

ZOLL AED+PLUS



**A Death
Defying Device**

For hearts & brains too good to die"

Developed by



In cooperation with

ZOLL Medical Corporation

**Working to reduce Sudden Cardiac Death through
Public Access Defibrillation**

The following presentation illustrates the indications for and demonstrates the proper use of a ZOLL AED Plus.

This presentation is intended for use by AED and CPR instructors as supplemental material in nationally accepted AED training programs.

The Reality of Life...



...Someday everyone will die!

The Problem

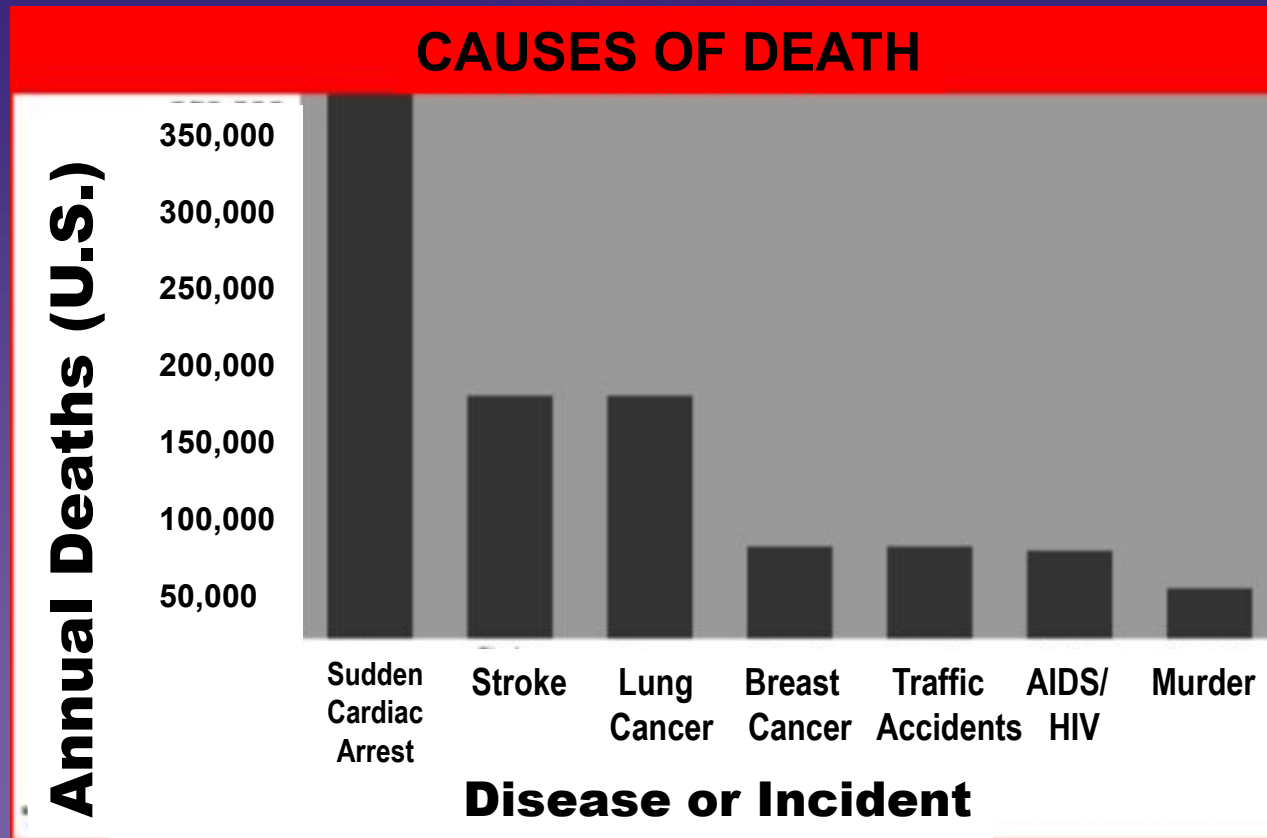
Premature Death



"... hearts & brains too good to die."

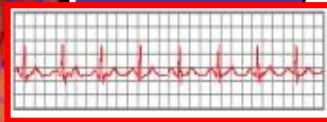
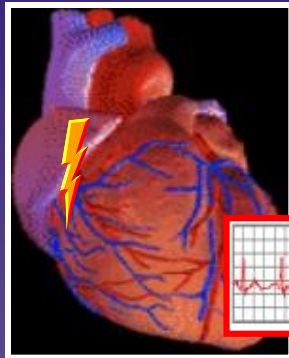
Peter Safar, MD

Despite advances in medical science...



