



Seattle/King County

A Story of: Education and Training fo FF/EMTs

Mike Helbock, M.I.C.P., NR-P, SEI
MSO-4 Seattle/King County Medic One (ret.)
Faculty – Seattle/King County Resuscitation Academy
Clinical Educator – Prehospital Medicine
University of Washington School of Medicine
Division of Emergency Medicine
Seattle, Washington

medicme@me.com
www.facebook.com/mike.helbock
206-948-1153

So,
how did
we do it?



HP-CPR . . . breaking it down

HP-CPR: Broken down

- A “choreographed” CPR event built around:
 - A “high” CPR Fraction Time...(90%, 95%)
 - **Quality CPR...(DVD-R)**
 - **COMPLETE Scene Coordination!!**



A Program built on Performance

(Through Education and Training)

Educate 4,000 EMS Providers

So FIRST...

We needed to
introduce a new term:

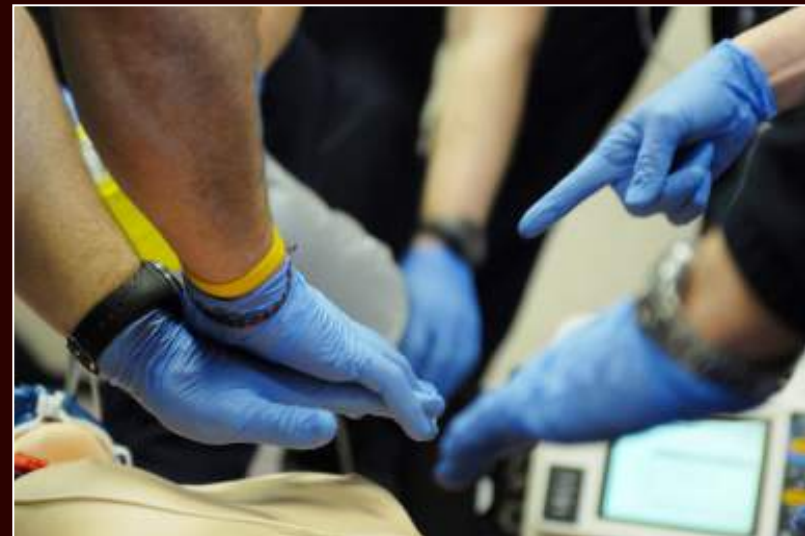
“Fraction Time”

CPR Fraction Time

- Measurement of compressions in proportion to the (overall) CPR event
 - Example: a CPR fraction time of **90%** in a **120 second/2 minute** time period:

