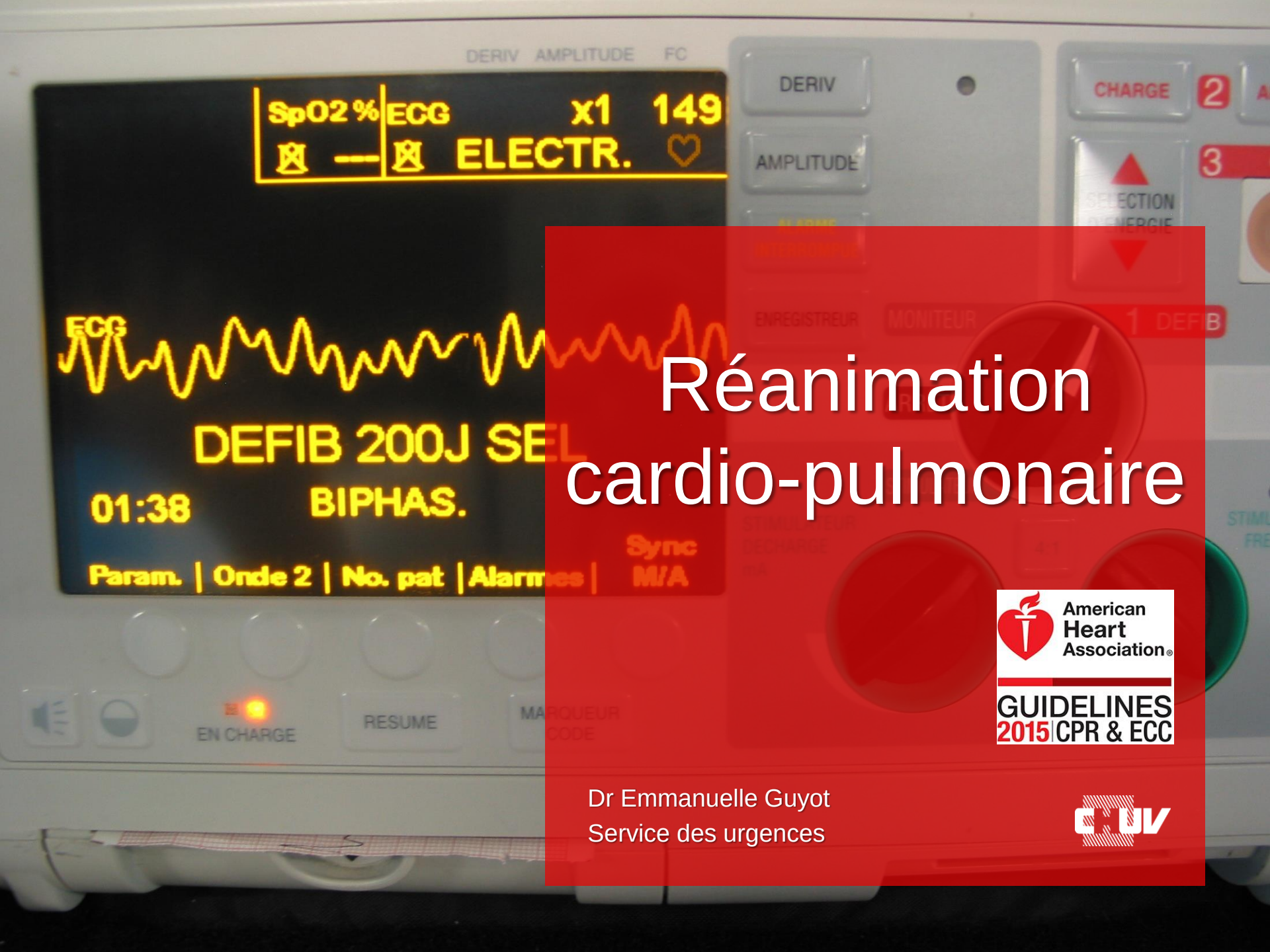


Réanimation cardio-pulmonaire

American Heart Association®

GUIDELINES 2015 CPR & ECC

Dr Emmanuelle Guyot
Service des urgences

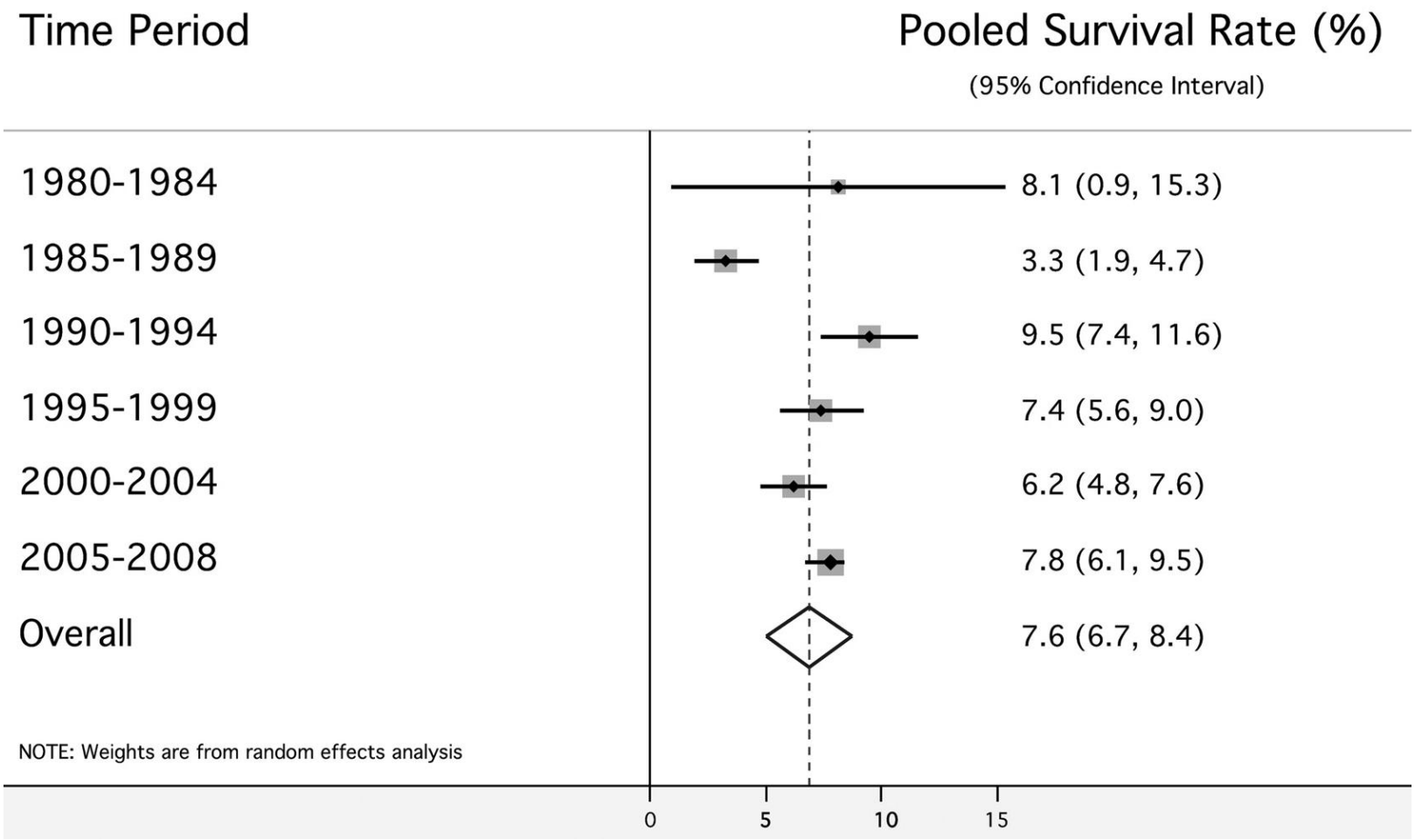
CHUV

Introduction

- ~500’000 arrêts cardiaques/an en Europe
- Survie à la sortie de l’hôpital: 5-10%
- RCP par témoins **vitale** avant l’arrivée des secours (ambulance, SMUR)
  - ↑ **2-3 x** chances de survie
  - RCP par témoin dans **seulement 1 ACR sur 5**
- Réanimation et défibrillation précoce (1-2 minutes) ⇨ >60% survie