Sudden Death continues to increase

How the Heart Works



Electric Event

generating



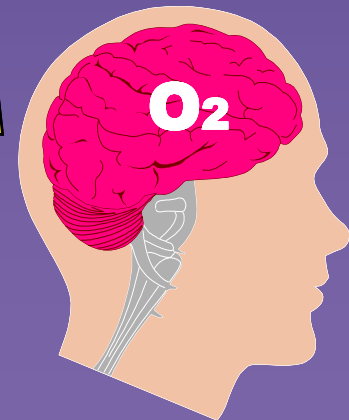
Pumping Action

producing



Blood Pressure

resulting in

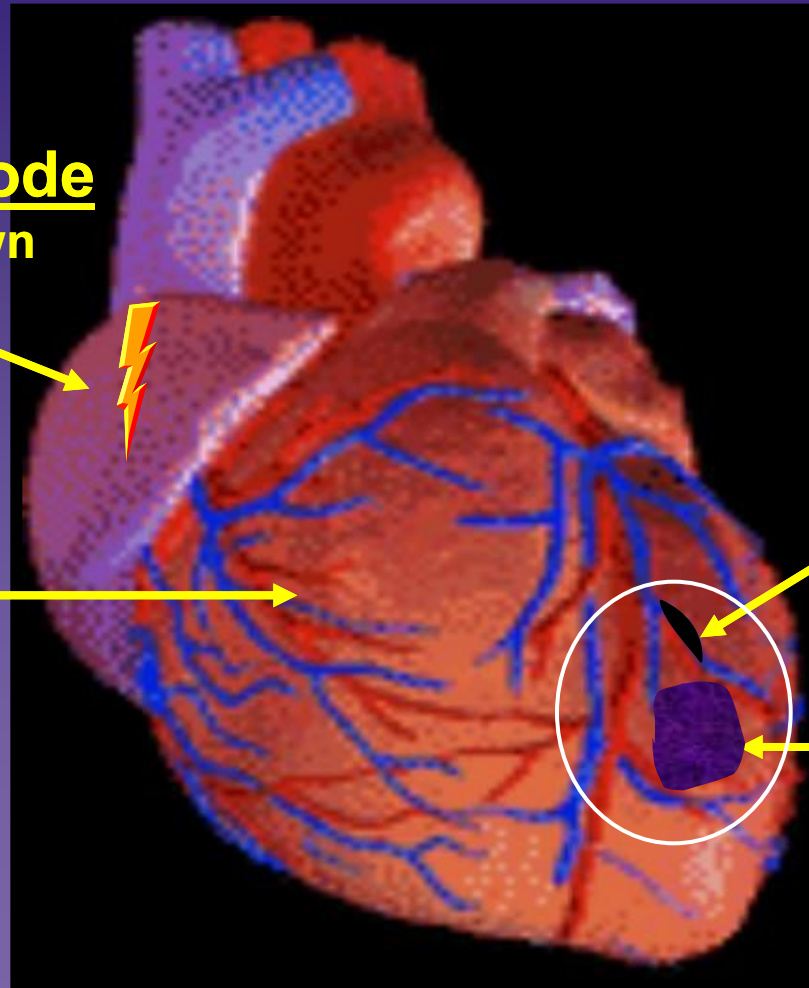


Heart Attack

The "S-A" Node

The heart's own
"pacemaker"

Heartbeat
Continues
to Beat



Blocked
Coronary
Artery

Damaged
Heart
Muscle

Heart Attack



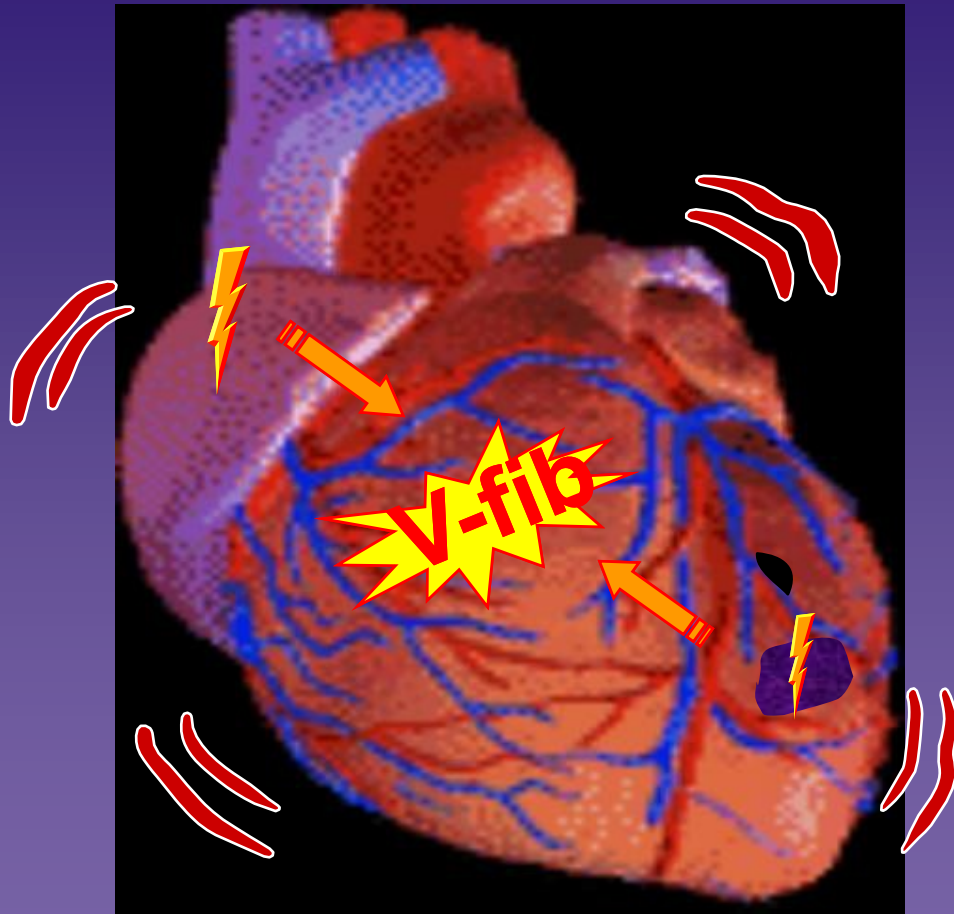
Signs & Symptoms

(Patient may have one or more...)

- Chest Pain/Discomfort
- Radiation to Arm, Neck or Jaw
- Profuse Sweating
- Difficulty Breathing
- Fearful, Confused or Irritable
- Denial of Symptoms

Continues to Have Heartbeat & Breathing

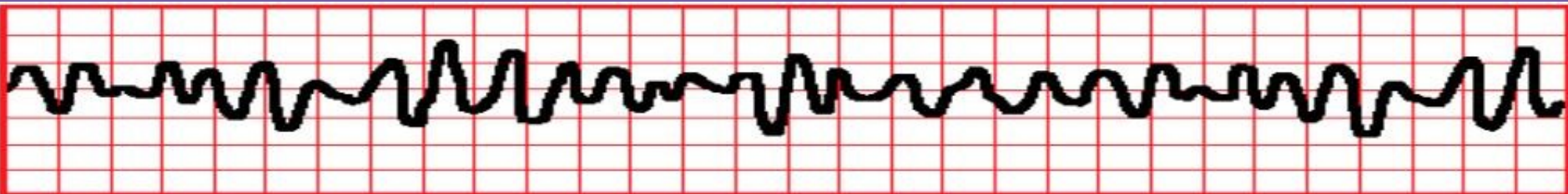
Sudden Death



Ventricular Fibrillation

Chaotic
Quivering
but

NO Heartbeat
NO Breathing



Patient Symptoms when in Ventricular Fibrillation

- Unconscious
- No Effective Heart Action
- No Breathing
- Looks Terribly Sick & Discolored



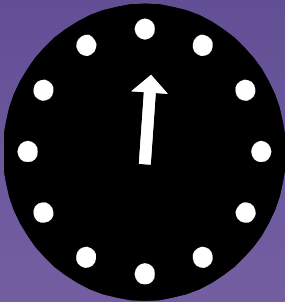
Resulting in...