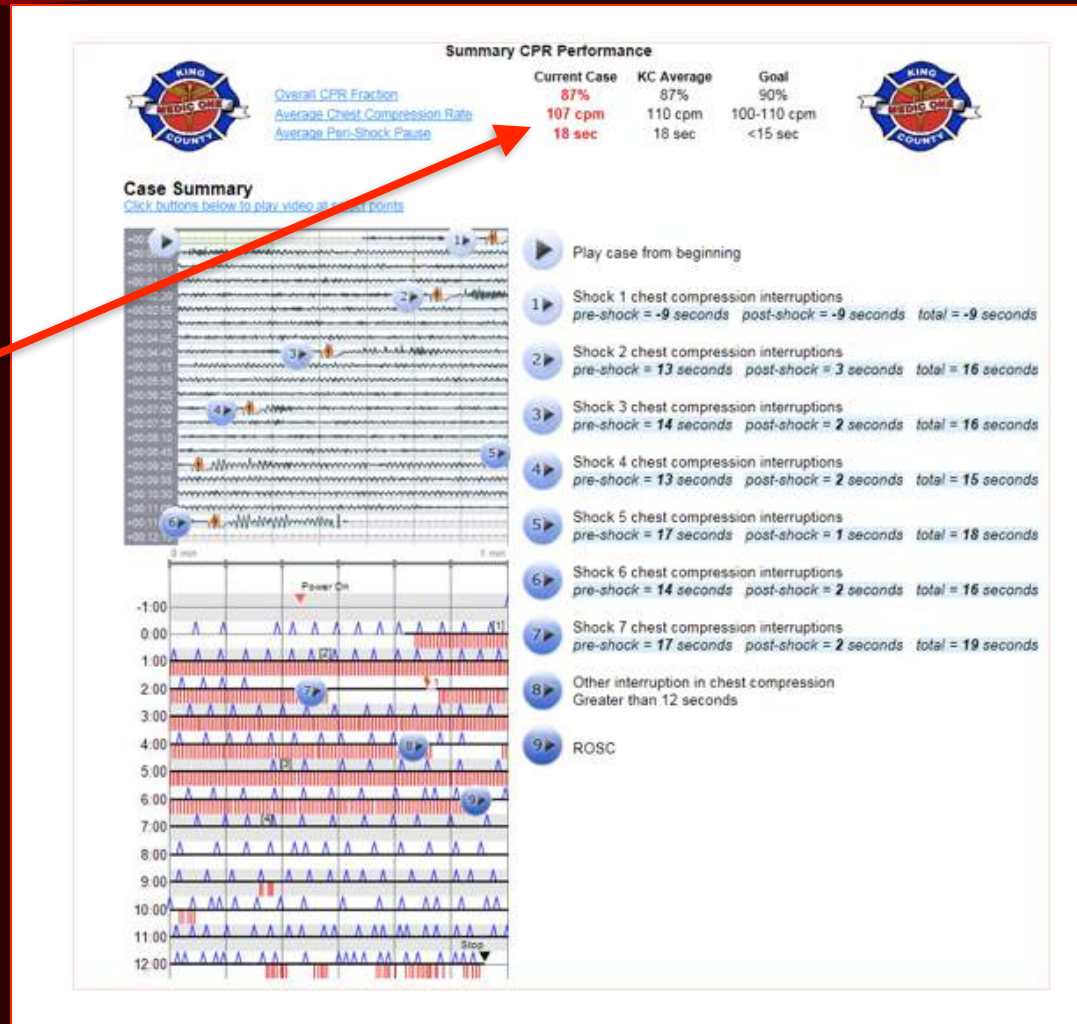
Is **108** seconds of CPR!!

Only **12** seconds
of total interruptions!



CPR Fraction Time

- Goal is:
90%... (30:2)
95%... (BLS Cont.)
(secured airway)



*When ALL components of HP-CPR
have been met:*

- 1% increase in Fraction Time

EQUALS

- 1% increase in Survival..!

THEN...

We had to
figure out,
how to...

Eliminate **ALL**
unnecessary
interruptions!



EXAMPLE:

**Rotation with
Hover!**

AND THEN...

WE

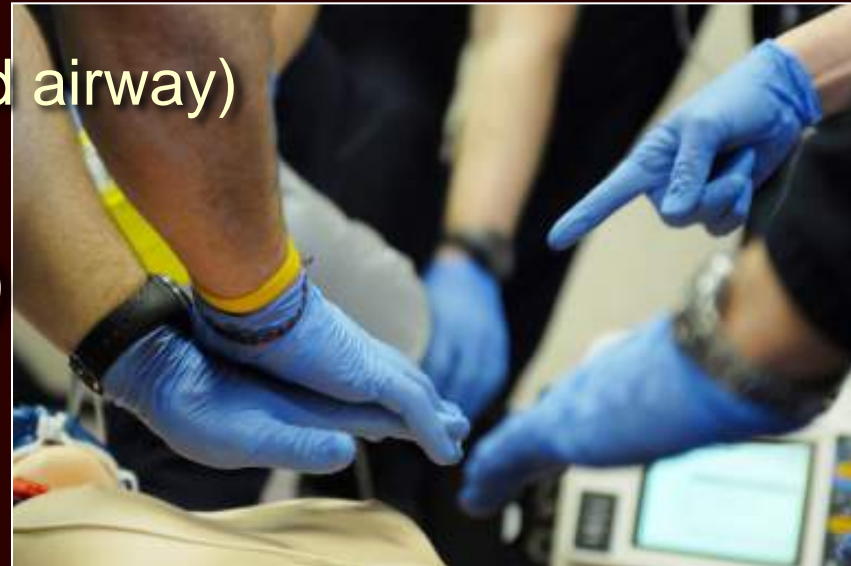
needed to
're-define' the rolls
and responsibilities
of our providers

The Providers

(BLS/ALS)