Epidémiologie

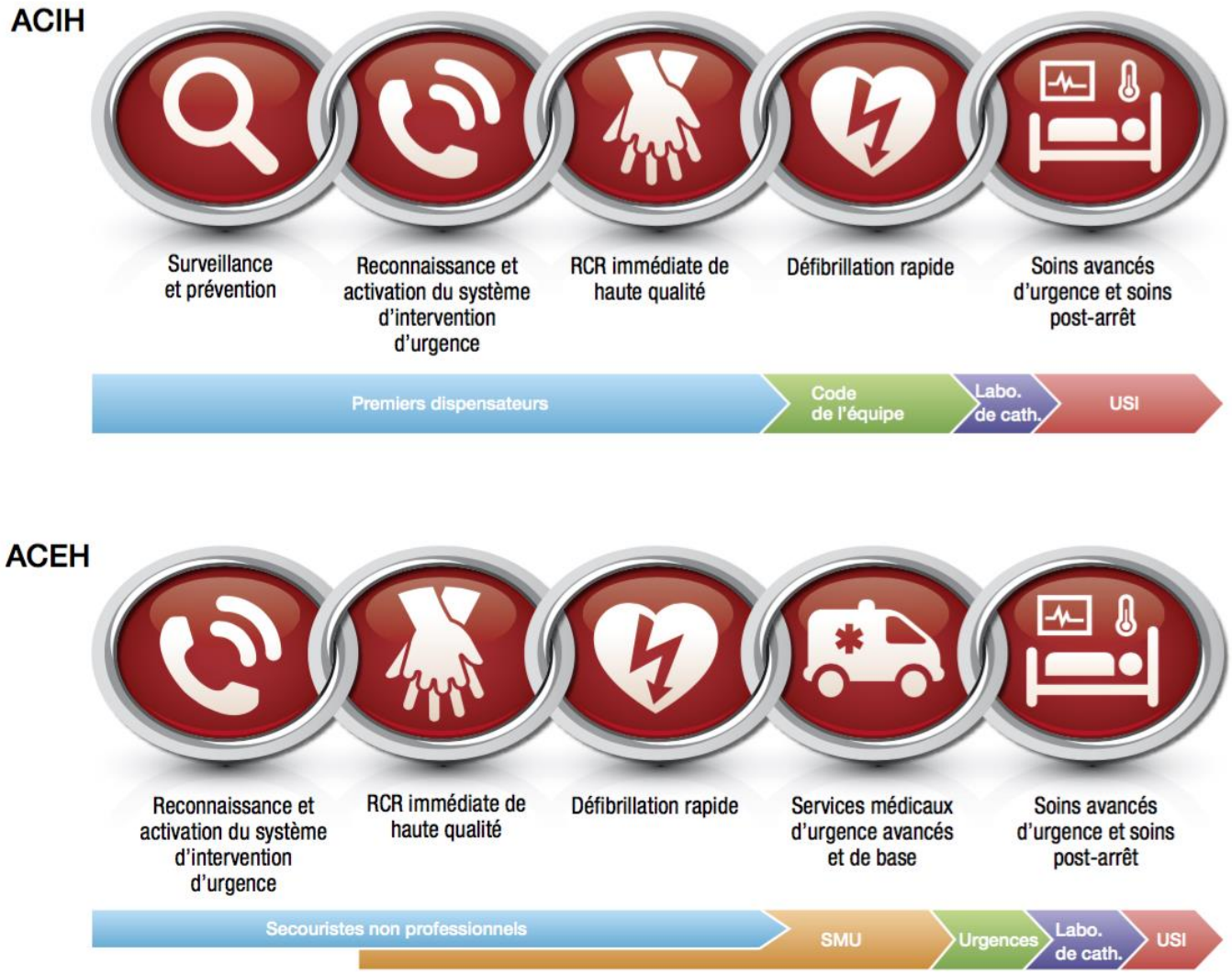
Survie après arrêt cardio-respiratoire



Sasson C et al. Circ Cardiovasc Qual Outcomes 2010;3:63-81

Chaîne de survie

Les chaînes de survie pour un ACIH (arrêt cardiaque intrahospitalier) et un ACEH (arrêt cardiaque extrahospitalier)



Importance du BLS

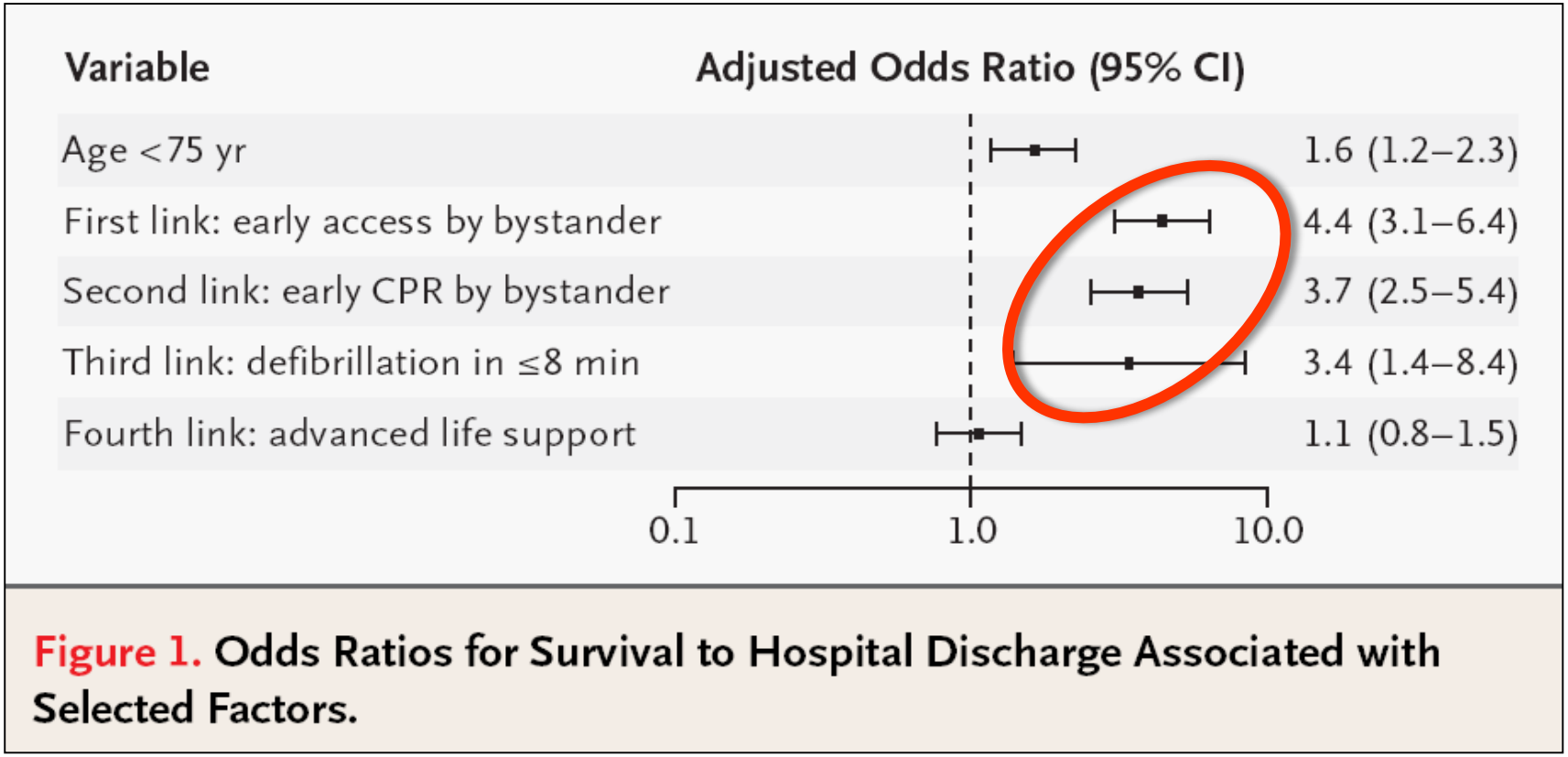


Figure 1. Odds Ratios for Survival to Hospital Discharge Associated with Selected Factors.

Stiell IG. N Engl J Med 2004;351:647-656

Qualité de la RCP

- Case series n=176 (Stockholm, London, Akershus)
- Outcome mesure = G2000 standards
- Chest compressions not delivered **48%** of the time
- Most compressions **too shallow**
- ECG analysis and defib account for only a small part of chest compression interruption

Wik L et al. JAMA 2005;293:299-304

Importance du massage cardiaque

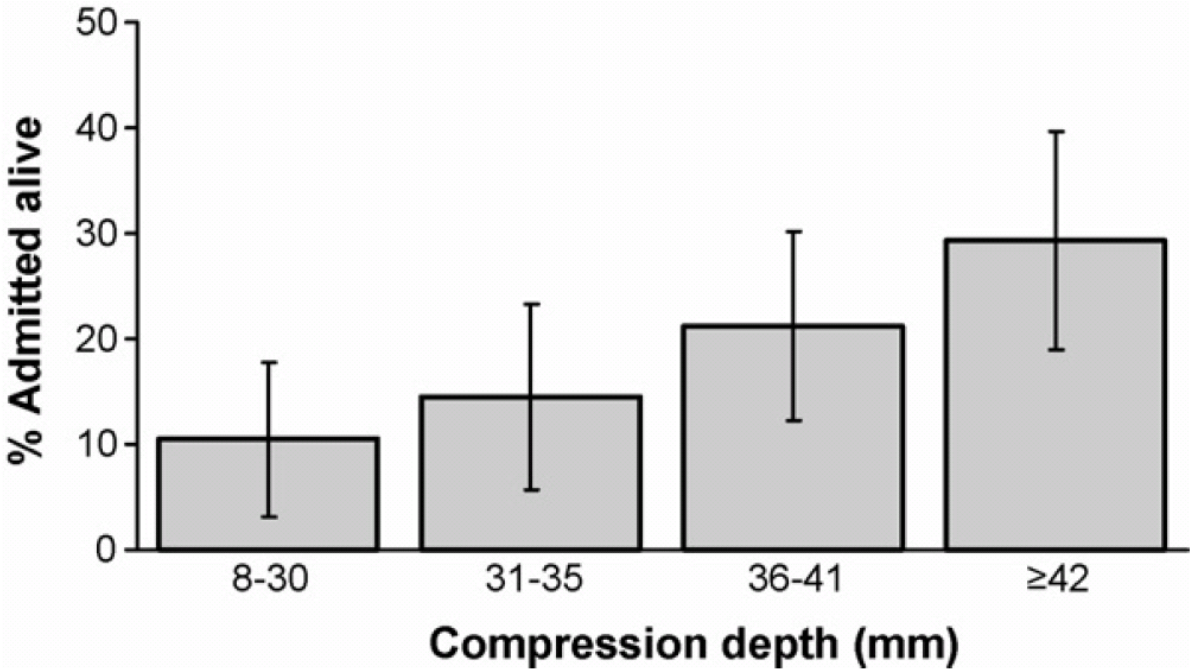
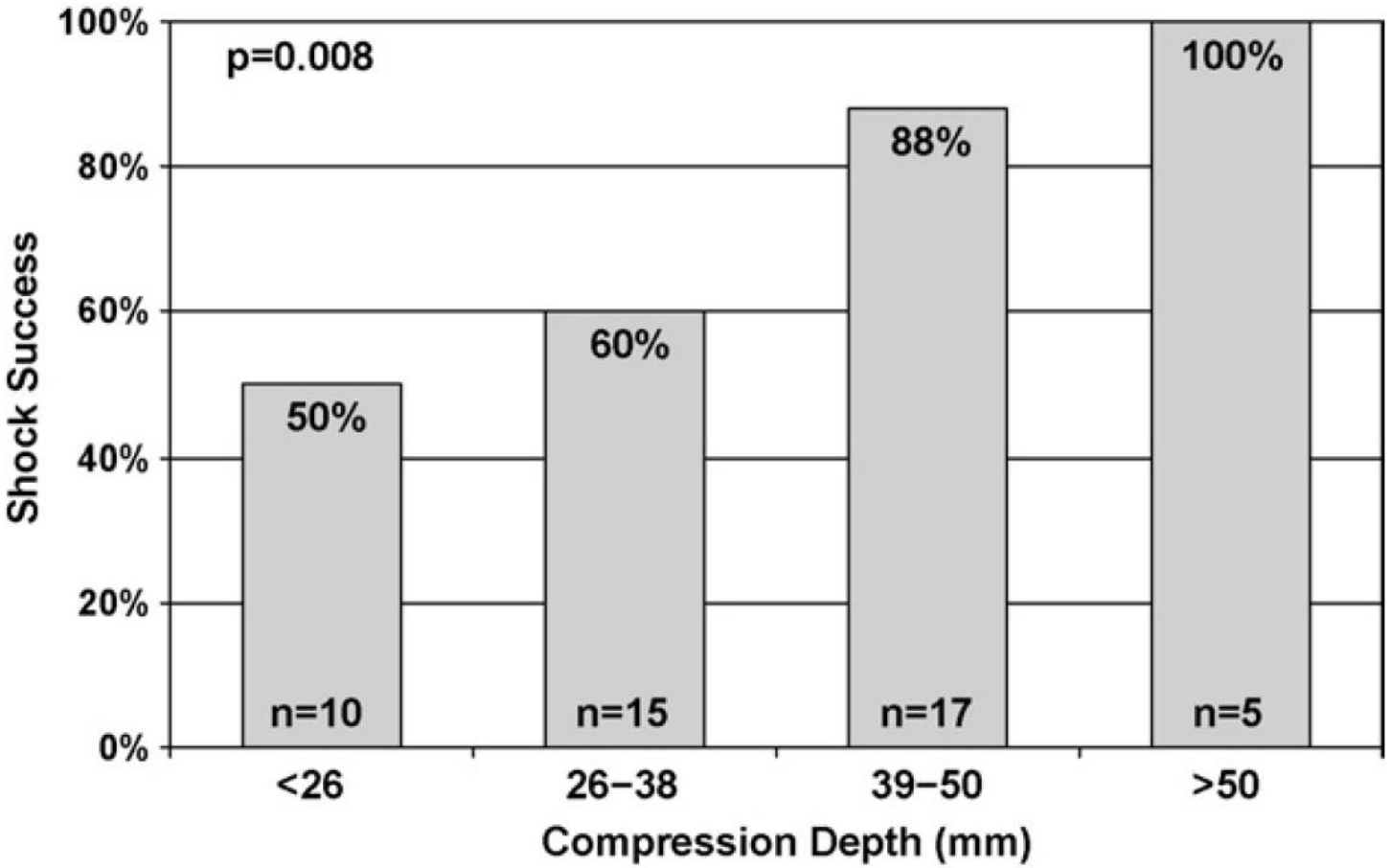


Figure 1 Percentage of patients admitted alive (error bars represent 95% CI) when grouped by increasing compression depth by quartiles.

Kramer-Johansen J et al. Resuscitation 2006;71:283-92

Importance du massage cardiaque



Edelson DP et al. Resuscitation. 2006;71:137-45

Importance de la défibrillation

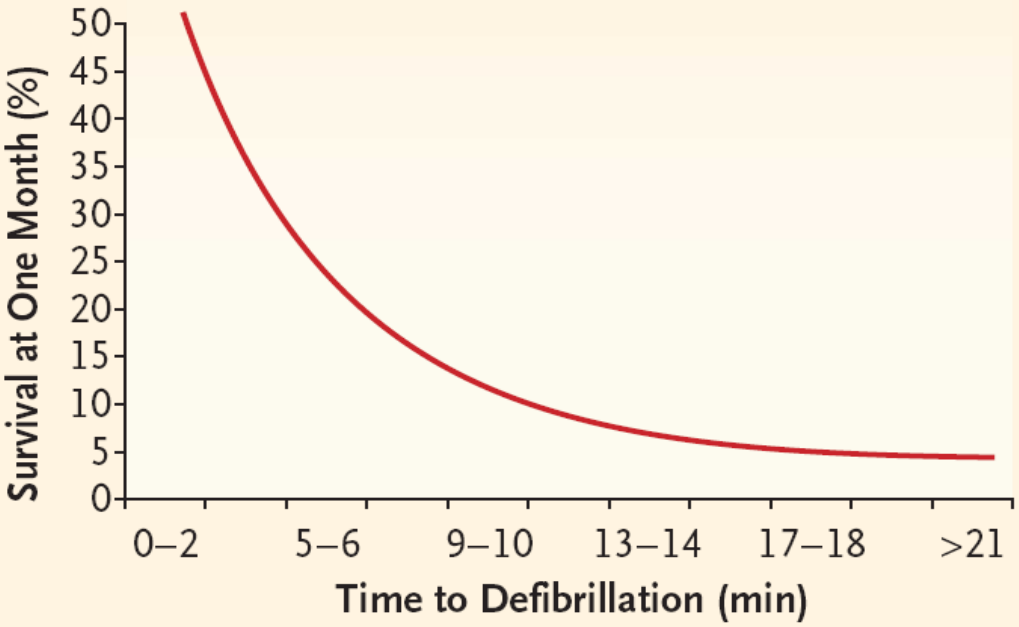


Figure 2. The Exponential Decline in the Rate of Survival after Sudden Cardiac Arrest as Time to Defibrillation Increases.

Defibrillation alone often results in successful resuscitation if delivered within four minutes of cardiac arrest.

Callans D. N Engl J Med 2004;351:632-634

Guidelines 2015 : Concepts

- Alerte précoce
- Débuter le massage cardiaque immédiatement
- Masser vite et fort (très fort !)
- Défibriller précocement

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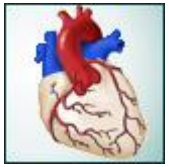
Définition de l'arrêt cardiaque

- Absence de réponse aux stimulations

- Apnée (ou gasping agonique)



- Cessation de l'activité mécanique cardiaque, confirmée par l'absence de pouls central palpable

Utstein Consensus Conference. Ann Emerg Med 1991;20:861-874

Réponse aux stimulations

Réponse aux stimulations


... SURTOUT, NE PAS PANIQUER !
... SURTOUT, NE PAS PANIQUER !
... SURTOUT, NE PAS PANIQUER !

Se faire aider

Vous,
appelez le
49’144

- Défibrillateur
- Chariot de réa

- code réanimation?

