

INTERFACILITY EMERGENCY TRANSPORTATION

PREAMBLE

Some acute illnesses, injuries and acute complications of pregnancy require emergency transportation between health care facilities, usually when a facility and personnel are required beyond those locally available. Initial resuscitation and stabilization are of utmost importance. Then, once the need for transfer is recognized, arrangements should be expedited to ensure the health and well-being of the patient.

Transportation by road and/or air is most efficient and safe if the appropriate equipment and personnel travel with the patient. Ensure that the patient is aware of the costs associated with ambulance transfer, if these costs are not publicly funded.

Four levels of acuity are recognized within this guideline in order to facilitate decision-making relating to patient requirements, the type of escort and the appropriate mode of transport, ground or air.

Transfer of care can be a complex interaction between medical personnel. This guideline offers appropriate levels of responsibility.

RESPONSIBILITIES OF THE PHYSICIAN

The Referring Physician

- Assesses the need for and initiates the transfer .
- **Assesses the patients' priority code which will allow for decision regarding type of transport and escort required. The skills of the members of the transporting team should match the patient's identified needs and the potential needs that may occur during the transport. Critically ill, unstable patients will require the presence of a physician as part of the transport team.** The type and urgency of transport may require consultation with the receiving physician.
- Physicians who are aware that there is a health care directive must ensure that this is forwarded with the patient during transport.
- Is responsible for patient care during transport, or until the patient is transferred to the receiving physicians direct care.
- Directly communicates with the receiving physician.
- Ensures specific written instructions regarding patient care and treatment during transport are given to the escort personnel.
- The role and responsibility of the referring physician may be assumed by the senior health care personnel at a facility (e.g. nurse at nursing station).
- Communicates to transport personnel and receiving physician regarding appropriate precautions necessary for suspected communicable diseases.

- Will respect the judgement of air and land ambulance personnel, not to transport a patient if it cannot be done safely during inclement weather conditions.

The Transport Physician

- Does not need to be the referring or the receiving physician.
- Must be able to provide the level of care required for the patient.
- Confers with the referring physician relating to care and treatment during transport.
- Communicates with receiving physician, while en route, if necessary, to discuss the patient status.

The Receiving Physician

- Must agree to accept the patient prior to transfer and remain available for consultation until the patient's arrival.
- Must notify the relevant services within the receiving hospital of the patient's anticipated arrival time and medical requirements.
- Confers with the referring physician relating to care and treatment prior to and during transport, or until the patient is transferred to the care of the receiving physician.
- Must communicate to the referring physician the arrangements made for transfer, if not already done.
- Must ensure the receiving hospital's acceptance of the patient.

PREPARATION FOR TRANSFER

- **Resuscitation and stabilization of the patient is essential prior to transport.**
- Stabilization includes evaluation and initiation of treatment to ensure, within reasonable medical probability, that transfer of a patient will not result in death or in loss or serious impairment of bodily functions, part, or organs.
- The patients' needs must be evaluated and attended to on a systems basis:
 - : airway management¹
 - : spinal immobilization
 - : respiratory system
 - : cardiovascular system/haemodynamic status
 - : central nervous system
 - : diagnostic studies as required
 - : appropriate wound care
 - : fracture immobilization
 - : nasogastric tubes and urinary catheters if indicated
- Write transport orders.
- Send patient records (e.g. x-rays, laboratory data).
- Obtain family/patient consent for transfer, and for release of medical records.

MANAGEMENT DURING TRANSPORT

¹ It is extremely difficult to perform tracheal intubation during transport. Therefore, intubation should be carried out **prior** to transport if the patient's respiratory status is questionable.

The escort should consist of **appropriately trained personnel and equipment** needed to handle specific patient related problems which may occur en route.

These include:

- airway management
- cardiorespiratory support
- blood volume replacement
- monitoring of vital signs
- administration of appropriate medications
- ongoing communication with receiving institution during transfer
- documentation of patient status en route

DOCUMENTATION

Information transmission is vital with transfer. A **written record** must be transferred with the patient and include:

- demographic information
- past history
- history of injury or illness
- vital signs pre-transfer
- treatment rendered to patient
- investigations performed including x-rays
- fluids and medications administered
- name of referring physician
- name of receiving physician
- a health care directive, if relevant

If the physician believes a transfer appears to be medically inappropriate, but the patient or responsible person insists on transfer, the physician must:

- carefully explain the medical risks related to transfer to the patient or responsible person
- document in detail the explanation given, and the insistence of the patient/responsible person to carry out the transfer

TRANSPORTATION OF CHILDREN

Transportation of the critically ill child requires special attention. The potential for rapid deterioration of a critically ill child and the need for aggressive treatment is often underestimated.