BLS Providers

- BLS “owns” CPR
- Clear, calm communication
 - Keep CPR fraction time HIGH
 - (90% for 30:2)
 - (95% for CCC, advanced airway)
 - CPR rotation
 - Femorals (place holder)
 - Analyze/charge AED



BLS “owns” CPR



ALS...(Integration)

- Paramedics **MUST** keep interruptions to a minimum (*perform skills DURING comp.*)
 - ET (advanced airway)
 - IV/IO, peripheral
 - Rhythm checks
 - Manual defibrillation
 - ☑ (Pre-Charge @ 1:45)
 - ☑ compress during charge
(to decrease “pre-shock” pause)



ALS (Paramedics)

ALL skills done during compressions:

ETT



IV/IO





LASTLY...

Using A “CAB” Approach

- **C**ompression
- **A**irway
- **B**reathing

WE had to
identify the
HP-CPR metrics

Then educate, train and
measure performance!

HP-CPR!

(the METRICS)

D – Depth of compression

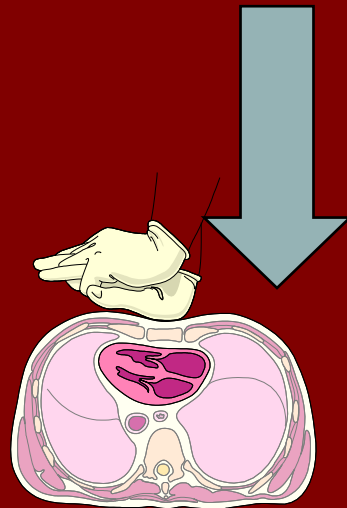
V – Ventilation (*chest rise*)

D – Decompression (*recoil*)

R – Rate of compression

CPR...Focus on Quality

Depth of compressions



Depth of “at least”
2 inches - 2.4 (max)
(4-6cm) Singapore?

*****Minimize interruptions
in chest compressions**

**Rotate compressors every
2 minutes**

*(minimize fatigue and
maintain choreography)*

CPR...Focus on Quality

Depth of compressions

Ventilations

*Achieve visible chest rise
ONLY ~ 300-400cc

**about 1 sec/breath
(with 30:2 - unsecured)

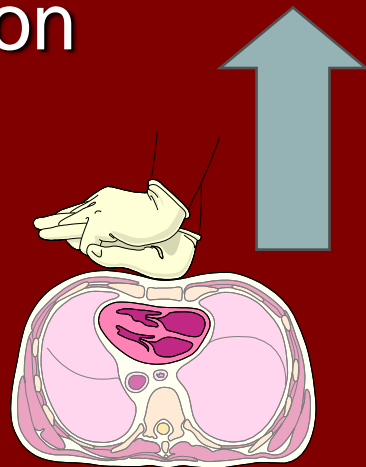
With continuous
**1 breath/10 compressions

CPR...Focus on Quality

Depth of compressions

Ventilations

Decompression



Complete chest *recoil*
after each
compression.

REQUIRED!

CPR...Focus on Quality

Depth of compressions

Ventilations

Decompression

Rate of compressions

****Use Metronome****

Hands *“hovering”* over the chest during analyze and/or shock!

100-120

110/min

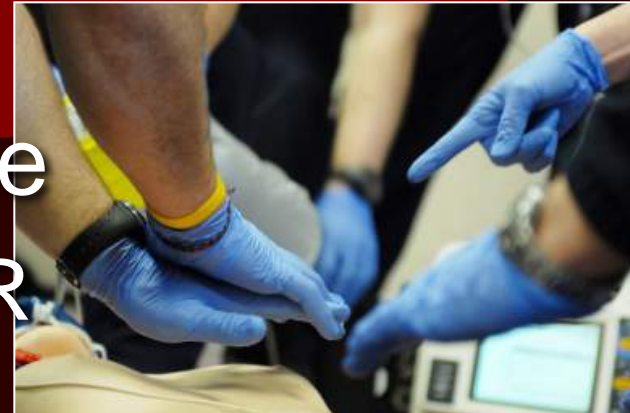
So now,
how do
we *TEACH* it?

