

INTERFACILITY ADVANCED LIFE SUPPORT TRANSPORT

INTERIM REPORT

EMCC April 26, 2013

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INTERFACILITY ADVANCED LIFE SUPPORT ISSUES STATEMENT

Background

Ambulances within Orange County are licensed by Orange County EMS and can be divided into pre-hospital (emergency 911) and interfacility categories. Interfacility transports are those that occur between health care facilities (example: skilled nursing facility to hospital). Currently, Interfacility transports (IFTs) include Basic Life Support (BLS) Transports (EMT level care) and Critical Care Transports (CCT) (Registered Nurse level care). Beginning in 2008, Proposals for licensing mid-level advanced life support (ALS) interfacility transport service has been received by Orange County EMS. This type of service is commonly used in the surrounding counties of Riverside and Los Angeles. In Orange County, ALS services are only provided for 911 dispatched emergency aid calls.

Benefits of utilizing ALS level providers for IFT transport ambulances include:

- Increased ability to off-load local emergency departments of ALS level of care patients requiring transfer to another facility, thereby opening emergency department beds more quickly, thereby decreasing over-crowding of local emergency departments.
- Decrease in transferring health care facility waiting times to an average of 30 minutes for transfer of patients who require ALS level providers; in Orange County, these types of transports are performed by critical care ambulances with most frequently reported call to response times of approximately three hours. This may result in better care and safety for patients being transferred for higher care or advanced therapy.
- Off-loading the 911 system of calls for non-emergency aid transports that occur between licensed residential care facilities, skilled nursing facilities, community hospitals and specialty centers. Resulting in an eventual decrease in costs for the 911 system.
- Introduction of the ability of the Health Care Agency to monitor and oversee interfacility transports. (Currently, nurse staffed transports are not overseen or monitored by the Health Care Agency). Introduction of ALS staffed interfacility transport units will allow for monitoring of safety, timeliness of response and medical oversight of IFT ALS staffed units.
- Decreased operational costs for private ambulance companies providing IFTs. On average, nurse staffing costs \$48.00/hour, while ALS staffing costs \$18.00-\$ 20.00/hour. While not affecting Medicare or Medicaid patients (for whom payments are made using fixed rate schedules based on services provided), this can result in decreased costs for non-government health care payers and individuals.

Risks of utilizing ALS level providers for IFT transport ambulances include:

- Potential for transports of critically ill patients who may require skills beyond the level of an ALS provider.
- Potential inability for Orange County EMS to monitor ALS providers providing IFT-ALS services.
- Lack of demand for such services, with preference of health providers to use critical care transport level services.
- Potential risks to health and safety of employees and community; for example lack of properly immunized ALS providers or high risk for needle sticks or communicable disease exposure for ALS providers.
- Potential for unfunded or underfunding of the Health Care Agency programs required to license, oversee, and manage the IFT-ALS program.

Other concerns regarding IFT transport ambulances:

- Both the Orange County Professional Firefighters Association and the Orange County Ambulance Association have expressed concerns that the introduction of the IFT-ALS program will eventually lead to private industry displacement of current Orange County 911 service providers. Presently, Orange County 911 paramedic service providers are 100% fire department based, and most ambulance association members have exclusive operating contracts to provide emergency 911 basic life support ambulance transport. Concern is that IFT-ALS providers may also have an interest in expanding into 911 service lines and will compete and contract with Orange County cities to provide 911 ALS and BLS services. While this concern may or may not be valid, it is reality that the potential for a city to contract with other than a current 911 provider weakens the bargaining power for the associations representing the current 911 providers.

Impact to the County

Introduction of an IFT-ALS program will increase HCA's staffing requirements needed for program development, maintenance, and oversight. Under California state law, all paramedic and ALS providers operate under the medical authority of the local EMS Agency Medical Director. Transport nurses work under the direction of a licensed physician employed by the ambulance company. Introduction of an IFT-ALS program requires the HCA to accredit, supervise, monitor, and continuously authorize both the ALS staffs and the ALS provider services. Orange County would assume some liability for those transports. For the IFT-ALS program to be net revenue neutral, the County's cost must be offset by fees charged to the IFT-ALS providers.

The types of cases selected for ALS staffed level IFTs will require clear definition. For the IFT ALS staffed program, the Orange County EMS Medical Director will be required to limit and define appropriate ALS level cases and provide an IFT-ALS scope of practice that is medically appropriate and safe.

It is anticipated that IFT-ALS providers will provide medical care using written protocols and procedures such that access to Orange County Base Hospitals for medical direction will not be required. It is not anticipated that there will be an impact on local EMS Base Hospitals.

