Dear ARPA Grant Committee,

This letter is to request funding from the American Rescue Plan Act to purchase equipment to help protect our Dixon Rural Fire and Ambulance Department members and patients from Covid-19 by purchasing equipment to provide medical services as safe as possible. The equipment we are requesting is critical to aid in the fight against COVID 19 and help save lives in our community now and in the future.

COVID 19 puts an additional strain on Dixon Rural Fire and Ambulance and our equipment. There is an urgent need for additional equipment. On average over the past three years, we had approximately 620 calls for service per year. Personnel are concerned about their health and safety and need to be assured we are doing everything we can to keep them safe. We only have 6 active Volunteer EMTs and hope we will be able to get more active members who previously left if we are able to secure proper equipment that keeps our Emergency Medical technicians and patients safe. The equipment we need is prohibitively expensive with our budget and this funding deficit is exacerbated by our inability to fundraise in our normal manner due to the pandemic. The equipment we are requesting is necessary to provide safe effective care during this pandemic and in the future.

We are requesting funding for one (1) Lucas compression device to which would be added to our second ambulance.

Our current LUCAS compression device used for Cardio Pulmonary Resuscitation (CPR) has been a critical piece of equipment to maintain effective CPR, reduce the number of responders necessary for manual CPR, especially during COVID 19 and due to our long transport time to the hospital. We only have one (1) Lucas for our two ambulances, which is increasingly becoming a problem because on a regular basis both ambulances are needed to be in service at the same time.

Equipment Funding Request:

- Lucas 3 compression Device:

Total Request = $15,579.00

The requested equipment will help us reduce Covid-19 risks, retain personnel, prevent injury, decrease potential liability from equipment failure and allow us to save lives in our community as well as maintaining our personnel's wellbeing.

Thank for your time, service, and consideration of this request. We look forward to your support helping make our community safer.

Sincerely,

Chief Sid Aurand
Dixon Rural Fire Protection District
1020 Palmyra St. Dixon, IL. 61021
815-284-6897

American Rescue Plan Act-Coronavirus State & Federal Local Fiscal Recovery Funds

Request for Expenditure

Date of Request:	**9/21/2021**
Contact person(s) for request (including contact information):	**Chief Sid Aurand**
Department(s) for expenditure:	**Dixon Rural Fire Department**
Timeline for project/expenditure:	**As soon as funded and equipment is available.**
ARPA Grant Category this expenditure falls under (reference Outline and/or IFR)	**Section A. 7** **Emergency medical response expenses, including emergency medical transport, related to COVID-19**

Detailed cost of expenditure and timeline for project (Please include estimates and any other supporting documentation)	**See attached Stryker Quote**
Narrative regarding expenditure (how this expenditure fits into the funding, how this expenditure will benefit the department/county, details regarding project, etc.)	**See attached Documents**

If this expense is ineligible under the grant funds and is a needed expense, which line item/account/fund do you anticipate using for expenditure?	**N/A**
Signature/Date of person(s) submitting Request	S. M 9-21-20
Expenditure: **APPROVED DENIED** **Signature/Date of person(s) Approving/Denying Expenditure Request**	

***Note this is a REQUEST for the expenditure to be reviewed and considered for payment with ARPA grant funds. Please await approval/denial prior to expending funds.**

9/22/21 Eligible under Public Health Emergency - Emergency Medical Response Expense (Section 1.B) - SL

Stryker

LUCAS 9.21 ARP

Quote Number: 10431907

Version: 1

Prepared For: DIXON RURAL FIRE DEPT

Attn:

Remit to: **Stryker Medical**
P.O. Box 93308
Chicago, IL 60673-3308

Rep: Christine Rogers

Email: christine.rogers@stryker.com

Phone Number:

Quote Date: 09/21/2021

Expiration Date: 12/20/2021

Delivery Address		End User - Shipping - Billing		Bill To Account	
Name:	DIXON RURAL FIRE DEPT	Name:	DIXON RURAL FIRE DEPT	Name:	DIXON RURAL FIRE DEPT
Account #:	1167309	Account #:	1167309	Account #:	1167309
Address:	1020 PALMYRA ST	Address:	1020 PALMYRA ST	Address:	1020 PALMYRA ST
	DIXON		DIXON		DIXON
	Illinois 61021		Illinois 61021		Illinois 61021

Equipment Products:

#	Product	Description	Qty	Sell Price	Total
1.0	99576-000063	LUCAS 3, v3.1 Chest Compression System, Includes Hard Shell Case, Slim Back Plate, (2) Patient Straps, (1) Stabilization Strap, (2) Suction Cups, (1) Rechargeable Battery and Instructions for use With Each Device	1	$13,453.89	$13,453.89
2.0	11576-000060	LUCAS Desk-Top Battery Charger	1	$1,025.17	$1,025.17
3.0	11576-000071	LUCAS External Power Supply	1	$332.35	$332.35
4.0	11576-000080	LUCAS 3 Battery - Dark Grey - Rechargeable LiPo	1	$641.75	$641.75
5.0	11576-000046	LUCAS Disposable Suction Cup (3 pack)	1	$125.80	$125.80
				Equipment Total:	$15,578.96

Price Totals:

Estimated Sales Tax (0.000%):	$0.00
Freight/Shipping:	$0.00
Grand Total:	$15,578.96

Prices: In effect for 90 days

Terms: Net 30 Days

Contact your local Sales Representative for more information about our flexible payment options.

stryker

April 2021

Dear valued customer,

Based on the required regulatory applicability of certain products during the COVID-19 pandemic, please review the following information regarding Stryker's LUCAS® 3, v3.1 chest compression system.

Providing high-quality, Guideline-consistent chest compressions during a sudden cardiac arrest with minimal interruptions, the LUCAS device is designed to improve CPR quality while prioritizing caregiver and patient safety.

Some key features of the LUCAS 3, v3.1 device that can help with caregiver safety during COVID-19 include:

- Ability to maintain distance from suspected and confirmed COVID-19 patients during CPR
- Reduced number of caregivers needed to administer chest compressions during a code compared to a rotation of caregivers providing manual CPR
- *Improved caregiver safety when providing CPR during transport*

Additional guidance

The American Heart Association[1], U.S. Department of Defense[2] and Canadian Cardiovascular Society[3] propose a role for mechanical CPR in resuscitation during the COVID-19 outbreak.

In order to reduce the risk of SARS-CoV-2 transmission to caregivers, there are additional factors to consider when providing CPR:

• Manual CPR is a possible transmission route for caregivers because the mouth and nose of the personnel come close to mouth and nose of the patient[4] (that is valid for any other airborne transmission, such as meningitis)

• During manual CPR, the operator is performing an aerobic activity that increases his/her minute volume and makes it more likely to breathe in aerosol from the patient (patient exhalation of breath including airborne virus)

• During CPR, the patient may be ventilated with an airway device that is not a closed system

• The rotation of operators during manual CPR exposes more people to the disease transmission. When managing suspected and confirmed cases of COVID-19, the number of individual staff members involved in the resuscitation should be kept to a minimum with no or minimal exchange of staff for the duration of the case, if possible.[5]

Please visit strykeremergencycare.com for more information on the LUCAS chest compression system.

