ANAPHYLAXIS
A MOCK EVENT

Darlene Cobbs, RN BSN
Clinical Nurse Educator
Staff Education Kaiser Permanente
Baldwin Park

Objectives

- Discuss anaphylaxis
- Discuss the types of anaphylaxis reactions
- Discuss the importance of mock drills
- Discuss the roles of the team members in a mock drill

Definitions according to the World Allergy Organization

- **Hypersensitivity**
  - Objectively reproducible symptoms or signs initiated by exposure to a defined stimulus at a dose tolerated by normal persons

- **Atrophy**
  - A personal and or familial tendency to become sensitized and produce antibodies in response to ordinary exposures of commonly encountered environmental allergens. This results in the development of asthma, rhino-conjunctivitis or eczema.

- **Allergy**
  - Hypersensitivity initiated by specific immunological mechanisms. When other mechanisms can be proven, the term non-allergic hypersensitivity should be used. Cell mediated allergy produces a delayed response to allergen.

- **Anaphylaxis**
  - A severe life threatening generalized or systemic hypersensitivity reaction. May be classified as allergic or non-allergic.

A reaction may be classified as anaphylaxis if it satisfies any one of the following three definitions:

1. Acute-onset illness with involvement of skin and/or mucosal hives, pruritis or flushing swollen lips and/or tongue) and at least one of the following:
   - Respiratory compromise: dyspnea, wheezing, broncho-spasm, stridor, hypoxemia
   - Hypotension or associated symptoms of end-organ dysfunction (collapse, syncope, incontinence)

2. Two or more of the following within minutes to a few hours of exposure to a likely allergen for that patient:

3. Hypotension within minutes to several hours following exposure to a known allergen for that patient

Clinical Features

**General**
- Anxiety
- Malaise
- Weakness feeling of impending doom

**Cutaneous**
- Runny nose, congestion,
- Conjunctival tearing
- Itching
- Flushing
- Angio-edema

**Lower GI**
- Nausea
- Vomiting
- Abdominal Pain
- Diarrhea

**Upper GI**
- Airway edema
- Chest tightness
- Dyspnea
- Cough
- Broncho-spasms
- Hypoxaemia
- Central cyanosis
# Clinical Features

<table>
<thead>
<tr>
<th>Cardiovascular</th>
<th>Neurological</th>
</tr>
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<tbody>
<tr>
<td>Tachycardia</td>
<td>Throbbing headache</td>
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<tr>
<td>Hypotension</td>
<td>Dizziness</td>
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<tr>
<td>Diaphoresis and</td>
<td>Syncopel</td>
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<tr>
<td>Circulatory failure</td>
<td>Visual loss</td>
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<tr>
<td>Cardio-genic shock</td>
<td>Loss of consciousness</td>
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<tr>
<td>and pulmonary edema</td>
<td>Incontinence</td>
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<tr>
<td>Cardiac arrest</td>
<td>Confusion</td>
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</tbody>
</table>

# Mock Events

- The goal of mock events is to insure rapid medical assistance is received by those exhibiting signs/symptoms of anaphylaxis.
- To provide this assistance through adequate and coordinated efforts that will minimize loss of life, disabling injuries, and human suffering.
- The plan includes a system for alerting and dispatching medical personnel and resources.
- Finally, the plan is designed as an extension of normal day-to-day services and functionality of the department.

# Why mock events

- Mock events, drills, require a team effort. They involve the physicians, nurses, clerical support, pharmacist.
- On the community level it involves the emergency response team, and the hospital team.

# Treatment Goals

- The overall goal is to establish safe, effective, efficient, evidence-based care for emergent patients in the critical "first 10 minutes" in the clinic, while delivering exceptional hand-offs to paramedics or other emergency care providers.

# Why have mock events

- The organization periodically tests staff knowledge through demonstration, mock events, and other suitable methods. This testing is then documented. (2003, JCAHO)
**Developing Individual and Emergency Care Plans - The Team Approach**

- Establish an in-service training plan for staff on risk reduction strategies including avoidance prevention, recognizing symptoms of anaphylaxis, administration of epinephrine and other emergency medications, and monitoring of patients with potentially life threatening allergies.

**Steps in Response Preparedness**

- Identify the special population at risk for or exhibiting symptoms of anaphylaxis
- Prepare key personnel for response to emergency situations
- Anticipate the unexpected. Equipment and processes must constantly be examined and redesigned to detect and eliminate latent errors

**Mock Drills**

- Establish set protocols to identify and assess for anaphylaxis and or cardiac events
- Establish set protocols to administer treatment rapidly.
- Treat and triage every member as though they were going to have an anaphylaxis reaction.

