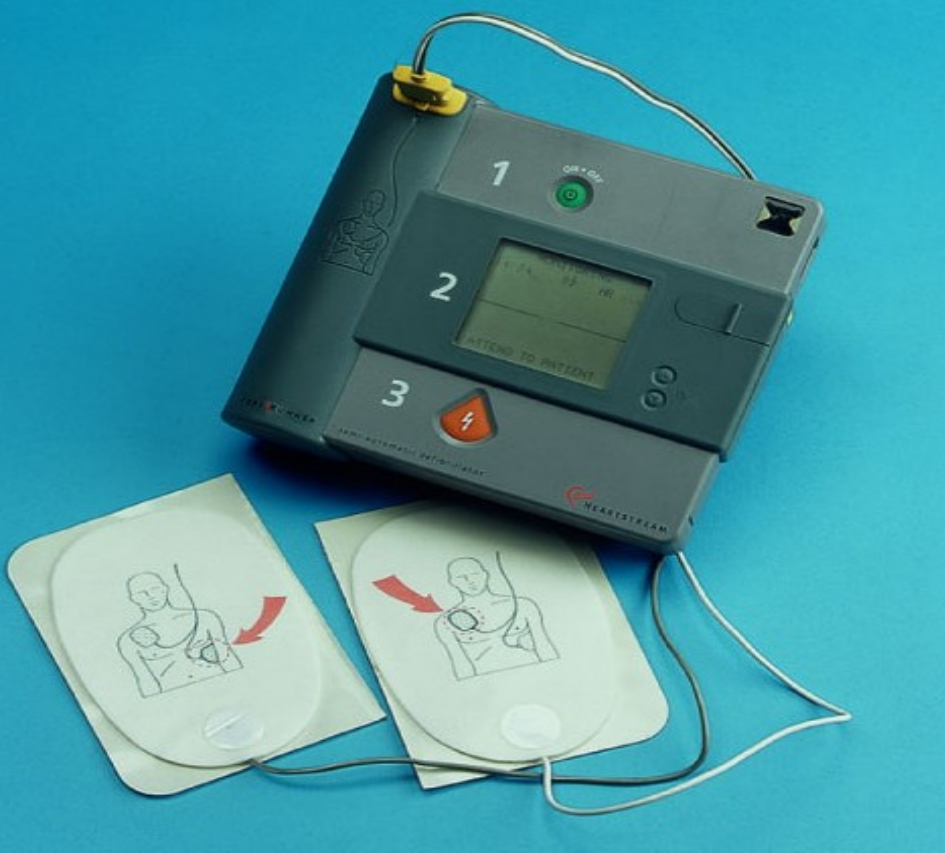


AED'S Save Lives



**Cardiopulmonary Resuscitation (CPR)
And
Automated External Defibrillators (AED's)**

The Chain of Survival



**Early
Access**

**Early
CPR**

**Early
Defibrillation**

**Early
Advanced
Care**

**CPR can support the patient but cannot
reverse the condition!**

کاغذ و قلم - سوزن و نخ - لباس اضافه - دمپائي - کبريت يا فندک - کارت شناسايي - حوله و صابون - ظروف



ات انفرادي نيز وسائلي هستند که معمولاً با توجه به نياز هر عمليات و امکانات موجود در سازمان در اختيار نيروها

کوله پشتي، کيسه خواب يا پتو، پوتين يا کفش مناسب، لباس امدادي (با توجه به فصل)، چراغ قوه، قمقمه، ماسکهاي محافظ، دستکشهاي محافظ

The Chain of Survival



در ابتدا امداد را آماده شد، حتماً به کمک و ابزار لازم جهت انجام کار و انجام مأموريت. اما که با بخش اولين تجهيزات را وسائلي امدادي و پزشک
بروي يار. ترمومتر، چراغ قوه، دستکش استريل، دستکش يکبار مصرف (Air Vial) وسائيل جعبه کمکهاي اوليه: باند (سه گوش، نواري، کشي، قوچي)، استتر

حسب زخم

يك پليس، عبور و مرور را کنترل خيد و يا ماند يك

مأمور آتش نشانی مجبور به خاموش کردن آتش

در بعضي از موقعيتهاي خاص در اثر حوادث، ابتدا نياز به يك سري عملياتهاي نجات و تجهيزات خاص مي باشد تا ما بتوانيم يك عمليات امدادي مؤثر را انجام دهيم، که لزوم آن شناختن

سوزي و رها سازي مصدومين گرفتار در آتش، و يا

و توانائي لازم را جهت انجام عمليات امدادي داشته باشيم. هميشه قبل از ورود به محل حادثه، بايد از نيازات و تجهيزات لازم جهت امداد و نجات شناختن و آماده سازي و فراهم کردن آنها را در نظر گرفت.

