14I – INTERHOSPITAL TRANSFERS

EMERGENCY MEDICAL DISPATCHER
EMERGENCY MEDICAL RESPONDER
EMT
EMT-INTERMEDIATE 85
ADVANCED EMT
PARAMEDIC

A patient may require a transfer from one hospital to another hospital if:

1. Patient evaluation at the original hospital reveals care needs unavailable at that hospital.
2. Another hospital is preferred by the patient, the patient's legal representative, or the patient's established physician(s).

A hospital must agree to facilitate a patient transfer (regardless of patient's financial status) if the patient meets any of the above criteria.

Any interhospital transfer must be arranged as a practitioner/physician-to-physician transfer in accordance with Federal regulations.

Prior to any interhospital transfer, the EMS professional must receive appropriate transfer paperwork, including an adequate summary of the patient's condition, current treatment (including nursing and practitioner/physician evaluation notes, lab results, radiology results and films, possible complications that could occur during transfer, and any further medical information deemed necessary by the EMS professional or physician(s). Any anticipated interhospital transfer treatment orders are to be written and signed by the transfer initiating practitioner/physician.

Prior to any interhospital transfer, if the EMS professional is concerned that the patient is not stabilized to the extent possible for transport, the EMS professional shall review his /her concerns with the transferring practitioner/physician with a goal to ensure appropriate clinical care is performed to further stabilize the patient. In the **rare** instance in which the EMS professional and transferring practitioner/physician cannot agree on the stability of the patient and/ or further care necessary prior to the interhospital transfer, the EMS professional is to consult with the accepting physician at the receiving hospital to review these concerns. If in such situation the receiving hospital has automatically accepted the patient for care to the "emergency group/doctor", the EMS professional is to discuss concerns with the on-duty emergency physician at that hospital. If the EMS professional cannot rapidly resolve the situation with the transferring practitioner/physician and receiving physician, the EMS professional is to notify the Chief Medical Officer for intervention, ideally via a recorded line.

PROTOCOL 14I: Interhospital Transfers, cont.

The overriding principle for all aspects of interhospital transfer is matching patient needs with adequate provider knowledge and skill, equipment and infrastructure that provide continued patient safety during transport.

It is the professional and ethical responsibility of an EMS professional as well as of an EMS organization to not accept or perform an interhospital transfer that involves monitoring and treatment exceeding their scope of authorized practice, training, and/or ability.

An EMS professional must be licensed as an EMT – I85 or higher to verify patency of vascular access. IV fluid type and flow rate must be specified in written practitioner/physician orders and verified prior to interhospital transfer. Any IV fluid bag supplied must contain enough solution to accommodate the expected interhospital transport time.

Any IV infusion medications must be specified in written practitioner/physician orders and verified prior to transfer. The paramedic must be comfortable managing all medications ordered or anticipated to be given during the interhospital transfer. Questions to the contrary should be routed to the supervisor, with subsequent physician consultation as needed. There is a limit of 4 concurrent IV infusion medications for paramedic-only accompanied interhospital transfers.

All interhospital transfer patients with IV infusion medications will be continuously cardiac monitored, including monitoring pulse oximetry during transport. Waveform capnography should be utilized as indicated by appropriate protocols. Blood pressure monitoring will be at least as frequently as every 10 minutes with a minimum of two blood pressure recordings. The interhospital transfer orders may specify more frequent measurements.

During interhospital transfer, should the patient experience signs or symptoms of intolerance (significant side effects) to the IV infusion medication(s) or the IV infusion pump indicates an error not easily addressed by the paramedic, stop the infusion and consult the transferring hospital's on-line medical control for direction.

Mechanical ventilation settings must be confirmed with either the transferring practitioner/physician or a respiratory therapist. The paramedic must review and confirm ventilation rate, tidal volume, FiO2 (50% or 100%), and positive-end expiratory pressure (PEEP) settings. If at any time during interhospital transfer mechanical ventilation malfunctions, institute bag-valve assisted ventilations with 100% O2 while troubleshooting the mechanical ventilator and airway circuit. Ensure the patient receives appropriate oxygenation and ventilation continuously.