(2) Parts to HP-CPR

(a “micro/macro” education model)

(2) Levels of education:

- “Micro”-education piece
 - actual components of CPR (DVD-R)
- “Macro”-education piece
 - Choreography of HP-CPR



Part #1

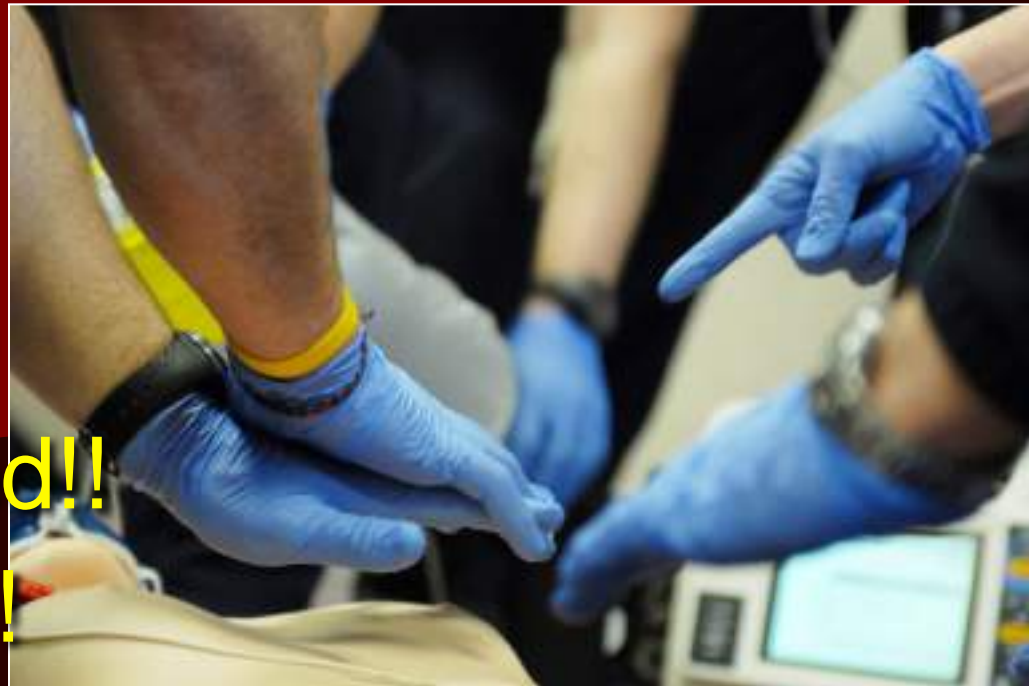
The initial responders



“Micro”-Education Piece

The actual
components of
CPR... (DVD-R)

- must be measured!!
- must be flawless!!



Part #2

Additional responders



“Macro”-Education Piece

The “Choreography” of the
entire event...

(the complete *package)

*integration of BLS/ALS



A Program built on
*Performance and
continual QI*

Train 4,000 EMS Providers

Psychomotor Performance

(All skill performances were measured with an instrumented manikin)

- ✓ Seattle/KC produced videos
- ✓ individual skills performance
- ✓ small group performance
- ✓ multi-company performance

