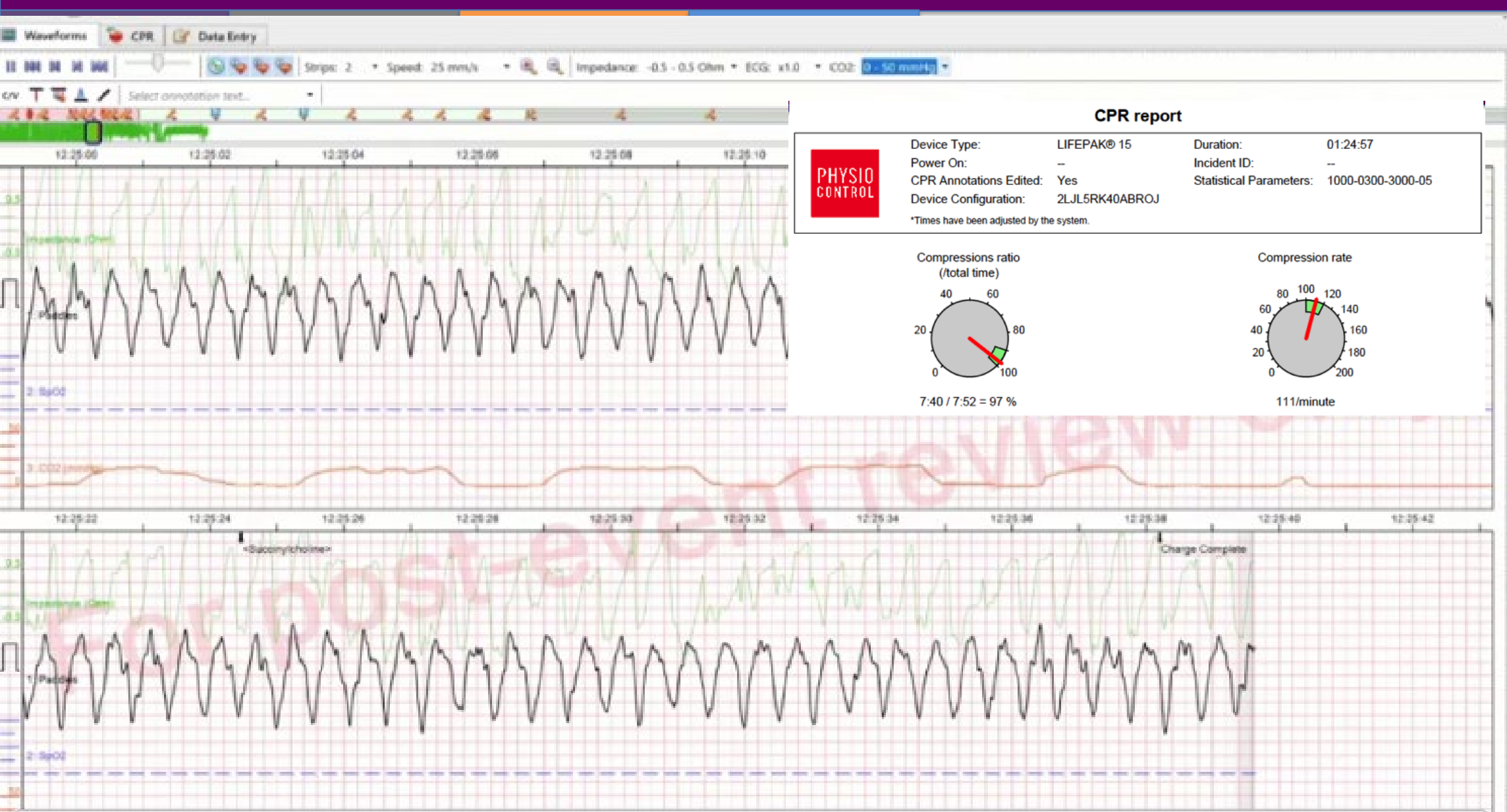
# Where are the holes...?

- Bystander CPR
- Dispatch
- Pauses during CPR
- Policies/Procedures
- Equipment
- Post ROSC Care

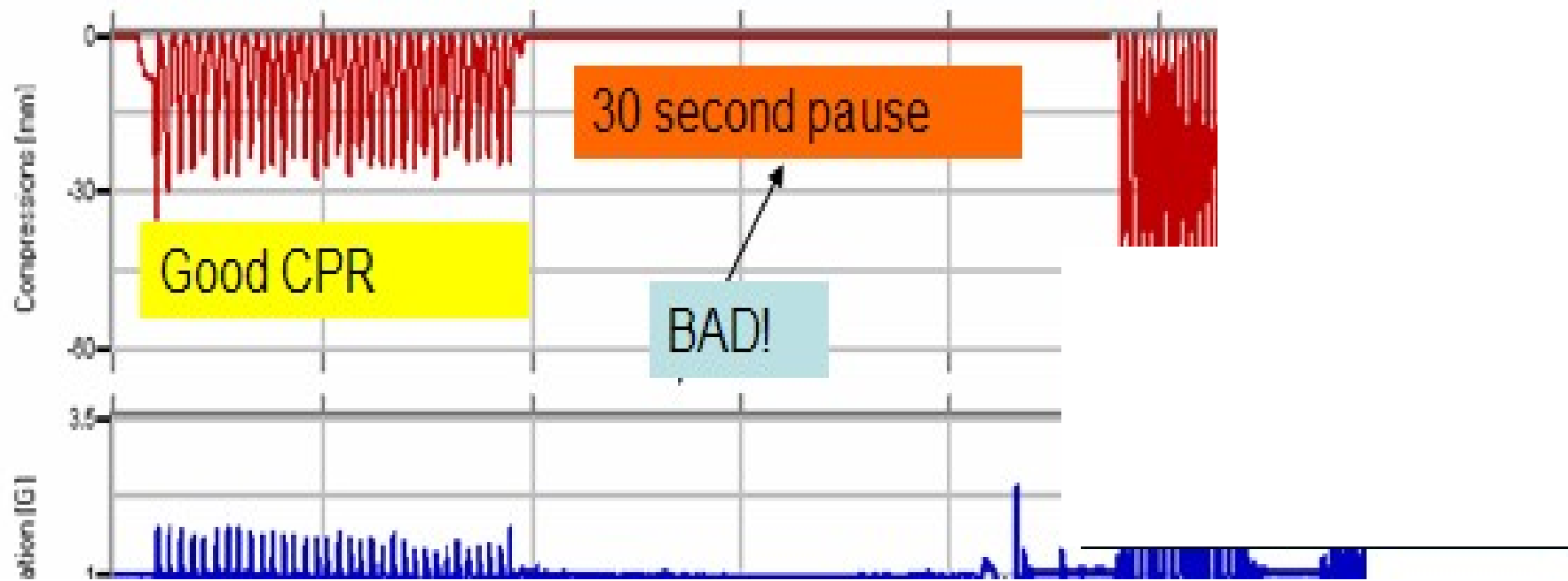
Improving survival  
from cardiac  
arrest

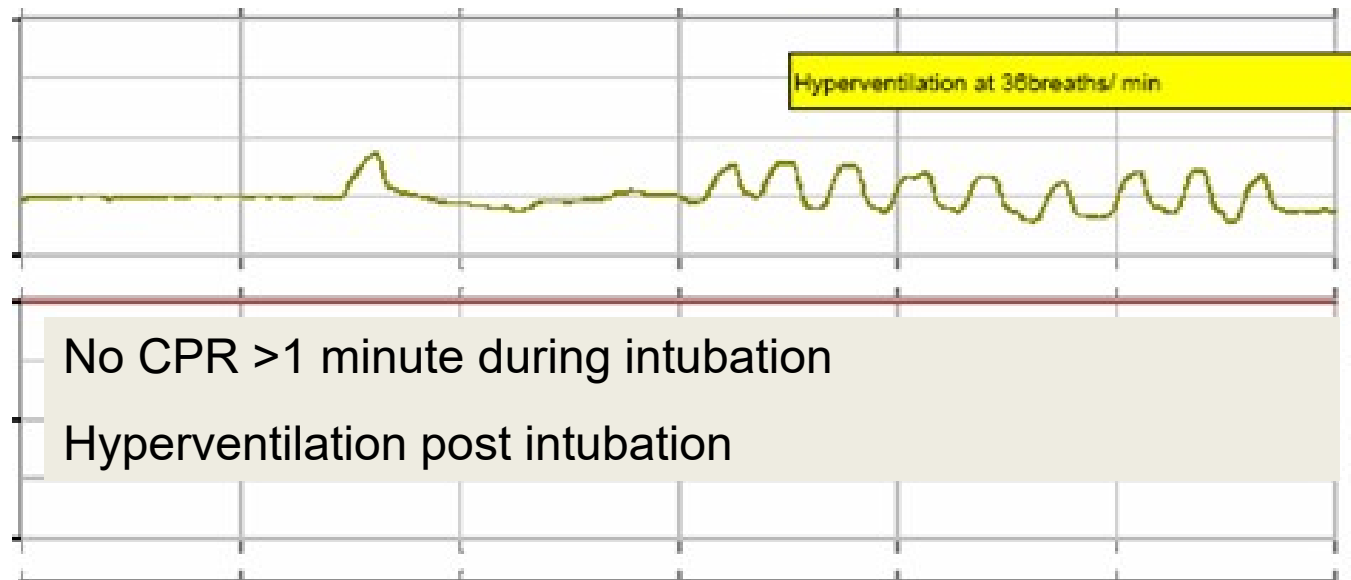
# Where are the holes...?