All indwelling devices and lines (e.g. chest tube(s), naso/orogastric tube, PEG/G/J-tube, surgical drain(s), intra-aortic balloon pump (IABP), ventricular assist device (VAD), wound vacuum) must be reviewed with either the transferring practitioner/physician or appropriate nursing personnel. Potential complications during transfer should be discussed and contingency plans reviewed. If the paramedic feels unable to safely monitor and maintain any indwelling device, he or she is to request appropriate nursing or ancillary personnel from the transferring hospital to accompany the patient during transfer.

PROTOCOL 14I: Interhospital Transfers, cont.

Under these conditions, EMS personnel will not begin the transfer until such request is accommodated.

***For specialized patients not ordinarily transported by EMS professionals (e.g., high-risk obstetrical patients, neonates) or for any patient with a condition requiring interhospital assessment and/or treatment beyond expected EMS professional scope of practice, an appropriately trained healthcare professional is to accompany the transporting EMS professionals to best provide interhospital transfer care.

For acute stroke patients either having received alteplase (tPA®) just prior to interhospital transfer or that will be continuing to receive alteplase during interhospital transfer, specific documentation and treatment should include:

1. Vital signs prior to transport and every 10 minutes enroute. Verify that systolic blood pressure is less than 180 mmHg and diastolic blood pressure is less than 105 mmHg. If blood pressure exceeds these limits, the transferring hospital is to lower the blood pressure via anti-hypertensives for further vascular stabilization prior to transport.

2. Stroke neuro-exam at time of interhospital transfer, utilizing the Los Angeles Prehospital Stroke Screen.

3. Oxygen administration via NC or NRB if dyspnea or SpO2 <94% at room air.

4. Head of cot elevated at approximately 15 degrees if tolerated and low risk of aspiration.

5. Patient NPO status, including medications, to protect against aspiration.

6. Documentation of total dose and time of IV alteplase bolus (if dose is completed prior to transfer) and when infusion started (and completed, if applicable).

7. Infuse all alteplase from tubing by infusing saline through same tubing set following alteplase dose.

    - When bottle appears empty, there is still some alteplase left in the tubing which must be infused.
    - Remove the IV tubing connector from the bottle and attach it to a newly spiked bag of normal saline and re-start infusion at the previous rate used. This will ensure that the remainder of the alteplase is infused.

8. Anti-hypertensive therapy adjustment enroute:
    - If labetalol IV infusion started at sending facility: Increase infusion rate by 2 mg/min every 10 minutes (to maximum of 8 mg/min) until desired decrease in BP:
      Sys BP <180 mmHg and Dia BP <105 mmHg
    - If nicardipine IV infusion started at sending facility: Increase infusion rate by 2.5 mg/hr every 10 minutes (to maximum of 15 mg/hr) until desired decrease in BP:
      Sys BP <180 mmHg and Dia BP <105 mmHg
    - Discontinue anti-hypertensive infusion for any one of the following:
      Sys BP <140 mmHg, Dia BP <80 mmHg, or heart rate <50 per minute

PROTOCOL 14I: Interhospital Transfers, cont.

Common IV Medications During Interhospital Transfer
(Infusions are continuation of infusions started at the transferring facility, not initiations)

Class of Medication	Significant Side Effects
Sedatives	
Diazepam (Valium®) Diprivan (Propofol®) Lorazepam (Ativan®) Midazolam (Versed®)	Respiratory depression, Hypotension
Opiate Analgesics	
Fentanyl (Sublimaze®) Hydromorphone (Dilaudid®) Meperidine (Demerol®) Morphine Nalbuphine (Nubain®)	Respiratory depression, Hypotension
Hypertension Control Agents	
Labetalol (Normodyne®, Trandate®) Nicardipine (Cardene®) Nitroprusside(Nipride®)	Hypotension, Symptomatic bradycardia Symptomatic tachycardia, Ventricular dysrhythmias
Acute Coronary Syndrome Agents	
Anti-platelet (Clot Inhibitors) Abciximab (ReoPro®) Eptifibatide (Integrilin®)	Bleeding
Anti-coagulant (Clot Inhibitors) Heparin	Bleeding
Thrombolytic (“Clot Buster”) Alteplase (tPA®) Reteplase (Retavase®) Tenectaplase (TNKase®)	Bleeding
Anti-anginal (Coronary Vasodilator) Nitroglycerin (Tridil®)	Hypotension

