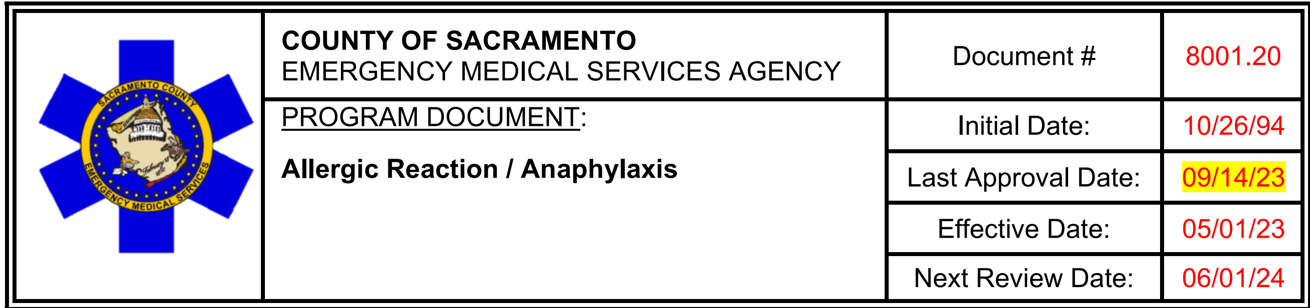

COUNTY OF SACRAMENTO EMERGENCY MEDICAL SERVICES AGENCY	Document #	8001.20
PROGRAM DOCUMENT: **Allergic Reaction / Anaphylaxis**	Initial Date:	10/26/94
	Last Approval Date:	09/14/23
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Signature on File — EMS Medical Director

Signature on File — EMS Administrator

Purpose:

A. To establish a treatment standard for patients with signs and symptoms of Allergic Reaction and/or Anaphylaxis.

Authority:

A. California Health and Safety Code, Division 2.5
B. California Code of Regulations, Title 22, Division 9

Definition:

A. **ALLERGIC REACTION:** A local response to an antigen involving skin (rash, hives, edema, nasal congestion, watery eyes, etc.) with normal vital signs.
B. **ANAPHYLAXIS:** A systemic response to an antigen involving two (2) or more organ systems OR any involvement of the upper and/or lower respiratory systems OR any derangement of vital signs.
C. **BRADYKININ MEDIATED ANGIOEDEMA:** Bradykinin mediated angioedema. This type of angioedema is not triggered by an allergy. Triggers include ACE-inhibitor or ARB exposure. Minor trauma can also be a triggering event. Onset is much slower than in allergic swelling. No urticaria or itching will be seen. There is usually no other organ involvement – no wheezing, no nausea or vomiting. Patients will be unresponsive to antihistamines or epinephrine.
D. **HISTAMINE INDUCED ANGIOEDEMA:** This type of angioedema is typically triggered by an allergen – food, insect sting, etc. There is a diffuse, systemic reaction that is usually accompanied by hives/urticaria, flushing, and itching. It has a fast onset from the triggering exposure. Hypotension, wheezing, nausea/vomiting may be present. Management of this form of angioedema will follow existing anaphylaxis treatment – anti-histamine and epinephrine treatment.

Notes:

A. **High-Risk Allergic Reaction:** Allergic reaction with a history of Anaphylaxis or significant exposure with worsening symptoms. High-risk allergic reactions should be monitored closely for deterioration and treated as Anaphylaxis for any worsening symptoms.
B. Any involvement of the respiratory system (wheezing, stridor) or oral/facial edema will be treated as Anaphylaxis. Remember that allergic reactions may deteriorate into Anaphylaxis. Reassess often and be prepared to treat for Anaphylaxis.

DRAFT

Protocol:

BLS

ALLERGIC REACTION:

1. Assess C-A-B
2. Secure Airway.
3. Remove the sting/injection mechanism.
4. Position of comfort, reduce anxiety.
5. SPO2 with Supplemental O_2 as necessary to maintain SpO2 ≥ 94%. ~~Use the lowest concentration and flow rate of O_2 as possible.~~
6. Suction as needed.
7. Airway adjuncts as needed.

ANAPHYLAXIS:

1. Administer Epinephrine by auto-injector if needed:
   a. Epinephrine auto-injector 0.3 mg IM for patients ≥ 30 kg. Do not repeat. Record the time of injection.
   b. Epinephrine auto-injector 0.15 mg IM for patients ≤ 30 kg. No repeat. Record the time of injection.
2. Transport and begin therapy simultaneously.

BRADYKININ MEDIATED ANGIOEDEMA or HISTAMINE-INDUCED ANGIOEDEMA:

1. Administer Epinephrine by auto-injector.
   a. Epinephrine 0.3 mg IM for patients > 30 kg.
   b. Epinephrine 0.15 mg IM for patients < 30 kg.

ALS

ALLERGIC REACTION:

1. Consider Diphenhydramine 50mg – PO/IM/IV.
2. Consider vascular access.
3. Cardiac monitoring
4. Reassess

ANAPHYLAXIS:

1. Epinephrine: 1:1,000
   a. 0.3 mg IM (Max dose 0.9 mg).
   b. May repeat in 15 minutes up to three (3) doses if symptoms persist.
2. Establish large-bore vascular access with normal saline (NS); titrate to systolic B/P ≥ 90 mmHg.
3. Diphenhydramine: 50 mg IV/IO/IM.
4. Cardiac and SpO2 monitoring.
5. Albuterol: 5 mg (6 ml unit dose) HHN for wheezing. Reassess after the first treatment. May be repeated as needed for respiratory distress.
6. Consider CPAP.
7. If no signs of improvement and the patient is in extremis (stridor, persistent hypotension, etc.):
   a. Epinephrine: 0.01 mg/ml (10mcg/ml)-0.5-2 ml every 2-5 minutes (5-20mcg) IV/IO for stridor and hypotension. Titrate to a minimal systolic B/P > 90 mmHg OR a total of 0.5 mg. is given.

NOTE: Epinephrine should be used cautiously in patients > 35 years old or with a history of CAD or HTN.

1. Inadequate response to Epinephrine and the patient is on Beta Blockers:
    a. Glucagon 1 mg IV/IO given over one (1) minute. May give IM if no vascular access or delay is anticipated.

BRADYKININ MEDIATED ANGIOEDEMA/ HISTAMINE-INDUCED ANGIOEDEMA:

1. Continue assessing the patient per the BLS section.
2. Cardiac Monitoring.
3. ETCO2 monitoring as available.
4. Consider intubation for impending airway collapse with pooling of oral secretions.
5. Epinephrine 1;1000, 0.3 mg IM. May repeat in 15 minutes up to three (3) doses if symptoms persist.
6. Establish large-bore vascular access. Normal Saline (NS) bolus, titrate to BP > 90 mmHg.
7. Diphenhydramine 50 mg IV/IO/IM.
8. For patients with localized swelling to the face or tongue with suspicion of bradykinin-induced angioedema, administer 1 gm of IV TXA.
9. Continue management as described in the anaphylaxis section of this treatment protocol.

Cross Reference: PD# 8020 – Respiratory Distress: Airway Management
PD# 8026 – Respiratory Distress