No Oxygen to the Brain or Body Organs

Life or Death is now a matter of TIME

Sudden Death

**Some
Oxygen**



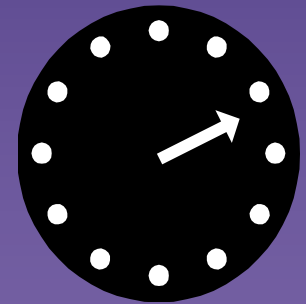
0 Minutes



Brain Death



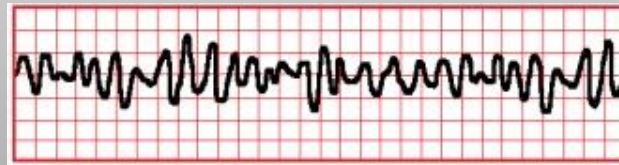
**No
Oxygen**



10-12 Minutes

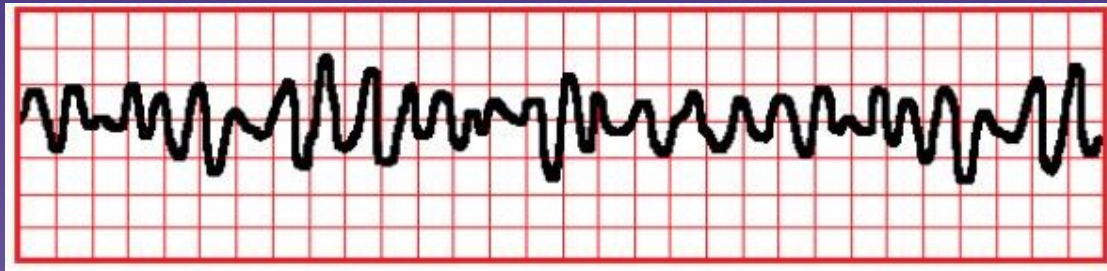
R I P

80-90%
of sudden deaths
are caused by
V-fib



The Only Correction for

V-fib



De-fib

Chain of Survival



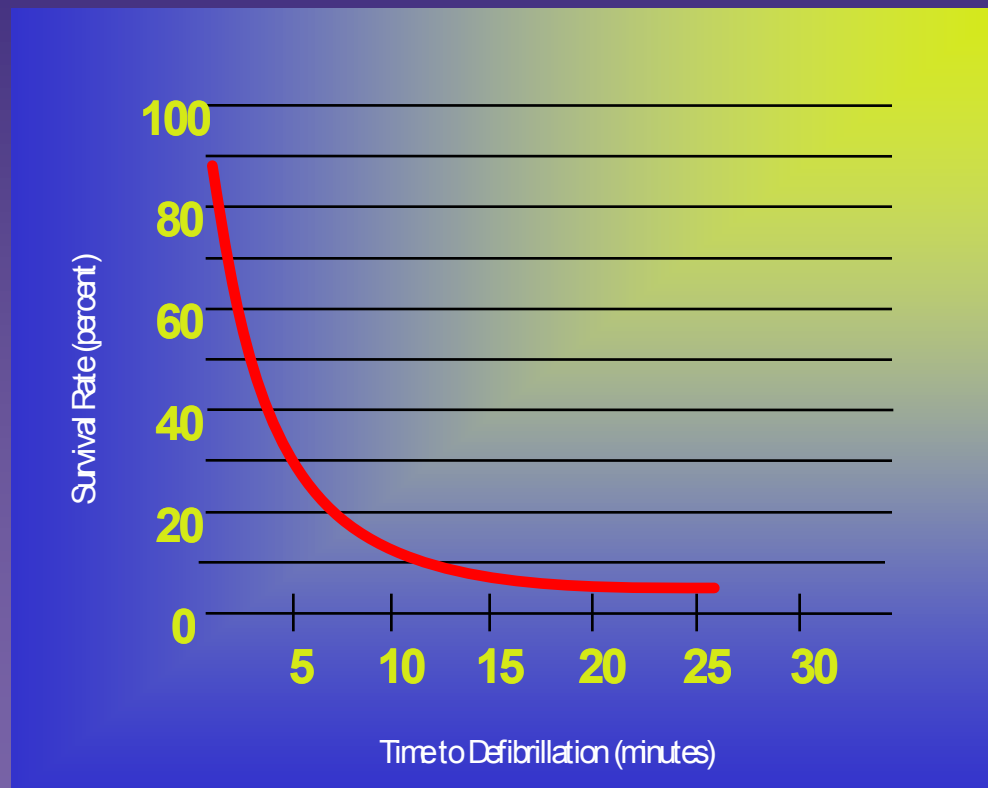
**Early
Access**

**Early
CPR**

**Early
Defibrillation**

**Early
Advanced
Care**

**For each minute that defibrillation is delayed
Survival is reduced by 10%**



A *Shocking* Solution
to Sudden Death

ZOLL
AED+PLUS



Automated External Defibrillators

- ✓ **Safe**
- ✓ **Simple Use**
- ✓ **High Success Rate**

Sudden Death Reversal Rates

- **CPR (only) 0-2%**
- **EMS/ER 5-15%**
- **CPR+AED 30-75%**

Public Access Defibrillation



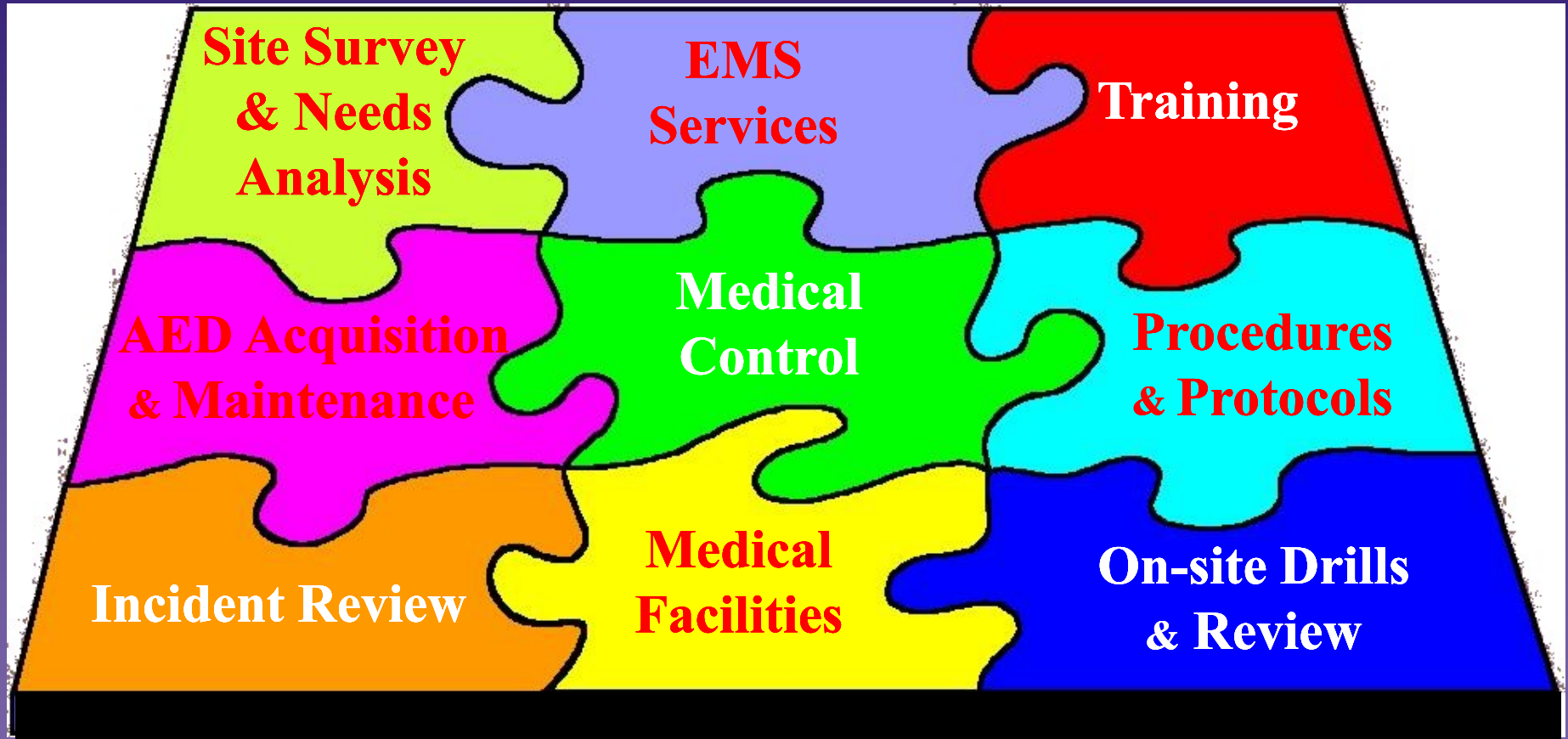
For use by...