Sincerely,

Chris Walsh
Director of Marketing

Instructions for use: https://www.lucas-cpr.com/resources/#instructions-for-use

1. Edelson, et al. Interim guidance for basic and advanced life support in adults, children, and neonates with suspected or confirmed COVID-19. *Circulation*. 2020. (Online ahead of printing)
2. Matus RL, et al. DoD COVID-19 practice management guide: clinical management of COVID-19. https://health.mil/Reference-Center/Technical-Documents/2020/04/14/DoD-COVID-19-Practice-Management-Guide-Version-2
3. Canadian Cardiovascular Society. Guidance from the CCS COVID-19 rapid response team. https://www.ccs.ca/images/images_2020/NEW_CCS_RRT_Inhopital_infection_reduction_30Mar.pdf
4. Ling L, et al. COVID-19: A critical care perspective informed by lessons learnt from other viral epidemics. *Anaesth Crit Care Pain Med*. 2020 [Online ahead of printing]
5. Peng WHP, et al. Outbreak of a new coronavirus: what anaesthetists should know. *British Journal of Anaesthesia*. 2020;124(5):497-501.

Emergency Care
11811 Willows Road NE, Redmond, WA 98052 USA | P +1 425 867 4000 | Toll-free +1 800 442 1142 | stryker.com

10.1161/CIRCULATIONAHA.120.047463

Interim Guidance for Basic and Advanced Life Support in Adults, Children, and Neonates With Suspected or Confirmed COVID-19: From the Emergency Cardiovascular Care Committee and Get With the Guidelines®-Resuscitation Adult and Pediatric Task Forces of the American Heart Association in Collaboration with the American Academy of Pediatrics, American Association for Respiratory Care, American College of Emergency Physicians, The Society of Critical Care Anesthesiologists, and American Society of Anesthesiologists: Supporting Organizations: American Association of Critical Care Nurses and National EMS Physicians

Running Title: *Edelson et al.: Interim Guidance for Life Support for COVID-19*

Dana P. Edelson, MD, MS[1]; Comilla Sasson, MD, PhD[2]; Paul S. Chan, MD, MS[3]; Dianne L. Atkins, MD[4]; Khalid Aziz, MBBS, BA, MA, Med (IT)[5]; Lance B. Becker, MD[6]; Robert A. Berg, MD[7]; Steven M. Bradley, MD, MPH, FAHA[8]; Steven C. Brooks, MD, MHSc[9]; Adam Cheng, MD, FRCPC, FAAP[10]; Marilyn Escobedo, MD[11]; Gustavo E. Flores, MD, NRP[12]; Saket Girotra, MD, SM[4]; Antony Hsu, MD[13]; Beena D. Kamath-Rayne, MD, MPH[14]; Henry C. Lee, MD[15]; Rebecca E. Lehotsky, PhD[2]; Mary E. Mancini, RN, PhD, NE-BC[16]; Raina M. Merchant, MD, MSHP[17]; Vinay M. Nadkarni, MD, MS[7]; Ashish R. Panchal, MD, PhD[18]; Mary Ann R. Peberdy, MD[19]; Tia T. Raymond, MD[20]; Brian Walsh, PhD, RRT[21]; David S. Wang, MD[22]; Carolyn M. Zelop, MD[23]; Alexis Topjian, MD, MSCE[7]

[1]University of Chicago, Chicago, IL; [2]American Heart Association, Dallas, TX; [3]Mid America Heart Institute and the University of Missouri-Kansas City, Kansas City, MO; [4]Carver College of Medicine, University of Iowa, Iowa City, IA; [5]University of Alberta, Edmonton, Alberta, Canada; [6]Donald and Barbara Zucker School of Medicine at Hofstra Northwell, Hempstead, NY; [7]The Children's Hospital of Philadelphia, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA; [8]Minneapolis Heart Institute, Healthcare Delivery Innovation Center, Minneapolis, MN; [9]Queen's University, Kingston, Ontario, Canada; [10]Alberta Children's Hospital, University of Calgary, Calgary, Alberta, Canada; [11]University of Oklahoma, Norman, OK; [12]Emergency & Critical Care Trainings, San Juan, Puerto Rico; [13]St Joseph Mercy, Ann Arbor, MI; [14]Global Newborn and Child Health American Academy of Pediatrics, Itasca, IL; [15]Stanford University, Stanford, CA; [16]The University of Texas at Arlington, Arlington, TX; [17]University of Pennsylvania, Philadelphia, PA; [18]The Ohio State University Wexner Medical Center, Columbus, OH; [19]Virginia Commonwealth University, Richmond, VA; [20]Medical City Children's Hospital, Dallas, TX; [21]Liberty University, Lynchburg, VA; [22]Columbia University Irving Medical Center, New York, NY; [23]NYU School of Medicine, New York, NY