زير آوار و انومبيل باشيد. بنابر اين بايد براي ايقاي

ش بيني اين مسئله را انجام دهيم. چراغ قوه (با باتري و لامپ اضافي) چراغ هالوژنه، پرژكتور ثابت، پرژكتور دستي، پرژكتور مه شکن، هلامپ (چراغ پيشاني)، چراغ روشنائي گاز
عمليات رها سازي و دستيابي به مصدوم مورد استفاده قرار مي گيرد. از خصوصيات اين ابزار ميتوان به فراواني، قابل دسترس بودن، تعمير و تأمين مجدد آسان، کم حجم بودن، قاب

نقش صحيح خودتان احتياج به ابزار و تجهيزات

اين دسته از ابزار کارائي بسيار بالايي را جهت انجام عمليات رها سازي و نجات دارند، ولي تمام آنها معمولاً بر حجم و حمل آنها يار به ماسکهاي امدادگانه اي بجز آمبولانس را دارند

بخصوص، دارند و بايد آنها که ممکن است نسبت به

Automated External Defibrillators

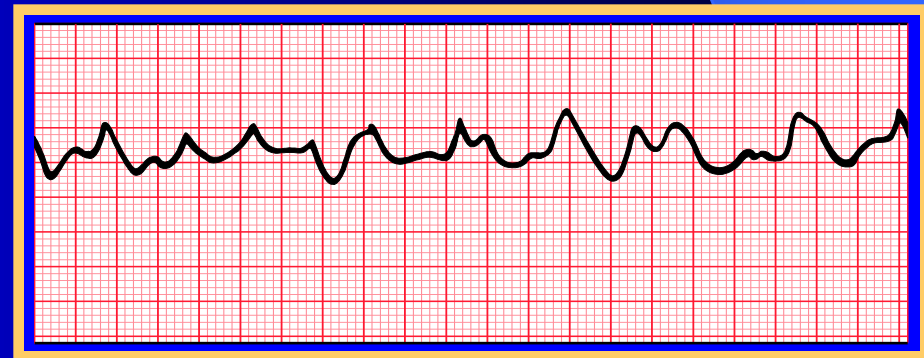
- Automated External Defibrillators (AED,s) are computerized defibrillators that may be safely operated by health care providers and lay rescuers who have only a few hours of training.
- Extremely accurate
- Relatively inexpensive

Defibrillation

- The most important therapy for the cardiac arrest patient whose heart is in ventricular fibrillation (VF) or ventricular tachycardia (VT).
- In US 80% of adult sudden death is due to VF/VT rhythms.

AEDs and Ventricular Fibrillation

- Ventricular Fibrillation is the most frequent initial rhythm in sudden cardiac arrest
- Ventricular Fibrillation is a useless quivering of the heart that results in no blood flow
- Defibrillation is the only effective treatment for Ventricular Fibrillation
- Successful electrical defibrillation diminishes rapidly over time



Defibrillation



Ventricular Fibrillation

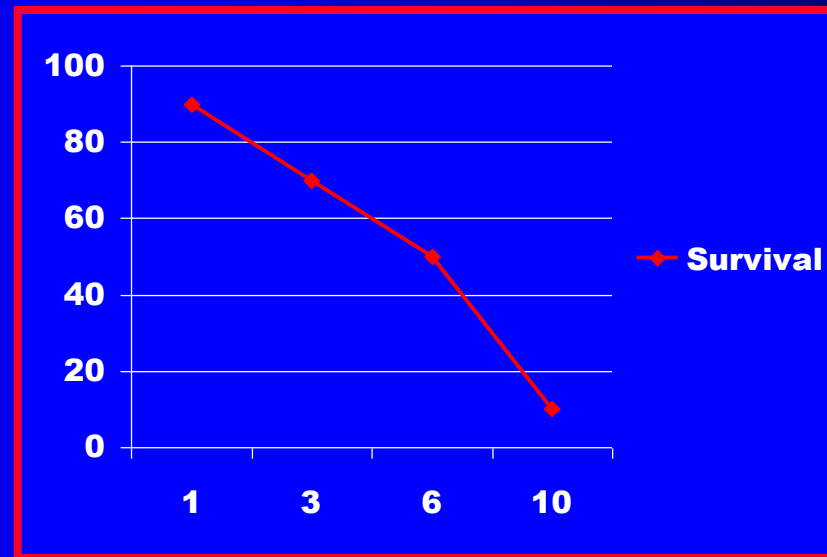


Ventricular Tachycardia

Defibrillation

- Can stop these rhythms and restore a pulse. But TIME is critical!