- Bystander CPR----->Pulse Point, CPR training
- Dispatch
- Pauses during CPR----->Re-education, feedback
- Policies/Procedures
- Equipment
- Post ROSC Care-----> New Protocol, Re-ed, feedback



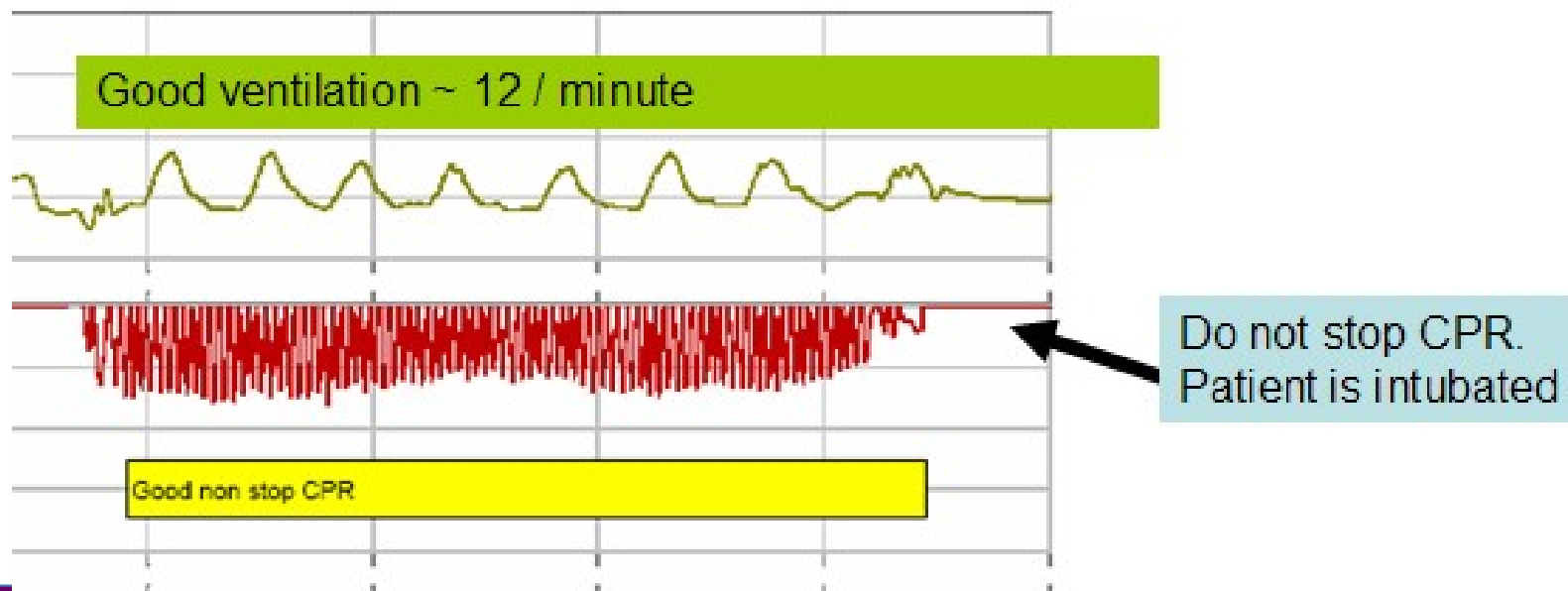
# CPR Time – Bad Example





Ventilations

Compressions

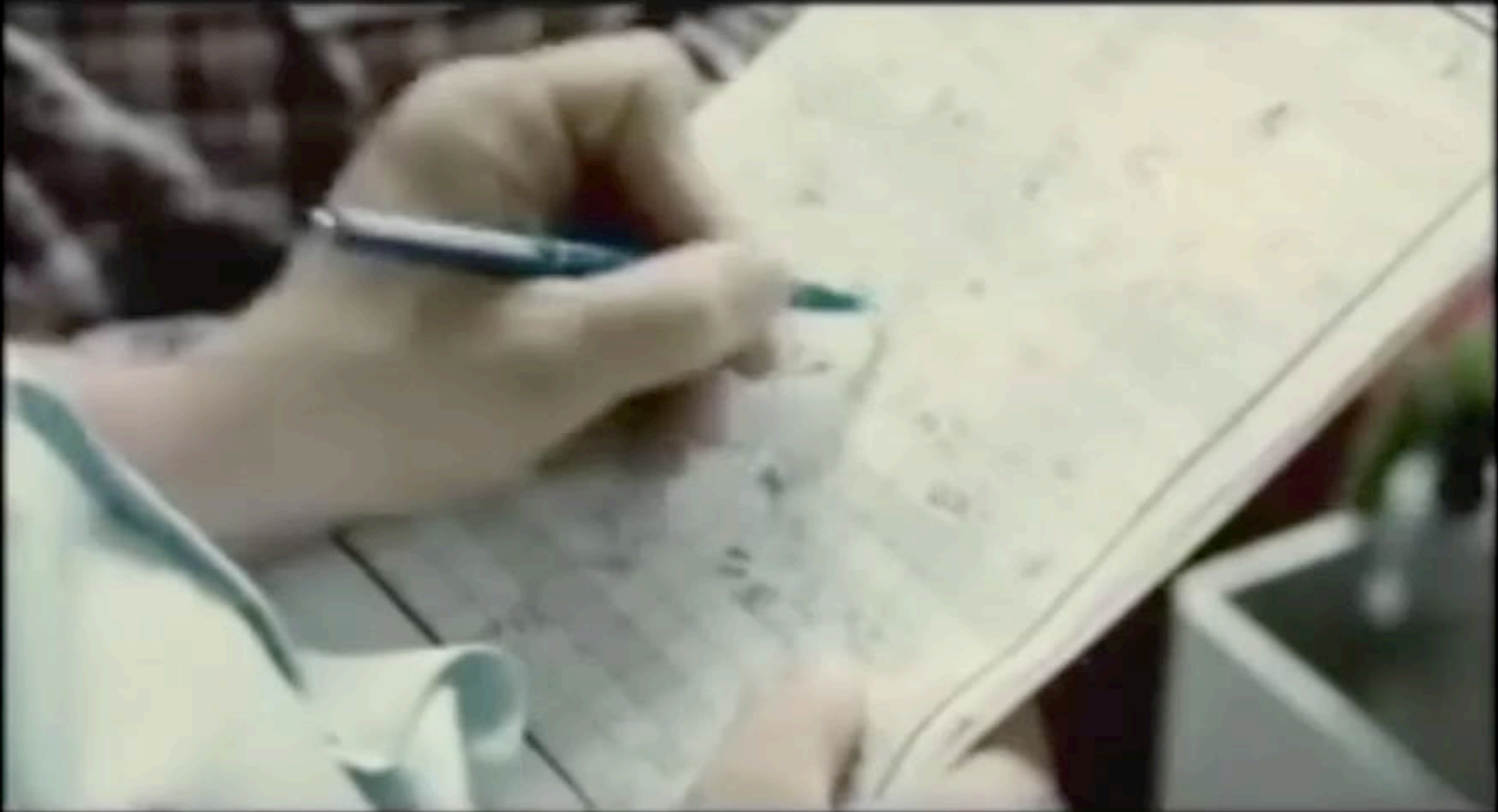




# Arrest with EMS on scene



# Arrest with EMS on scene





78 yo F w/ Hx CHF in severe resp distress

VS P130 R30 BP 90/p O<sub>2</sub> sat 78% RA  
rales thru out

- Placed on O<sub>2</sub> via FM ->O<sub>2</sub> sat 89%
- Reeves stretcher to ambulance
- Cardiac arrest in ambulance





- Scoop and run mentality
- Poor working conditions
- Comfort working in ambulance
- Scene safety/bystanders