Address for Correspondence:
Comilla Sasson, MD, PhD
12401 E. 17th Ave., B215, Leprino Building
Dallas, TX 80045
Tel: 847-502-2341
Email: Comilla.sasson@heart.org

Background

Existing American Heart Association (AHA) cardiopulmonary resuscitation (CPR) guidelines do not address the challenges of providing resuscitation in the setting of the COVID-19 global pandemic, wherein rescuers must continuously balance the immediate needs of the victims with their own safety. To address this gap, the AHA, in collaboration with the American Academy of Pediatrics, American Association for Respiratory Care, American College of Emergency Physicians, The Society of Critical Care Anesthesiologists, and American Society of Anesthesiologists, and with the support of the American Association of Critical Care Nurses and National EMS Physicians, has compiled interim guidance to help rescuers treat victims of cardiac arrest with suspected or confirmed COVID-19.

Over the last 2 decades, there has been a steady improvement in cardiac arrest survival occurring both inside and outside of the hospital.[1] That success has relied on initiating proven resuscitation interventions, such as high-quality chest compressions and defibrillation, within seconds to minutes. The evolving and expanding outbreak of SARS-CoV2 infections has created important challenges to such resuscitation efforts and requires potential modifications of established processes and practices. The challenge is to ensure that patients with or without COVID-19 who experience cardiac arrest get the best possible chance of survival without compromising the safety of rescuers, who will be needed to care for future patients. Complicating the emergent response to both out-of-hospital and in-hospital cardiac arrest is that COVID-19 is highly transmissible, particularly during resuscitation, and carries a high morbidity and mortality.[2]

Approximately 12%–19% of COVID-positive patients require hospital admission and 3%–6% become critically ill.[2–4] Hypoxemic respiratory failure secondary to acute respiratory distress syndrome (ARDS), myocardial injury, ventricular arrhythmias, and shock are common among critically ill patients and predispose them to cardiac arrest,[5–8] as do some of the proposed treatments, such as hydroxychloroquine and azithromycin, which can prolong the QT.[9] With infections currently growing exponentially in the United States and internationally, the percentage of cardiac arrests with COVID-19 is likely to increase.

Healthcare workers are already the highest risk profession for contracting the disease.[10] This risk is compounded by worldwide shortages of personal protective equipment (PPE). Resuscitations carry added risk to healthcare workers for many reasons. First, the administration of CPR involves performing numerous aerosol-generating procedures, including chest compressions, positive pressure ventilation, and establishment of an advanced airway. During those procedures, viral particles can remain suspended in the air with a half-life of approximately 1 hour and be inhaled by those nearby.[11] Second, resuscitation efforts require numerous providers to work in close proximity to one another and the patient. Finally, these are high-stress emergent events in which the immediate needs of the patient requiring resuscitation may result in lapses in infection-control practices.

In arriving at this interim guidance, we reviewed existing AHA CPR recommendations in the context of the COVID-19 pandemic and considered the unique pathophysiology of COVID-19 with reversal of hypoxemia as a central goal. We sought to balance the competing interests of providing timely and high-quality resuscitation to patients while simultaneously protecting

rescuers. This statement applies to all adult, pediatric, and neonatal resuscitations in patients with suspected or confirmed COVID-19 infection unless otherwise noted. The guidance contained herein is based on expert opinion and needs to be adapted locally based on current disease burden and resource availability.