PROTOCOL 14I: Interhospital Transfers, cont.

Common IV Medications during Interhospital Transfer, cont.
(Infusions are continuation of infusions started at the transferring facility, not initiations)

Class of Medication	Significant Side Effects
Cardiac Anti-arrhythmics	
Amiodarone (Cordarone®, Pacerone®) Diltiazem (Cardizem®) Lidocaine Procainamide	Hypotension, Symptomatic bradycardia Symptomatic tachycardia, Ventricular dysrhythmias
Vasopressors (Hypotension Treatment)	
Dobutamine (Dobutrex®) Dopamine (Intropin®) Epinephrine Norepinephrine (Levophed®) Phenylephrine (Neosynephrine®)	Hypertension, Symptomatic tachycardias Ventricular dysrhythmias
Volume Expanders (Hypovolemia Treatment)	
Albumin Dextran Hetastarch (Hespan®) Plasma protein fraction (Plasmanate®)	Allergic reactions ranging from itching only to more serious reactions of hives, (urticaria), respiratory distress (typically bronchospasm), tachycardia, and hypotension (evidence of anaphylaxis).
Blood Products (Anemia or Coagulopathy Treatment)	
Cryoprecipitate Frozen Plasma (FFP) Packed Red Blood Cells (PRBC) Platelets Whole Blood	Allergic reactions ranging from itching only to more serious reactions of hives, (urticaria), respiratory distress (typically bronchospasm), tachycardia, and hypotension (evidence of anaphylaxis).
Gastrointestinal Bleeding Control Agents	
Esomeprazole (Nexium® – acid reducer) Octreotide (Sandostatin®–varices constrictor) Pantoprazole (Protonix® – acid reducer)	None
Acid-Base Metabolism Agents	
Sodium Bicarbonate	None

PROTOCOL 14I: Interhospital Transfers, cont.

Common IV Medications during Interhospital Transfer, cont.
(Infusions are continuation of infusions started at the transferring facility, not initiations)

Class of Medication	Significant Side Effects
Hyperglycemia Control Agents	
Insulin	Hypoglycemia-related complications
Electrolyte Replacement	
Potassium chloride (KCL)	Ventricular dysrhythmias
Seizure Control Agent	
Fosphenytoin (Cerebyx®) Magnesium (for eclampsia) Phenytoin (Dilantin®) Phenobarbital	Respiratory depression, Hypotension, Symptomatic bradycardia
Bronchospasm Control Agents	
Aminophylline (Theophylline®)	Symptomatic tachycardias, Hypertension
Pregnancy - Related Agents	
Oxytocin (Pitocin®–stimulates uterine contraction Inducing labor and controls uterine bleeding)	Hypotension (if rapid infusion), Symptomatic tachycardias, Hypertension
Antimicrobials/Antibiotics	
Aminoglycosides (e.g. gentamicin) Antifungals (e.g. fluconazole) Anti-TB (e.g. isoniazid - INH) Anti-viral (e.g. acyclovir) Carbapenams (e.g. imipenem) Cephalosporins (e.g. ceftriaxone) Macrolides (e.g. azithromycin) Penicillins (e.g. ampicillin; piperacillin) Quinolones (e.g. levofloxacin) Sulfonamides (e.g. TMP-SMX, Bactrim®) Other categories (e.g. clindamycin, vancomycin)	Allergic reactions ranging from itching only to more serious reactions of hives (urticaria), respiratory distress (typically bronchospasm), tachycardia, and hypotension (evidence of anaphylaxis). In some cases, a localized phlebitis (pain at infusion site with redness of vein) may occur due to irritation cause by the infusion itself. While the infusion is to be stopped, this usually is not a true allergy.