# Pittsburgh EMS Crashing Patient Algorithm

## General Impression of a Patient in Extremis

Airway Issues  
Significant Respiratory Distress  
Signs of Shock

Place NP/OP Airway as Indicated/Tolerated

## Respiratory Status

OK or Respiratory Distress

## Respiratory Failure

- Poor Tidal Volume
- Unable to Speak
- Loss of Muscle Tone
- Unable to Sit Up
- SpO2 < 90% despite O2
- Altered Mental Status
- PU < 92

High Flow O2  
or  
CPAP +/- Albuterol  
if SBP > 90

## Trial of Assisted Ventilation PPV via BVM

No Improvement

Improves

Circulatory Status  
SBP < 90

Endotracheal  
Intubation

CPAP +/- Albuterol  
if SBP > 90

EKG: Tachycardia or  
Bradycardia

## Electrical Therapy

Immediate IV/IO Access  
500cc NSS Pressure Infused  
Check Glucose  
Check Lactate  
Reassess ABC's/Vitals

## Access Appropriate Protocol

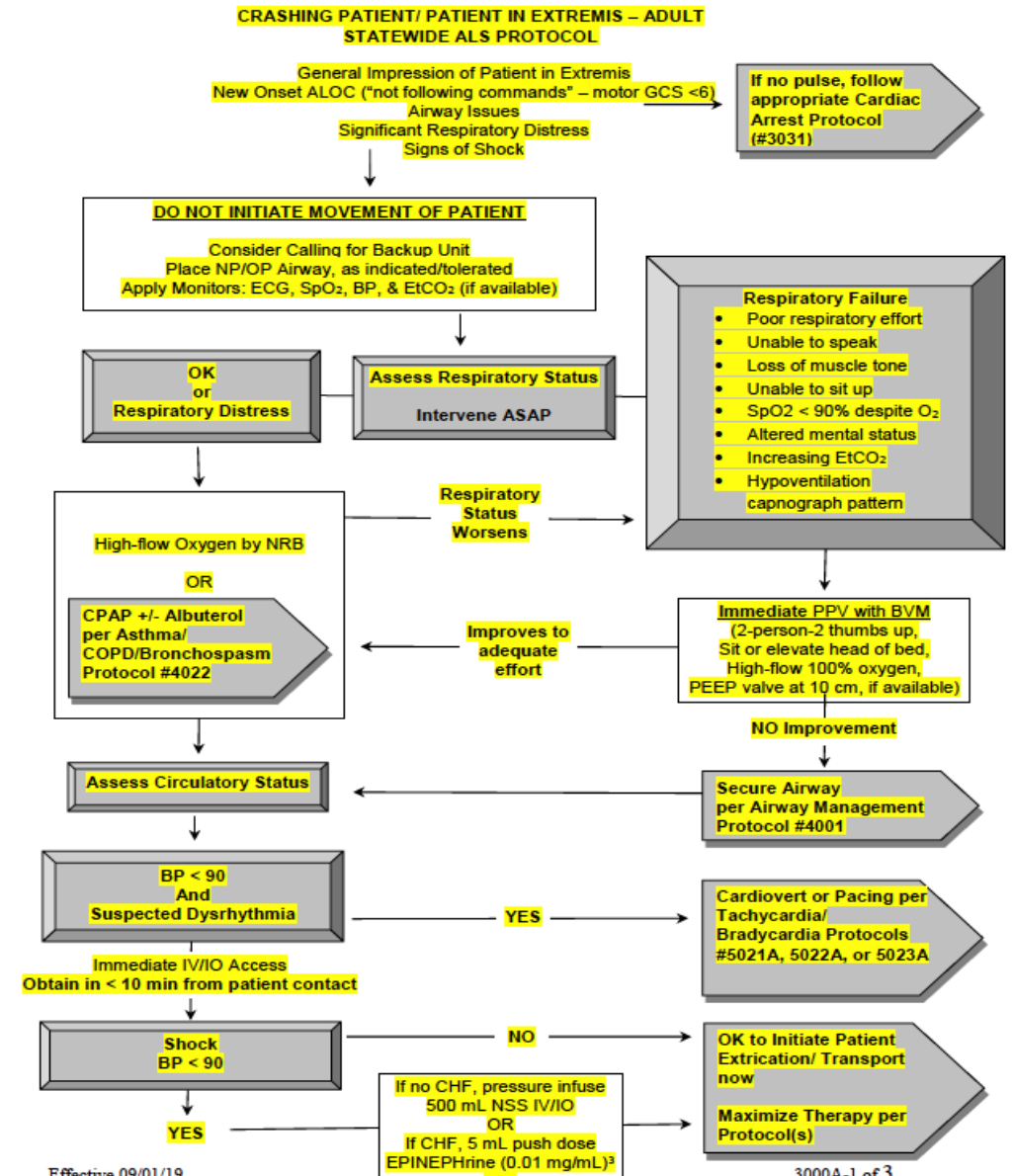
Maximal Medical Therapy

Consult Command MD

Pennsylvania Department of Health

Resuscitation

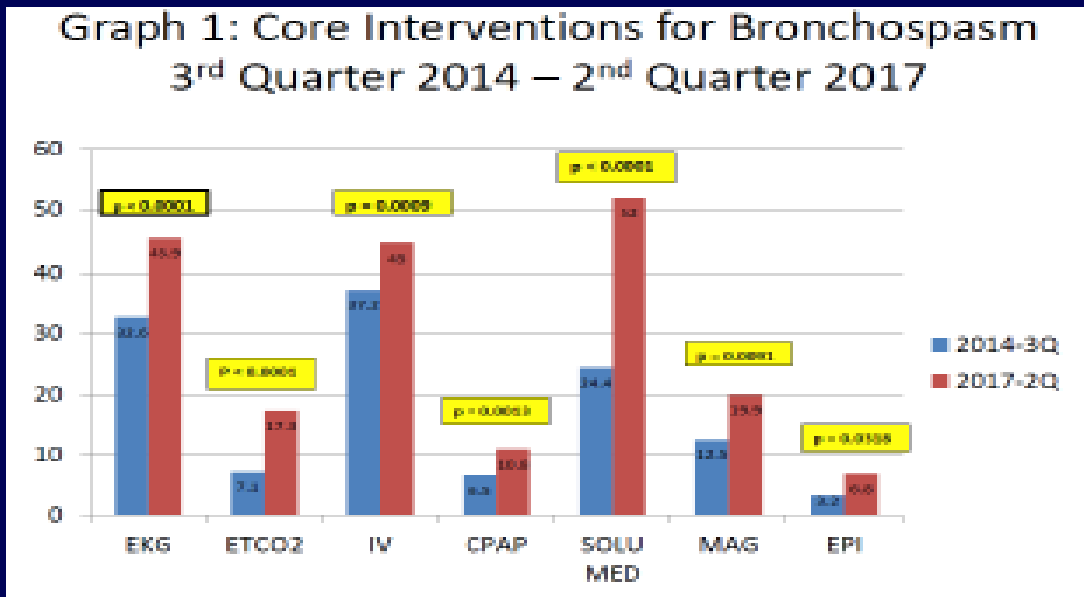
3000A – ALS – Adult





Graph 1: Core Interventions for Bronchospasm  
3<sup>rd</sup> Quarter 2014 – 2<sup>nd</sup> Quarter 2017

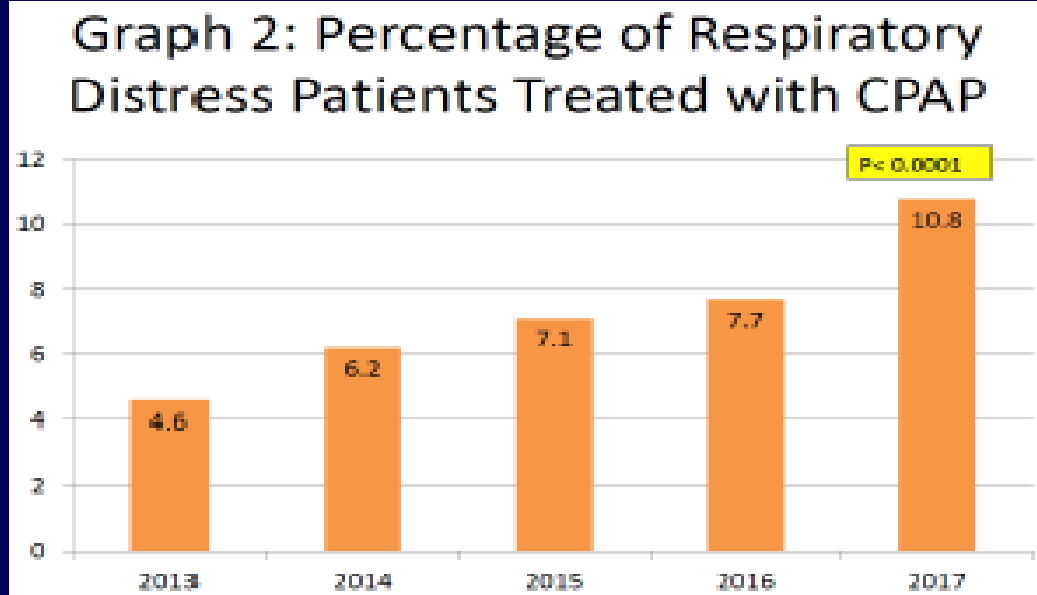
Intervention	2014-3Q	2017-2Q	p-value
EKG	32.6	45.9	0.0001
ETCO2	7.1	17.3	0.0005
IV	37.2	45	0.0009
CPAP	6.3	10.8	0.0005
SOLU MED	24.4	52	0.0002
MAG	12.3	19.5	0.0091
EPI	3.2	6.6	0.0108



