

Supplementary File 1. Adverse Safety Event Determination matrix

Domain	Adverse Safety Event	Threshold	U, N, S, E, M	Severity	Preventability
Assessment, Impression/Diagnosis	Failure to check glucose in any arrest including post ROSC with AMS		S	Mild	Preventable
	Delay in determining shockable/non-shockable rhythm	>5 min	E	Severe	Preventable
	Failure to monitor pulse oximetry	Bradycardia with pulse	E	Severe	Preventable
		Any	S	Mild	Likely not preventable
Clinical Decision-Making	ACLS instead PALS	Age <12 years and weight <50 kg	E	Severe	Preventable
	Incorrect PALS algorithm	Evidence of not using pulseless arrest algorithm when indicated	E	Severe	Preventable
	Neonatal resuscitation program algorithm not used but indicated	Failed to warm, dry, stimulate	E	Severe	Preventable
		Incorrect ventilation/compression ratio	E	Severe	Preventable
Procedures	IV placement: Too many attempts	>1	E	Mild	Preventable
	IO placement: Too many attempts	>1	E	Mild	Likely Preventable
	IV/IO placement:	Failure to successfully establish access	E	Severe	Likely preventable
	IV/IO placement: delay in access	>10 min	E	Severe	Preventable
	Defibrillation overdose	>8 J/kg	E	Mild	Preventable
	Defibrillation underdose	<1 J/kg	E	Severe	Preventable
Airway	Failure to ventilate	Within 2 minutes of arrival	E	Severe	Preventable
	Intubation: Too many attempts	≥3 attempts	E	Severe	Preventable
		2 attempts	S	Mild	Likely not preventable
	Failure to immediately confirm endotracheal tube placement	<1 minute to perform capnography	E	Severe	Preventable

	Incorrect airway equipment size	Tube size > half size off		E	Severe	Preventable
		Premature infant	2.5-3.5			
		0-6 months	3.0-4.0			
		6-12 month	3.5-4.5			
		1-2 years	3.5-5.0			
		2-4 years	4.0-5.5			
		4-6 years	4.5-6.0			
		6-8 years	5.0-6.5			
		8-10 years	6.0-7.5			
	10-18 years	6.5-7.5				
Tube displacement	Any	M	Severe	Preventable		
Tube too deep	>2 cm above 3 times the age appropriate diameter (size used)	M	Mild	Preventable		
Inappropriate airway choice	King airway for weight <12 kg	E	Severe	Likely Preventable		
Medications	Epinephrine overdose	2-<10 fold	S	Mild	Likely preventable	
		≥10 fold	E	Severe	Preventable	
	Epinephrine 1:1000 concentration	Incorrect concentration/correct mg dose	E	Mild	Preventable	
	Epinephrine underdose	>50% of recommended dose (considering 1mg is max dose)	E	Severe	Preventable	
	Other medication overdose	≥10 fold	E	Severe	Preventable	
	Other medication overdose	2-<10 fold	S	Mild	Likely preventable	
	Epinephrine indicated and not given	No ROSC in <10 min	E	Severe	Preventable	
	Medications given and not indicated					
	Atropine	Age <12 and weight <50 kg	E	Mild	Preventable	
	Sodium Bicarbonate	Any	S	Mild	Preventable	
	Vasopressin	Age <12 and weight <50 kg	E	Mild	Preventable	
	Delay in epinephrine	>10 minutes or 3 defibrillations with no Epinephrine	E	Severe	Likely preventable	
Interval between doses	>10 minutes	E	Severe	Preventable		

U = Unintended injury or consequence (not solely by disease process); N = Near miss (not a planned event); S = Suboptimal action that can be improved; E = Error; M = Management complication; ROSC = Return of spontaneous circulation; AMS = Altered mental status; IV= Intravenous; IO = Intraosseous