General Principles for Resuscitation in Suspected and Confirmed COVID-19 Patients

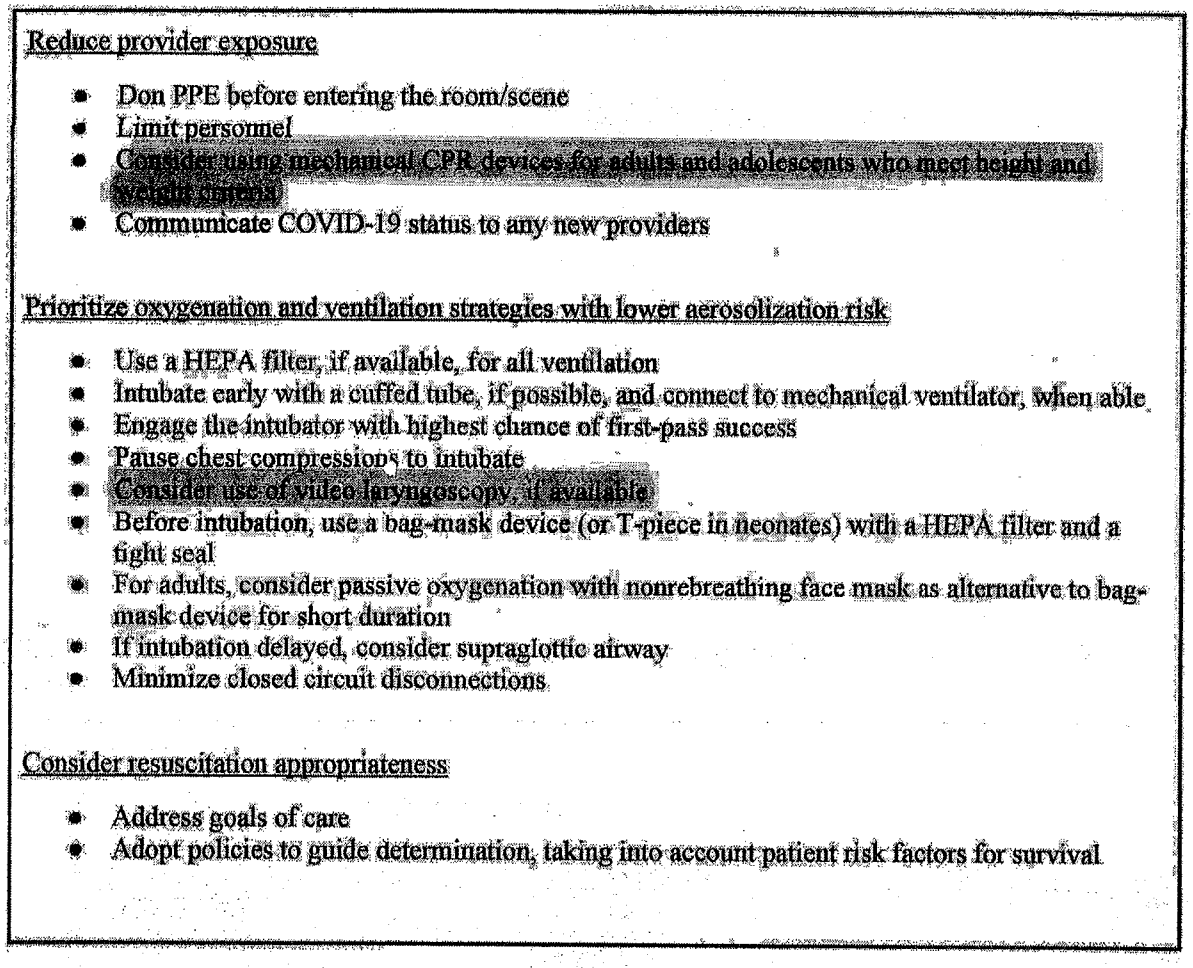
Reduce provider exposure to COVID-19

- Rationale: It is essential that providers protect themselves and their colleagues from unnecessary exposure. Exposed providers who contract COVID-19 further decrease the already strained workforce available to respond and have the potential to add additional strain if they become critically ill.
- Strategies:
    1. Before entering the scene, all rescuers should don PPE to guard against contact with both airborne and droplet particles. Consult individual health or emergency medical services (EMS) system standards as PPE recommendations may vary considerably on the basis of current epidemiologic data and availability.
    2. Limit personnel in the room or on the scene to only those essential for patient care.
    3. In settings with protocols and expertise in place for their use, consider replacing manual chest compressions with mechanical CPR devices to reduce the number of rescuers required for adults and adolescents who meet the manufacturers height and weight criteria.
    4. Clearly communicate COVID-19 status to any new providers before their arrival on the scene or receipt of the patient when transferring to a second setting.