### Graph 2: Percentage of Respiratory Distress Patients Treated with CPAP

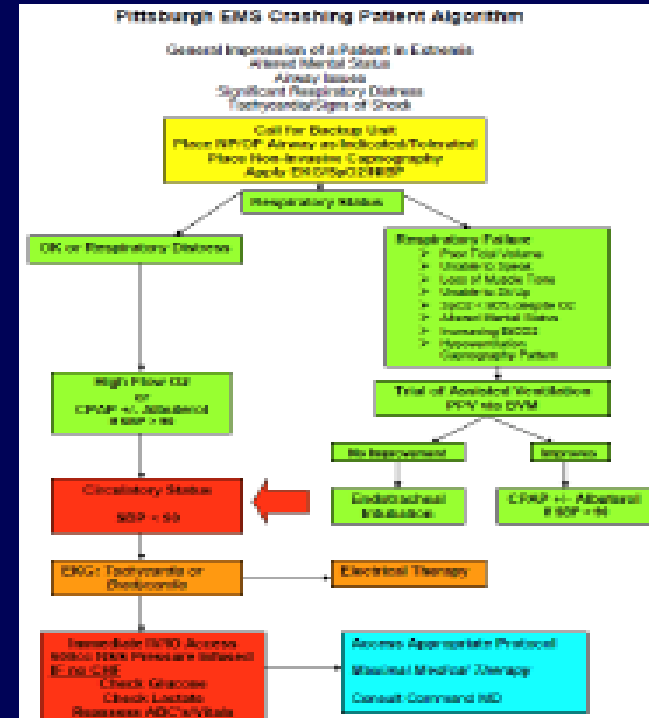
Year	Percentage of Respiratory Distress Patients Treated with CPAP
2013	4.6
2014	6.2
2015	7.1
2016	7.7
2017	10.8

$P < 0.0001$



```

graph TD
    Start([Pittsburgh EMS Crashing Patient Algorithm]) --> Assess[General Impression of a Patient in Extremis  
Assess Mental Status  
Airway Issues  
Significant Respiratory Distress  
Toothy/oral Signs of Shock]
    Assess --> Call[Call for Backup Unit  
Place NIV/CPAP Airway as Indicated/Tolerated  
Place Non-Invasive Cardiography  
Apply ECG/SpO2/IBP/PPV]
    Call --> Respiratory[Respiratory Status]
    Respiratory --> OK[OK or Respiratory Distress]
    Respiratory --> Tolerate[Respiratory Tolerate  
- Peak Tidal Volumes  
- Moderate CO Spont  
- Tolerate H. Machine Time  
- Unable to Sit up  
- SpO2 > 90% on CPAP  
- Altered Mental Status  
- Increasing ECG/IBP  
- Hypertension  
- Cardiography Pattern]
    OK --> HighFlow[High Flow O2  
or  
CPAP +/- BiPAP if SOB > 10]
    Tolerate --> Trial[Trial of Assisted Ventilations  
PPV into BVM]
    Trial --> NoImprovement[No Improvement]
    Trial --> Improves[Improves]
    NoImprovement --> Endotracheal[Endotracheal Intubation]
    Improves --> CPAP[CPAP +/- BiPAP if SOB > 10]
    HighFlow --> Circulatory[Circulatory Status  
SBP < 90]
    Circulatory --> ECG[ECG: Tachycardia or Bradycardia]
    ECG --> Electrical[Electrical Therapy]
    ECG --> Resuscitate[Initiate BVO Access  
SBP/CO/IBP Pressure Intrafemoral ECG/SpO2  
Check Glucose  
Check Lactate  
Resuscitate AGC/Vital]
    Endotracheal --> Resuscitate
    CPAP --> Resuscitate
    Electrical --> Resuscitate
    Resuscitate --> Protocol[Administer Appropriate Protocol  
Maximal Medical Therapy  
Consent/Command M.D.]
  
```

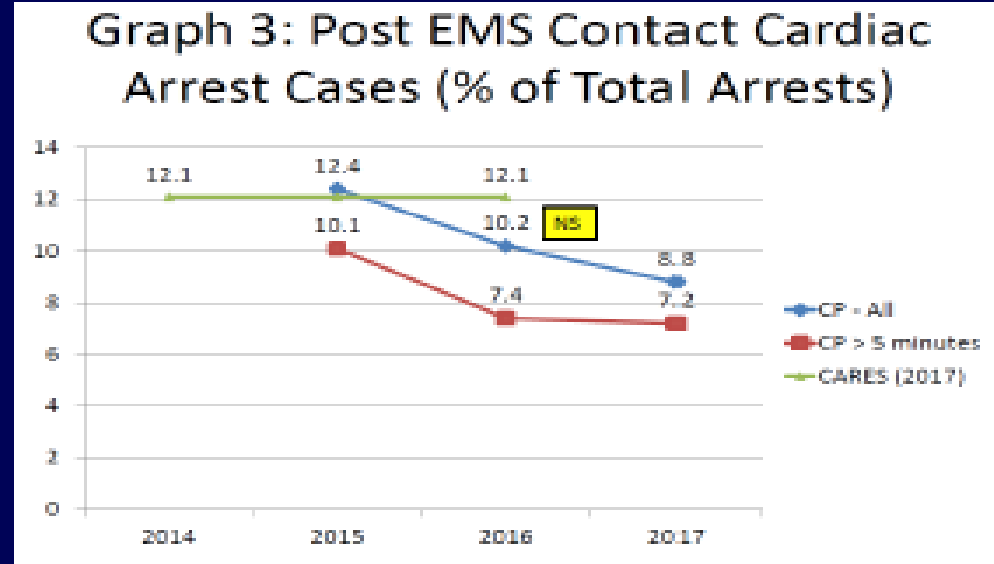


B R O N C H I T I S - A S T H M A		
NON-CLINICAL	CLINICAL DATA	REVIEW
<ul style="list-style-type: none"> <li>• Age: 0, 10000, 100, 1000</li> <li>• Gender:</li> <li>• Request collected as needed</li> <li>• IV access</li> <li>• Monitor for hypotension and/or vomiting</li> </ul>	<ul style="list-style-type: none"> <li>• Age: 0, 10000, 100, 1000</li> <li>• Gender:</li> <li>• Request collected as needed</li> <li>• IV access</li> <li>• IV fluid: 0.9% NaCl / 0.45% NaCl</li> <li>• Monitor for hypotension and/or vomiting</li> <li>• Transfusion to CPAP if needed</li> <li>• Allow for oxygenation if needed</li> </ul>	<ul style="list-style-type: none"> <li>• Age: 0, 10000, 100, 1000</li> <li>• Gender:</li> <li>• IV fluid: 0.9% NaCl / 0.45% NaCl</li> <li>• Transfusion to CPAP if needed</li> <li>• Allow for oxygenation if needed</li> <li>• IV access</li> <li>• IV fluid: 0.9% NaCl / 0.45% NaCl</li> <li>• Monitor for hypotension and/or vomiting</li> <li>• Transfusion to CPAP if needed</li> <li>• Allow for oxygenation if needed</li> </ul>

[illegible]

### Graph 3: Post EMS Contact Cardiac Arrest Cases (% of Total Arrests)

Year	CP - All	CP > 5 minutes	CARES (2017)
2014	12.1		12.1
2015	12.4	10.1	12.4
2016	10.2	7.4	12.1
2017	8.8	7.2	12.1



# Impact of the Implementation of a Critically Ill Patient Bundle of Care on the Performance of Key Medical Intervention for Respiratory Distress Patients in the Field



M Pinchall<sup>1</sup>, M Tomassi<sup>1</sup>, R Roth<sup>2</sup>, J Dlutowski<sup>1</sup>, S Taxel<sup>1</sup>, J Reim Jr.<sup>1</sup> & T Goode<sup>1</sup>

<sup>1</sup>City of Pittsburgh Bureau of Emergency Medical Services, Pittsburgh, PA

<sup>2</sup>University of Pittsburgh School of Medicine, Department of Emergency Medicine, Pittsburgh, PA

## INTRODUCTION

- Bundles of care have been advocated as a process based system to improve patient care and outcomes using evidenced based guidelines.
- In hospital care bundles have been developed for critical care conditions such as Sepsis.
- Prehospital data shows better patient outcomes when critical ALS interventions are accomplished in the field (1)

**Objective:** To assess the effectiveness of the implementation of a Prehospital "Crashing Patient" Critical Intervention Bundle of Care on the performance of key prehospital interventions for patients presenting with respiratory distress.