...just about ANYONE

just about ANYWHERE



PAD Program



Planning & Implementation

Public Access Defibrillation

Part of an On-site

Emergency

Medical

Response

Plan



Emergency Medical Response Plan



What if...

Someone suddenly develops signs of a heart attack



Provide Initial Life Support



Call for EMS/Medical Help



If you see patient collapse or you find him down...



...you don't know if it's
Sudden Death
or a
Heart Attack

You'll Need

ZOLL AED+PLUS

- More than just a defibrillator
- Addresses all aspects of a rescue
 - ✓ Accessing Help
 - ✓ Airway Control
 - ✓ CPR
 - ✓ Defibrillation



“Designed for infrequent, often reluctant responders”

How To Use A

**ZOLL
AED+PLUS**



When “hearts and brains are too good to die”,
a sudden death need not be permanent.

ZOLL AED PLUS

Prompts the user in what to do

- **Visual**
(Graphical Operator Interface)



- **Audible**

reinforces rescuer training

Through the ENTIRE Resuscitation Effort

Is Help Needed?

- Recognize that someone needs emergency medical help
- Check **T**he **A**rea for personal dangers



- **Is person unresponsive?**



**Are you
okay?**



...if not already there,

- **“Log-roll” patient onto his back on a firm surface**



Stay Calm

Take a deep breath
and focus your
emotional energy



Send someone for Help



Make the Right Call

Someone should
IMMEDIATELY
Call for
EMS/Medical Help



*If you are alone...
Call EMS/911 yourself*



- **Send someone for the AED...**



...or if alone, go yourself!

While someone goes for the AED,
if no breathing nor signs of circulation...



2

Breaths

Begin CPR

at a

Rate and Ratio of



30

Compressions

When the AED Plus is on Scene

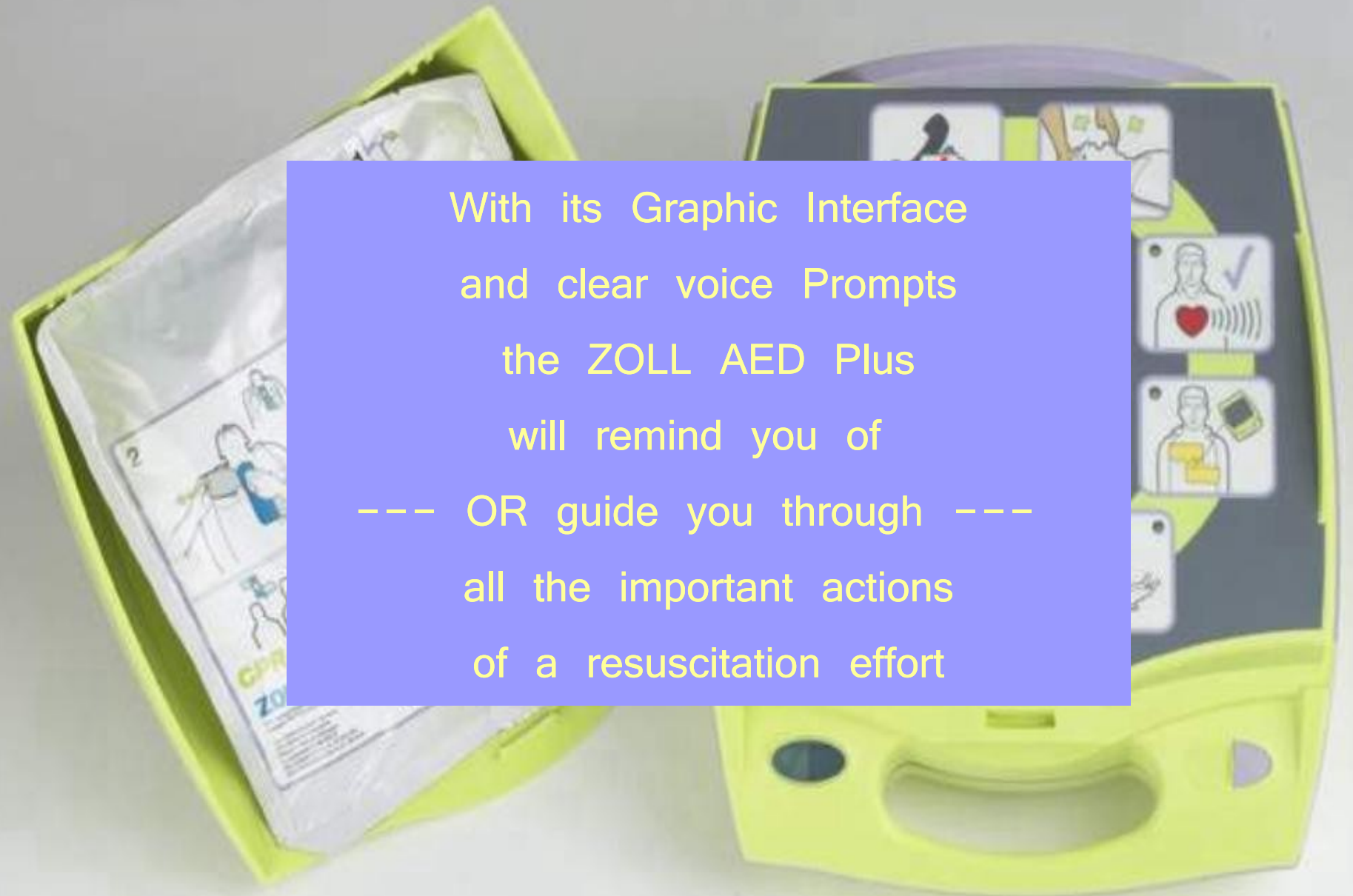


**Push the
“ON”
Button**

✓ Open the lid



✓ Follow visual & voice prompts



With its Graphic Interface
and clear voice Prompts
the ZOLL AED Plus
will remind you of
--- OR guide you through ---
all the important actions
of a resuscitation effort