%
survival



Minutes from collapse to first shock.
CPR can prolong, but not reverse VF/VT!

Defibrillation

Survival is affected by two time intervals:

1. Collapse to defibrillation
2. Collapse to CPR

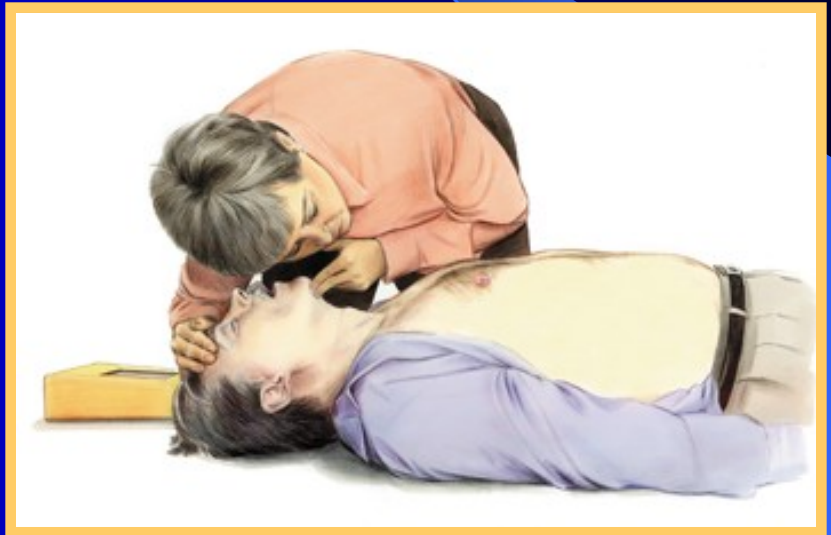
Defibrillation

- Defibrillation is a higher priority than CPR
- If a defibrillator is available then it should be used as soon as it is known that the patient has no pulse
 - Search for a shockable rhythm
 - Find and shock as soon as possible

When to use an AED

Patients who are:

- Unresponsive
- Not breathing
- Without a pulse



Operation of AED

- Verify patient is in cardiac arrest
- Turn power on
- Apply electrodes
- Press to analyze-Stop CPR
- Follow screen messages and voice prompts



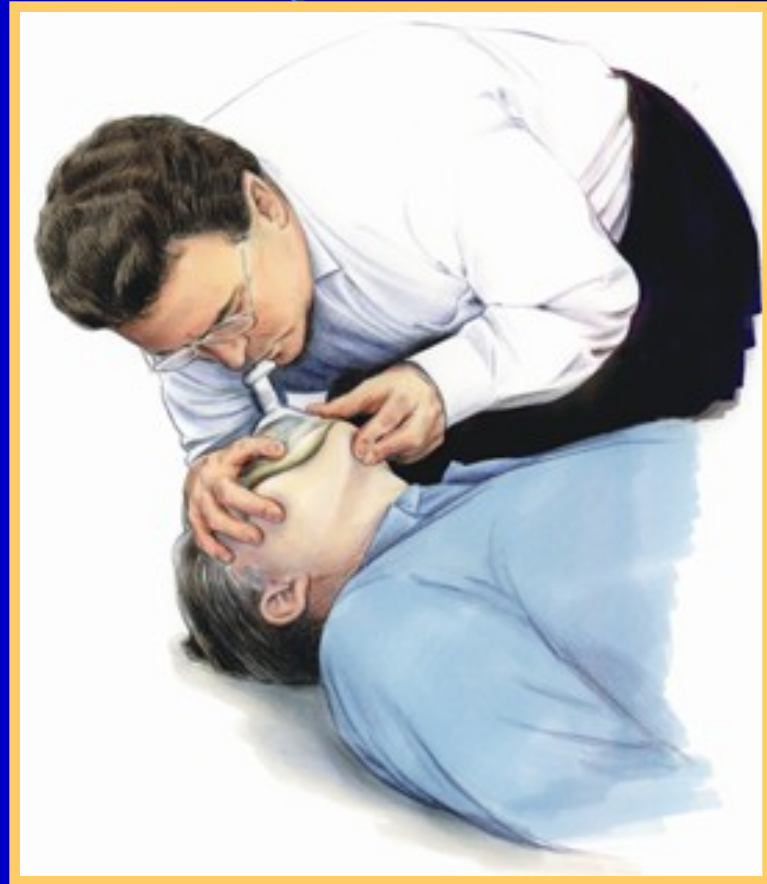
Priorities and the AED

A – Airway

B – Breathing

C – Circulation

D – Defibrillation



Special Considerations

- Is victim lying in water?
- Is victim wearing a transdermal medication patch on his or her chest?
- Does victim have a pacemaker or implanted defibrillator?



Special Considerations

- Are you, or anyone else, in contact with the patient during defibrillation?
- Do not operate the defibrillator in a moving vehicle
- Do not use portable radios near the patient



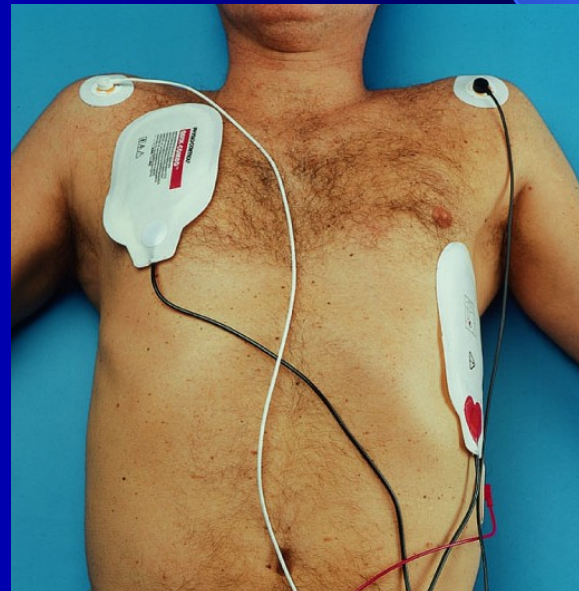
Manual Defibrillators

- ECG monitors/defibrillators/pacemakers
- Operator
 1. Analyzes the ECG
 2. Determines the need to shock
 3. Selects the energy levels to shock with
 4. Charges the machine
 5. Delivers the shocks
 6. Is responsible for time intervals between shocks
 7. Reassess all rhythm changes for continued need to shock



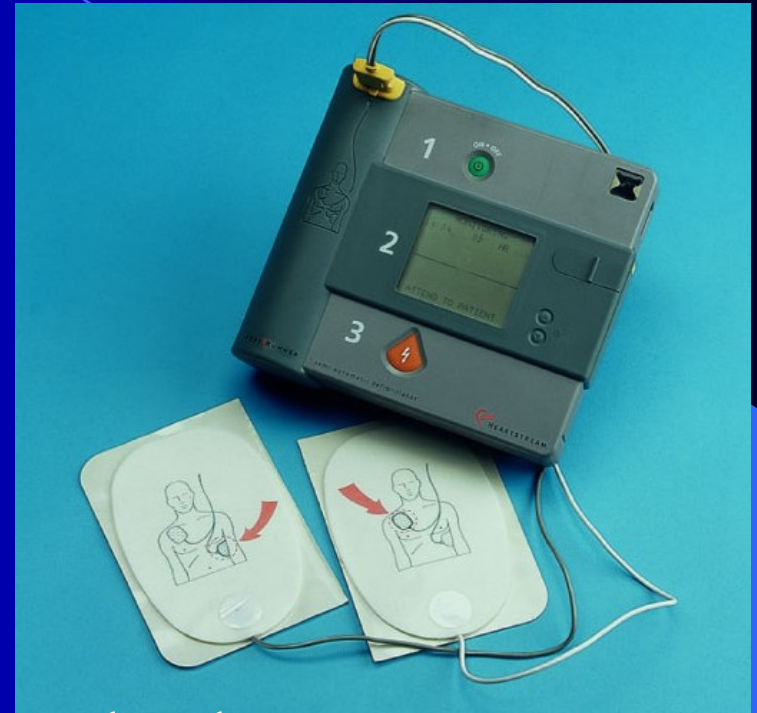
Manual Defibrillators

- Energy can be delivered through paddles placed on the chest or “defibrillation” pads that stick to the chest.



Automated External Defibrillators (AED's)

- Operator
 1. Turns on the device
 2. Applies the pads
 3. Follows directions
- AED
 1. Analyzes the rhythm
 2. Decides if shock is needed
 3. Selects the appropriate energy levels
 4. Times intervals between shocks
 5. Directs the operator on each step



AED During Resuscitation

2 Rescuers

- Rescuer 1 performs initial assessment
 - Shake and shout
 - Open the airway
 - Check breathing
 - Check pulse
 - Begin 1 person CPR