**Hypothesis:** The implementation of a Prehospital "Crashing Patient" Critical Care Bundle would improve execution of core ALS interventions for patients presenting with respiratory distress and decrease the incidence of post EMS contact cardiac arrest for these patients.

## METHODS

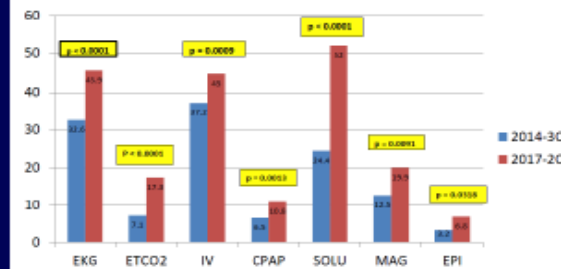
- Urban all ALS municipal (third service) EMS system.
- 63,000+ responses per year
- Crashing Patients Program fully implemented in 2014 with a variety of continuing educational methods
- Retrospective review of electronic PCR's (EMS Charts<sup>®</sup>) coded as "Respiratory Distress" from July 2014 – June 2017)
- Core interventions measured for all cases. For patients receiving a Albuterol<sup>®</sup> or Atrovent<sup>®</sup>, administration of Solu-Medrol<sup>®</sup>, Magnesium & 1:1000 Epinephrine were measured

## Disclosures

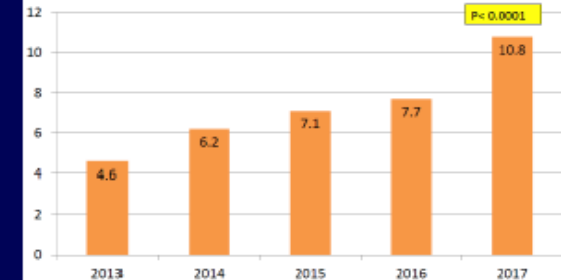
None

## TABLES & RESULTS

Graph 1: Core Interventions for Bronchospasm  
3<sup>rd</sup> Quarter 2014 – 2<sup>nd</sup> Quarter 2017



Graph 2: Percentage of Respiratory Distress Patients Treated with CPAP



Significant increases in all core performance measures for bronchospasm

- Significant increase in the use of CPAP over time: from every 22<sup>nd</sup> patient to every 9<sup>th</sup>
- Decrease in the overall incidence of post EMS Contact Cardiac Arrest over time and compared to the incidence reported in CARES, however this was not statistically significant.(2)

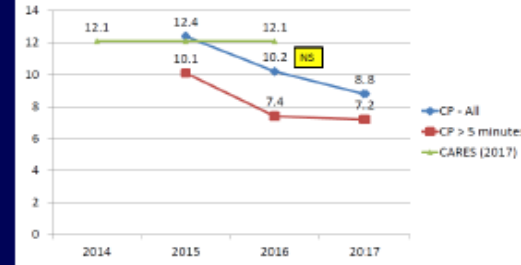
Pittsburgh EMS Crashing Patient Algorithm



BRONCHOSPASM - ASTHMA
• SpO2 < 92% on 2L O2
• Wheezing
• Increased work of breathing
• Rales
• P > 120/80
• Decreased level of consciousness
• CPAP + Albuterol 8-10 puffs
• If no improvement, consider intubation

CRITICAL CARE PATIENT CRASHING
• SpO2 < 92% on 2L O2
• Wheezing
• Increased work of breathing
• Rales
• P > 120/80
• Decreased level of consciousness
• CPAP + Albuterol 8-10 puffs
• If no improvement, consider intubation

Graph 3: Post EMS Contact Cardiac Arrest Cases (% of Total Arrests)



## CONCLUSIONS

Implementation of a Prehospital Critical Care "Crashing Patient" Care Bundle resulted in:

- Significant increases in application of EKG & EtCO2 monitoring
- Significant increase in obtaining IV access
- Significant increase in use of CPAP
- Significant increases in administration of Solu-Medrol<sup>®</sup>, Magnesium & 1:1000 to patients in bronchospasm
- A reduction in the incidence of post EMS contact cardiac arrest, however this was non-significant

Critical Care Patient Care Bundles may have significant utility to improve patient care and safety in the prehospital setting

## LIMITATIONS

- Retrospective data review that did not take into account the initial severity of patient presentation
- No data on effect on patient outcome outside of incidence of post EMS contact cardiac arrest

## FUTURE DIRECTIONS

- Data analysis based on severity of initial patient presentation
- Effects of interventions on specific patient outcome parameters

## REFERENCES

1. "Advanced Life Support for Out-of-Hospital Respiratory Distress", Stiell et al., *The New England Journal of Medicine*, Web 2 July 2016.
1. "2016 Presumed Cardiac National Summary Report." CARES. N.p., 14 Apr. 2016. Web. 5 Sept. 2017.

# Peer review

- Oncoming crew reviews previous shift
- QI interest group

“That dude never documents 2 sets of vital signs on his trip sheets!”

# Peer Review-Identifying Adverse Events

*Prehosp Emerg Care.* 2014 ; 18(4): 495–504. doi:10.3109/10903127.2014.916022.

## A Comparative Assessment of Adverse Event Classification in the Out of Hospital Setting

P. Daniel Patterson, PhD, MPH, MS, NREMT-P, Judith R. Lave, PhD, Matthew D. Weaver, MPH, EMT-P, Francis X. Guyette, MD, Robert M. Arnold, MD, Christian Martin-Gill, MD, Jon C. Rittenberger, MD, David Krackhardt, PhD, Vincent N. Mosesso, MD, Ronald N. Roth, MD, Richard J. Wadas, MD, and Donald M. Yealy, MD



## AE identified

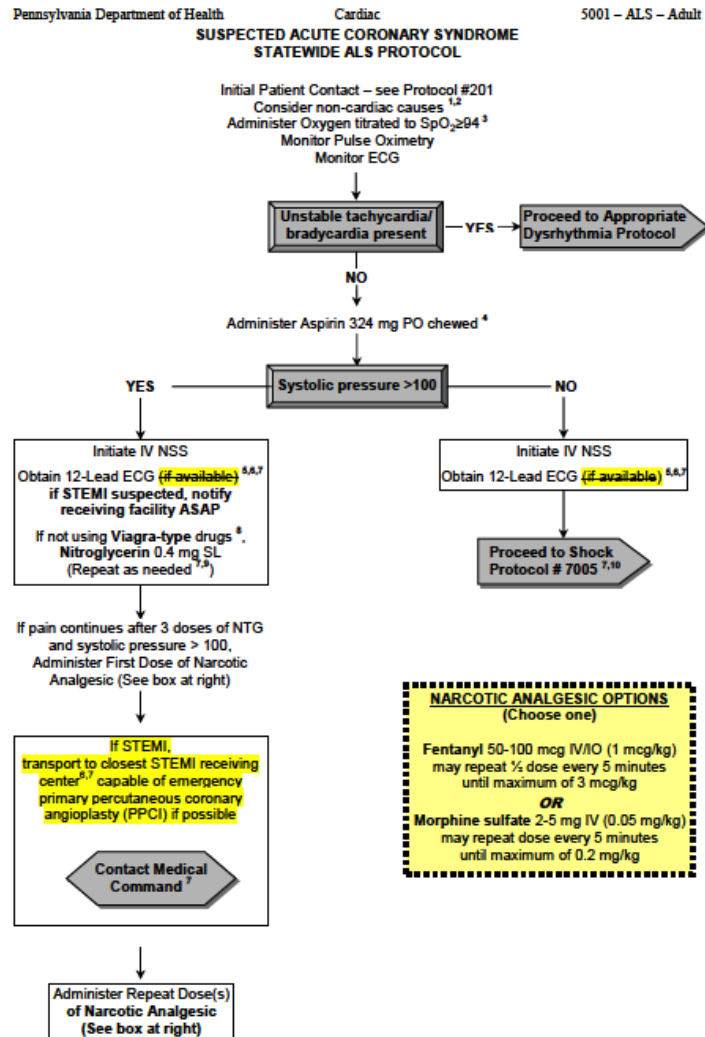
- Sr MDS 13
- MC MDs 18
- RN/Medic 36

# I Hawthorne Effect!

- Alteration of behavior by the subjects of a study due to their awareness of being observed.
- For EMS- May require a perceived demand for performance.