Prioritize oxygenation and ventilation strategies with lower aerosolization risk.

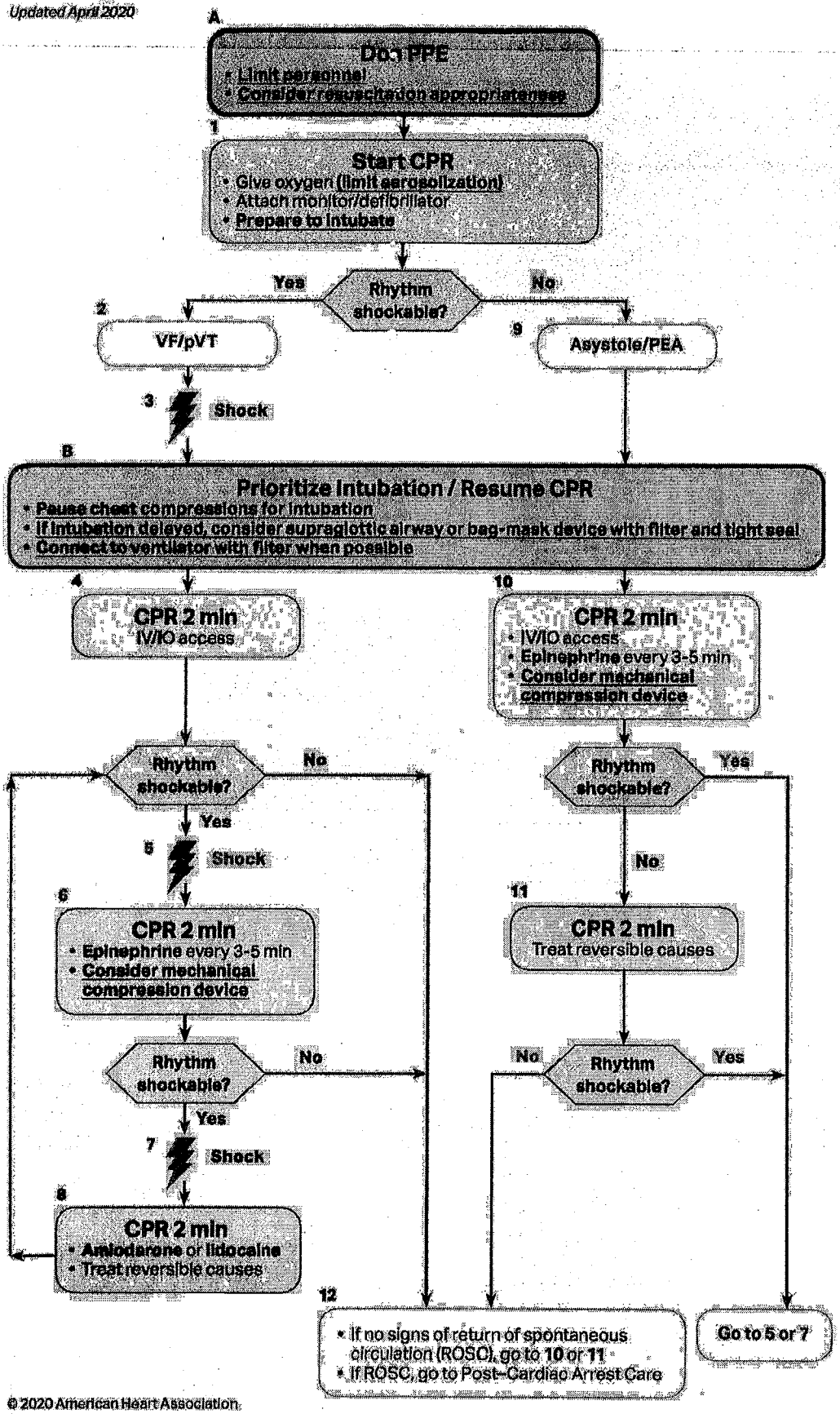
- Rationale: While the procedure of intubation carries a high risk of aerosolization, if the patient is intubated with a cuffed endotracheal tube and connected to a ventilator with a high-efficiency particulate air (HEPA) filter in the path of exhaled gas and an in-line suction catheter, the resulting closed circuit carries a lower risk of aerosolization than any other form of positive-pressure ventilation.[12]
- Strategies:
    5. Attach a HEPA filter securely, if available, to any manual or mechanical ventilation device in the path of exhaled gas before administering any breaths.
    6. After healthcare providers assess the rhythm and defibrillate any ventricular arrhythmias, patients in cardiac arrest should be intubated with a cuffed tube, at the earliest feasible opportunity. Connect the endotracheal tube to a ventilator with a HEPA filter, when available.
    7. Minimize the likelihood of failed intubation attempts by
        a) Assigning the provider and approach with the best chance of first-pass success to intubate
        b) Pausing chest compressions to intubate
    8. Video laryngoscopy may reduce intubator exposure to aerosolized particles and should be considered, if available.

