

## Appendix 1. Summary of CPR Training Content and Assessment Tools

### 1. Training Content Overview

Component	Topics Covered
<b>Basic Life Support (BLS)</b>	<ul style="list-style-type: none"> <li>- Chest compressions (rate, depth, recoil)</li> <li>- Ventilation techniques</li> <li>- Use of AED</li> <li>- Adult, child, and infant CPR</li> <li>- Scene safety and calling for help</li> </ul>
<b>Advanced Life Support (ALS)</b>	<ul style="list-style-type: none"> <li>- Advanced airway management</li> <li>- ECG rhythm recognition</li> <li>- Medication use in resuscitation</li> <li>- High-performance team dynamics</li> <li>- Post-cardiac arrest care</li> </ul>
<b>Instructional Methods</b>	<ul style="list-style-type: none"> <li>- Lecture-based instruction</li> <li>- Demonstration by instructor</li> <li>- Hands-on practice</li> <li>- Scenario-based simulation</li> </ul>

### 2. Knowledge Assessment

- **Format:** 20 multiple-choice questions
- **Source:** Adapted from AHA official post-test resources (2020 Guidelines)
- **Topics:**
  - CPR sequence and priorities
  - Compression/ventilation ratios
  - AED use
  - Recognition of cardiac arrest
  - Pharmacology and rhythm management in ALS

### 3. Skills Assessment Rubric (Simulation-Based)

#### Assessment Criteria (Sample)

Skill Domain	Performance Indicator	Score (0–2)
Chest compression technique	Rate 100–120/min, depth $\geq$ 5 cm, full recoil	
Ventilation technique	Proper seal with mask, visible chest rise	
AED operation	Turned on, pads applied correctly, safety during shock	
ALS airway management	Appropriate use of airway adjuncts	

Rhythm recognition	Accurate identification of rhythm and appropriate action	
Team communication	Clear roles, closed-loop communication	

- **Scoring:** Each item rated 0 (not performed), 1 (partially), or 2 (fully correct)
- **Passing threshold:**  $\geq 80\%$  total score

<b>Appendix 2. SPIRIT Checklist</b>		
<b>SPIRIT Item</b>	<b>Recommendation</b>	<b>Where Addressed in Manuscript</b>
Title (1)	Descriptive title identifying study as a protocol	Title page
Abstract (2)	Structured summary of trial design, methods, outcomes, and registration	Abstract (revised)
Background (6a, 6b)	Scientific background, rationale, research gap	Background section
Objectives (7)	Specific objectives including primary and secondary outcomes	<b>Objectives section (revised)</b>
Trial design (8)	Description of trial design (parallel, cluster, allocation ratio)	Methods – Design (revised)
Study setting (9)	Description of study setting and context	Methods – Participants and Sampling
Eligibility criteria (10)	Inclusion and exclusion criteria	Methods – Participants and Sampling
Interventions (11a–11d)	Details of interventions for each group, how/when administered	Methods – Intervention Implementation
Outcomes (12)	Primary, secondary outcomes, measurement timepoints	<b>Methods – Outcomes (new section)</b>
Sample size (14)	Estimated number of participants and rationale	Methods – Data analysis (Sample size)
Sequence generation (16a)	Method of random sequence generation	Methods – Participants and Sampling
Allocation concealment (16b)	Mechanism of implementing allocation	Methods – Trial design (clarified)
Blinding (17a, 17b)	Who is blinded, how blinding will be maintained	Methods – Blinding
Data collection methods (18a)	Plans for assessment and collection of data	Methods – Intervention & Outcomes
Data management (19)	How data will be stored, coded, secured	Methods – Data analysis (Anonymized codes, secure storage)
Statistical methods (20a–20c)	Analysis methods for outcomes, subgroup analysis, handling missing data	Methods – Data analysis
Ethics approval (24)	Approval, consent, confidentiality	Declarations – Ethical considerations

Dissemination (31a)	Plans for communicating protocol/results	Ethical considerations + Discussion
Trial registration (23)	Registry name, number, or explanation if not registered	<b>Abstract &amp; Ethical considerations (revised)</b>
Funding (25)	Sources of funding/support	Declarations – Funding
Author contributions (31b)	Roles of each author	Declarations – Author contributions
Conflict of interest (28)	Financial/non-financial conflicts	Declarations – COI
Acknowledgments (31c)	Acknowledgments	Declarations – Acknowledgments