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| Location Section/Page # | Change | Purpose of Change  (Provider Input, Stakeholder Input, Evolution of Evidence, Best Practice, etc.) | Evidence for Change | Expected Impact  (Operational, Educational, Financial, QI, Medical Direction, Communication, etc.) | Size of Change (Small/Medium/ Large) | Desired Outcome |
| Red 2/ #10 | Change “Have defib pads ready as these patients are high risk for VF/VT” to “Apply defib pads and be prepared to defibrillate as these patients are high risk for VF/VT cardiac arrest” | Evolution of best practice – evidence suggests 4% risk of OHCA with prehospital STEMI and >60sec reduction in time to first shock if pads are already in place | Decreasing Time to First Shock (PMID 31469063) | Small educational rollout, operational cost of pads (376 total STEMI primary impressions statewide in 2018 report) | Small | Improvement in OHCA and STEMI care and decrease time to defibrillation if the patient suffers cardiac arrest |
| Red 5/ final box | Close the parentheses | grammar | Grammatical | None | None | Grammatical |
| Red 6/ #6 | Remove “if so trained” from “Cardiac monitor and 12-lead ECG…” | Match protocol with scope of practice. | Section Author Review | Educational | Small | Align protocol with AEMT scope given all AEMT’s are trained |
| New Red Protocol | New Hyperkalemia Protocol | Guide paramedic recognition and treatment of ECG changes associated with hyperkalemia | Section Author Review | Educational | Medium | Yes – with proposed edits |
| Red 7/ top box “consider cause of arrest” | Change “Is the patient acidotic, hyperkalemic, or overdose? – Bicarb and fluid bolus” to “… - calcium, bicarb, and fluid bolus” | Best practice now that calcium is in our formulary | Section Author Review | Best practice now that calcium is in our formulary | medium | Additional treatment options given current drug formulary for acidotic and hyperkalemic OHCA; |
| Red 7/ PEARL | Change “…consideration of bicarb in possible toxic, acidotic, or hyperkalemic patients.” To “…consideration of bicarb in possible toxic or acidotic patients. Also, consideration of bicarb and calcium in hyperkalemic patients – note patients on dialysis are at highest risk.” | Best practice now that calcium is in our formulary | Section Author Review | Best practice now that calcium is in our formulary | medium | Additional treatment options given current drug formulary for hyperkalemic OHCA |
| Red 8/ #4 | Change “high flow O2 with BVM ventilation…” to “…at a ratio of 30:2 or 1 breath every 10 chest compressions during recoil and without interrupting compressions” | Prioritization of language: 30:2 ratio is the AHA taught ratio (Class IIa) while AHA reports continues ventilation strategy “may be reasonable” (Class IIb) | AHA guidelines – 2017 updates (no additional changes since) | Prioritizing the language, no education needed | small | Allow variations on high performance CPR |
| Red 8/ #13c | Change: “For refractory VF/VT (total of 5 shocks…)” to “(total of 3 shocks…)” | Allow for earlier deployment of therapies for refractory VF based on continued study suggesting early deployment beneficial | DOSE – VF (pilot study 2020) and Impact of DSED (2019) | Educational | small | Opportunity to deploy therapies for complex OHCA as early as clinical studies suggest |
| Red 12/”Indication” | Change: “refractory VF/VT after 5 unsuccessful shocks” to “…after 3…” | Same as above | Same as above | Educational | Small | Same as above |
| Red 12 | Reorganization of the Refractory VF/VT protocol to initiate vector changes and ensuring adequate pad contact after 3 defibrillations. Only then moving to consideration of DSD. | Same as above | Same as above | Educational | Small | Same as above |
| Red 8/ New #13d | Add “PEA, consider treatment based on QRS complex width: narrow vs wide” and PEA algorithm infographic (consideration of rhythm specific treatments) | Highlight available treatments for PEA and provide guidance based on ECG tracing that is more instructive than classic Hs&Ts training |  | Education | Medium | Create a focused approach to the treatment of PEA based on the morphology/rate of PEA with the aim of increasing survival from PEA |