Figure 1. Summary of adjustments to CPR algorithms in suspected or confirmed COVID-19 patients.



ACLS Cardiac Arrest Algorithm for Suspected or Confirmed COVID-19 Patients

Updated April 2020



CPR Quality

- Push hard (at least 2 inches [5 cm]) and fast (100-120/min) and allow complete chest recoil.
- Minimize interruptions in compressions.
- Avoid excessive ventilation.
- Change compressor every 2 minutes, or sooner if fatigued.
- If no advanced airway, 30:2 compression-ventilation ratio.
- Quantitative waveform capnography
  - If P_{ETCO_2} <10 mm Hg, attempt to improve CPR quality.
- Intra-arterial pressure
  - If relaxation phase (diastolic) pressure <20 mm Hg, attempt to improve CPR quality.

Shock Energy for Defibrillation

- **Biphasic:** Manufacturer recommendation (eg, initial dose of 120-200 J); if unknown, use maximum available. Second and subsequent doses should be equivalent, and higher doses may be considered.
- **Monophasic:** 360 J

Advanced Airway

- **Minimize closed-circuit disconnection**
- **Use intubator with highest likelihood of first pass success**
- **Consider video laryngoscopy**
- Endotracheal intubation or supraglottic advanced airway
- Waveform capnography or capnometry to confirm and monitor ET tube placement
- Once advanced airway in place, give 1 breath every 6 seconds (10 breaths/min) with continuous chest compressions

Drug Therapy

- **Epinephrine IV/IO dose:** 1 mg every 3-5 minutes
- **Amiodarone IV/IO dose:** First dose: 300 mg bolus. Second dose: 150 mg.
  or
  Lidocaine IV/IO dose: First dose: 1-1.5 mg/kg. Second dose: 0.5-0.75 mg/kg.

Return of Spontaneous Circulation (ROSC)

- Pulse and blood pressure
- Abrupt sustained increase in P_{ETCO_2} (typically ≥40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

Reversible Causes

- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/hyperkalemia
- Hypothermia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary