

2015 Interim Training Materials BLS for Healthcare Providers Student Manual Comparison Chart

		New	Τ	Old	Rationale
Part 2: BLS/CPR for Adults Immediate recognition and activation of emergency response system	•	Call for nearby help upon finding the victim unresponsive. Continue to assess the breathing and pulse simultaneously. Activate the emergency response system or call for backup.	•	Check for responsiveness. Check for no breathing or no normal breathing. Call for help. Check for pulse for no longer than 10 seconds.	The intent of the recommendation change is to minimize delay and to encourage fast, efficient, simultaneous assessment and response, rather than a slow, methodical, step-by-step approach.

Shock first vs CPR first	For witnessed adult cardiac arrest, chest compressions should be started immediately. Use a defibrillator as soon as possible. CPR should be provided while the AED pads are applied and until the AED is ready to analyze the rhythm.	When any rescuer witnesses an out-of- hospital arrest and an AED is immediately available on-site, the rescuer should start CPR with chest compressions and use the AED as soon as possible. HCPs who treat cardiac arrest in hospitals and other facilities with on-site AEDs or defibrillators should provide immediate CPR and should use the AED/defibrillator as soon as it is available. These recommendations are designed to support early CPR and early defibrillation, particularly when an AED or defibrillator is available within moments of the onset of sudden cardiac arrest. When an OHCA is not witnessed by EMS personnel, EMS may initiate CPR while checking the rhythm with the AED or on the electrocardiogram (ECG) and preparing for defibrillation. In such instances, 1½ to 3 minutes of CPR may be considered before attempted defibrillation. Whenever 2 or more rescuers are present, CPR should be provided while the defibrillator is retrieved. With in-hospital sudden cardiac arrest, there is insufficient evidence to support or refute CPR before defibrillation. However, in monitored patients, the time from ventricular fibrillation (VF) to shock delivery should be under 3 minutes,	While numerous studies have addressed the question of whether a benefit is conferred by providing a specified period (typically 1.5 to 3 minutes) of chest compressions before shock delivery, as compared with delivering a shock as soon as the AED can be readied, no difference in outcome has been shown.
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	New	Old	Rationale
		and CPR should be performed while the defibrillator is readied.	
Chest	In adult victims of cardiac arrest,	Lay rescuers and healthcare providers	A single large registry series suggested
compression rate	perform chest compressions at a rate of 100 to 120/min.	perform chest compressions at a rate of at least 100/min.	that as the compression rate increases to more than 120/min, compression depth decreases in a dose-dependent manner. For example, the proportion of compressions of inadequate depth was about 35% for a compression rate of 100 to 119/min but increased to inadequate depth in 50% of compressions when the compression rate was 120 to 139/min and to inadequate depth in 70% of compressions when the compression rate was more than 140/min.
Chest compression depth	Perform chest compressions to a depth of at least 2 inches/5 cm for an average adult. Avoid excessive chest compression depths of more than 2.4 inches/6 cm when a feedback device is available.	The adult sternum should be depressed at least 2 inches (5 cm).	A compression depth of approximately 5 cm is associated with greater likelihood of favorable outcomes compared with shallower compressions. While there is less evidence about whether there is an upper threshold beyond which compressions may be too deep, a recent very small study suggests potential injuries (none life-threatening) from excessive chest compression depth (greater than 2.4 inches/6 cm). Compression depth may be difficult to judge without use of feedback devices, and identification of upper limits of compression depth may be challenging. It is important for rescuers to know that chest compression depth is more often too shallow than too deep.

	New	Old	Rationale
Chest recoil	Avoid leaning on the chest between	Allow complete recoil of the chest after	Full chest wall recoil occurs when the
	compressions to allow full chest wall	each compression, to allow the heart to	sternum returns to its natural or neutral
	recoil for adults in cardiac arrest.	fill completely before the next	position during the decompression phase
		compression.	of CPR. Chest wall recoil creates a
			relative negative intrathoracic pressure
			that promotes venous return and
			cardiopulmonary blood flow. Leaning
			on the chest wall between compressions
			precludes full chest wall recoil.
			Incomplete recoil raises intrathoracic
			pressure and reduces venous return,
			coronary perfusion pressure, and
			myocardial blood flow and can
			influence resuscitation outcomes.
Minimizing	Minimize the frequency and		Interruptions in chest compressions can
interruptions	duration of interruptions in		be intended as part of required care (ie,
in chest	compressions to maximize the		rhythm analysis and ventilation) or
compressions	number of compressions delivered		unintended (ie, rescuer distraction).
	per minute.		Chest compression fraction is a
			measurement of the proportion of total
	For adults in cardiac arrest who		resuscitation time that compressions are
	receive CPR without an advanced		performed. An increase in chest
	airway, perform CPR with the goal		compression fraction can be achieved by
	of a chest compression fraction as		minimizing pauses in chest
	high as possible, with a target of at		compressions. The optimal goal for
	least 60%.		chest compression fraction has not been
			defined. The addition of a target
			compression fraction is intended to limit
			interruptions in compressions and to
			maximize coronary perfusion and blood
			flow during CPR.

	New	Old	Rationale
Part 4:	Although the amount and quality of	Initiate CPR for infants and children	In the absence of new data, the sequence
BLS/CPR for	supporting data are limited,	with chest compressions rather than	has not been changed. Consistency in
Children;	providers should maintain the	rescue breaths (C-A-B rather than	the order of compressions, airway, and
Part 5:	sequence from the 2010 Guidelines	A-B-C). CPR should begin with 30	breathing for CPR in victims of all ages
BLS/CPR for	by initiating CPR with C-A-B over	compressions (by a single rescuer)	may be easiest for rescuers who treat
Infants	A-B-C.	or 15 compressions (for resuscitation	people of all ages to remember and
		of infants and children by 2	perform. Maintaining the same sequence
C-A-B		healthcare providers) rather than	for adults and children offers
sequence		with 2 ventilations.	consistency in teaching.
Chest	Rescuers should provide chest	To achieve effective chest	One adult study suggested harm with
compression	compressions that depress the chest	compressions, rescuers should	chest compressions greater than 6 cm,
depth	at least one third the anteroposterior	compress at least one third of the	resulting in a change in the adult BLS
	diameter of the chest in pediatric	anteroposterior diameter of the	recommendation to include an upper
	patients (infants [younger than 1	chest. This corresponds to	limit for chest compression depth; the
	year] to children up to the onset of	approximately 1.5 inches (about 4	pediatric experts accepted this
	puberty). This equates to	cm) in most infants and about 2	recommendation for adolescents beyond
	approximately 1.5 inches (4 cm) in	inches (5 cm) in most children.	puberty. A pediatric study observed
	infants to 2 inches (5 cm) in		improved 24-hour survival when
	children. Once children have		compression depth was greater than 51
	reached puberty (ie, adolescents),		mm (2 inches). Judgment of
	the recommended adult compression		compression depth is difficult at the
	depth of at least 2 inches (5 cm) but		bedside, and the use of a feedback
	no greater than 2.4 inches (6 cm) is		device that provides such information
	used.		may be useful if available.
Chest	To maximize simplicity in CPR	Push at a rate of at least 100	One adult registry study demonstrated
compression	training, the adult chest compression	compressions per minute.	inadequate chest compression depth
rate	rate of 100 to 120/min is used for		with extremely rapid compression rates.
	infants and children.		To maximize educational consistency
			and retention, in the absence of pediatric
			data, pediatric experts adopted the same
			recommendation for compression rate as
			is made for adult BLS.

	New	Old	Rationale
Compression-	Conventional CPR (rescue breaths	Optimal CPR in infants and children	Large registry studies have
only CPR	and chest compressions) should be	includes both compressions and	demonstrated worse outcomes for
	provided for infants and children in	ventilations, but compressions alone	presumed asphyxial pediatric cardiac
	cardiac arrest. The asphyxial nature	are preferable to no CPR.	arrest, which comprise the vast majority
	of most pediatric cardiac arrests		of out-of-hospital pediatric cardiac
	necessitates ventilation as part of		arrest, treated with compression-only
	effective CPR. However, because		CPR. In 2 studies, when conventional
	compression-only CPR can be		CPR (compressions plus breaths) was
	effective in patients with a primary		not given in presumed asphyxial arrest,
	cardiac arrest, if rescuers are		outcomes were no different from when
	unwilling or unable to deliver		victims did not receive any bystander
	breaths, we recommend rescuers		CPR. When a presumed cardiac etiology
	perform compression-only CPR for		was present, outcomes were similar
	infants and children in cardiac arrest.		whether conventional or compression-
			only CPR was provided.
Part 7: CPR	With an advanced airway in place,	When an advanced airway (ie,	This simple single rate for adults,
With an	deliver 1 breath every 6 seconds (10	endotracheal tube, Combitube, or	children, and infants—rather than a
Advanced	breaths per minute) while	laryngeal mask airway) is in place	range of breaths per minute—should be
Airway	continuous chest compressions are	during 2-person CPR, give 1 breath	easier to learn, remember, and perform.
	being performed.	every 6 to 8 seconds without	
Ventilation		attempting to synchronize breaths	
during CPR		between compressions (this will	
with an		result in delivery of 8 to 10 breaths	
advanced		per minute).	
airway			

BLS Dos and Don'ts of Adult High-Quality CPR

Rescuers Should	Rescuers Should Not
Perform chest compressions at a rate of 100	Compress at a rate slower than 100/min or
to 120/min	faster than 120/min
Compress to a depth of at least 2 inches (5	Compress to a depth of less than 2 inches
cm)	(5 cm) or greater than 2.4 inches (6 cm)
Allow full recoil after each compression	Lean on the chest between compressions
Minimize pauses in compressions	Interrupt compressions for greater than 10
	seconds
Ventilate adequately (2 breaths after 30	Provide excessive ventilation (ie, too many
compressions, each breath delivered over 1	breaths or breaths with excessive force)
second, each causing chest rise)	