Se faire aider

CHARIOT DE REANIMATION

PLATEAU SUPERIEUR

1 DEFIBRILLATEUR
(2 SETS DE PATCH + 6 ELECTRODES MONITORING)
1 BALLON DE VENTILATION A USAGE UNIQUE

PLATEAU INFERIEUR

1 BTE GANTS (S/M/L)
1 BTE TAMPON TELA
1 CONTAINER AIGUILLES
1 FLACON SOFTASEP
1 FLACON STERILLIUM

FACE LATERALE GAUCHE

1 APPAREIL TA + STETHOSCOPE

FACE ARRIERE

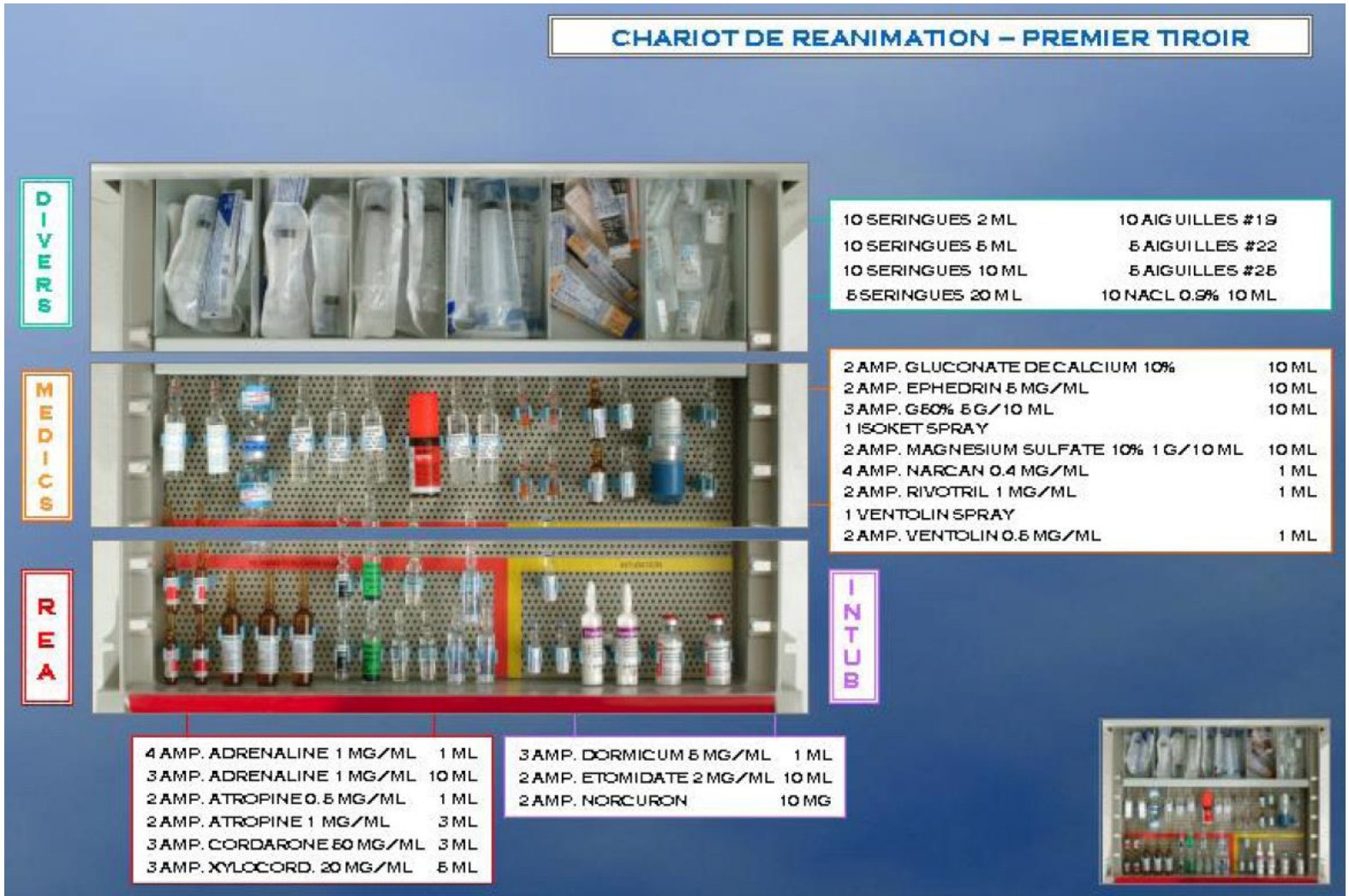
1 ASPIRATION MURALE
1 BOUTEILLE D'OXYGENE
5 SONDES D'ASPIRATION

FACE LATERALE DROITE

1 PLANCHE

DF/AL – CIU/2008

Se faire aider



Se faire aider

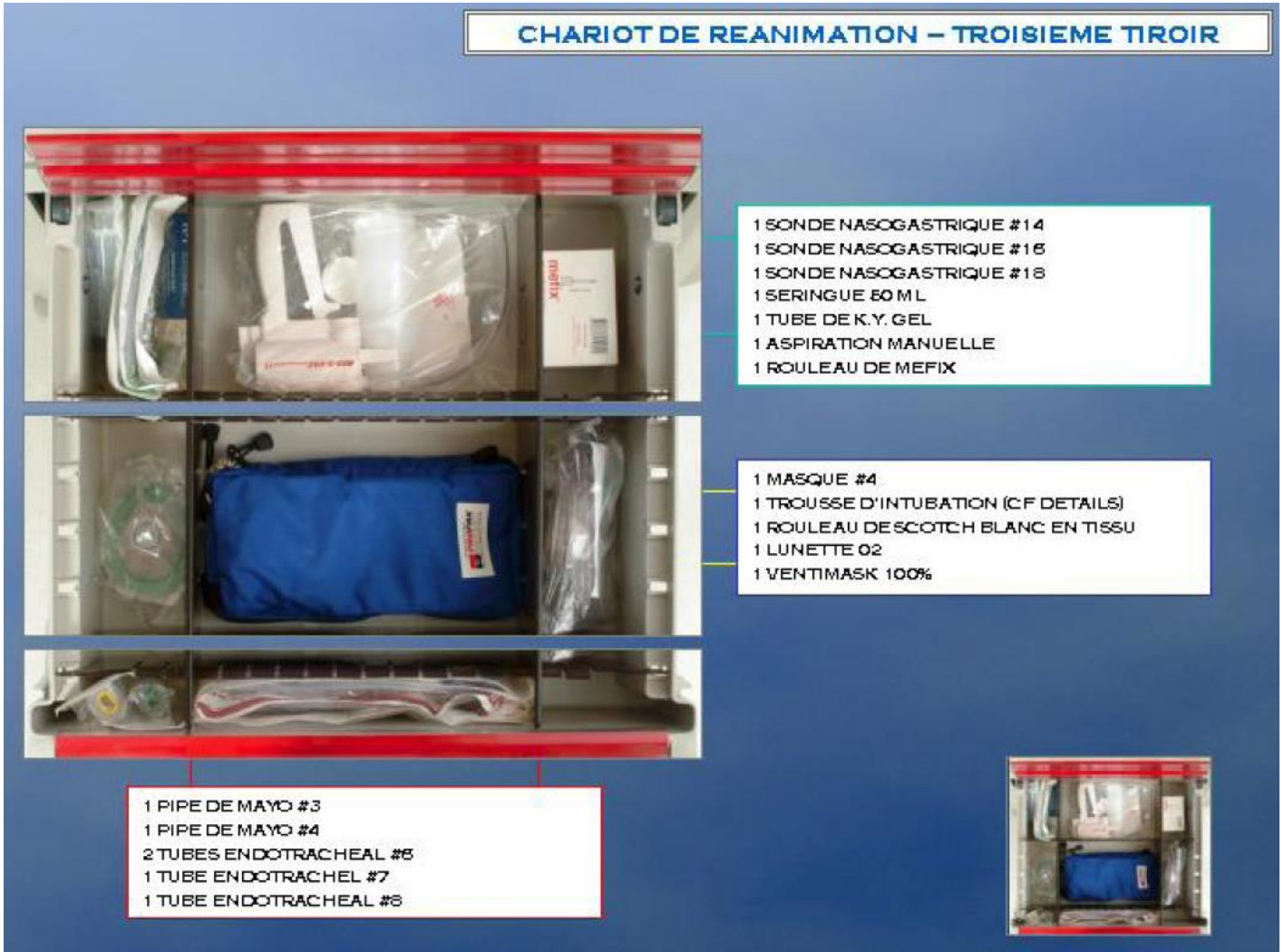
CHARIOT DE REANIMATION – DEUXIEME TIROIR

1 HES
2 NACL 0.9% 500 ML
1 MANCHETTE A PRESSION POUR PERFUSION
3 TUBULURES A PERFUSION
4 SERINGUES A GAZOMETRIE
1 SET DE DESINFECTION

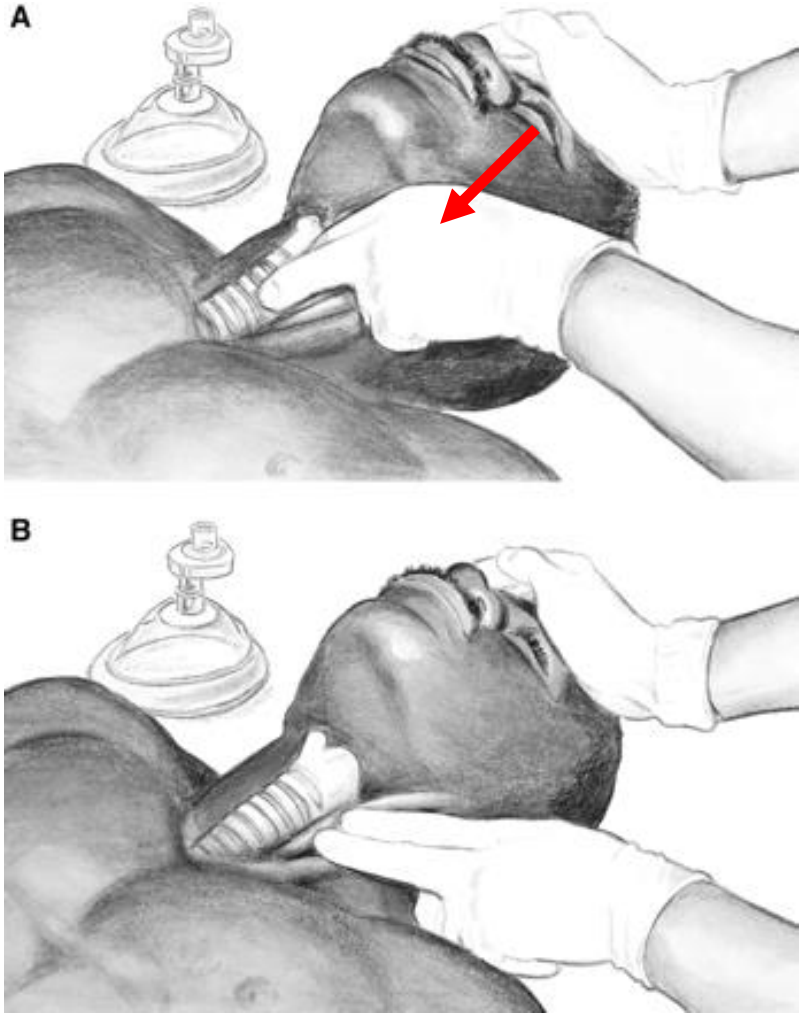
5 TEGADERM POUR VENFLON
5 VENFLONS #14
5 VENFLONS #18
5 VENFLONS #20
5 COMPRESSES STERILES 5X5 CM
1 NAHCO3 8.4% 100 ML