PROTOCOL 14I: Interhospital Transfers, cont.

Priority and Timing for Interfacility Transfer Requests:

Priority 1 Clinical Condition – Immediate Life Critical Intervention at Receiving Hospital Facility
Time Standard is 911 Call to Arrival = Response 10:59 or less with use of Red Lights & Sirens (RLS)
Once ambulance is assigned cannot be re-assigned unless closer unit and only one re-assignment total

Acute ST Elevation Myocardial Infarct
Transferring Facility – No Interventional Cardiology
Receiving Facility – Interventional Cardiology/Cardiac Cath Lab

Acute Thromboembolic Stroke
Transferring Facility – No Interventional Neurology
Receiving Facility – Interventional Neurology & Procedure Imminent

Acute Aortic Dissection
Transferring Facility – No Vascular Surgery
Receiving Facility – Vascular Surgery & Surgery Imminent

Acute GI Bleeding with Hemodynamic Instability
Transferring Facility – No Gastrointestinal/Colorectal Capability
Receiving Facility – Gastrointestinal/Colorectal Capability and Endoscopy Imminent

Acute Amputation with Limb Salvage Attempt/Limb Ischemia/Arterial Occlusions
Transferring Facility – No Vascular Surgery/Interventional Radiology
Receiving Facility – Vascular Surgery/Interventional Radiology and Intervention Imminent

Suspected or Confirmed Ectopic Pregnancy with Hemodynamic Instability
Transferring Facility – No Obstetric Surgery
Receiving Facility – Obstetric Surgery & Surgery Imminent

Active Labor with Evidence for Complicated Delivery – Breech/Limb Position by Ultrasound
Transferring Facility – No Obstetric Surgery
Receiving Facility – Obstetric Surgery & Surgery Imminent

Acute Angle Closure Glaucoma/Acute Retinal Artery Occlusion/Acute Vision Loss Imminent
Transferring Facility – No Ophthalmology
Receiving Facility – Ophthalmology & Intervention Imminent

Level I/II Trauma with Hemodynamic Instability
Transferring Facility – No Trauma Surgery/Capability
Receiving Facility – Trauma Surgery/Capability

PROTOCOL 14I: Interhospital Transfers, cont.

Priority 2 Clinical Condition – No Immediate Time Critical Intervention at Receiving Hospital Facility
Time Standard is 911 Call to Arrival = Response 24:59 or less without use of Red Lights & Sirens
Once ambulance is assigned cannot be re-assigned unless Priority 1 Call and only one re-assignment total

Post Cardiac Arrest with Hemodynamic Stability
Transferring Facility – No ICU and/or Cardiology Services
Receiving Facility – ICU and Cardiology Services

Active Labor with Routine Delivery Planned
Transferring Facility – No Obstetric Surgery
Receiving Facility – Obstetric Surgery

Dialysis Required with Hemodynamic Stability
Transferring Facility – No Dialysis Capability
Receiving Facility – Dialysis Capability with Dialysis Imminent

Ground Component of Air Ambulance Transport Assist
Estimated Landing Time 25 Mins or Less

Priority 3 Clinical Condition – No Immediate Time Critical Intervention at Receiving Hospital/Facility
Time Standard is 911/non-911 Call to Arrival = Response 59:59 or less without use of Red Lights & Sirens
Once ambulance is assigned cannot be re-assigned unless Priority 1 or 2 Call and only two re-assignments total

Hospital ED or Inpatient Transfer
Transferring Facility – Limit of Care Capabilities/Course of Treatment Reached
Receiving Facility – Higher Care Capabilities/Ongoing Course of Treatment Possible