Check Responsiveness



Stay Calm

- Reconfirm that the person is unconscious



Is Help On the Way?



- **Be sure someone has called for EMS/Medical Help**



Open Airway



- Head Tilt/Chin Lift
- Empty the mouth?



Check Breathing

- Look
- Listen
- Feel



...if none is found

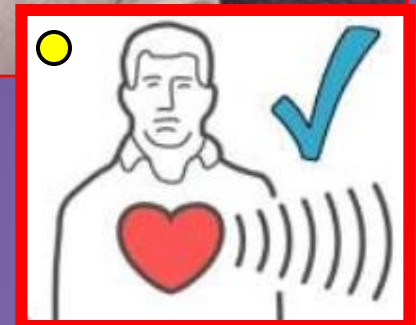
Provide Breathing

- Place CPR Face Shield ???
- Pinch Patient's Nostrils
- Take a Deep Breath
- Place Your Mouth Over Patient's *(Make a Firm Seal)*
- Give 2 Slow Breaths
(Take a Fresh Breath In Between)

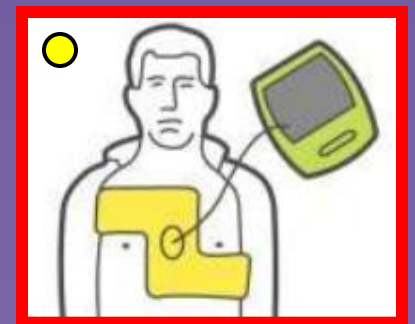


Examine for Signs of Circulation

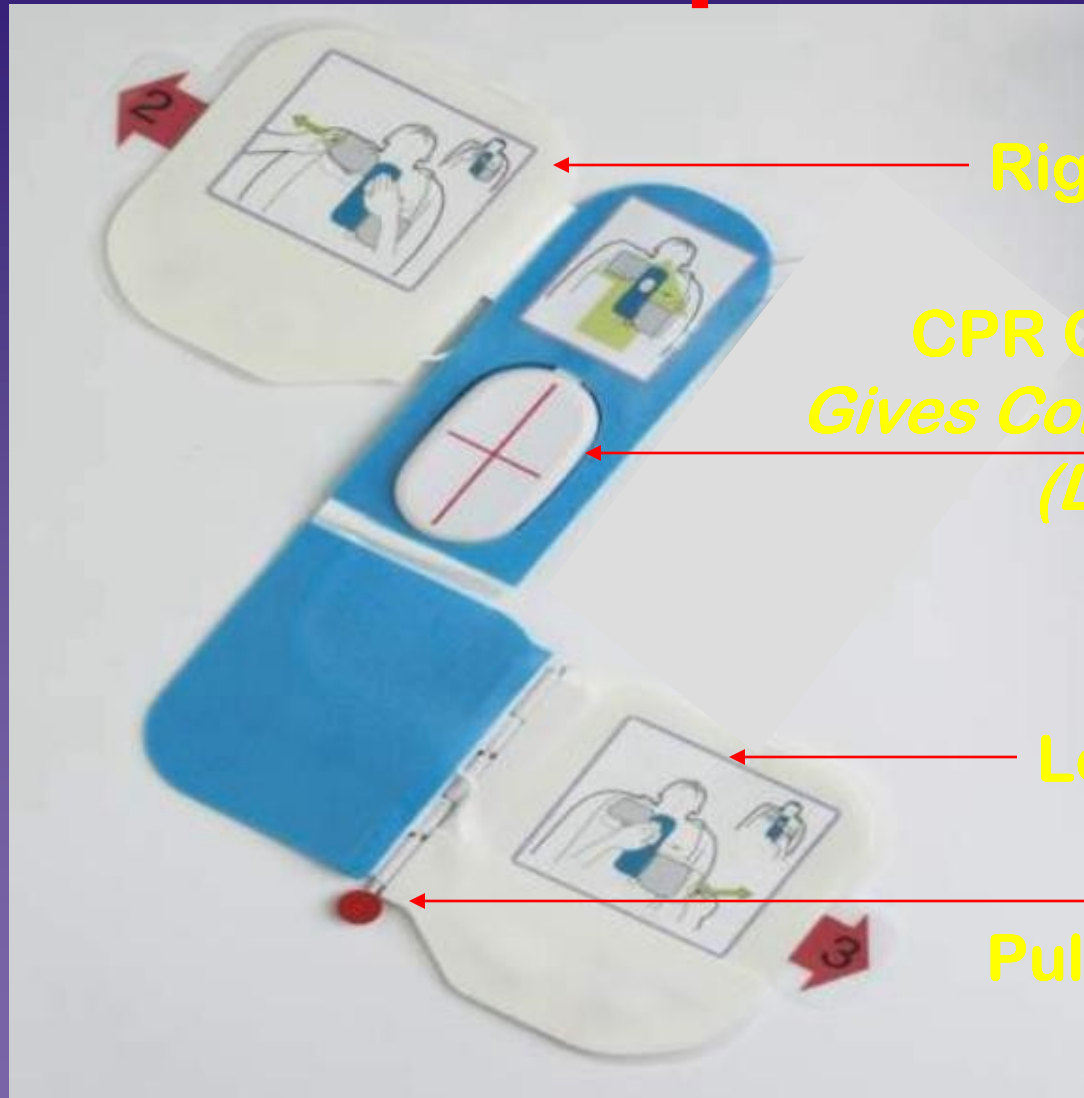
- **Check for Neck Pulse**
(If skilled to do so)
- **Normal Skin Color ???**
- **Coughing or
Obvious Breathing**