**Mock Drills**

- Develop effective communication strategies (e.g., content, timing, dissemination, and monitoring of reactions) to address risk expectations and acceptable responses to these populations.

**Community and Regional Response**

- Assess and evaluate strategies to model community-level and regional-level response to test the efficiency of the response.
- Develop and test assessment strategies for drills and mock events to identify strategies that can be used.
- Drills and mock events include novel practices that enhance the capability to provide emergency care and treatment.

**PURPOSE**

- To assure that the clinical site is equipped and prepared to handle emergencies that may occur.
- A checklist is needed to list the types of emergencies, and the staff is responsible for acquiring the knowledge to perform the skills.
- The Department Administrator and Charge Nurse will assure that this checklist is completed annually for this site and that follow-up occurs for any inadequacies/incomplete areas. (ACOG, 2001)
Emergency Response Checklist for Kaiser Permanente Crossroads Allergy Clinic

<table>
<thead>
<tr>
<th>Plan and Implementation</th>
<th>Reviewed by staff</th>
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</thead>
<tbody>
<tr>
<td>An emergency preparedness plan has been prepared and is maintained by the facility.</td>
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</tr>
<tr>
<td>The facility’s emergency preparedness plan includes a Fire Evacuation Plan and a Fire Safety Plan, Anaphylaxis Treatment, Cardiac Arrest and resuscitation, earthquake and disaster plan.</td>
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<tr>
<td>The facility administration has implemented a semi-annual drills of these plans to ensure that all staff members understand their specific duties and assignments as outlined in the emergency preparedness plan.</td>
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<tr>
<td>The facility administration has implemented a staff educational program to ensure that all staff members have practiced and/or rehearsed their specific duties and assignments, as outlined in the emergency preparedness plan.</td>
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<td>The staff is knowledgeable on the location and use of emergency equipment.</td>
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The Six Links of Survival

- These are imperative for every office when confronted with the issue of being prepared for medical emergencies. Any missing link will cause a decrease in the survivability of the patient. The six links of survival are:
  - Physician Training
  - Staff Training
  - Medical Emergency Plan
  - Emergency Drug Kit
  - Proper Equipment
  - Mock Drills (IMEP, 2008)

Staff Roles in an Emergency

- RN Identify patient in distress
  - Assesses patient and confirms anaphylaxis reaction
  - Summons for assistance
  - Begins ABC of resuscitation
- LVN Assist with getting the ill patient to designated resuscitation room
  - Alert physicians and nurses of the emergency and the patient’s location
  - Bring all emergency equipment to the site of the emergency (if not already in the treatment room)
  - Obtain initial set of vital signs
  - Obtain medical history of patient
  - If oxygen saturation is less than 93 percent, start oxygen by face mask
  - Assist in code
  - Staff nurses Act as medication nurse and documents events of the events of resuscitation
  - When instructed to do so by the provider dials 9-1-1, gives location and description of the emergency

Physician’s role

- Physicians must respond to the call for assistance
- One physician to act as team leader and assist in any efforts needed in resuscitation or management of the patient (if available)
- One physician to control airway

Clerical Support

- Keep flow of patients moving in and out of clinic
- Ensures way is clear for paramedic upon arrival
- Directs paramedics to location of the emergency

Emergency Supplies Kit

- Medications
  - Epinephrine
  - Benadryl
  - steroids
- Supplies
  - Syringes
  - Needles
  - Angio caths
  - Tourniquets
  - IV start kits
  - Intubation tray
  - Oral airways
- IV fluids
  - NS
  - LR
Evidence Based Treatment

- The most important initial treatment, and one that can be overlooked in the rush to treat anaphylactic symptoms, is the need to remove the causative agent (Gavalas et al, 1998).

Mock Drills

- By properly equipping the clinics, educating staff, and practicing lifesaving skills, physicians can ensure that their patients receive essential care in office emergencies, and that staff have been adequately trained to assess and assist in saving the lives of the patients that are served.

- Finally, we must establish a learning environment to continually evaluate and improve patient safety. Where possible, simulators and mock drills should be used for team training to practice for anaphylaxis reactions.

References

- JCAHO Joint Commission of Accredited Hospital Organizations, Hospitals role in emergency preparedness retrieved August 7, 2009 from: http://www.jcaho.org