2 RASOIRS
3 RACCORDS 3 VOIES AVEC RALLONGE
5 BOUCHONS
1 GARROT
1 LAMPE DE POCHE

Se faire aider

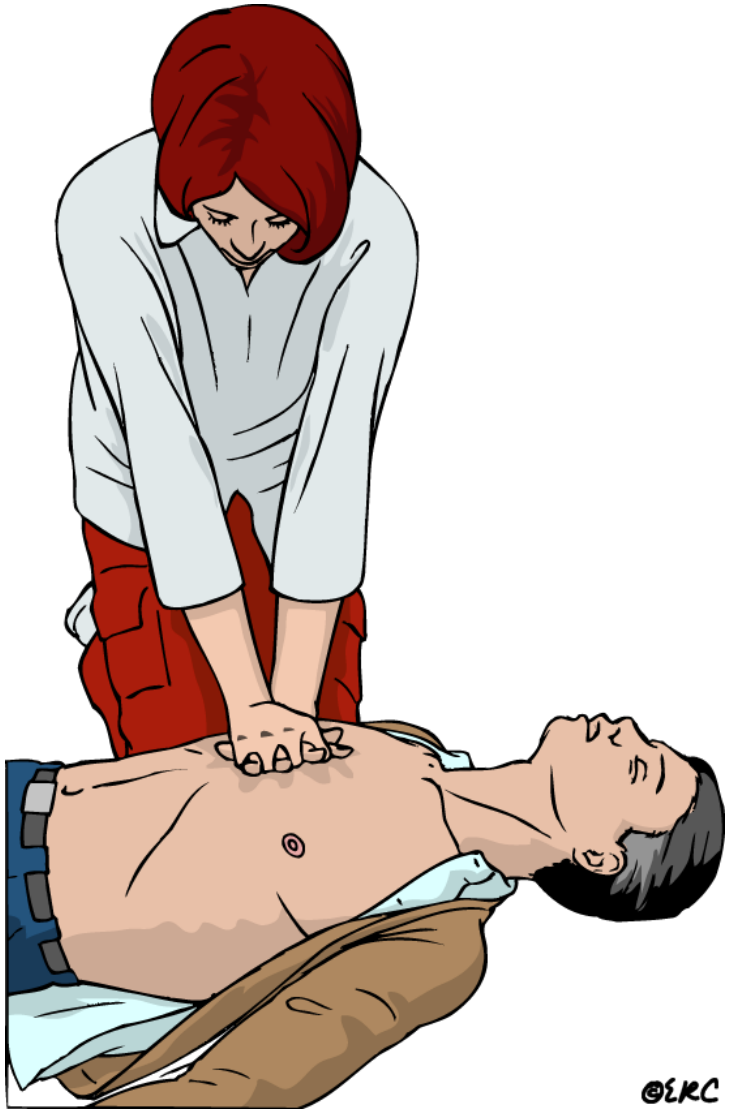


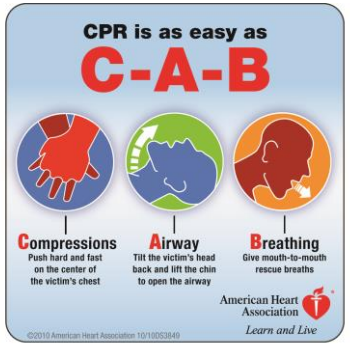
C circulation



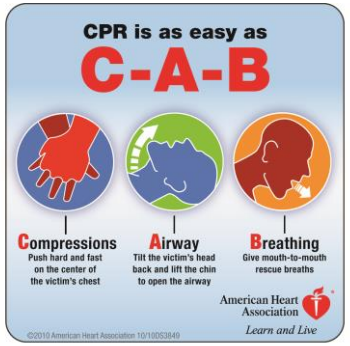
10 secondes

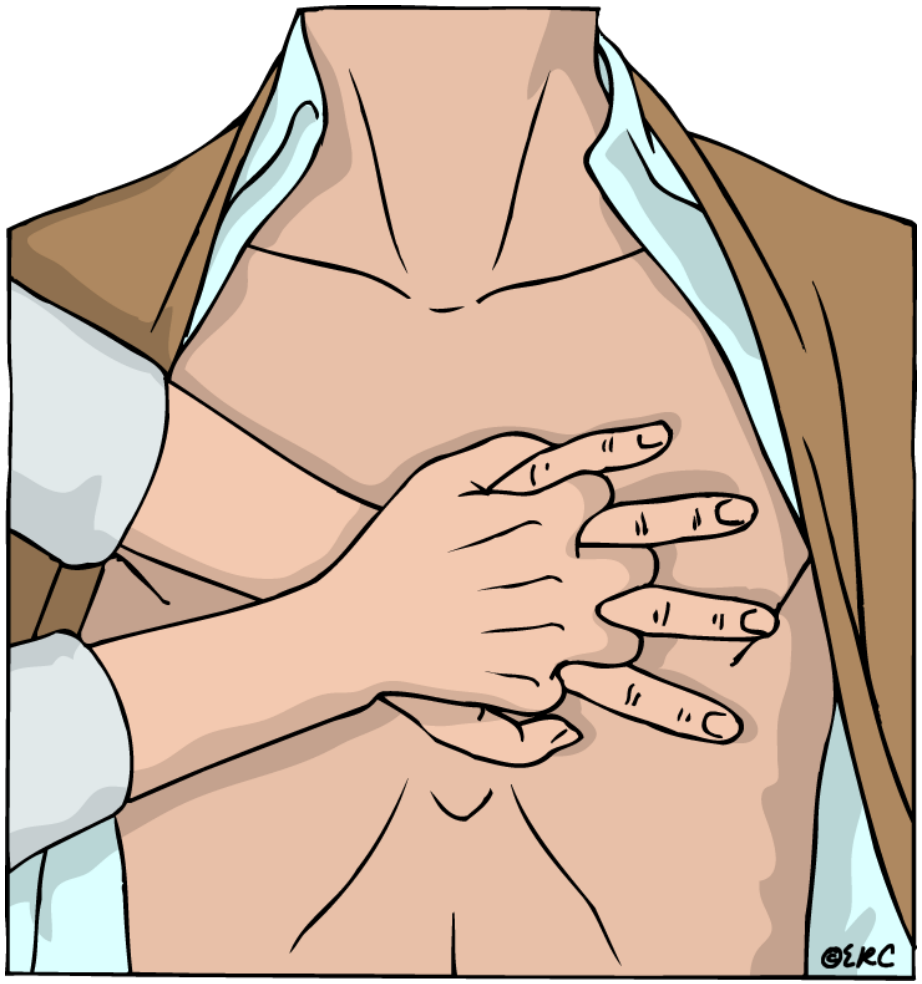
C circulation



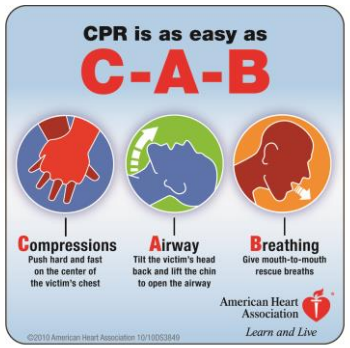


C circulation





C circulation



- **Push hard**

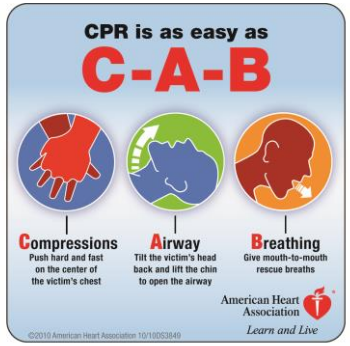
  5-6 cm

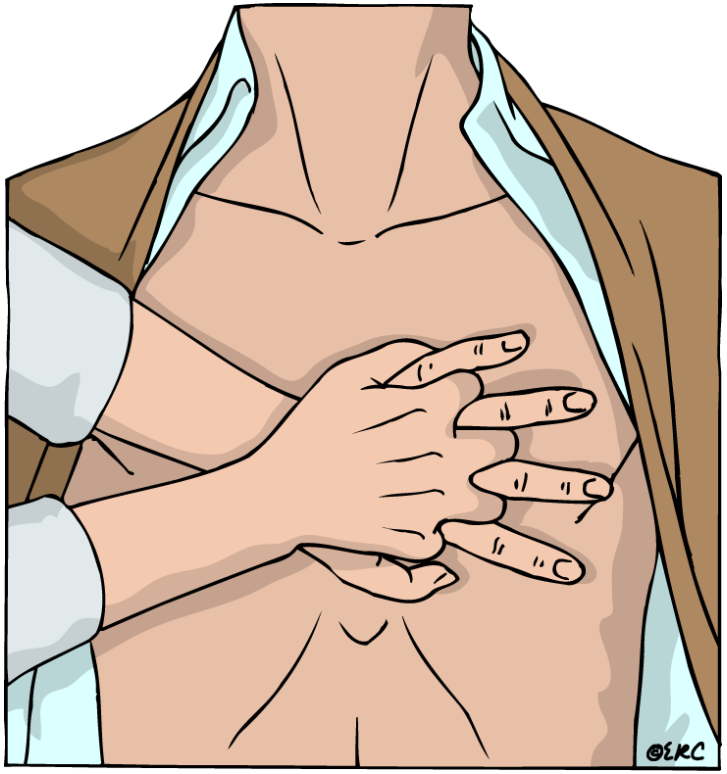
- **Push fast**

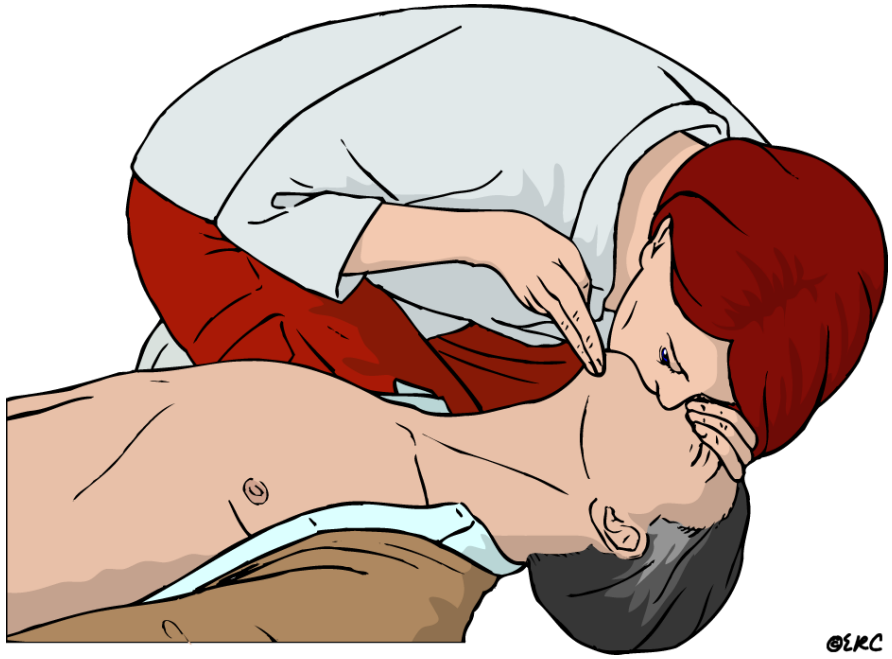
  100-120 /min

- Compression = Relaxation
- Limiter les interruptions
- Relayer le masseur (2 min)