Attach Electrode Pads



ZOLL's Unique CPR-D Padz



Right side electrode

CPR Compression Site
*Gives Compression Feedback
(Depth & Rate)*

Left side electrode

Pull "Red Pin" to extend
apex electrode
on large patient

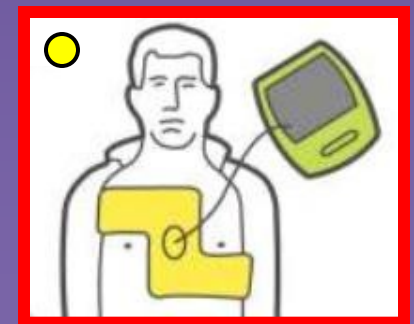
One Piece **CPR-D Padz**

- **Simplifies proper positioning**
- **Eliminates potential delay**
- **Integrates CPR skills**
- **Easily remembered placement guide**
- **Virtually impossible to get confused**
- **Rapid “Release and Press” Liners**
- **Packaged with all accessories**



Prepare the Chest for Electrodes

- ✓ Expose the patient's bare chest



Prepare the Chest for Electrodes

(if necessary)

- ✓ Shave hair at pad sites
- ✓ Wipe/dry pad site area



ZOLL AED Plus units come with potentially needed accessories:

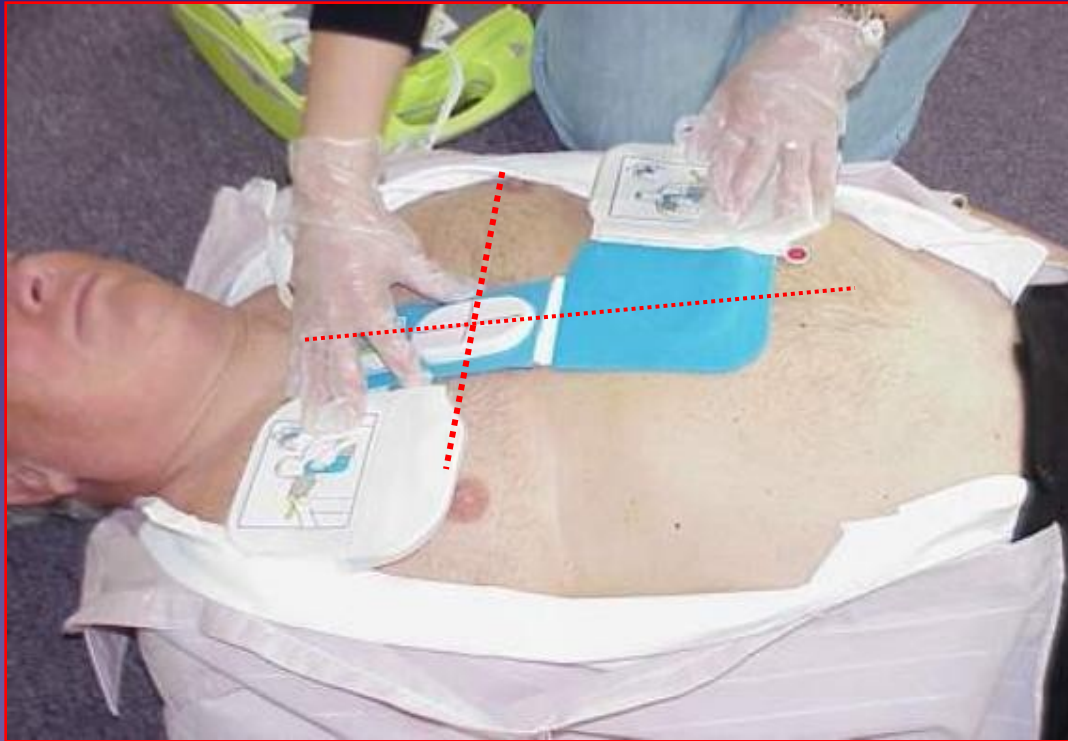
Scissors
Razor
Towel
Gloves
Hand Wipes
CPR Face Shield



1. Open CPR-D PADZ



CPR-D Padz Placement



Position center "puck"
(as shown)



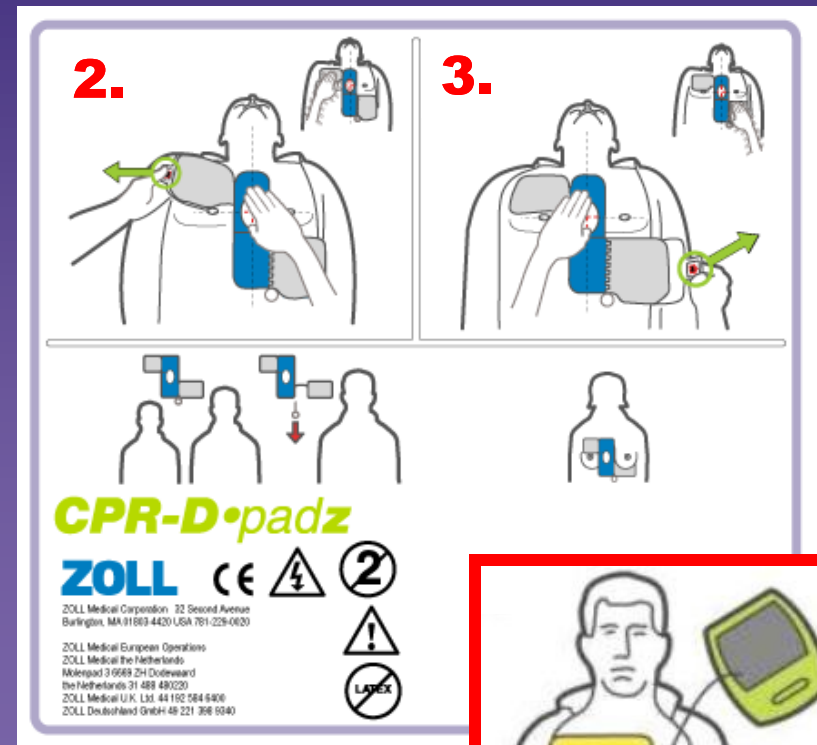
Place Electrodes on Patient

2. Remove Right Pad backing

3. Remove Left Pad backing

FIRMLY

Press Padz in place



Note: Left Apex Pad
can be extended
on large patients

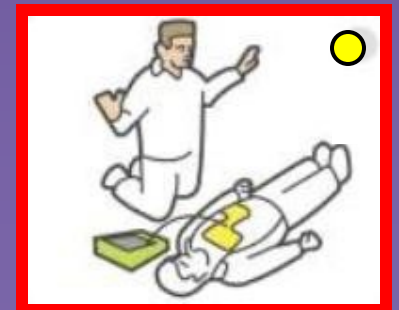


- Pull “Pin”
- Extend Pad

WARNING!