Hospital ED to Residence/Nursing Facility Post ED Evaluation and Treatment

Priority 4 Clinical/Logistic Condition – No Immediate Time Critical Intervention at Receiving Hospital/Facility
Time Standard is 911/non-911 Call to Arrival = 15 minutes within scheduled pick-up appointment time
Once ambulance is assigned cannot be re-assigned unless Priority 1, 2, or 3 Call and only four re-assignments total

Scheduled Outpatient Dialysis Care

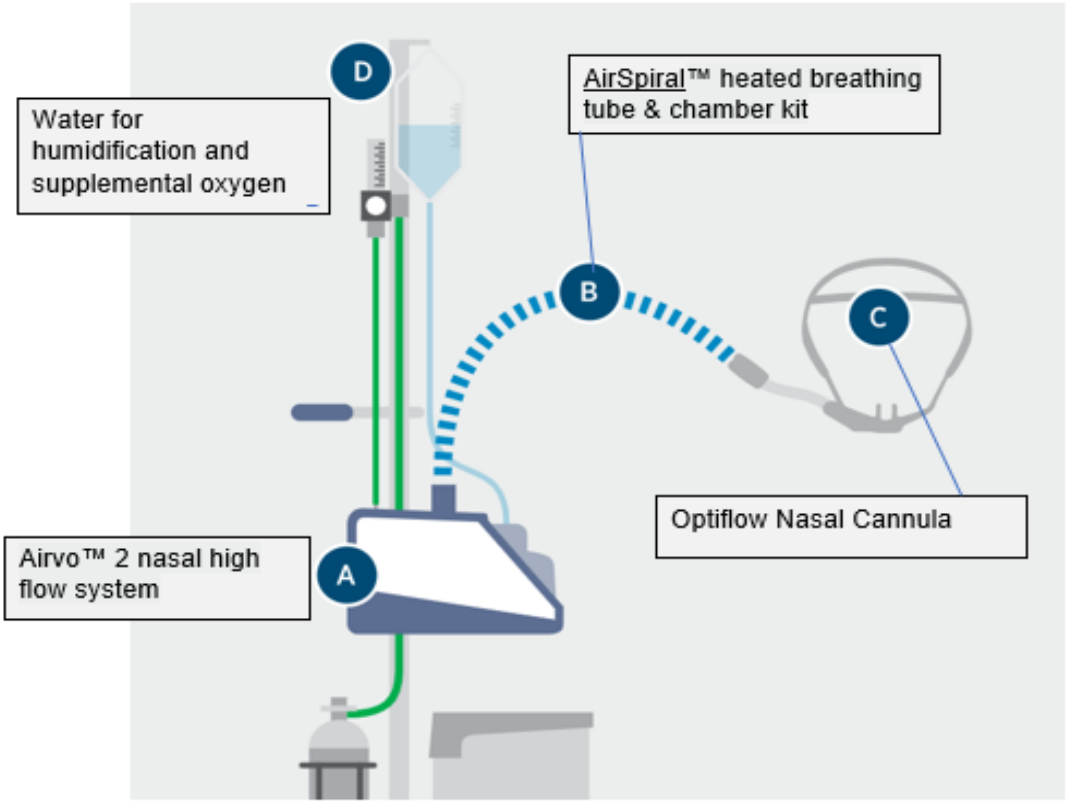
Hospital Inpatient to Residence/Nursing Facility Post ED Evaluation and Treatment

Inpatient Bed Shortages and Hospital to Hospital or Facility to Facility Patient Movement Due to Bed Shortage

PROTOCOL 14I: Interhospital Transfers, cont.

High Flow Nasal Cannula during Interhospital transfer

Nasal high flow creates breath and flow-dependent pressure, making inspiration easier and promoting slow, deep breathing on expiration, thereby increasing alveolar ventilation.



Any patient on High Flow Nasal Cannula (HFNC) requiring transfer to another facility or being discharged home with appropriate equipment in place may be transported utilizing the hospital's high flow system (if allowed by facility) or change out HFNC components as needed to allow for transport on the same settings.

Titrations can be made as needed during transport to maintain therapeutic oxygenation and ventilatory support.