| Red 8/ #14 | 14a – sodium bicarb, IVF, calcium  14b – sodium bicarb, IVF  14c – sodium bicarb, IVF | Best practice now that calcium is in our formulary | Section Author Review | education | small | Additional treatment options given current drug formulary for hyperkalemic OHCA; |
| Red 8/#15 | Remove “post resuscitation amiodarone drip” | Amiodarone bolus is adequate | Section Author Review | Education | Small | Pharmacokinetics; |
| Red 9 | Addition of Hospital “H” to peripartum paragraph | Highlight value of medical consultation in complex patients | Section Author Review | None | Small | Visual aid |
| Red 17/ #9a | Modify the valsavla?  “Place stretcher flat. Position patient seated upright and have patient blow into a 10cc syringe forcefully, attempting to move the plunger for 15 sec. Then, immediately lay the patient supine and raise legs to 45 degrees. Hold legs for 1 min, then return to seated position. Reassess. May repeat once.” | REVERT trial |  | Educational | Small | Improve treatment of SVT with new modifications of the Valsalva maneuver that are more successful than traditional maneuvers |
| Red 17/ #9b | Adenosine: 6mg IV rapid bolus, “may repeat adenosine x1 at 12mg…” change to “may repeat x2 at 12mg IV…” | ACLS protocols allow for 3 total doses of adenosine at 6mg, 12mg, 12mg. Current protocol only allows for 2 doses. |  | Education | Small | Align with AHA protocols |
| Red 18/ Paramedic | Insert “8. Check mechanical capture frequently (every 2 minutes) by palpating a pulse, ensuring that it matches the paced rate. “ | Improve care based on QI experiences | Section author review | Educational | Small | Ensure adequate mechanical capture in patients undergoing transcutaneous pacing |
| Red 18 | Insert: “Post-ROSC bradycardia is a peri-arrest state. For the patient who has achieved ROSC and becomes bradycardic, be very cautious. Typically, these causes do not respond durably to TCP alone. In addition to TCP, consider early initiation of Norepinephrine and refer to the post arrest protocol. Check mechanical capture every 2 minutes and restart CPR if no pulse.” | Improve care based on QI experiences | Section author review | Educational | Medium | Address post arrest bradycardia by focusing on importance of pressors (NorEPI for the cardiogenic shock post-arrest patient) as TCP does not work well in this population. Bradycardia is a peri-arrest state and likely to degrade. |
| Red 13 | Insert: “In the event that a patient arrests or re-arrests after leaving the scene and resuscitation efforts are unsuccessful, continue non-emergent transfer to the hospital for final steps of patient care. This pathway should also be considered for TOR’s that occur in unsafe or undesirable locations. Please discuss and pre-plan with your local hospitals to ensure that all local systems are involved” | Protocolization of practices we have been supporting for several years | Section author review | Educational | Small | Support of family and responding EMS Clinicians during tremendously difficult clinical circumstances. Practice consistency across the state based on our board’s best practice recommendation |
| Red 20/ PEARL | Add "pediatric patients very rarely require vasopressors. If the patient is not responding to IVF or not tolerating IVF call OLMC to discuss” | Best practice | Section author review | Educational | Small | Encourage OLMC Consultation in very ill pediatric patients; strategize the care of sick pediatric patients |
| Red 21/ PEARL | Change- “25% of geriatric syncope…” to “Up to one third of syncope in the older adult is caused by cardiac disorders.” | Evidence in available literature highlights the risk of cardiac syncope in older patients | Section author review | Educational | Small | Highlight the potential of cardiac causes of syncope in the |
| Red 21/ PEARL | Add “pulmonary embolism” to “consider other causes including GI bleed, ectopic pregnancy, seizure, stroke, hypoglycemia, shock, toxicologic (ie alcohol) and medication.” | Additional consideration on list of concerning causes of syncope | European Cardiology Review  2014;9(1):28–36 DOI:https://doi.org/  10.15420/  ecr.2014.9.1.28 | Educational | Small | Identify PE as a potential cause of syncope |
| Red 22 | Add hospital H and statement encouraging early contact with the patient’s VAD team | Provider input | EMS Clinician Input | Education | Minimal – visual cue only | Add que encouraging early consultation patients with medical complexity. |