Initial paramedic program started in 1977 with a few paramedic-staffed ambulances
- Most ambulances were Basic Life Support (EMT-staffed).
- Fire departments were either EMT or First Aid/Public Safety

Increasing paramedic staffing in 911 ambulances with full paramedic staffing approximately 5 years ago.

Fire first responders all became EMT-level, subsequently several fire departments developed paramedic first responder programs
Current 9-1-1 System Staffing

- **9-1-1 Transport**
  - AMR, San Ramon Valley Fire and Moraga Orinda Fire provide paramedic staffing on all ambulances

- **Fire First Responders**
  - Paramedic: Contra Costa County Fire, Pinole Fire, Rodeo-Hercules Fire and El Cerrito Fire (SRVF and M-O)
  - EMT: Richmond Fire, Crockett-Carquinez Fire and East Contra Costa Fire

- **Other System Features**
  - Quick response vehicles (single paramedic) provide first-responder paramedic services to Crockett and East County areas
  - In Richmond, more rapid response times requirements to provide earlier paramedic care
Advanced Life Support Studies

- OPALS Studies from Ottawa, Canada are the most prominent studies to look at what interventions modify outcomes
- Before and After ALS implementation studies:
  - Trauma – ALS care had no effect and in fact may have worsened outcome
  - Cardiac Arrest – ALS care had no effect on outcome but rapid defibrillation (a BLS skill) did increase survival
  - Respiratory Distress – Improvement in mortality with ALS Care
    - Postulated use of beta-agonist medication like Albuterol, use of nitroglycerin, and use of positive pressure ventilation
First-Responder Paramedics

- In the absence of evidence, there are likely clinical conditions in which minutes count in which First-Responder ALS may be useful
  - Seizure control with midazolam
    - stopping seizures faster is felt to improve outcomes
  - Anaphylaxis
    - delay in treatment is associated with increased mortality
  - Treatment of hypoglycemia
First-Responder Paramedics in Contra Costa

- QRV (outside of Brentwood) – few critical interventions – 4-5 treatments per month (half are Albuterol)
- First-Responder Fire – most interventions occur is slightly earlier time frame than can be provided by ambulance paramedics
  - Critical time-sensitive ALS interventions occur on 2-4% of calls though some of these interventions do occur after ambulance arrival – most are albuterol
  - Critical BLS Interventions – Defibrillation, oxygen, airway and ventilation support, hemorrhage control (Cardiac Arrest, Critical Trauma, Respiratory Distress)
Complementary Function versus Duplication of Service

- First-responder paramedics can provide care earlier in some areas where ambulance saturation is lower (distant from hospitals)
  - Examples: Clayton, Rossmoor, Bay Point, El Cerrito, Rodeo (not complete list)

- More duplication in denser urban/suburban areas

- Questionable benefit and high cost in very low volume areas
  - Examples: Rural East County
Other Important Paramedic Care

- Assessment
- Symptom Relief
  - pain, nausea, shortness of breath
- 12-Lead ECG for STEMI, Stroke Assessments
Infrastructure

- Medical Control
  - Supervision
  - Training
    - More critical when skills infrequently used
  - Quality Improvement
    - Paramedic care requires greater oversight
Future Considerations

- Tiered approach (ALS and BLS), flexibility
  - Many changes in health care delivery that we will need to respond to, including likelihood of shrinking reimbursement
- High-quality Emergency Medical Dispatch (EMD) system supports more selective use of resources
- Goal – sustainable, safe, efficient and effective delivery of EMS based on available resources