Responsibilities of the referring and receiving physicians, and the preparation for transfer, remain critical aspects in the interfacility transportation of children. Communication is vital.

Management During Transport

- The transferring hospital and physician must ensure that the skills and equipment available during transport will meet the anticipated needs of the patient.

- If transport team/physician lacks paediatric expertise it may be preferable for the receiving physician to act as medical control physician, and to ensure continued communication during transport.

Important management principles of the critically ill child are

- early airway intervention, including intubation
- establishment of appropriate lines prior to transportation and securing of same
- early management of raised intracranial pressure
- temperature control
- commencement of antibiotics early, e.g. meningitis
- recognition and treatment of hypoglycaemia
- maintenance of normal blood pressure for age

Of major importance is the prevention of secondary insults during transportation. Pre-transfer resuscitation and stabilization are vital.

TRANSPORTATION OF MENTALLY ILL PATIENTS

The Mental Health Act makes specific provisions for the interfacility transfer of the mentally ill.

Patients who are being transferred from one hospital inpatient unit to another hospital inpatient unit require a Warrant, once both hospitals have agreed to the transfer. In order to obtain a Warrant of Transfer, the Office of the Chief Provincial Psychiatrist must be contacted. A Warrant of Transfer will require a minimum of 24 hours to obtain and is to accompany the patient upon transfer to the second facility.

In any other circumstances involving involuntary patients, the provisions of *The Mental Health Act* apply.

CATEGORIZATION OF INTERFACILITY PATIENT TRANSFER

PRIORITY CODE 1: CRITICAL

Transport ASAP. The patient's condition is unstable, and there is immediate threat to life or function.

Definition

One or more body systems are abnormal and rapidly deteriorating in association with an acute illness or injury. Intense monitoring and medical interventions are required to correct and stabilize the patient's condition.

- requires immediate specialty care
- examples -
 - : abnormal or deteriorating neurological status
 - : life threatening cardiac emergencies, e.g.
 - severe chest pain non-responsive to conventional therapy
 - serious cardiac dysrhythmias non-responsive to conventional therapy
 - hypertensive emergencies, severe hypotension/shock after initial treatment at the referring site prior to transfer
 - : threat to maternal or fetal life
 - : airway compromise/severe respiratory distress
 - : multiple trauma associated with above features

Patient Escort

- physician (if delegated to another health care professional, this individual must be competent to perform any current or anticipated complications)²
- nurse or appropriately trained personnel as required

PRIORITY CODE 2: EMERGENT

Transport ASAP. The patient's condition is presently stable but there is potential for deterioration and potential threat to life or function.

Definition

Vital signs are presently within normal parameters and there is no immediate threat to life or function. However, there is acute illness or injury which could result in deterioration and instability in the patient's condition. Close intensive monitoring required with potential need for acute intervention.

- requires immediate specialty care
- examples -

² See CPS Statement No. 130 *Delegation of Function: Principles* and Guideline No. 132 *Shared Competencies and Delegated Physician Services*.

- : abnormal but not acutely deteriorating neurological status
- : cardiovascular abnormalities presently stable with potential for deterioration
- : acute vascular compromise of limb(s)
- : respiratory compromise with adequate airway and no immediate threat to life
- : multiple trauma with no immediate threat to life
- : pregnancy related emergencies where there is no immediate threat to maternal or fetal life

Patient Escort

- physician/nurse or appropriately trained personnel as determined by consultation between referring and receiving physician

PRIORITY CODE 3: URGENT

The patient's condition is stable and there is no immediate threat to life or function. The patient can safely wait for transportation.

Definition

Vital signs are within normal parameters and there is no immediate threat to life or function. Less intensive monitoring is required. Acute deterioration not anticipated, but interventions may be necessary during transport.