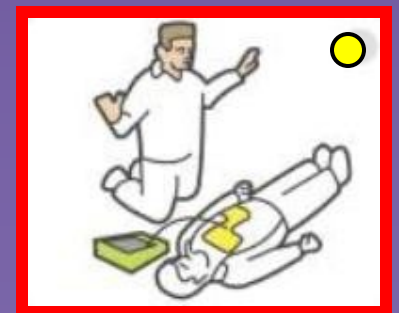
- Don't Touch Patient During Analysis



WARNING!

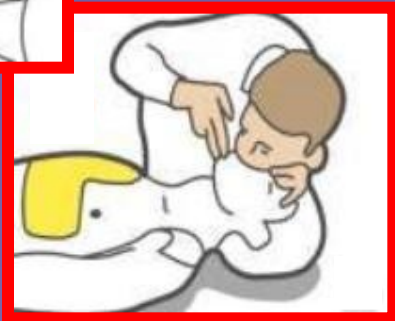


- **Stay Clear of Patient During Shocks**
 - ✓ **Verbal Command to Clear**
 - ✓ **Visually Confirm All Are Clear**





Push Treatment Button

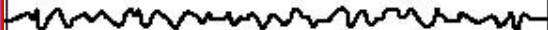


AED Plus

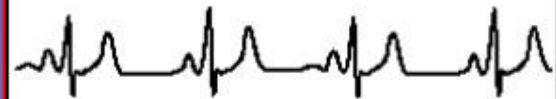
ONLY Advises Treatment

**Deliver one shock If there is a
Shockable Rhythm**

Push Shock Button



No Shock Needed



Whether shocks are delivered or not advised...

Open

- **Airway**



Check for

- **Breathing**



- **Signs of Circulation**

If No Signs of Circulation ...

Resume CPR 2 Mins

- **Kneel next to patient**
- **Locate hand position**
(on compression depth sensor)
- **Position your body**
- **Give CPR at rate of 30:2**

You will hear:

*“Good compressions” or “Push harder”
Adaptive metronome will help pace you*



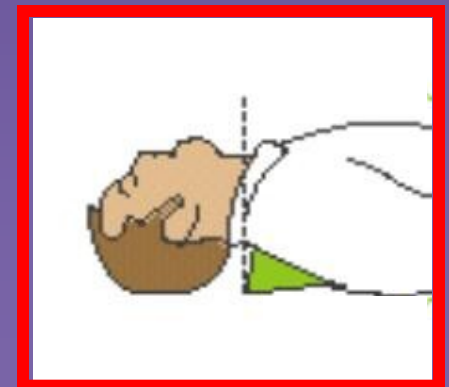
If CPR or Shocks aren't needed...

- **Maintain Airway**

- *Chin Lift*
- *Empty Mouth?*
- *“Recovery Position” ?*
- *Place PASS ??*

- **Assist Breathing**

- **Give Emotional Support**



Passive Airway Support System

The ZOLL AED Plus offers the unique option of a Passive Airway Support System (PASS). The AED lid can be removed, inverted and used as a “wedge” placed under the patient’s shoulders





Until EMS Arrives

- **Provide Life Support**
(as needed...)

When Breathing & Pulse Do Not Return

- Continue CPR
- Follow Voice Prompts
 - Rhythm Re-analysis
 - Repeat Shock(s)



...Until EMS Arrives

When Breathing & Pulse Return

Support Life

H
E
L
P

- **Airway**
- **Breathing**
- **Circulation**



Be as Efficient & Effective as Possible

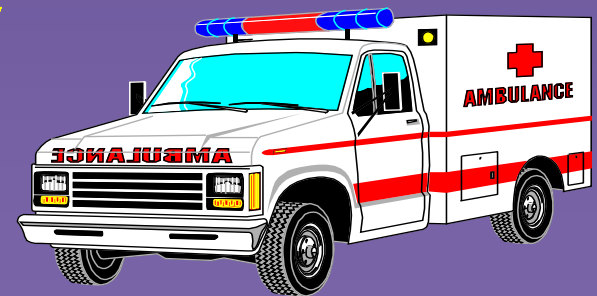
...Until EMS Arrives

Transfer of Care

- **Verbal Report**

- Initial Condition
- Care Delivered (*including # of shocks*)
- Estimated “Down Time”
- Any Changes in Patient’s Condition
- Any available Medical History

- **Cooperate and Assist**
(as necessary & requested)





Practical Skills Scenarios

Use of a

**ZOLL
AED+PLUS**

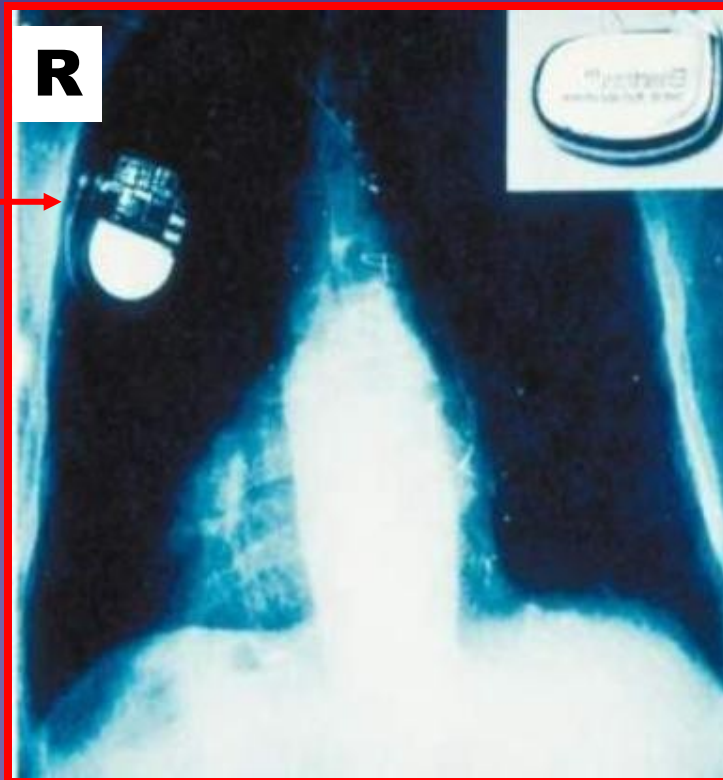


Special Considerations

Precautions & Concerns

Avoid Placing the Electrode Directly Over
Implanted Heart Devices

Pacemaker



Precautions & Concerns

- **Implanted Heart Devices**

- Pacemaker
- Defibrillator

*If scar or “bulge” on
right side of chest
Don't put pad over device*

Slightly “Rotate” Padz

- **Medication Patches**

Remove Patch – Wipe Chest Clean



Additional Factors *When using an AED*

- **Sensitivity to Family**
- **Crowd Control**
- **Periods of “Inactivity”**
- **Talk to the Patient**