Impact on Staffing Costs for Private Ambulance Companies

The use of ALS level providers will potentially result in staff cost savings for Orange County IFT-ALS providers that are currently providing both ALS and critical care level transports using only nurse staffed ambulances.

Impact on Costs for Patients' and Transferring Hospitals

Most interfacility transports are paid by Medicare, CalOptima, or private insurance. Occasionally, hospitals transfer patients at hospital expense and the costs of these transports are typically negotiated between providers.

Medicare and CalOptima, and most others, set and pay rates on the basis of services rendered, not on the basis of staffing, so no financial impact is anticipated for patients or for the transferring hospitals. HMO hospitals with large transfer volumes may negotiate lower rates with the ambulance companies for IFT ALS staffed transfers.

Impact on Community

Those health providers that would be most affected by an IFT-ALS program include hospitals, medical associations, medical care provider groups, and extended medical-social care providers. These groups have not provided formal comments on this subject. General support for potential IFT-ALS programs has been verbalized in the Facilities subcommittee of the EMCC.

Addressing the Issue of IFT-ALS Services in Orange County

For greater than five years, the issue of interfacility ALS transport service in Orange County has been a persistent controversy. The debate on IFT transport in Orange County has been the subject of both local and national media reports. To address the controversy, it is possible to conceptualize the issues into three categories:

1. Medical feasibility, safety, and efficacy:

To address the medical feasibility, safety, and efficacy of a potential IFT-ALS program, scientific medical evidence is required. Given that IFT-ALS programs are in use in Los Angeles and Riverside Counties without apparent decreases in medical level of care, it can be assumed that it is safe to conduct a controlled pilot trial to determine the feasibility, safety, and resources required for an IFT ALS staffed program in Orange County.

Such a pilot was first presented in the June and December 2012 EMCC meetings when the IFT-ALS concept was discussed in open committee. Plans for a pilot were completed in January 2013 and pilot transports initiated on March 18. At the time of preparation of this report, the pilot is in progress. Attached to this report are the pilot protocol documents and an interim report of the findings of the pilot project.

2. Political interests for and against an Orange County IFT-ALS program:

Orange County EMS has been the focus of political interests for and against an IFT-ALS program. At present, health care facilities and providers, who would be directly affected by an IFT-ALS program, have been silent on the issue.

It is understood that the Orange County Professional Fire Fighters Association and the Ambulance Association are concerned that an IFT-ALS program may be a means for an IFT provider to pose a challenge by bidding on existing city exclusive operating contracts and 911 paramedic services. With that understanding, Orange County EMS has designed the pilot IFT-ALS program such that there is not cross-over between 911 and IFT services, with the IFT program referring or releasing appropriate emergency medical aid calls to the 911 system. It is the intent and future plan of Orange County EMS that both 911 and IFT services operate in parallel with a minimum overlap or interference of one on the other. Also, a 911 ALS service provider is required to meet specific performance criteria set forth in OCEMS Policy # 700.00 which are separate from the criteria for IFT-ALS.

With respect to the political nature of the IFT-ALS issue, Orange County EMS is subject to the direction of elected officials and local courts. Legal direction has been obtained in the development of the pilot project and local elected officials have been informed and updated of the issue and IFT-ALS pilot project.

3. Cost benefits and loss:

Costs of an IFT-ALS cannot be determined with exactness because of lack of financial data. General projections can be made using the following assumptions:

- A. Costs to patients and health care payers will decrease or remain unchanged. As stated earlier, payments for transport services are generally based on level of service. Government payment for ALS service levels are defined by Medicare payment schedules. Whether transported by a nurse staffed ambulance or ALS staffed ambulance, payment is based on defined level of service and not staffing level.

Companies that dispatch nurse staffed ambulances for ALS level calls will have a cost benefit with the introduction of the IFT-ALS program. On average, nurse staffing costs \$ 48.00/hr while ALS staffing is estimated to be \$ 18.00-\$ 20.00/hr.

- B. The County will incur ongoing costs for overseeing and directing an IFT-ALS program. Costs would include medical and administrative staff to develop medical protocols, training, medical monitoring, and quality improvement. In addition, the IFT-ALS pilot is based on future programs being fully electronic with respect to EMS database input. To cover the costs for the County of an IFT-ALS program, licensing and inspection fees will be established using the standardized County fee study technique.



**PILOT : INTERFACILITY TRANSPORT ADVANCED LIFE SUPPORT
(IFT-ALS) SERVICE PROVIDER CRITERIA**

I. AUTHORITY:

California Health and Safety Code, Division 2.5-1797.218. California Health and Safety Code, Division 2.5 – 1791.200, 1797.206, 1797.208, and 1797.214. California Title 22, Section 100144; (b):

II. APPLICATION:

- A. This policy defines the criteria for licensure of an Interfacility Transport Advanced Life Support (IFT-ALS) service provider by Orange County Emergency Medical Services (OCEMS). Licensure as an OCEMS IFT-ALS service provider is in addition to an OCEMS basic ambulance license. No provider may provide IFT-ALS service in Orange County without being licensed to do so by OCEMS.
- C. IFT-ALS service providers are authorized to perform basic life support (BLS) and advanced life support (ALS) transports between health care and home health facilities that can be conducted within the scope of practice of licensed and OCEMS Accredited IFT-ALS personnel. IFT-ALS service providers are not authorized to respond to 911 dispatched emergency medical aid calls.
- B. A prospective IFT-ALS service provider agency shall submit a written application to:

Orange County EMS Medical Director
Orange County Emergency Medical Services
405 W. 5th Street, Suite 301A
Santa Ana, CA 92701

III. CRITERIA:

- A. An IFT-ALS service provider shall identify the number of IFT-ALS units in service and provide a statement of coverage for specific geographical areas for proposed IFT-ALS service units.
- B. An IFT-ALS service provider must comply with OCEMS requirements for uniform electronic record keeping, data collection and electronic submission of all Orange County EMS data system elements to OCEMS (OC-MEDS).
- C. An IFT-ALS service provider must have dispatch capability and protocols to determine the appropriate level for dispatch of IFT units, including: BLS (EMT) level, ALS (EMT-P) level, CCT (Nurse staffed) level, and referral to the 911 System of calls that require Base Hospital Contact as defined in OCEMS Base Hospital Guideline I-40.
- D. The IFT-ALS service provider application shall include:
 - 1. Documentation of licensure as an Orange County ambulance provider with OC MEDS (OCEMS county-wide data system) capability.
 - 2. Agreement to respond within the stated geographic service area (Section III, A) and transport between Orange County health care and home health facilities any patient (regardless of payer status) in need of ALS transport for which the requirements of the transport are within the scope of practice of a IFT-ALS.
 - 3. Agreement to provide service response on an uninterrupted daily, continuous 24 hour basis.

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4. Agreement to respond for an unscheduled IFT-ALS level transport call within the stated geographic area of service (Section III, A) within a maximum 30 (thirty) minutes of the initial contact of the provider dispatch center.
5. Agreement to adhere to applicable sections of the California Health and Safety Code, California Title 22 and to OCEMS policies, standing orders, and procedures.
6. Agreement to provide staffing requirements for each ALS unit of two (2) Orange County Accredited IFT-ALS personnel). After one (1) year of working as a member of two (2) person IFT-ALS teams, an "experienced" IFT-ALS may staff an IFT-ALS ambulance in a one IFT-ALS:one OCEMS Accredited EMT model.
7. A list of all licensed and locally accredited IFT-ALS personnel sponsored by the IFT-ALS service provider.
8. An identified, qualified IFT-ALS program coordinator who is a California licensed Registered Nurse with a minimum of three (3) years experience in emergency or critical care nursing or advanced life support transport that will be the liaison with OCEMS and conduct mandatory OCEMS system updates and ongoing training of IFT-ALS staff of the provider.
 - A. The IFT-ALS Coordinator will be familiar with OCEMS policies, standing orders, and procedures and perform or oversee the following tasks:
 - 1) Orient IFT-ALS personnel to the OCEMS IFT-ALS program.
 - 2) Maintain documentation of IFT-ALS personnel orientation to the OCEMS IFT-ALS program.
 - 3) Develop and maintain an OCEMS approved IFT-ALS quality assurance plan as set forth by OCEMS policy and procedures. A copy of the provider IFT-ALS quality assurance plan must accompany the application and the appropriate current plan with an annual report of quality assurance activities shall be submitted yearly to OCEMS.
 - 4) Assure that IFT-ALS personnel adhere to BLS and IFT-ALS Standing Orders approved by the OCEMS Medical Director.
 - 5) Ensure the ongoing education and competency of all IFT-ALS personnel.
9. IFT-ALS service provider policies for:
 - A. Notification of OCEMS of IFT-ALS service provider operational modifications including:
 - 1) Proposed changes in number of units or unit locations.
 - 2) Proposed changes in geographic area coverage for IFT-ALS services.
 - 3) IFT-ALS Coordinator changes and office site changes.
 - 4) Changes in status of IFT-ALS OCEMS licensed and accredited personnel.
 - B. Mechanism to receive, respond to, and notify OCEMS (with specific complaint or

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circumstances of the following occurrences and a copy of the appropriate transport Prehospital Care Report [PCR]) for:

- 1) All patient complaints (excluding billing) involving an IFT-ALS transport.
 - 2) Hospital complaints regarding IFT-ALS transports.
 - 3) Violations of OCEMS policies or standing orders.
- C. To work in conjunction with OCEMS when evaluating IFT-ALS medical and communication equipment.
- D. Provide field internship opportunities for paramedic trainees from OCEMS approved paramedic training programs.
- E. Ensuring all OCEMS accredited IFT-ALS personnel attend and successfully pass exams to show competence in OCEMS mandatory updates for EMS personnel. To ensure all IFT-ALS personnel are updated when revisions to IFT-ALS Standing Orders are made by the OCEMS Medical Director.
- F. Maintenance and training of IFT-ALSs for the Orange County MED-9 (or other appropriate communication equipment to allow for contact of Orange County Communications) radio system.
- G. Mechanism to allow for and documentation of IFT-ALS personnel attendance at two or more Base Hospital Regional Paramedic Advisory Committee (RPAC) meetings annually.
- H. The timely reporting of infectious disease exposures to other involved health care providers and facilities and methods for timely medical care and prophylaxis (as appropriate) for IFT-P and other service provider personnel.
- I. Addressing the approved method for handling, transporting, storing, and disposing of biomedical waste.
- J. Regular inspection for and resupply of used or expired medications and equipment.
11. The full IFT-ALS medication and equipment inventory must be stocked on each IFT-ALS unit as described in OCEMS policy, subject to inspection at any time.
12. IFT-ALS service provider must stated agreement to pay all Orange County IFT-ALS service provider fees and fines as published by OCEMS.

IV. HEARING/SUSPENSION/REVOCATION:

- A. OCEMS shall review the approval of each IFT-ALS service provider at least every two years. Such approval may be changed, renewed, canceled or otherwise modified, when necessary.
- B. OCEMS may deny, suspend, or revoke the approval of an IFT-ALS service provider for failure to comply with state and county statutes, regulations, and ordinances or applicable OCEMS policies.
- C. A licensed IFT-ALS provider that has been suspended or revoked may request a hearing as described by Orange County Ordinance No. 3517 (Orange County Ambulance Ordinance); a copy of which may be viewed on the Orange County EMS Internet website.

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ORANGE COUNTY EMERGENCY MEDICAL SERVICES
PREHOSPITAL TREATMENT GUIDELINES

PILOT: INTERFACILITY TRANSPORT ALS STANDING ORDERS

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GENERAL ALS PROCEDURES

Orange County Accredited IFT-ALS personnel may use judgment to do any of the following:

1. Use any BLS Standing Order.
2. Cardiac monitor.
3. IV or saline lock vascular access.
4. 12-lead electrocardiogram.
5. Oxygen by mask or nasal canula.
6. BVM assisted ventilation.
7. Endotracheal intubation with confirmation of proper placement.
8. Pulse oximetry; if oxygen saturation less than 95%, give:
 - ▶ High-low oxygen by mask or nasal canula as tolerated.
9. Obtain blood glucose determination and if less than 80, administer one of:
 - Adult/Adolescent:
 - ▶ Oral glucose preparation, if airway reflexes are intact.
 - ▶ 50% Dextrose 50 mL IV
 - ▶ Glucagon 1 mg IM if unable to establish IV.
 - Pediatric:
 - ▶ Oral glucose preparation, if airway reflexes are intact.
 - ▶ 25% Dextrose 2 mL/kg IV if less than 2 years-old.
 - ▶ 50% Dextrose 1 mL/kg IV if greater than or equal to 2 years-old.
 - ▶ Glucagon 0.5 mg IM if unable to establish IV.
10. Intraosseous placement in cardiac or traumatic full arrest.

RESPIRATORY DISTRESS AND FAILURE ¹

Respiratory Failure (unconscious with apnea or hypoventilation)

1. Assist ventilations with BVM and
 2. If 12 years or older (40 kg or more), endotracheal intubation
- Hypoventilation/Suspected Narcotic Overdose

Adult/Adolescent:

1. Naloxone 2 mg IN/IM or 0.8 mg IV titrate to effect

Pediatric:

1. Naloxone 0.1 mg/kg IN/IM/IV

Wheezing/Suspected Asthma

Adult/Adolescent/Child:

1. Albuterol 5 mg continuous nebulization.

Adult Pulmonary Rales/Suspected CHF

1. CPAP when available to maximum 10 cmH₂O.
2. Nitroglycerin:
 - SBP > 100 systolic give 0.4 mg (1 puff or 1 tablet).
 - SBP > 150 systolic give 0.8 mg (2 puffs or 2 tablets).

CHEST PAIN (ADULT) ¹

1. Nitroglycerine 0.4 mg SL, may repeat twice if BP > 90 systolic.
2. 12-lead ECG for age greater than 45 or suspected MI.
3. Aspirin 324 (or 325 mg) chewed if suspected cardiac chest pain.
4. Morphine sulfate 5 mg IV (or fentanyl 50 mcg IV), may repeat same dose for continued pain after 3 minutes.

SEIZURE/CONVULSION (ONGOING) ¹

Adult/Adolescent:

1. Midazolam 5 mg IN/IM, may repeat in 3 minutes for ongoing or recurrent seizure.

Pediatric:

1. Midazolam 0.1 mg IN/IM, may repeat in 3 minutes for ongoing or recurrent seizure

ALTERED LEVEL OF CONSCIOUSNESS ¹

1. Obtain blood glucose and if < 80 treat per General ALS Procedures.

2. If suspected narcotic overdose:

Adult/Adolescent:

1. Naloxone 2 mg IN/IM or 0.8 mg IV titrate to effect.

Pediatric:

1. Naloxone 0.1 mg/kg IN/IM/IV.

SHOCK / SIGNS OF POOR PERFUSION BP < 90 SYSTOLIC ¹

1. Adult/Adolescent (lungs clear to auscultation):
 - Normal saline 250 mL IV bolus, may repeat up to 1 liter total to maintain perfusion.
2. Pediatric (lungs clear to auscultation):
 - Normal saline 20 mL/kg IV bolus, may repeat second bolus to maintain perfusion.

ANAPHYLAXIS ¹

Pulses Present and Airway Clear

Adult/Adolescent:

1. Epinephrine (1:1,000) 0.3 mg IM.

Pediatric:

1. Epinephrine (1:1,000) 0.01 mg/kg IM to maximum of 0.3 mg.

If Wheezing:

Adult/Adolescent/Child:

1. Albuterol 5 mg continuous nebulization.

Absent Pulse or Impending Airway Obstruction

Adult/Adolescent:

1. Epinephrine (1:10,000) 0.3 mg slow IV or 0.3 mg (1:1,000) IM.
2. Normal saline IV bolus 250 mL, continue to 1 liter total if lungs clear to auscultation.
3. Diphenhydramine (Benadryl) 25 mg IV/IM.

Pediatric:

1. Epinephrine (1:10,000) 0.01 mg/kg slow IV or 0.01 mg/kg (1:1,000) IM maximum IV or IM dose of 0.3 mg.
2. Normal saline IV bolus 20 mL/kg.
3. Diphenhydramine 1 mg/kg IV/IM.

TRAUMA / EXTREMITY AND HIP INJURY ¹

Hypotension / Poor Perfusion/Traumatic Arrest:

Adult/Adolescent: Normal saline 250 mL bolus IV/IO, continue infusion to maintain perfusion.

Pediatric: Normal saline 20 mL/kg bolus IV/IO, continue infusion to maintain perfusion.

Extremity Injury/Burn/Crush With Pain and BP > 90 systolic

Adult/Adolescent: Morphine 5 mg IV/IM (or fentanyl 50 mcg

IN/IM/IV); may repeat same dose for continued pain after 3 minutes.

Pediatric: Morphine 0.1 mg/kg IV/IM once.