- requires medical care and/or diagnostic evaluation unavailable at referring facility

Patient Escort

- nurse or appropriately trained personnel as determined by consultation between referring and receiving physician

PRIORITY CODE 4: NON-URGENT

The patient's condition is stable and there is no threat to life or function. Evaluation or diagnostics unavailable in the referring facility.

Definition

The vital signs are within normal parameters and there is no expected threat to life or limb. Minimal monitoring is required and is expected that no interventions will be required during transport.

- requires diagnostic procedures, evaluation or treatment not available at referring facility
- the transport is pre-arranged in order to provide care.

Patient Escort

- as required - need not be health care professional

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11. Committee on Trauma of the American College of Surgeons. Interhospital transfer of patients. *ACS Bulletin* 1984;69(10):29-32.

APPENDICES:

- Appendix I Categorization of Interfacility Patient Transfers
- Appendix II Transfer Checklist
- Appendix III General Transport Supplies Kit
- Appendix IV Drug Transport Kit (Adult/Paediatric)

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APPENDIX I

CATEGORIZATION OF INTERFACILITY PATIENT TRANSFERS

PRIORITY CODE	DEFINITION	ESCORT
Code 1: CRITICAL	One or more body systems are abnormal and rapidly deteriorating in association with an acute illness or injury. Intense monitoring and medical interventions are required to correct and stabilize the patient's condition.	<ul style="list-style-type: none"> • Physician (if delegated to another health care professional, this individual must be competent to perform any current or anticipated complications)³ • Nurse or appropriately trained personnel as required.
Code 2: EMERGENT	Vital signs are presently within normal parameters and there is no immediate threat to life or function. However, there is acute illness or injury which could result in deterioration and instability in the patient's condition. Close intensive monitoring required with potential need for acute intervention.	<ul style="list-style-type: none"> • Physician/nurse or appropriately trained personnel as determined by consultation between sending and receiving physician.
Code 3: URGENT	Vital signs are within normal parameters and there is no immediate threat to life or function. Less intensive monitoring is required. Acute deterioration not anticipated but interventions may be necessary during transport.	<ul style="list-style-type: none"> • Nurse or appropriately trained personnel as determined by consultation between sending and receiving physician.
Code 4: NON-URGENT	The vital signs are within normal parameters and there is no expected threat to life or limb. Minimal monitoring is required and is expected that no interventions will be required during transport.	<ul style="list-style-type: none"> • As required - need not be a health care professional.

³ See CPS Statement No. 130 *Delegation of Function: Principles* and Guideline No. 132 *Shared Competencies and Delegated Physician Services*.

TRANSFER CHECKLIST

Patient's Name _____ Date of Transfer _____

- _____ Receiving physician notified and documented
- _____ Receiving hospital notified and documented
- _____ Family notified and documented

Stabilization of patient (If patient does not need the intervention, put N/A in the appropriate area.)

- Respiratory
 - _____ airway _____ intubation _____ oxygen delivery _____ flow rate
 - _____ suction _____ mechanical ventilation
 - _____ chest tube _____ N/G tube to prevent aspiration
- Cardiovascular
 - _____ control bleeding _____ replace blood loss
 - _____ establish large bore IV's _____ Foley catheterization
- Central Nervous System
 - _____ intubation and hyperventilation in head injury
 - _____ administer appropriate medications after neurosurgical consultation
 - _____ cervical spine immobilization
- Diagnostic Studies
 - _____ x-ray (chest, other) _____ blood studies
 - _____ electrocardiogram _____ urinalysis
- Wounds
 - _____ clean and dress _____ dT adults and children >7 years; dT
 - _____ antibiotics _____ children <7 where would is dirty and
 - _____ tetanus immune globulin if indicated _____ immunization status is unclear or deficient
- Fractures
 - _____ appropriate splinting and traction
 - _____ backboard

Management during transport

- _____ establish appropriate escort
- _____ written instructions regarding patient care and treatment given to escort

Written Record to accompany patient includes:

- _____ initial diagnostic impression _____ history of illness or injury
- _____ patient demographics _____ condition on admission
- _____ vital signs on admission, at time of transfer
- _____ treatment rendered to patient (e.g. medications and route of administration, fluids given, type and volume)
- _____ health care directive, if any

APPENDIX III

GENERAL TRANSPORT SUPPLIES KIT

Suggested items include:

DRESSING SUPPLIES:

- sterile dressing tray
- 1 elastoplast tape
- Kling (1 - 5 cm., 1 - 10 cm.)
- sterile dressings (10 - 2x2, 5 - 4x4)
- 5 Opsites
- 2 abdominal dressings

MISCELLANEOUS:

- scissors
- tape (1 - waterproof, 1 - 1" cloth)
- tourniquet
- sterile gloves (sizes 6, 7, 7.5, and 8)
- 6 non-sterile gloves
- 4 tongue blades
- 2 tensor bandage
- alcohol swabs
- 1% or 2% Betadine swabs

INTRAVENOUS EQUIPMENT:

Adult IV Catheters

- 3 - 16 gauge
- 3 - 18 gauge
- 4 - 20 gauge

Paediatric IV Catheters

- 3 - 21 gauge butterfly
- 2 - 23 gauge butterfly
- 2 - 25 gauge butterfly
- 2 - 22 gauge Jelco

Intraosseous Needles

- 1 Jamshidi needle, or
- 18 gauge needle with stylet

- Buretols (1 microdrip, 1 minidrip)
- 2 extension tubing
- 2 stopcocks

INTRAVENOUS FLUIDS:

- 2 0.9% NS 250 ml
- 2 0.3 NS/3.3 D 250 ml
- 3 0.9% NS 1000 ml

NEEDLES:

- 5 18 gauge
- 5 20 gauge

OBSTETRICAL PACKS:

Commercial or Disposable Type

AIRWAY EQUIPMENT

- endotracheal tubes
- laryngoscopes
- oral airways - paediatric/adult

APPROPRIATE MONITORING EQUIPMENT

DRUG TRANSPORT KIT (ADULT/PAEDIATRIC)

3	Epinephrine (Adrenalin) pre-filled syringes (1:1,000) 1 mg/ml or 30 ml vial
3	Epinephrine (Adrenalin) pre-filled syringes (1:10,000) 1 mg/ml or 30 ml vial
3	Atropine pre-filled syringes (10 ml) 1 mg/10 ml
3	Lidocaine pre-filled syringes (5 ml) 20 mg/ml
1	Sodium Bicarbonate pre-filled syringe (50 ml) 8.4%
1	Sodium Bicarbonate pre-filled syringe (10 ml) 4.2% (paediatric)
2	D50W pre-filled syringes 25 gm
2	D25W pre-filled syringes (paediatric)
2	Verapamil (Isoptin) ampules (2 ml) 5 mg/ml
1	Nitrospray or Nitro tablets
1	Naloxone (Narcan) ampule (1 ml) 2 mg/ml
3	Diazepam (Valium) ampules (2 ml) 10 mg/2 ml
2	Furosemide (Lasix) ampules (2 ml) 10 mg/ml
2	Diphenhydramine (Benadryl) ampules (1 ml) 50 mg/ml
2	Dimenhydrinate (Gravol) ampules (1 ml) 50 mg/ml
2	Oxytocin (Syntocinon) ampules (1 ml) 10 units/ml
5	Phenytoin (Dilantin) ampules (5 ml) 50 mg/ml
4-5	Normal Saline for injection
4-5	Sterile water for injection
1	Isoproterenol (Isuprel) ampules 1 mg/1 ml
1	Dopamine 200 mg/5 ml
1	Lidocaine 1% without epinephrine (20 ml vial)
1	Mannitol 25% (50 ml vial) or 500 cc bag 20%
1	Magnesium sulphate 20% (20 ml vial)
1	Procainamide (Pronestyl) 100 mg/ml (10 ml vial)
1	Norepinephrine (Levophed) ampules (4 ml) 1 mg 1 ml
1	Methylprednisolone (Solumedrol) ampules 40 mg/ml
5	Adenosine ampules (2 ml) 3 mg/ml

Syringes

2 - 1 cc
 3 - 3 cc
 2 - 5 cc
 2 - 10 cc

Needles

5 - 21 gauge
 5 - 23 gauge
 5 - 18 gauge, 1½"

Miscellaneous

5 - 2 x 2
 1" tape
 tourniquet
 alcohol swabs

ADD: (if required) Opioid Analgesic (either Demerol or Morphine) Pancuronium

A guideline is practice generally recommended.

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