(Hearing is the last sense to leave the body)

When Not to Use an AED

- Patient is less than 8 yrs of age
- Patient is under 80 pounds
- Explosive environment
- Patient is immersed in water
- Following serious trauma

Returning to AED Readiness

Logistics

- ✓ **Clean Area**
- ✓ **Clean AED Plus**
- ✓ **Replace Batteries (if necessary)**
- ✓ **Replace CPR-D Padz**
- ✓ **Repack & Restore Unit**



Battery Replacement



Re-packaging the AED Plus



Self Testing and Alarms

- Assures constant readiness
- Both audible and visual alerts
- Unit monitors its self every week
- Status indicator shows a green ✓ to clearly indicate ready
- When unit requires new batteries, it sounds an audible alarm and displays the red X
- For problems contact the ZOLL Technical Services 800-348-9011



After Using an AED

Administration

- ✓ Download Data
- ✓ Case Review
- ✓ Complete Required Reports
- ✓ Notify Medical Control
- ✓ “Post Situation Ventilation”



Data Download & Review

- **AED Plus utilizes standard IRDA port**
(found on most laptop and desktop computers)
- **Easy data integration**
(with ZOLL Data Review)*

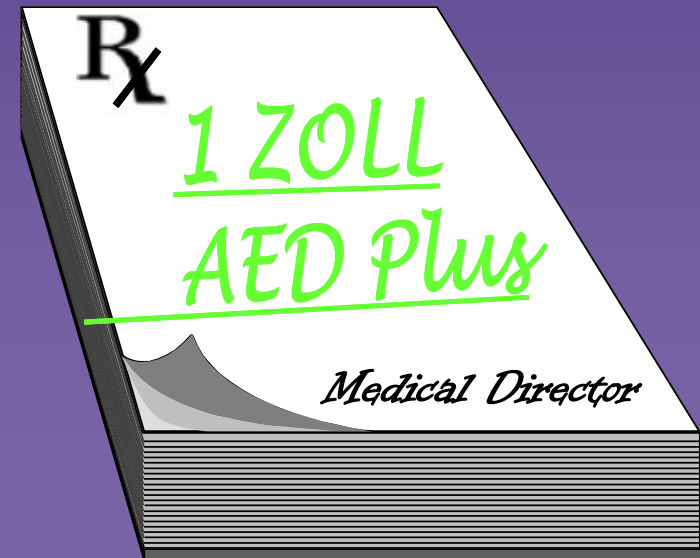


* Free Downloadable Software



AEDs & the Law

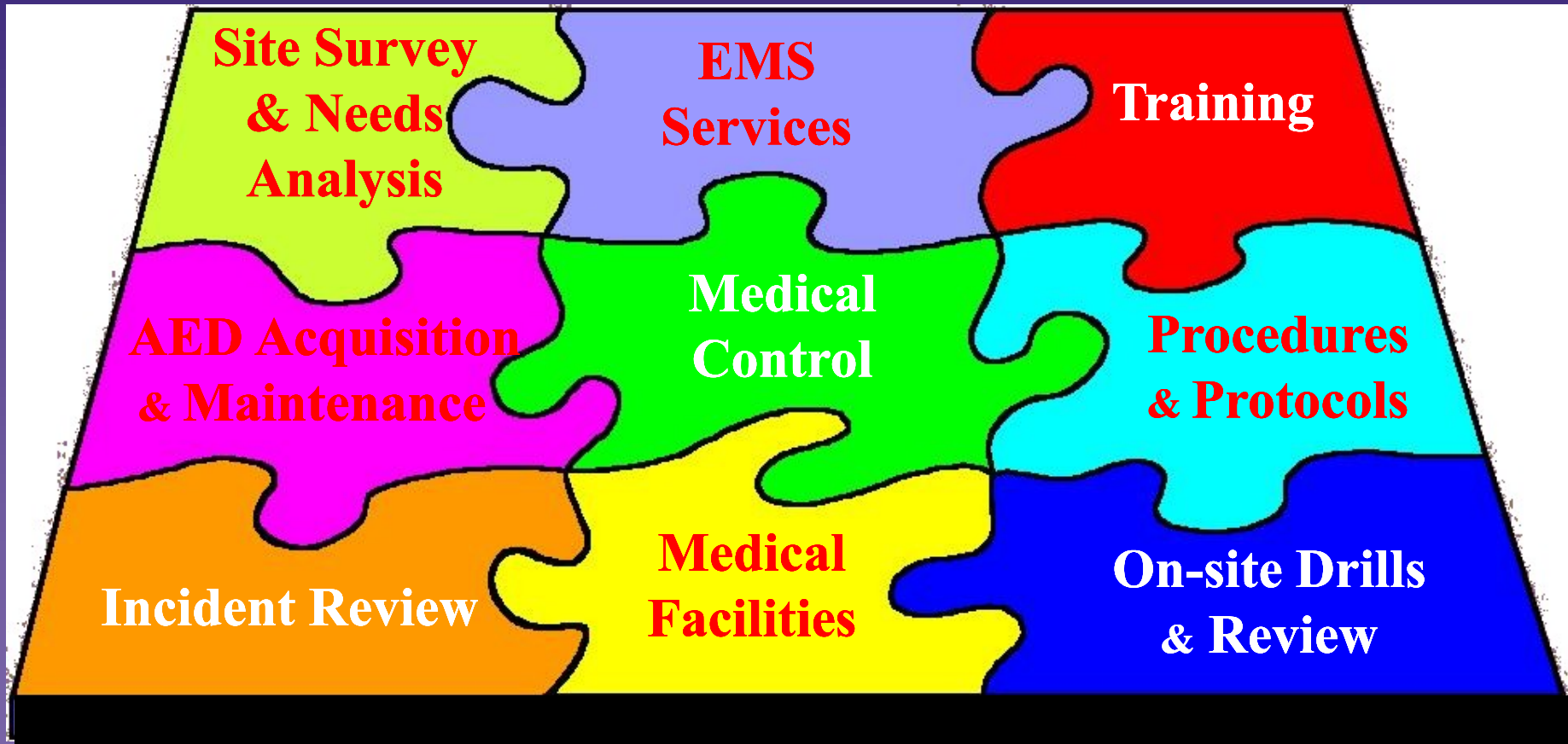
- Physician's Prescription/Order
- “Good Samaritan Law” Protection
- Current Case Law ?
- Medical Control



Medical Control



PAD Program Components



When Hearts & Brains Are Too Good to Die

Sudden Death **Can Be** Interrupted **&**

Conclusion

Life **Can Be** Continued



You Can Do It!

Thank You

For Your Commitment To
Safety, Health & Life