Campbell JP, et. al. Ann Emerg Med 1995;26:590-594

# QI built into protocols



## Performance Parameters:

- All patients should either receive aspirin or the PCR should include documentation of why aspirin was contraindicated.
- Review for appropriate transmission of 12-lead ECG when possible. Review for appropriate diversion to facility capable of PCI and/or for appropriate notification of receiving facility when STEMI is identified.
- Cardiac rhythm monitored and 12-lead ECGs done (when available) and rhythm strips/12-lead ECGs documented with graphs included in PCR.
- Possible benchmark for on scene time of ≤ 20 minutes.
- Vital signs documented after each use of vasoactive medication (e.g. nitroglycerin or narcotic analgesics).

# Bundles of Joy



## Pittsburgh EMS Post Cardiac Arrest Bundle Audit

PRID: xxxxxxxxxxxx

Date: , 2016

Unit: M-

### Key Post Arrest Interventions:

Intervention	Performed	Comment
Airway Secured	YES	ETI Sx1
2 EtCO2 readings documented	YES	60 & 60 mm/hg
2 Blood Pressures documented	YES	190 & 180/SYS
Fluid Bolus	NO	
Epinephrine Drip	N/A	Lowest SBP 180
12 Lead EKG	YES	
Glucose	YES	99 mg/dl

Patient outcome: Pending from Mercy

Comments: 31 y/o male possible OD, arrested on you 4 minutes after arrival with a PEA rhythm. Great job with the resuscitation of this patient. Post arrest good job with screening the 12 Lead EKG & checking the glucose, Epinephrine Drip was not required at these SBP's.

Remember to give & document a 500cc NSS bolus (fluid given during the arrest counts towards this). Also check a blood glucose. Thanks!

Our new metric this year is goal of 80% of post arrest patients getting a Epinephrine Drip administered and a 12 lead EKG screened.

\*\*\*CONFIDENTIAL PEER REVIEW DOCUMENT\*\*\*



## Pittsburgh EMS "Crashing Patient" Audit

PRID:

Date: , 2016

Chief Complaint: Unresponsive

Unit: M-h

Patient contact to arrest: 29 minutes

Moved prior to arrest: YES

### Interventions prior to arrest:

Intervention	Performed	Comment	Time
Patient Monitoring	YES	SBP Yes	0 (5)
		SpO2 No	
		EKG Yes	9 (5)
		EtCO2 Yes - malfunction	11 (5)
Airway Managed	YES	NP Airway No	
		OP Airway No	
		King N/A	
		ETI Sx1	19 (20)
Respiratory Managed	YES	O2 Yes	6 (5)
		CPAP N/A	
		PPV-BVM Yes	6 (5)
Arrhythmia Managed	YES	Medications N/A	
		Pacing Yes	11 (10)
		Cardiovert N/A	
Vascular Access Shock Management	YES	IV No	
		IO Yes	14 (10)
		Fluids Yes	14 (10)
Medical Therapy	N/A	Pressors No	
		No Glucose check documented	

Thanks  
Patient Care Coordinator Pinchalk



# Procedures



IV Attempt/ Patients	Total 12 LD Cases	12-Lead/ Patients	T
18%	56	8%	
13%	23	5%	
17%	85	9%	
2%	7	1%	



# Find a champion



## COMPARISON OF TIMES TO INTUBATE A SIMULATED TRAUMA PATIENT IN TWO POSITIONS

Mark Pinchalk, BS, EMT-P, Ronald N. Roth, MD, Paul M. Paris, MD,  
David Hostler, PhD, NREMT-P

**PROJECTS**

- » Evidence Based Guidelines
- » Opioid Crisis
- » Nomenclature
- » EMS Education Standards
- » CPR LifeLinks
- » EMS Agenda 2050
- » Provider & Patient Safety
- » Stop the Bleed Initiative
- » NEMSIS

✉ RECEIVE EMAIL UPDATES

## EMS Compass



EMS Compass developed a process to create performance measures to improve the quality of care at the local, regional, state and national levels.

Hypoglycemia  
Stroke  
Seizure  
Trauma Pain  
Trauma  
Pediatric Respiratory  
Medication Error  
Vehicle Operations Safety  
Pediatric Medication Error

## Initiative Objectives

- Develop a core list of measures with specific definitions for EMS to improve quality.
- Use evidence-based recommendations and best practice data as the foundation of the development process.
- Utilize data elements from the National Emergency Medical Services Information System (NEMSIS) whenever possible.
- Engage local, state and national stakeholders throughout the development and testing process.
- Design a system to support continuous updating and expanding the performance measures dictionary going forward.



Treatment Administered for Hypoglycemia

Pediatric Respiratory Assessment

Administration of Beta Agonist for Pediatric Asthma

Documentation of Estimated Weight in Kilograms

Patient with Status Epilepticus Receiving Intervention

Suspected Stroke Receiving Prehospital Stroke Assessment

Injured Patients Assessed for Pain

Effectiveness of Pain Management for Injured Patients

Trauma Patients Transported to a Trauma Center

Use of Lights and Sirens During Response to Scene

Use of Lights and Sirens During Transport

NEMSQA will develop and endorse evidence-based quality measures for EMS and healthcare partners that improve the experience and outcomes of patients and care

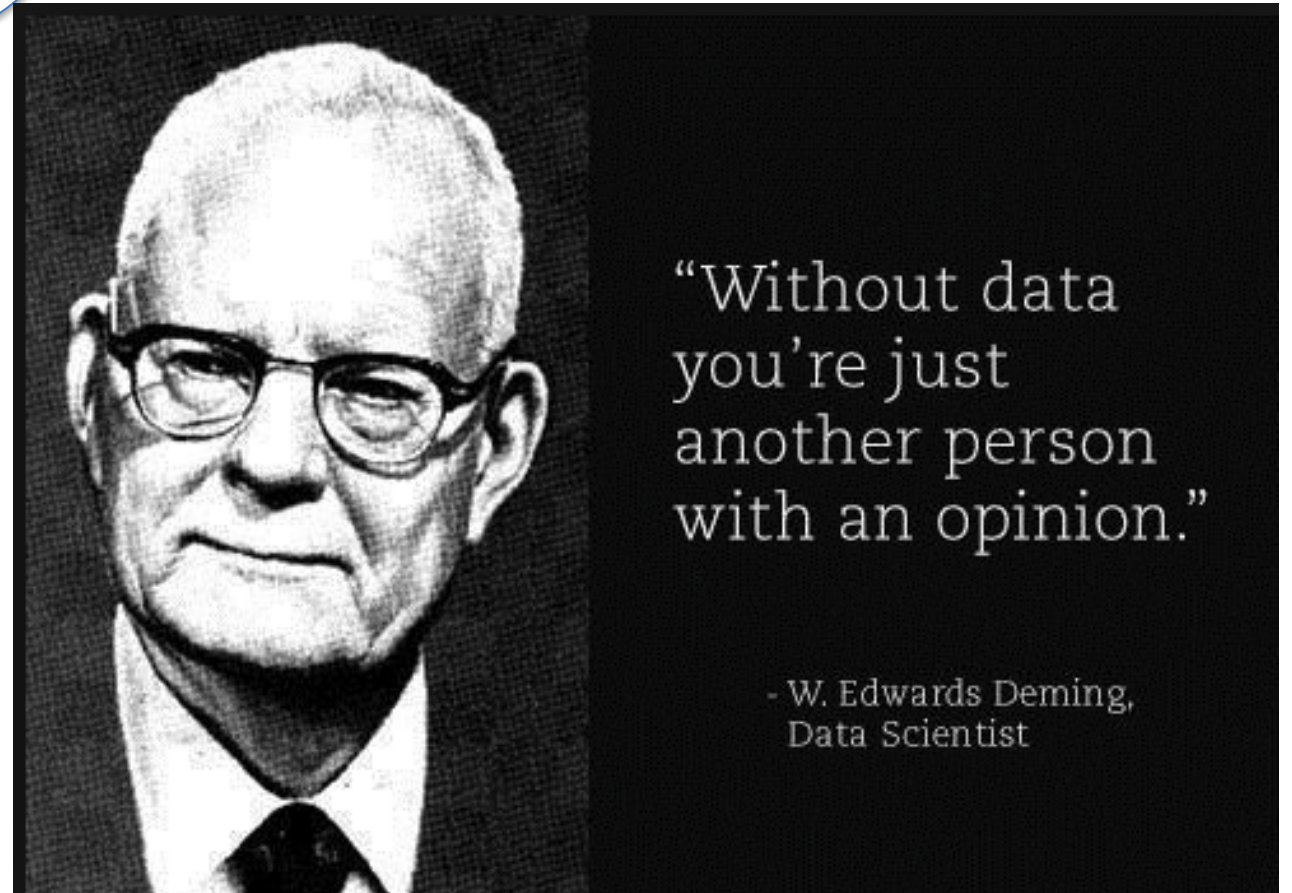
TABLE 2: Comparison of EMS clinical performance indicators.