C circulation



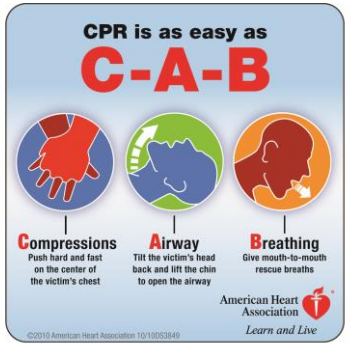




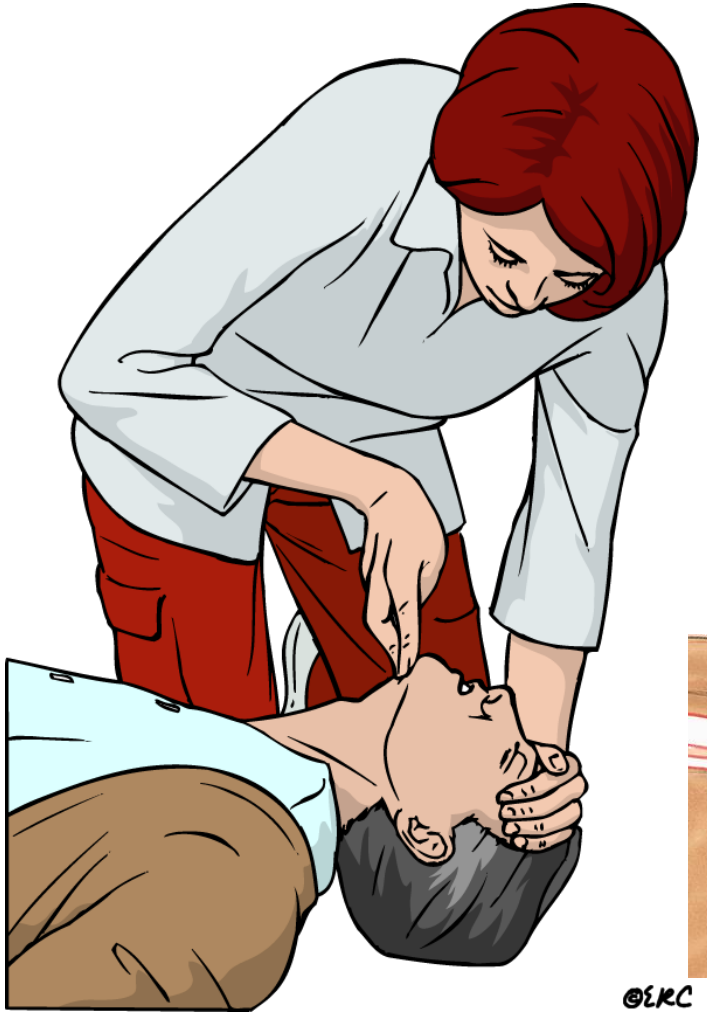
30 : 2

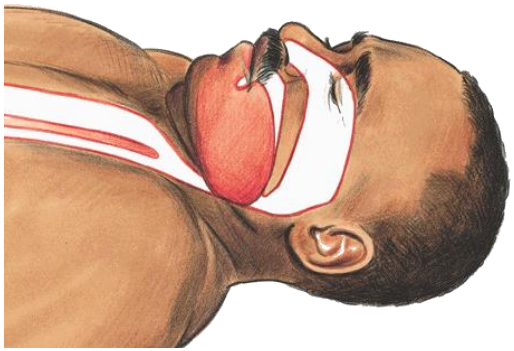
A airway

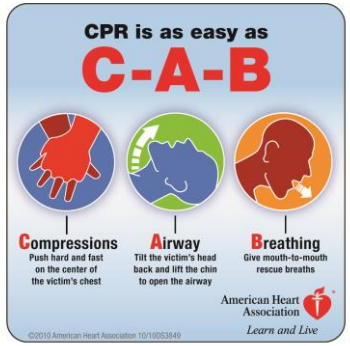

©ERC


CPR is as easy as
C-A-B
Compressions
Push hard and fast on the center of the victim's chest
Airway
Tilt the victim's head back and lift the chin to open the airway
Breathing
Give mouth-to-mouth rescue breaths
American Heart Association
Learn and Live
©2010 American Heart Association 10/1005384

A airway


©ERC

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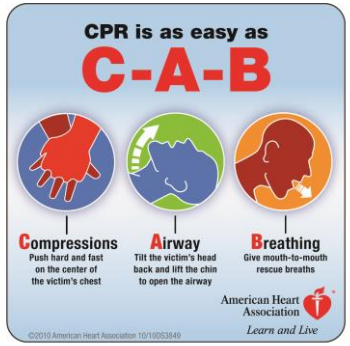
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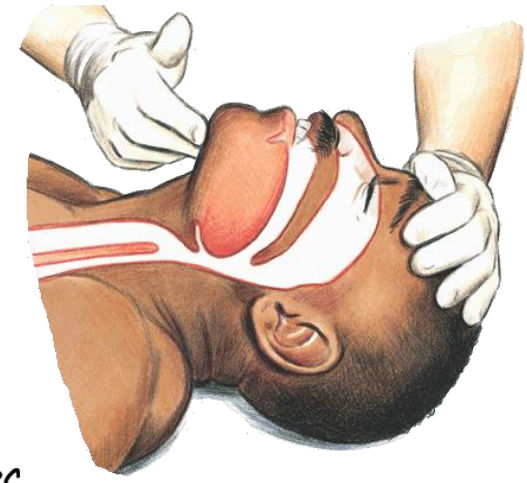
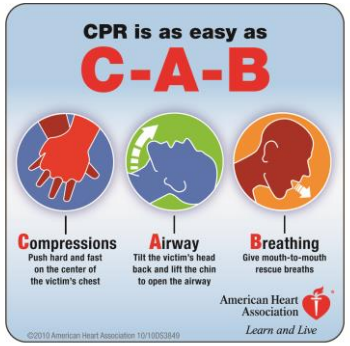
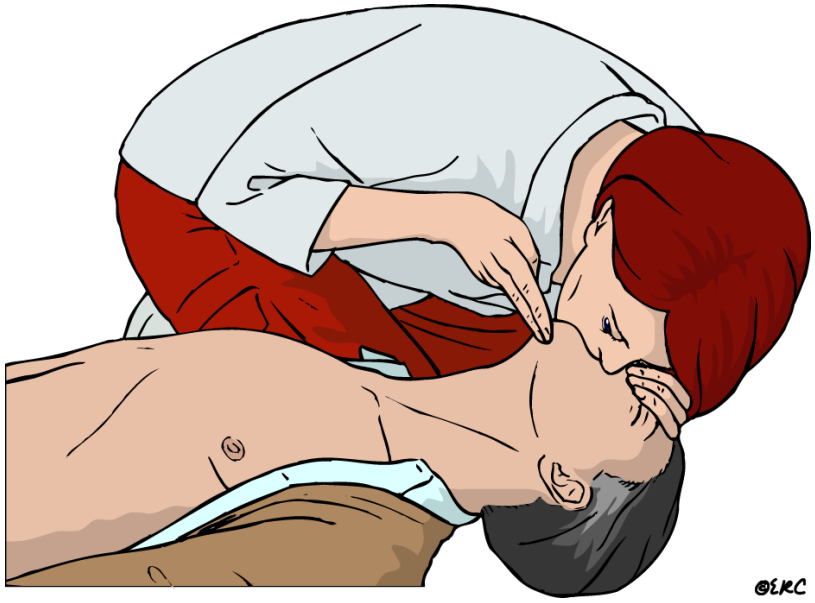
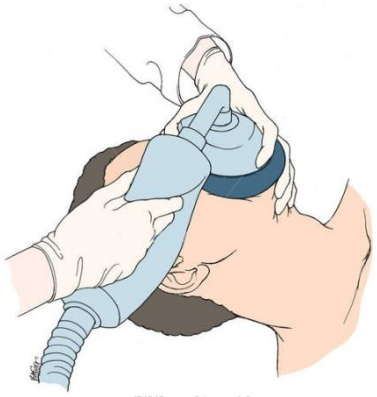