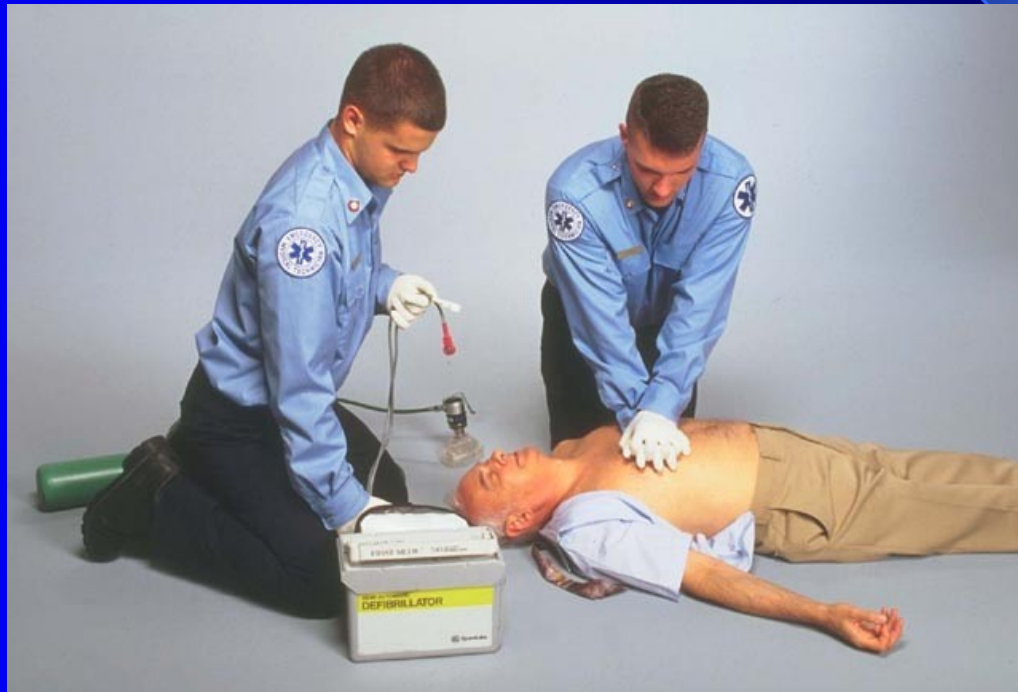


AED With 2 Rescuers

- Rescuer 2 operates the AED
- Four steps
 1. Turn the AED on
 2. Apply the cable and pads
 3. Analyze the rhythm
 4. Clear and shock

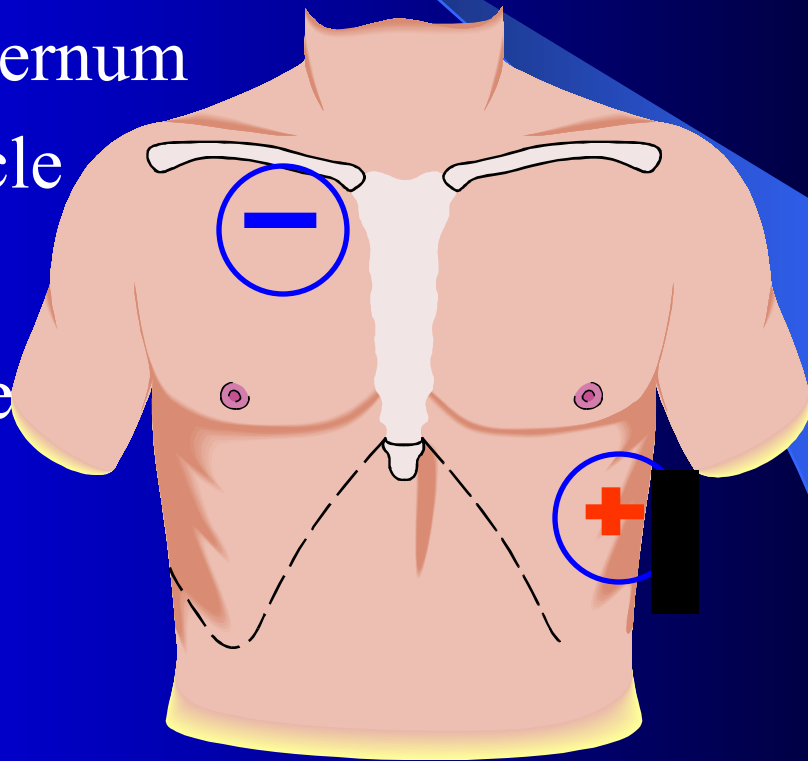
AED With 2 Rescuers

1. Turn the AED on
2. Apply the cable and pads



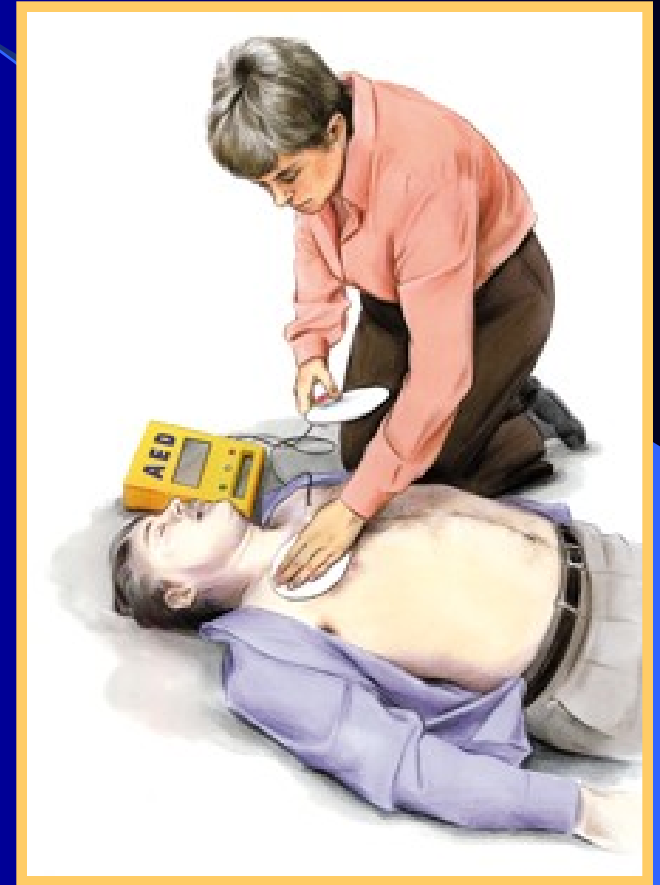
AED Pad Placement

- Right pad
 - Just to the right of sternum
 - Just below the clavicle
- Left pad
 - Below the left nipple
 - Midline of armpit



AED Pad Placement

- Make sure the pads stick well
 - Dry the skin if wet or very sweaty
 - May have to cut chest hair
 - Many machines will tell you “electrodes are not on” if contact is poor
 - Good contact is needed for effective shocks



AED With 2 Rescuers

3. Analyze the rhythm
 - Stop CPR
 - Make sure everyone is away from the patient



AED With 2 Rescuers

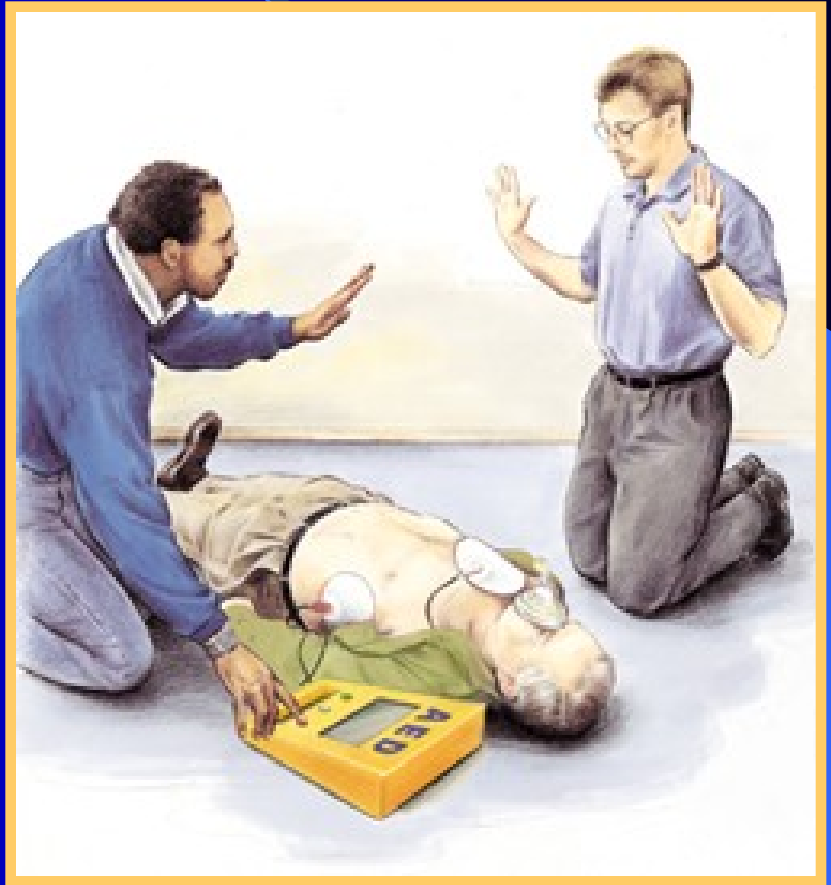
4. Clear and shock

- If AED advises to shock
- Clear everyone away
- Wait for AED to charge
- Then deliver 1st shock
- Deliver 2nd and 3rd shocks if advised
- Check pulse after 3rd shock



AED Safety

- No patient contact during analysis and shock
- Warn bystanders:
 - “I’m clear”
 - “You’re clear”
 - “Everybody clear”
- Perform a visual inspection
- Press to shock



AED With 2 Rescuers

- When to conduct pulse checks?
 - Initial assessment
 - After AED advises “No Shock”
 - After AED delivers 3 consecutive shocks

AED With 2 Rescuers

- If no pulse
 - Resume CPR for 1 minute



- Then repeat rhythm analysis
 - Deliver shocks as directed
 - If no shock is indicated, check pulse
 - Resume CPR for 1 minute if no pulse

AED With 2 Rescuers

- If pulse is present
 - Check and support breathing
 - Continue oxygen
 - Recovery position if possible
 - Monitor pulse and breathing

- Transport



2 Rescuer AED Summary

Rescuer 1

- Determines need and performs CPR
- Does not touch the patient during AED analyzation and shocks

Rescuer 2

- Applies and operates the AED
- Directs Rescuer 1 to clear the patient
- Follows direction of AED
- Assists with 2 person CPR when no shock and no pulse

1 Rescuer AED Summary

Single rescuer

- Determines need CPR
- Applies and operates the AED
- Performs CPR between AED analyzations

General AED Protocol

- Initiate CPR until the AED is ready
- AED analyzes rhythm
 - Deliver up to 3 shocks in rapid succession (stacked) if indicated
- Check pulse
 - Perform 1 minute of CPR if no pulse
- Repeat AED analyzation of rhythm

Shockable Rhythm – Sample Sequence

Initial assessment and delivery of shocks

AED operator presses Analyze button

AED advises Shock – 1

AED automatically charges to correct energy level

Operator assures safety and pushes Shock button



AED Reanalyzes rhythm

AED advises Shock – 2

AED charges to correct energy level

Operator assures safety and delivers Shock 2



AED Reanalyzes rhythm

AED advises Shock – 3

AED charges to correct energy level

Operator assures safety and delivers Shock 3

Shockable Rhythm – Sample Sequence

After delivery of initial 3 shocks

AED directs rescuers to check pulse

Rescuers perform CPR for 1 minute

AED prompts rescuers to Analyze



AED operator presses Analyze button

AED advises Shock – 4

AED charges to correct energy level

Operator assures safety and delivers Shock 4



AED Reanalyzes rhythm

AED advises Shock – 5

AED charges to correct energy level

Operator assures safety and delivers Shock 5



AED directs rescuers to check pulse

Rescuers perform CPR



**Repeat this
sequence for
shock - 6**

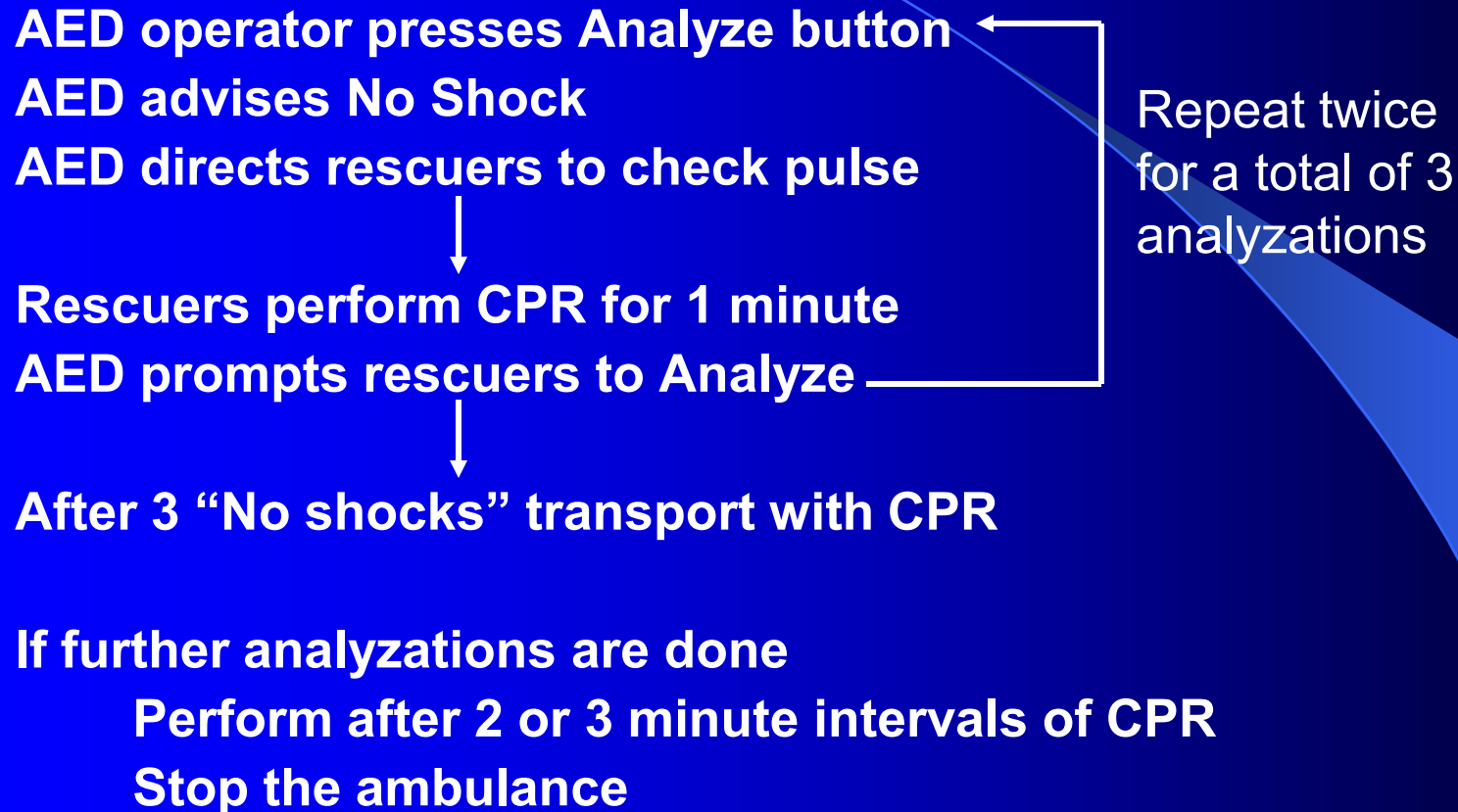
Shockable Rhythm – Sample Sequence

- **After delivery of second set stacked shocks**
 - Many BLS protocols require transport with CPR monitoring occasionally for pulse
 - If the AED is used, the ambulance must be stopped

Summary for Shockable Rhythm

- Initiate CPR
- Stop CPR for AED operations
- 3 shocks (as indicated)
- Pulse check and CPR 1 minute
- Stop CPR for AED operations
- 3 shocks (as indicated)
- Pulse check, CPR, transport

No Shock – Sample Sequence



Summary for Non-Shockable Rhythm

- Initiate CPR
- Stop CPR for AED operations
- Following “No Shock”
- Pulse check and CPR 1 minute
- Repeat sequence 2 more times
- Pulse check, CPR, transport

Shock-No Shock – Sample Sequence

Initial Analyzation

AED operator presses Analyze button
AED advises Shock – 1
AED automatically charges to correct energy level
Operator assures safety, delivers Shock

↓
AED automatically Reanalyzes rhythm
AED advises No Shock
AED directs rescuers to check pulse
Rescuers perform CPR for 1 minute

↓
AED prompts rescuers to Analyze
AED advises Shock - 2
AED charges to correct energy level
Operator assures safety, delivers Shock

↓
AED automatically Reanalyzes rhythm
AED advises No Shock
AED directs rescuers to check pulse
Rescuers perform CPR for 1 minute

→ AED prompts rescuers to Analyze
AED advises No Shock
AED directs rescuers to check pulse
Rescuers perform CPR for 1 minute

AED prompts rescuers to Analyze
AED advises No Shock
AED directs rescuers to check pulse
Rescuers perform CPR

Continue CPR and transport

Shock No-Shock Summary

- Check pulse after every No Shock
 - Perform CPR for 1 minute before reanalyzing
- Transport after 3 consecutive No Shocks
 - Perform CPR with occasional pulse checks enroute
 - If the AED is used enroute, stop vehicle

Shock with Return of Pulse

Initial Analyzation

AED operator presses Analyze button

AED advises Shock – 1

AED automatically charges to correct energy level

Operator assures safety, delivers Shock



AED automatically Reanalyzes rhythm

AED advises No Shock

AED directs rescuers to check pulse



A carotid pulse if felt!

Shock with Return of Pulse

- Check breathing
 - Adequate – provide oxygen
 - Inadequate provide rescue breathing
 - Keep the airway clear
- Begin transport
 - Place in recovery position if possible
 - Leave AED on
- Obtain vital signs
- If pulse is lost
 - Start CPR
 - Stop ambulance
 - Analyze with AED and follow its direction

BLS Cardiac Algorithm