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CARDIOPULMONARY ARREST¹

VENTRICULAR FIBRILLATION / VENTRICULAR TACHYCARDIA

1. Initiate or continue CPR and when defibrillator is available:
 - ▶ *Defibrillate once at pre-programmed defibrillator setting*
Pediatric: Defibrillate at 2 J/kg
2. If at any time develops rhythm with pulse:
 - Ventilate and oxygenate
 - Make base contact for further orders
3. If remains pulseless:
 - ▶ *High-flow oxygen by BVM*
 - IV/IO vascular access without interruption of CPR
4. Continually monitor cardiac rhythm:
 - If persistent VF/pulseless VT
 - ▶ *Defibrillate once at pre-programmed defibrillator setting*
Pediatric: Defibrillate at 4 J/kg
 - If PEA or asystole: refer to PEA/Asystole Section below.
5. For continued VF/ pulseless VT:
 - ▶ **Administer Epinephrine 1 mg (1:10,000) IV/IO, (Pediatric 0.01 mg/kg)** repeat approximately every 3 minutes for continued VF/pulseless VT
 - ▶ *Intubate Adults / Adolescents with minimal interruption of CPR and confirm ET tube placement.*
6. For continued VF/pulseless VT:
 - ▶ *Defibrillate once at pre-programmed defibrillator setting*
Pediatric: Defibrillate at 4 J/kg
7. For continued VF/ pulseless VT:
 - ▶ **Administer Amiodarone 300 mg IV/IO**
8. For continued VF/pulseless VT:
 - ▶ *Defibrillate once at pre-programmed defibrillator setting*
Pediatric: Defibrillate at 4 J/kg
9. Notify receiving hospital of transport.

PEA / ASYSTOLE

1. Initiate or maintain CPR
 - ▶ High-flow oxygen by BVM
 - ▶ IV/IO vascular access *without interruption of CPR*
 - ▶ 250 mL Normal Saline bolus, up to maximum 1 liter to attain and maintain perfusion.

Pediatric: 20 mL/kg, may repeat twice
2. If no response to initial 250 mL Normal Saline bolus:
 - ▶ Administer *Epinephrine 1 mg (1:10,000) IV/IO, **Pediatric 0.01 mg/kg***, approximately every 3 minutes
 - ▶ *Intubate Adults/Adolescents with minimal interruption of CPR and confirm ET tube placement*
3. If VF/ pulseless VT develops:
 - ▶ *Defibrillate once at pre-programmed defibrillator setting, **Pediatric 2 J/kg***, and follow VF/pulseless VT algorithm.
4. Notify receiving hospital of transport.

BRADYCARDIA - SYMPTOMATIC¹

Adult/Adolescent:

1. Initiate Transcutaneous Pacing (see Procedure PR-110)
2. Atropine 0.5 mg IV or IM, may repeat in 3 minutes as necessary.

Pediatric:

1. Insure adequate ventilation and oxygenation
2. Atropine 0.02 mg/kg IV or IM

SUPRAVENTRICULAR TACHYCARDIA ¹

ADEQUATE PERFUSION

Adult/Adolescent:

1. Valsalva maneuver
2. Adenosine 6 mg rapid IV, may repeat 12 mg rapid IV

Pediatric:

1. Support ventilation and oxygenation and transport rapidly

POOR PERFUSION

Adult/Adolescent:

1. Synchronized cardioversion, 100 J; may repeat with 200 J
2. Rapid transport

Pediatric:

1. Normal saline bolus 20 mL/kg
2. Rapid transport

VENTRICULAR TACHYCARDIA WITH PULSES¹

ADEQUATE PERFUSION

Adult/Adolescent:

1. Support ventilation and oxygenation and transport rapidly
Pediatric:

1. Support

1. Support ventilation and oxygenation and transport rapidly
POOR PERFUSION

POOR PERFUSION

Adult/Adolescent:

1. Synchronized cardioversion, 100 J; may repeat with 200 J
2. Rapid transport

Pediatric:

1. Synchronized cardioversion, 1 J/kg; may repeat with 2 J/kg
2. Rapid transport

CHEST PAIN / ANGINA¹

ADULT:

1. Nitroglycerine 0.4 mg SL, may repeat twice if BP > 90 systolic.
2. 12-lead ECG for age greater than 45 or suspected MI.
3. Aspirin 324 (or 325 mg) chewed if suspected cardiac chest pain.
4. Morphine 5 mg IV (or fentanyl 50 mcg IV); may repeat in 3 minutes for continued pain.

RESPIRATORY DISTRESS WITH RALES (CHF) ¹

ADULT:

SYSTOLIC BP > 100

1. Nitroglycerine 0.4 mg SL, may repeat twice if BP > 100 systolic.
2. 12-lead ECG for age greater than 45 or suspected MI.

SYSTOLIC BP > 150

1. Nitroglycerine 0.8 mg SL, may repeat twice if BP > 150 systolic.
2. 12-lead ECG for age greater than 45 or suspected MI.

1. In addition to general ALS measures, the following apply for the specific symptom listed

Approved:

Fransky

IFT TxGuide2013:
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DATE: February 8, 2013

Protocol for Pilot Study of Interfacility-ALS (IFT-ALS) Proposal

Introduction:

The IFT-ALS program is being considered as a service for transport of advanced life support (ALS) level patients between health facilities and home healthcare settings. The IFT-ALS program is designed as an off-line (standing orders and protocols) ALS transport system with rapid response capability. The program does not replace or substitute for Critical Care Nurse transport capable services.

Pilot Goal:

Demonstrate feasibility and safety of an IFT-ALS program in Orange County.

Pilot Study Methods:

The pilot will be a prospective observation of IFT-ALS staffed transport units. IFT-ALS staff will function under defined standing orders and procedures developed by Orange County Emergency Medical Services (OCEMS). Study data will be retrieved from OCMEDS (OCEMS Medical Data System).

Included in the pilot study will be all of the first 100 IFT- ALS level transports that occur after initiation of the pilot. After interim review of the first 100 cases, a second period of evaluation of the second 100 cases may be done.

Excluded will be any BLS level transports performed by IFT- ALS crews.

Outcome measures will include:

Feasibility:

1. Attainment of complete data through the OCMEDS system with threshold = 95%.
2. Dispatch appropriate for IFT-ALS transports with threshold = 95%
3. Proper use of standing orders/procedures as demonstrated by application of appropriate standing orders when used, lack of exclusion of standing order/procedure steps, and proper dosing of medications with fallout rate < 2%
4. Assessment of patient outcomes with determination of whether patient arrived at receiving facility without deterioration during transport (as measured by vital signs and level of consciousness); assessed qualitatively.
5. Dispatch to arrival at facility response times with average time of 30 min.

Safety:

1. Frequency of traffic accidents related to IFT-ALS transports, none expected.
2. Frequency of IFT-ALS work related injuries (e.g. needle sticks) related to IFT-ALS transports, 1-2 expected.
3. Assessment of vaccination rate of IFT-ALS providers with current influenza vaccine, 100% threshold.
4. Frequency of respiratory or cardiac arrest of patients during IFT-ALS transport, 2 expected.
5. Frequency of medication errors (failure to provide, administration of wrong medication) during IFT-ALS transports, threshold 0%.

Statistical analysis:

Analysis of data will be by descriptive and frequency analysis, with measure of precision for data using measures of central tendency or proportions.

Expected Results:

It is expected that the first 100 IFT-ALS transports will demonstrate the feasibility and safety of the program. In the case that results are equivocal, a second set of 100 transports will be evaluated. If a second set of 100 transports are evaluated, outcome measures may be adjusted for that group.

A second evaluation may be done to determine feasible and safe staffing for IFT-ALS transport units. This initial pilot is being done with 2 IFT-ALS personnel staffing each IFT-ALS unit. Further evaluation may show that a staffing pattern utilizing 1 IFT-ALS and 1 Accredited EMT is equally feasible and safe.

Interfacility Transport – Advanced Life Support

Orange County Emergency Medical Services Interim Report to
The Emergency Medical Care Committee
April 26, 2013

Introduction: Interfacility Transport by Advanced Life Support (IFT-ALS) personnel is common in some areas of California (Riverside, Los Angeles Counties) and has not been found feasible in other areas (San Diego County). Since 2008, Orange County EMS (OCEMS) has received requests for allowing IFT-ALS services. The concept of expanded ALS services for health care interfacility transport is an issue throughout California and recent revisions of California Paramedic Regulations reflect support for up to critical care transport level transport by paramedics. In 2011, draft OCEMS policies that reflected state critical care transport paramedic level transports were released for public comment. Public comment was extensive, and revisions of draft policies made that focused on a proposed advanced life support level for interfacility transports. These draft policies were again released for public comment with further adjustments made. Using these revised draft policies, this pilot project was developed to evaluate the safety, feasibility, and efficacy of an IFT-ALS program.

Methods: A prospective observational evaluation of IFT-ALS staffed unit transports was used as the study methodology. Included in the pilot study cases were consecutive IFT-ALS field encounters that met ALS criteria; excluded were consecutive IFT-ALS calls that did not meet ALS criteria or that were turned over to a 911 provider by dispatch personnel or after initial field assessment. IFT-ALS personnel were trained in standardized standing orders and system standards for management of non-base contact ALS transports. Using standard medical dispatch protocols, IFT-ALS provider dispatchers were trained in standards for determination of when an incoming call should be referred to the 911 system. Outcome measures for feasibility and safety of the proposed program were determined prior to initiation of the pilot with measured elements defined (see attached protocol). The primary outcome measure of interest was transport from sending to arrival facility without medical deterioration during transport as determined by quantitative measures of serial vital signs and level of consciousness (GCS). Data for the study was entered from OCMEDS into a study database that did not contain personal identifiers. The initial ten cases were used to validate the data collection and study database and not utilized for final analysis (validation set). Data analysis was descriptive and by frequency with precision analysis of measures of central tendency.

Results: Results are provided in Table 1. Of the first 100 consecutive transports, three were excluded from dispatch to scene time analysis because ambulances for these three responses showed dispatch to scene time differences of 0 minutes (ambulances were pre-deployed and standby for a scheduled transport). For measure of the outcome measure of interest: stable arrivals to receiving facility, two transports were excluded due to lack of arrival vital signs. Interim data analysis showed 100% compliance with data input into the OCMEDS system, allowing for analysis of all potential study data. Three cases fell out for appropriate dispatch as more appropriate for 911 evaluations and transports. In none of these three cases were the vital signs or blood glucose presented by the caller to dispatch. Further, each of the three dispatch fall outs was of do-not-resuscitate status. Data for each study measure showed performance within the thresholds set *a-priori* for the pilot.

Conclusion: Interim data analysis shows performance within thresholds and parameters set prior to initiation of the pilot project.

TABLE 1: IFT-ALS Pilot Feasibility and Outcome Analysis

Interim Analysis # 1:
Total Calls Analyzed= 100

Age Data: Median Age = 76.5 (25% Q: 59.8; 75% Q: 76.5)

Feasibility:

<u>Measure</u>	<u>Threshold</u>	<u>Score</u>	<u>Comments:</u>
1. OCMEDS System input:	95%	100%	
Data Error Rate:		4%	1. 250 mL NS only documented in narrative 2. Three cases, dispatch to on-scene times = 0
2. Appropriate Dispatch:	95%	97%	Fallouts: 1. ALOC X 2 hours, Blood glucose = 72 2. Abd pain X 4 hours, O2 Sat = 94%, VS Stable 3. Pneumonia, low BP, decrease LOC (ER to ER)
Referral Rate to 911 System:		17 per 100 ALS dispatched (Table 3)	
3. Proper Use of Standing Orders:	<2% fallout	0 fallouts	

Outcome Measures:

4. Stable Arrival to Receiving Facility ¹ :	98% ²
5. Dispatch to Arrival at Scene: Avg = 30 minutes	24.3 +/- 14.7 minutes

Notes:

1. Defined as arrival vital signs unchanged or improved.
2. Two charts without arrival vital signs.

Descriptive Data:

6. Types of Transports	
Hosp to Hosp:	28
Hosp to SNF:	1
SNF to Hosp:	37
Assisted Living to Hosp:	22
Other:	
MD Office/Hosp:	5
Clinic/Hosp:	3
B & C/Hosp:	3
Home/Hosp:	1
7. Field Procedures / Medications:	
NS TKO:	2
12-Lead ECG:	11
Cardiac Monitor:	95
Medications:	
NS Fluid Challenge:	5
D50:	3
Albuterol:	2
Naloxone:	1
Prehung Antibiotic:	1
Prehung BiCarb:	1

TABLE 2: IFT-ALS Pilot Safety Analysis

Interim Analysis # 1:

100 transports

<u>Safety Measure:</u>	<u>Threshold</u>	<u>Performance</u>
Frequency of traffic accidents:	0	0
Frequency of work injury:	0	0
Influenza vaccination of ALS staff:	100%	100%
Frequency of Cardiac/Resp Arrest during transport:	2	0
Medication errors:	0	0
ACLS certification current ALS providers:	100%	100%
PALS/PEPP certification current:	100%	100%

TABLE 3: DISPATCH REFERRAL TO 911 SYSTEM

Interim Analysis # 1

Per 100 ALS Calls:

<u>Type of Site</u>	<u>Case Description</u>
Assisted Living	Low BP/Bradycardia
Assisted Living	Low BP/ALOC
B & C	Low BP/Tachycardia
SNF	Low BP/Low SpO2
SNF	Low BP/Low SpO2/ALOC
SNF	Respiratory Distress
SNF	Respiratory Distress
SNF	Low BP
SNF	Weakness
SNF	Low BP/Weakness
SNF	Stroke Symptoms
SNF	Respiratory Distress
SNF	Respiratory Distress
SNF	Respiratory Distress
SNF	Respiratory Distress
Unknown	Abdominal Pain/fainting
Unknown	SOB/Low BP/Tachycardia

Definitions:

Assisted Living – Licensed facility for assisted social and medical supervision without constant physician or nursing staffing.

Board and Care – Licensed facility providing on-going boarding and personal care services.

SNF – Licensed facility providing on-going nursing services.