B breathing

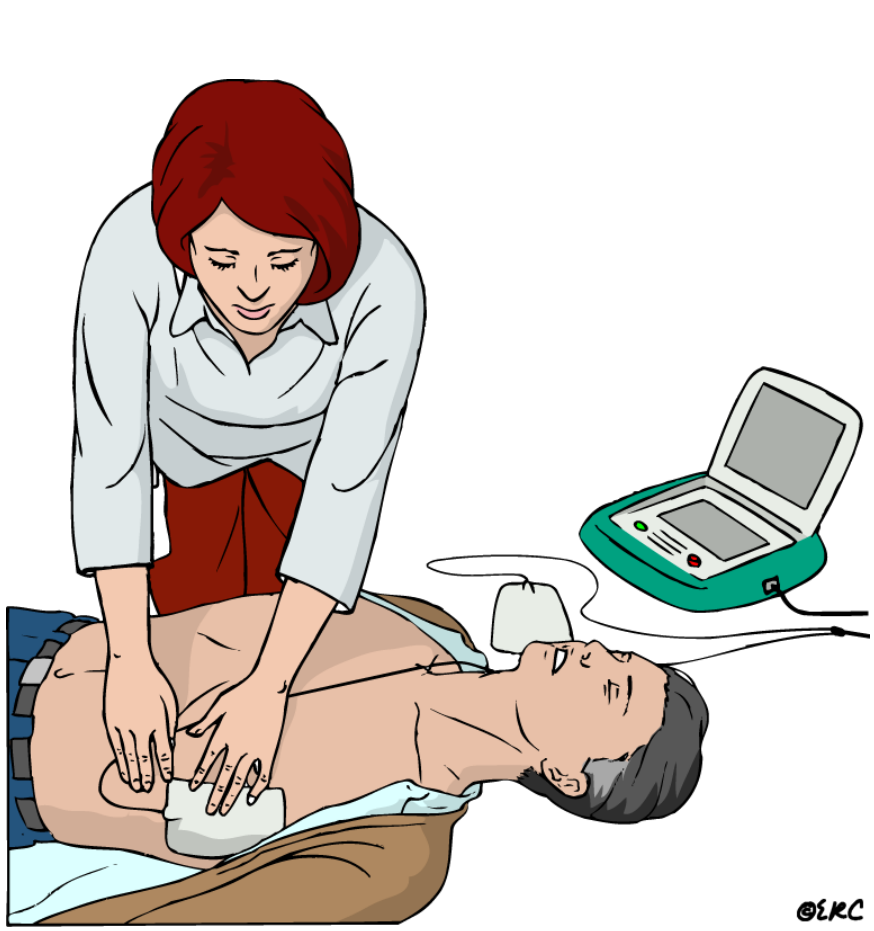


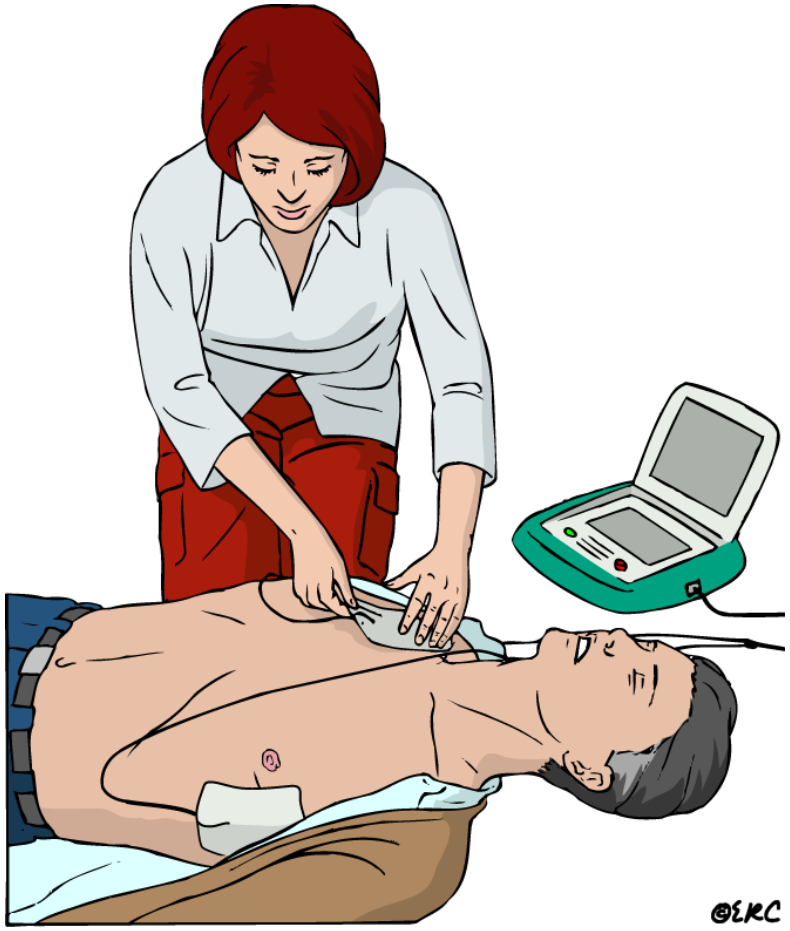
2 insufflations





D defibrillation





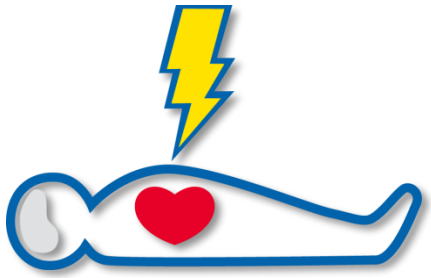
Défibrillateurs

Automatique

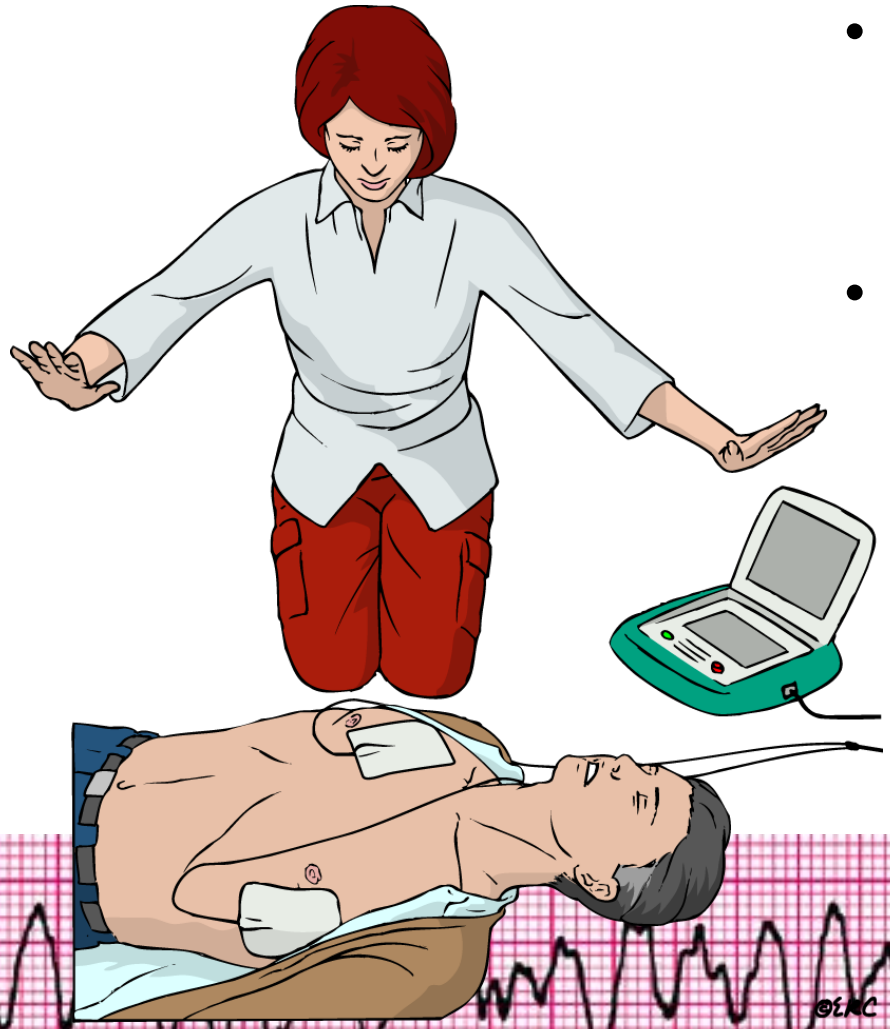
Manuel

Semi-automatique

Multi mode



D defibrillation

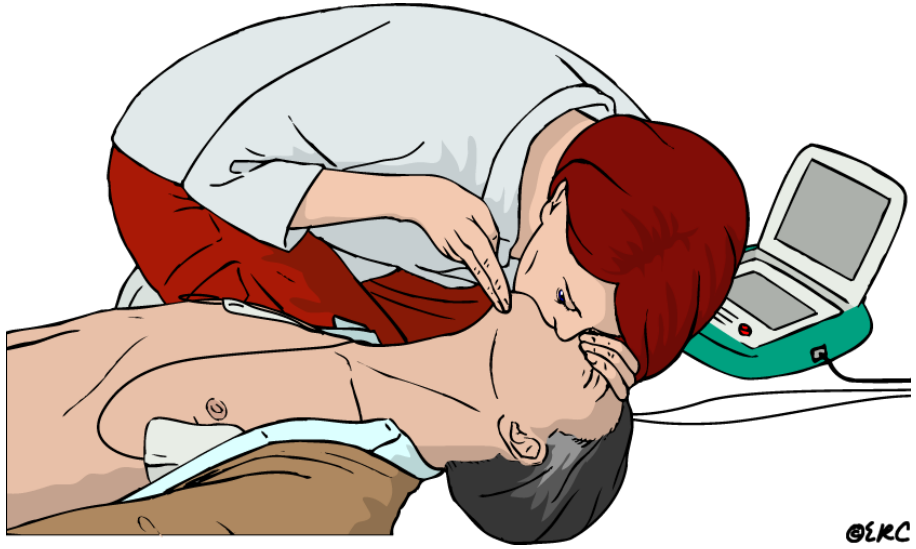


- Analyse du rythme…
- Ne pas toucher le patient

D defibrillation

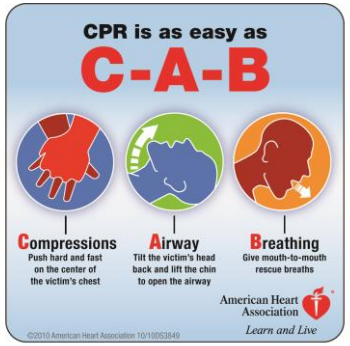
- Energie maximale dès le 1er choc

Reprise immédiate RCP



30 : 2

BLS survey



30:2

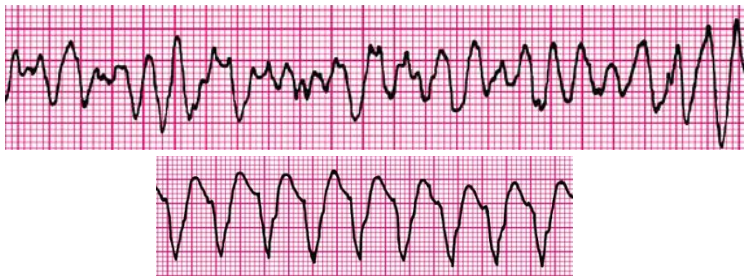
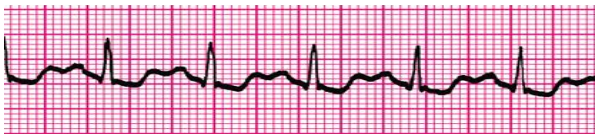
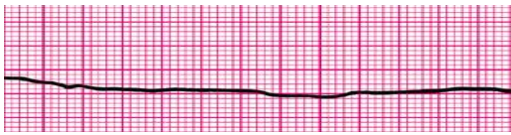
- **C**irculation — massage cardiaque
- **A**irway — dégager les voies aériennes
- **B**reathing — 2 insufflations

- **D**éfibrillation — choc FV/TV sans pouls

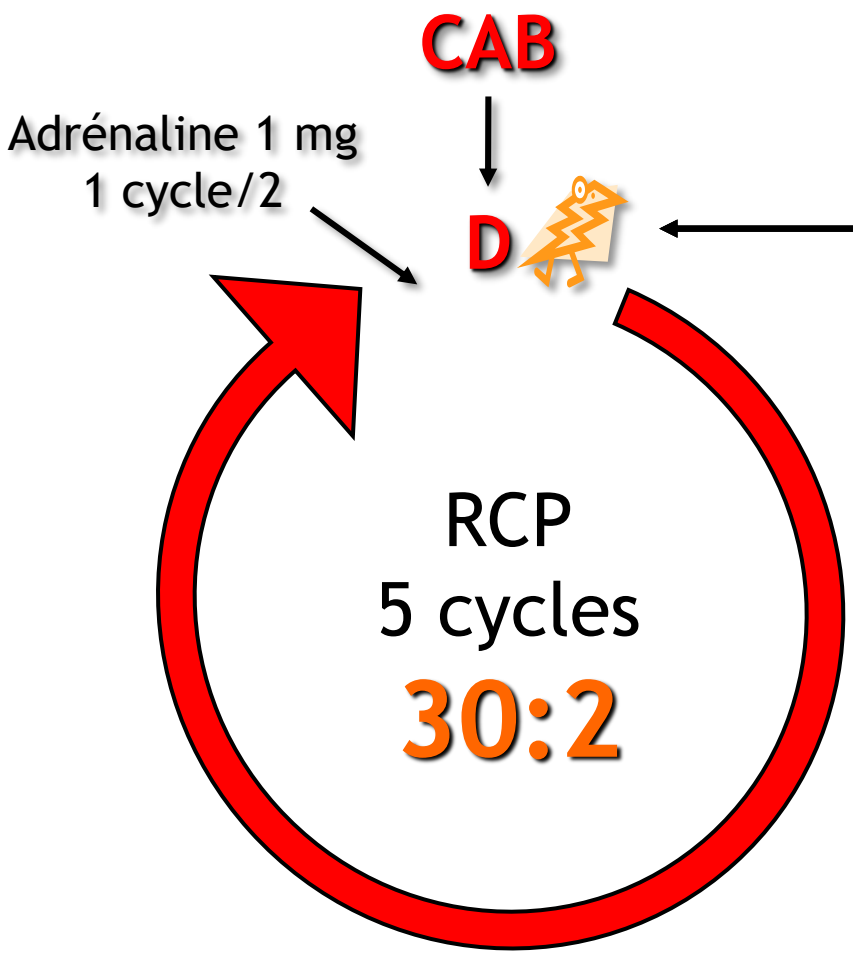
ACLS survey

- **A**irway — intubation + capnographe
- **B**reathing — assurer ventilation et ascension du thorax symétrique
- **C**irculation — accès IV, déterminer rythme, donner médicaments appropriés
- **D**iagnostic différentiel — chercher et traiter les causes réversibles

Traitement du rythme

1 FV/TV sans pouls	2 AESP	3 asystolie
		
Electricité **Adrénaline** Amiodarone Lidocaïne	**Adrénaline** Remplissage Causes traitables	**Adrénaline** atropine

Traitement du rythme



1 FV/TV sans pouls

1) Amiodarone 300 mg bolus
(150 mg bolus)

ou

2) Lidocaïne 100 mg (2x)

Torsade de pointe

Magnésium 2 g bolus

2 AESP

Volume (+ 6H 5T)

3 Asystolie

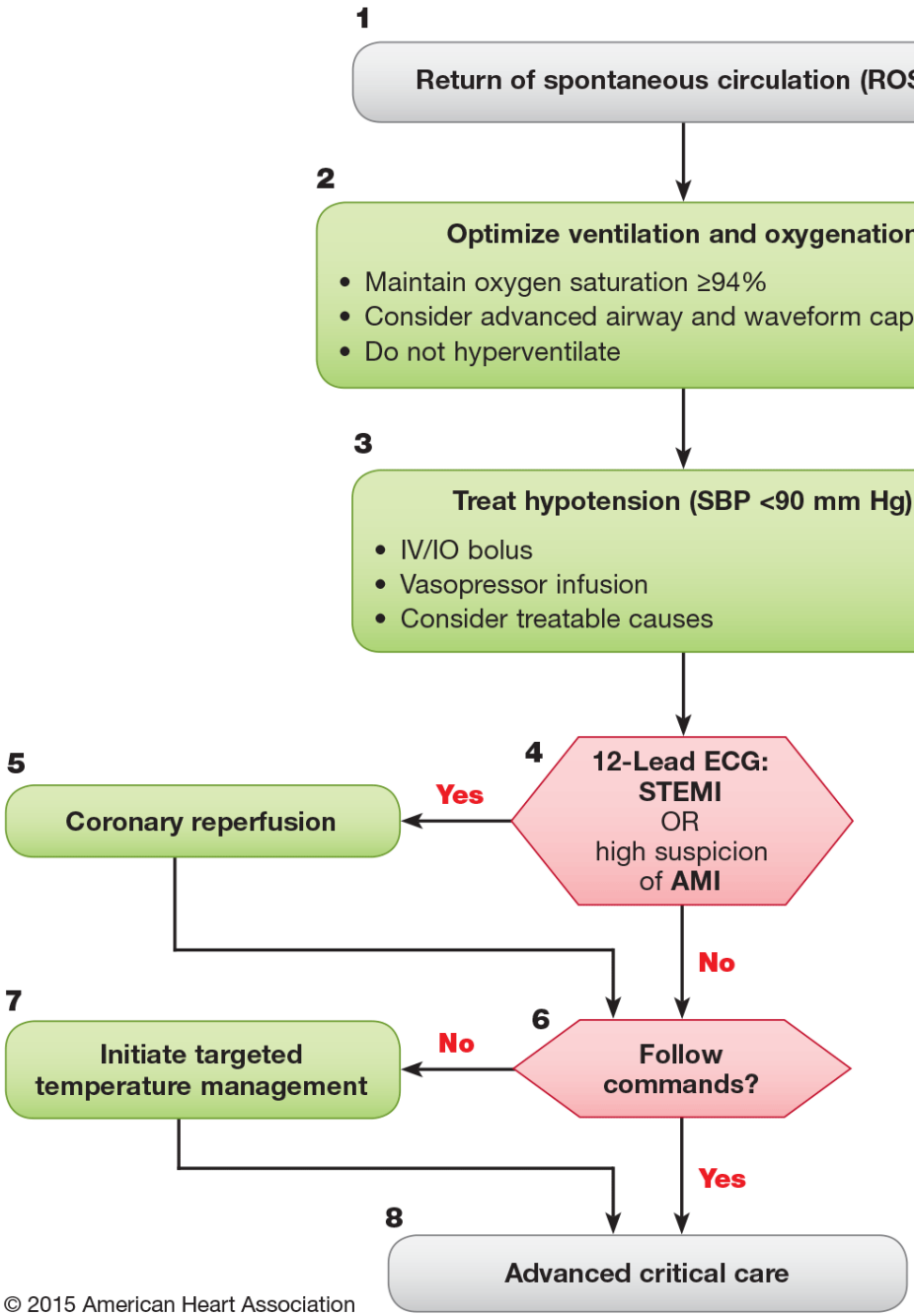
Réanimation

Anti-arythmique

Causes traitables

6 H	5 T
Hypovolémie	**T**oxiques médicaments overdose
Hypoxie	**T**hrombose coronarienne
H^{+} (acidose)	**T**hrombose pulmonaire (embolie)
Hyper-/hypokaliémie	**T**ension pneumothorax
Hypothermie	**T**amponnade
Hypoglycémie	

Adult Immediate Post–Cardiac Arrest Care Algorithm—2015 Update



Doses/Details

Ventilation/oxygenation:
Avoid excessive ventilation. Start at 10 breaths/min and titrate to target P_{ETCO_2} of 35-40 mm Hg.
When feasible, titrate F_{IO_2} to minimum necessary to achieve Sp_{O_2} ≥94%.

IV bolus:
Approximately 1-2 L normal saline or lactated Ringer's

Epinephrine IV infusion:
0.1-0.5 mcg/kg per minute (in 70-kg adult: 7-35 mcg per minute)

Dopamine IV infusion:
5-10 mcg/kg per minute

Norepinephrine IV infusion:
0.1-0.5 mcg/kg per minute (in 70-kg adult: 7-35 mcg per minute)

Reversible Causes

- **H**ypovolemia
- **H**ypoxia
- **H**ydrogen ion (acidosis)
- **H**ypo-/hyperkalemia
- **H**ypothermia
- **T**ension pneumothorax
- **T**amponade, cardiac
- **T**oxins
- **T**hrombosis, pulmonary
- **T**hrombosis, coronary

Guidelines 2015 : Ce qui change

2010

- C-A-B
- MCE >100/min (<120/min)
- Profondeur >=5 cm
- Priorité à la défibrillation
  Ne plus attendre 2 min
- Suppression de l'étape
  Regarder → Ecouter → Sentir
- Algorithme circulaire simplifié
- Capnographe si intubé
- Soins post-ACR
- Témoins non formés: MCE seul

2015

- MCE 100-120/min
- Profondeur 5-6 cm

(Suppression vasopressine)

(Arrêt resp → naloxone)

Guidelines 2015 : ce qui reste

2015 (=2010)

- Permettre une relaxation thoracique totale après chaque compression
- Réduire au minimum les interruptions pendant les compressions
- Éviter l'hyperinflation
- 1 seul choc suivi immédiatement de la RCP
- Réduire le délai entre la dernière compression et le choc (massage pendant la charge du défibrillateur) et entre le choc et la reprise des compressions

Pour en savoir plus…

ILCOR : www.ilcor.org

2015 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations

Circulation. 2015;132(16 suppl 1):s1-s311

AHA : https://eccguidelines.heart.org

2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care

Circulation. 2015;132(18 suppl 2):S313-S589

ERC : www.cprguidelines.eu

European Resuscitation Council Guidelines for Resuscitation 2015

Resuscitation. 2015;95:1-311

SRC : www.resuscitation.ch

Service des urgences

American Heart Association
life is why™

Et au CHUV…

- Carte de poche (Commission 144)

Cours ACLS Provider 2019

- 5-6 mars
- 28-29 mars
- 24-25 septembre
- 10-11 décembre

Cours ACLS Refresh 2019

- 11 septembre

Renseignements:
Secrétariat de Direction, Service des urgences (021 314 38 74)
www.chuv.ch/urgences