Clinical condition	US clinical performance indicators*					
	ST Elevation Myocardial infarction (STEMI)	Pulmonary Edema	Asthma	Seizure	Trauma	Cardiac arrest
Indicators or bundle elements	(1) Aspirin (2) 12 lead Electrocardiograph (ECG) (3) Direct transport to percutaneous cardiac intervention (PCI) interval from ECG to balloon <90 minutes	(1) Nitroglycerin (2) Noninvasive positive pressure ventilation	(1) $\beta_2$ agonist administration	(1) Blood Sugar measurement (2) Administration of a benzodiazepine	(1) Entrapment time <10 minutes (2) Direct transport to trauma for patients meeting criteria	(1) Response interval <5 min for basic CPR and Automated external defibrillators (AEDs)
Outcome	NNT = 15 Harm avoided: A stroke, 2nd myocardial infarction, or death	NNT = 6 Harm avoided: need for an endotracheal intubation	Not Specified	NNT = 4 Harm avoided: persistent seizure activity	NNT = 3 or 11 depending on criteria used Harm avoided: one death	NNT = 8 Harm avoided: one death

- Sayed M. Emergency Medicine International 2012,



Based on my  
clinical  
experience.....



# Potential Pitfalls





# EMS patient care records....

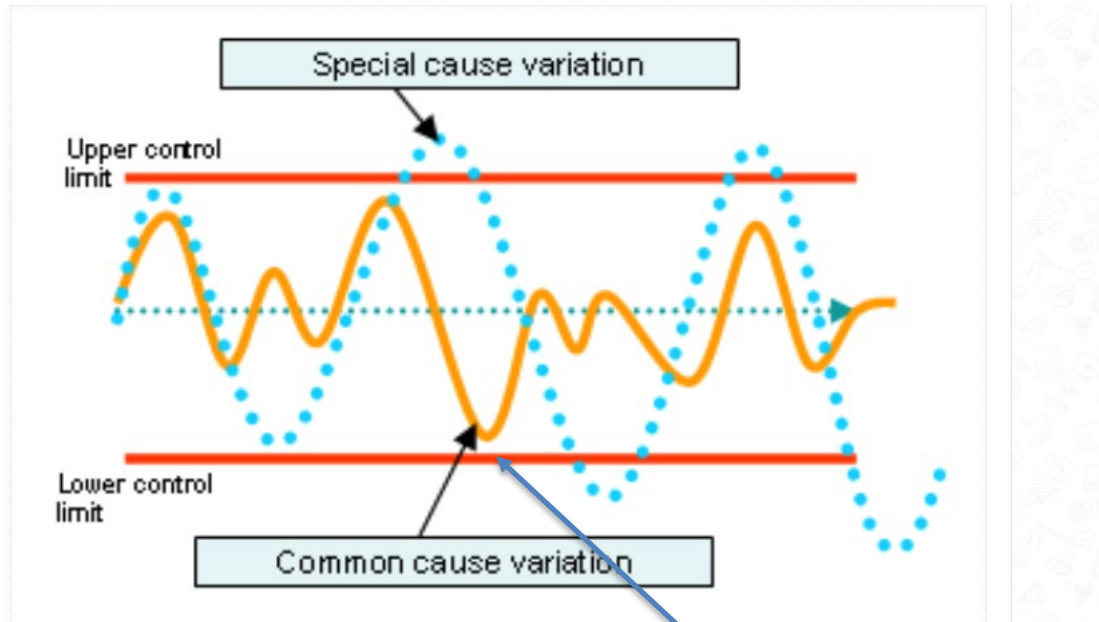


The classic major genres of **PCRs** are:

- Fiction.
- Comedy.
- Drama.
- Horror.
- Non-fiction.
- Realistic fiction.
- Romance novel.
- Satire.

We responded on a cold, dark, and stormy night....

# Chasing blips on the radar

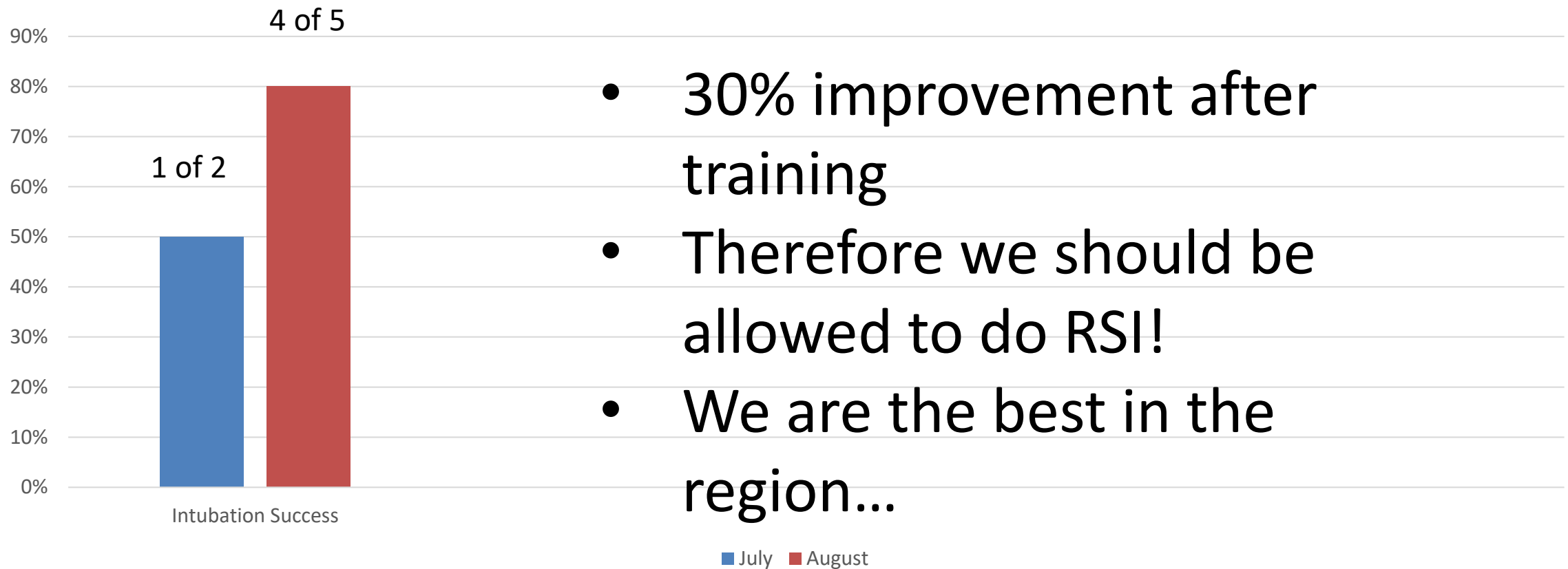


Placement of cappuccino machine in  
Medic Room

- Variation
  - Common cause vs special cause
- Effect Size/Sample size
- Negative feedback
- Human factors
- Irrelevant measures

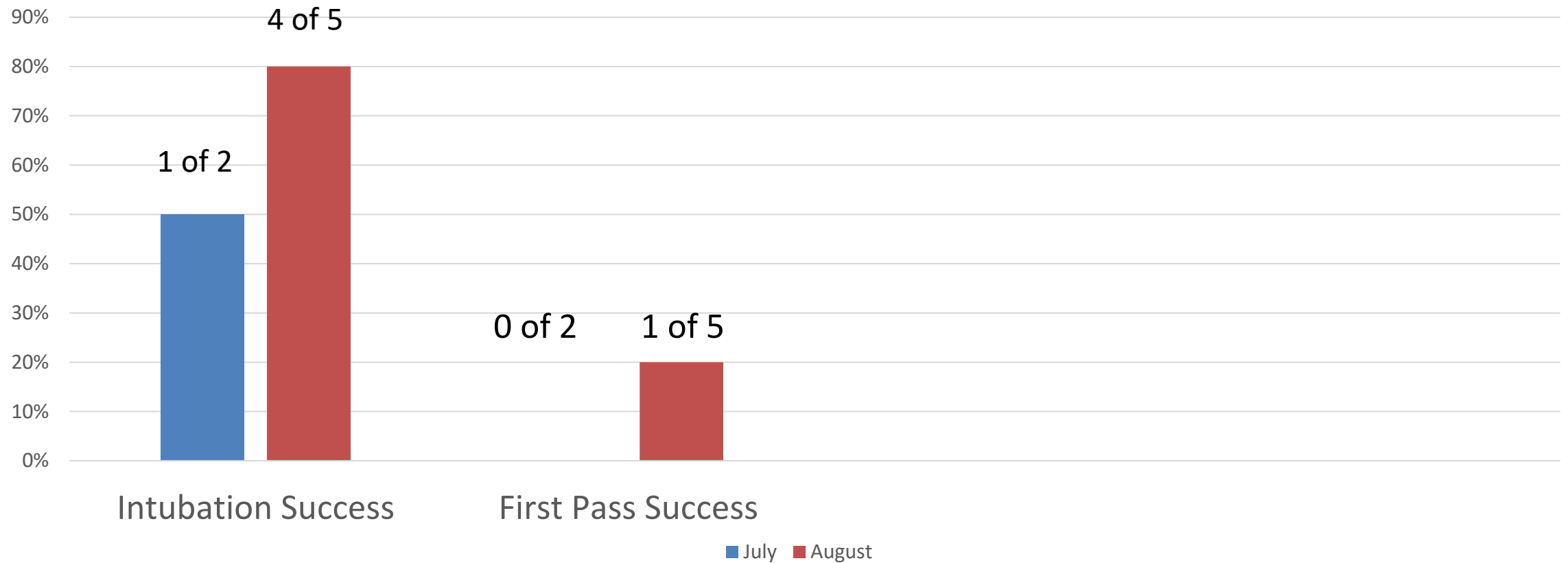
# ACME EMS QI Committee

## Acme EMS Intubation Success



# ACME EMS QI Committee

Acme EMS Intubation Success Rates



# “Improved intubation success rate with RSI”



95%

“After initiating RSI our intubation success rate is nearly 100%”

It may take us 6 or 7 tries but we get the tube in!”





# Human Error

How to remove human error

→ Get rid of humans

- Focusing solely on human error makes errors go underground
- Slips and laps will occur and systems must be able to mitigate these



# Begin with the end in mind

-Covey

- We get ROSC 50% of the time.....







9/28/2019

“Hi Dr. Roth,  
I am the guy that  
died at last year’s  
Great Race!”



# Missing pieces

emsCharts.com

home Level: Base Manager (52) Add QA Flag View Plans (3) ikelley - 08/30/05 logout

> Patient Chart  
> Page 1 (Dispatch)  
> Patient  
> Page 2 (PT/COHR)  
> Page 3 (Neuro, A/Vag)  
> Page 4 (Resp, Cardio)  
> Page 5 (Secondary Survey)  
> Page 6 (Lab, Fluids)  
> Page 7 (Med, IV, PTA)  
> Page 8 (Activity Log)  
> Page 9 (Misc Forms)  
> Entire Chart  
> Print Preview  
> Special Report  
> Chart Toolbox  
> Import Data

PRID: 500600 Dispatch #: Medical Record#:

Service: GREG's DEMO Service Date: January 25, 2005  
Base: Main Station Team: Critical Care  
Unit: Greg's Demo Medic 4 Crew 1: \*Criticalcare, Mary  
Dispatched As: Crew 2: \*Support, Presmure  
Main Casualty: Not Recorded Crew 3: \*Howard, Greg  
Ref Type: Scene Unscheduled \* ALS Provider  
Location: Fake Hospital (Cardiac Stepdown)  
Ref. Zip: 00000  
Receiving: (Emergency Department)  
Outcome: Scene Transport

Last Name: doe First: jayne  
Address: anylane  
City: anytown ST: PA  
Citizenship: United States  
DOB: 03/15/2005  
Gestational Age: 0  
Complications: Eclampsia, Meconium  
Maternal Disease: Herpes  
Age: ~48d Sex: F Weight: 75 kg  
Subscriber: No  
Race: White, non-Hispanic  
Barriers to Care: Not Recorded  
Pediatrician: Pediatrician David  
Neonatalist: Dr Neo Neonatologist  
Billing Information:  
Company Group ID:  
Allstate Life Insurance 66745df  
selfpay 11112315 111111111A

Odometer Start: 14:59  
City: At Ref: Standby: 14:59  
At Rec: Dispatch: 14:59  
End: EnRoute: 14:59  
Id Miles: At Ref: 14:59  
Tot Miles: At Patient: 14:59  
Lv Patient: 14:59  
Lv Ref: 14:59  
At Ref: 14:59  
Tuffare: 14:59  
Available: 14:59

Notice of Privacy Practices Given: None  
Consent Signed: No  
Medical Necessity Signed: No

Pre-Hospital



Valley Medical Center

Welcome Dr. Kemp Stephens

Home Appointments Patient CPOE Mail Report Settings Help About Logout

Register | Encounter | Review | Letters-Out | Transcribe | Letters-In

Adrian Methews 37 Years old Male Last Visit: 04-09-2004 Last Followup: Encounter Type: Office Visit Attending Doc: Kemp Stephens ENC Date: 04-12-2004 Home: (408) 666 8301

PMH (Table | Diagrams) Allergy Health Maintenance

CHEST PAIN NEC 786 59 since 04-12-2004 BARBITURATES (Clumsiness, dizziness) 07-07-2004 Annual Physical  
Diabetes since 1990 PENICILLINS (headache, sore mouth or tongue) 07-07-2004 Cholesterol  
Notes: 07-07-2004 Clinical Breast Exam  
Overall health appears good, regularly ex. 07-07-2004 Colonoscopy  
Pain: Left Back Posterior 07-07-2004 Dental Exam  
07-07-2004 Hearing  
07-07-2004 Influenza Vaccine

Surgery / Procedures Family History Social History

Exploratory laparotomy for perforated appendix 07-07-2004 Breast cancer - Aunt Degree MBA + a diploma holder  
Broken Hip 1999 Diabetes - None in the Family Occupation service in an MNC  
Wisdom teeth removal Prostate Cancer - Father Married Yes  
Marital Status Married  
Children 1  
Single parent No

Current Medication Personal Notes Specialty

Aredia IV SolR 30 mg 04-18-2004 Taking 2 week trip to Europe next month. The patient is married with 1 child and the family seems socially well placed. Date of Service 12-22-2003  
Bravelle Inj SolR 75 unit 06-04-2004 Date of Surgery 12-22-2003  
D-Biotin Misc Powd 07-15-2004 Diagnosis normal  
Paracetamol Indication symmetric  
Tylenol Lesion Size normal  
Warfarin Sodium Oral Tab 1 mg 06-14-2004 Location asymmetric  
Operation regular

Hospital

# WTF Moments in QI (What's the fuss?)

Crew administers Bicarb instead of D50 → Look for system issues, policies procedures



# WTF Moments in QI

Crew administers Bicarb instead of D50



Look for system issues,  
policies procedures

Crew administers 12mg of naloxone  
to an unresponsive patient with  
pinpoint pupils



Re-education

# WTF Moments in QI

Crew administers Bicarb instead of D50



Look for system issues,  
policies procedures

Crew administers 12mg naloxone to  
an unresponsive patient with  
pinpoint pupils



Re-education

Crew fails to take  
stretcher/equipment into a high-rise  
because most of the calls are BS.



Discipline

# Just Culture

- **Shared responsibility**
  - Systems are accountable
  - Individuals are accountable

## Human Error

- Memory lapse
- Mistake

## At-risk-behavior

- Behavioral choice
- Failure to recognize risk

## Reckless behavior

- Conscious disregard
- Unjustifiable risk

# WTF Moments in QI



Too Soon!

# You are being audited!



## Requests

- Response times
- Overtime expenses

How might you re-direct his audit?





“If you know one EMS agency...  
you know one EMS agency”

-Roth 1985

# One last thing...

- If it's good enough to change your practice you should publish it!



# Summary

- **Limited resources QI program**
  - Understand barriers
  - 3 ways to initiate QI program
  - Leverage “Peer review”
  - Performance Measures
  - Patient care bundles
  - EMS Compass /NEMSQA
- **Sophisticated program**
  - Accuracy of PCRs
  - Begin with the end in mind
  - Lack of hospital data
  - Reviewers may vary



An aerial photograph of Pittsburgh, Pennsylvania, taken at dusk. The city skyline is visible in the background, with numerous skyscrapers illuminated. The Allegheny River flows through the center of the city, with several bridges crossing it. In the foreground, a red trolley is visible on a track, and a fountain is located in the river. The text "Thank You" is overlaid on the image in a large, white, sans-serif font.

# Thank You

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