Crew Positioning

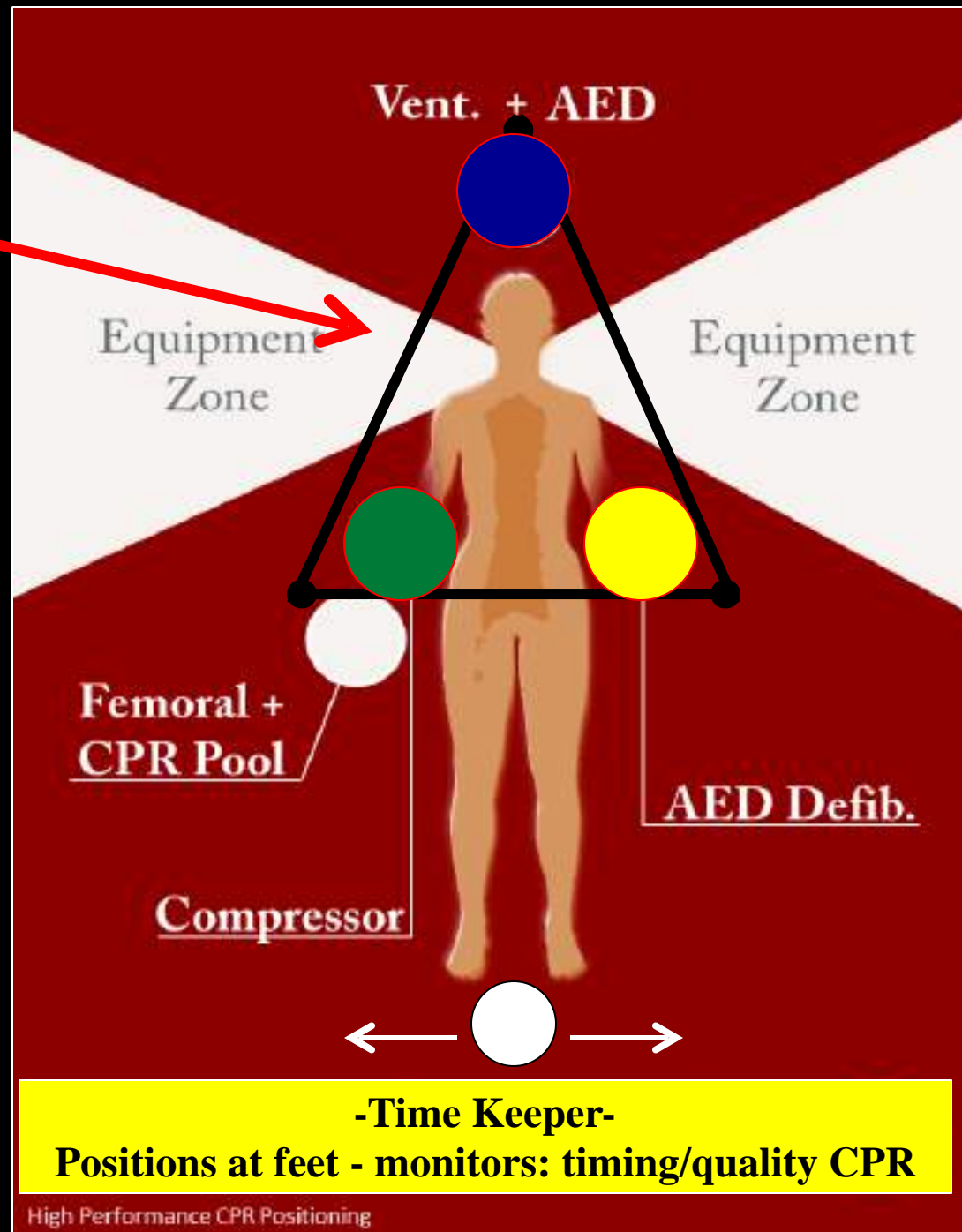


HP-CPR Triangle

HP-CPR Triangle

(Positions)

- * Cockpit ●
 - (pt. L side)
- * Compressor(s) ●
 - (pt. R side)
- * Ventilator ●
 - (pt. head)
- * Time Keeper ●
 - positions @ feet



HP-CPR Triangle

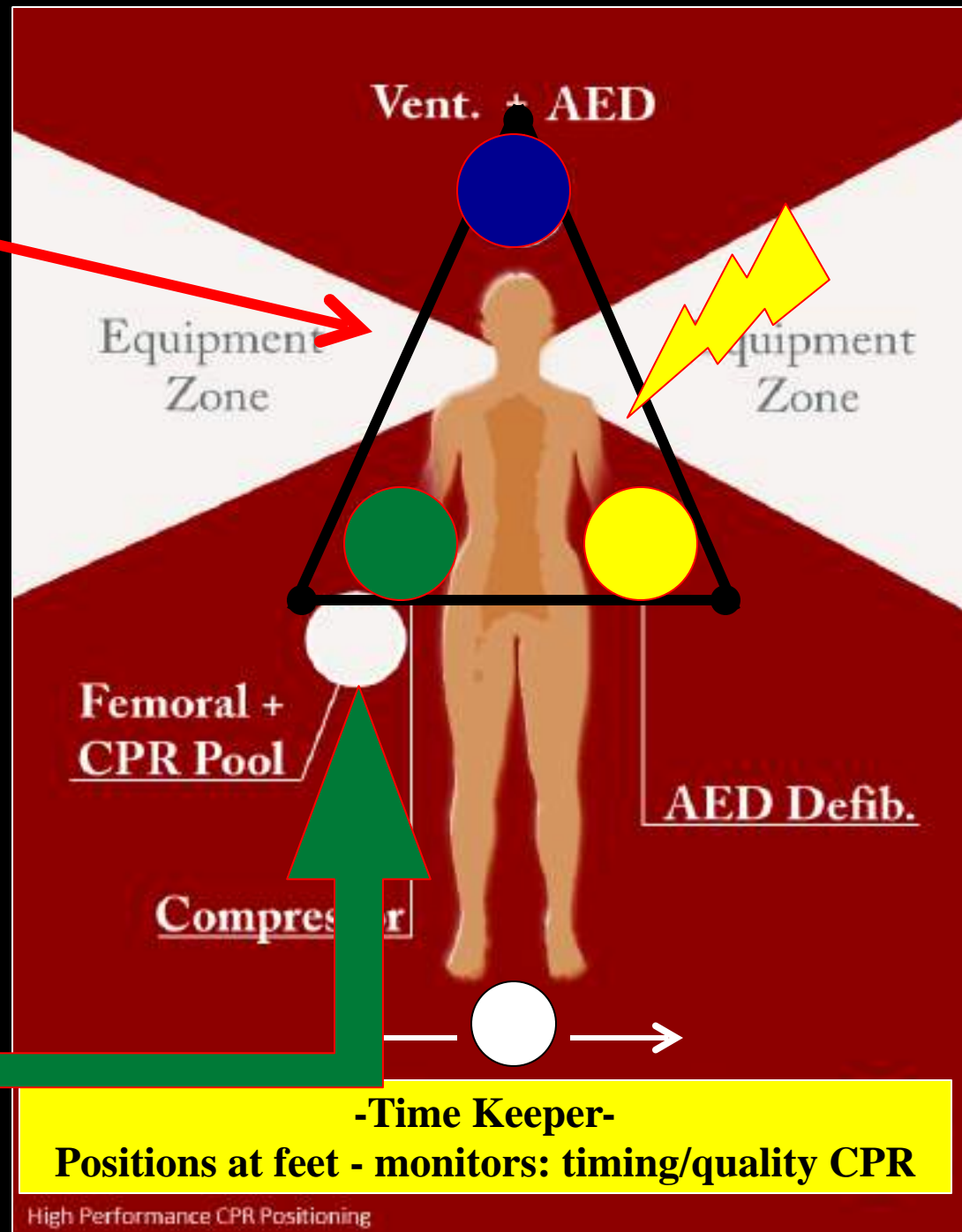
(Equipment/Manpower)

AED/Monitor**

- Placed @ pt. (L shoulder)

Compressor Pool

- enters from pt. (R side)



HP-CPR Triangle



Video Review

The HP-CPR

Metrics

Initial Assessment



Initial Assessment/Positioning



Body Mechanics



Complete Body Mechanics

with **Compression/Decompression**



3 Finger Technique



BVM Ventilation

BVM Ventilation

3-Finger

Technique

Pre-Charge (@1:45)



Pre-Charge @ 1:45



Key Point!

Eliminate **ALL**
unnecessary
interruptions!



Rotation
with
Hover...

Seattle Fire Department

Company Evolution
HP-CPR (BLS Continuous)

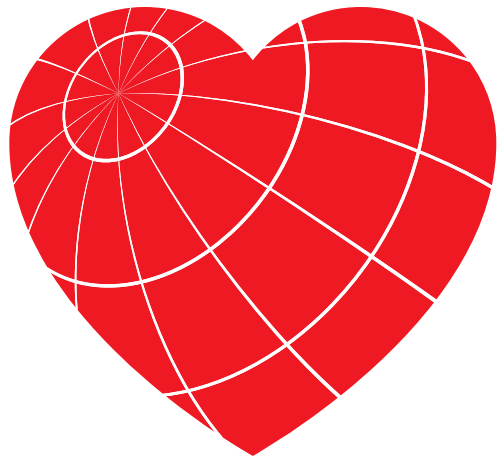
BLS Continuous



Multi-Company Evolution w/rotation

Questions? Comments?

resuscitationacademy.com



**Global
Resuscitation
Alliance**

