

## Emergency Department Admission Algorithm

### Preamble:

The intent of this policy is to enhance patient care, remove disagreement between physicians and shorten the admission process. The following outlines general principles and address specific diagnoses which historically have caused concerns. These are guidelines, which will cover the vast majority of cases.

### General Principles:

1. The Emergency physician will decide on which service to consult for admission;
2. The service/physician (resident or staff) receiving the consult is obliged to see and assess the patient before deciding if another service is more appropriate;
3. The decision regarding admission service should always be based on the *principle* that *"the patient is admitted to the most appropriate service taking the total patient into account"*.
4. Patients returning within 4 weeks of discharge will be the responsibility of the discharging service, unless there is a clear and unequivocal reason to do otherwise, e.g. acute MI after hospitalization for abdominal pain by General Surgery;
5. Patients followed by a specialist on a regular basis (3 visits or greater in the preceding year) with a presenting illness related to that specialist's system will be referred to that specialist or his service;
6. Patients followed by a specialist with an unrelated presenting diagnosis will be referred to the appropriate other service;
7. Family Medicine will admit their own patients within their scope of expertise. Academic Family Medicine will admit appropriate patients, provided their total does not exceed 14 patients at the Civic Campus and 10 patients at the General Campus.
8. If after assessment, the consulted service established a different diagnosis that is more appropriate for admission (under another service), then the patient will be referred back to the Emergency physician for further management.
9. If the consulted service agrees with the diagnosis, and according to the admission algorithm they are the appropriate service, then the staff physician of the consulted service will be responsible for contacting another service if he/she considers another service more suitable. If after discussion between the two services, no agreement is reached, then the Chief of Staff should be asked to decide on the admitting service.
10. All cases needing a binding decision will be reviewed by the Head of the Emergency Department/Head of the consulted Department(s)/Division(s) to decide if the algorithm needs modification.

**GUIDELINES FOR THE MOST APPROPRIATE SERVICE FOR EMERGENCY CONSULTS**  
(to be utilized in “Admission Algorithm of Patients from Emergency Department)

**Preamble**

It is recognized that, in the individual case, circumstances may exist which make other consultation choices more appropriate.

<b><u>Clinical Presentation</u></b>	<b><u>Qualified as Follows</u></b>	<b><u>Consult Service</u></b>
<b>Anesthesia Complication for Non-TOH Clinic</b>	See Attachment E	<b>Anesthesia</b>
<b>Aortic Dissection</b>	All	<b>To be decided:</b> - <b>Cardiac Surgery</b> - <b>Thoracic Surgery</b> - <b>Vascular Surgery</b>
<b>Biliary Tree Disease Bowel Obstruction</b>	Unless followed by GI Mechanical bowel obstruction. If doubt exists as to diagnosis, then a CT abdomen is advised to clarify the diagnosis/underlying cause.	<b>General Surgery</b> <b>General Surgery</b>
<b>Chest Pain</b>	If objective evidence of ischemia or high suspicion of ischemia	<b>Cardiology</b>
	All others	<b>Internal Medicine</b>
<b>Congestive Heart Failure</b>	Associated with ongoing ischemia or complex rhythm disturbance	<b>Cardiology</b>
	All others including those associated with such arrhythmias as atrial fibrillation and ventricular premature beats	<b>Internal Medicine</b>
	Associated with significant valvular abnormality requiring urgent investigation and potential surgical intervention.	<b>Cardiology</b>
<b>COPD/Asthma</b>	Requiring mechanical ventilation or ventilatory support	<b>ICU</b>
	If Respiriology following patient (see attachment D)	<b>Respirology</b>
	All others	<b>Internal Medicine</b>
<b>Dialysis Patient</b>	See attachment A	<b>Nephrology</b>
	Access problem	<b>Nephrology</b>
<b>Diverticulitis</b>	All	<b>General Surgery</b>
<b>Dysvascular Limb</b>	Patients known and actively followed by vascular presenting with a vascular problem	<b>Vascular Surgery</b>
	Patients presenting with an ischemic leg	<b>Vascular Surgery</b>

	and either infection, pain or gangrene and no pulses	
	Patients presenting with infection and pulses	<b>Internal Medicine</b>
<b>Empyema</b>	All	<b>Thoracic</b>
	If Civic Campus E.D. Call Thoracic Staff Surgeon directly.	
<b>Fractures</b>	Surgery needed	<b>Orthopaedics</b>
	Continuing medical problem that would require admission on its own right	<b>Internal Medicine</b>
	Pelvic ring only, if single and simple	<b>Family Medicine (see principles) or Internal Medicine</b>
<b>GI Bleed (Upper)</b>	Haemodynamically unstable	<b>Internal Medicine with consult to GI and General Surgery</b>
	Stable patient, Civic	<b>Gastroenterology</b>
	Stable patient, General	<b>Internal Medicine</b>
<b>GI Bleed (Lower)</b>	All unless followed by GI	<b>General Surgery</b>
<b>Inability to Ambulate after fall.</b>	Patients with operable injury	<b>Orthopedic Surgery</b>
If non-operable injury	E.P. decides reason for fall then,	
	Patients with non-operable injury:	<b>Family Medicine or appropriate medical service</b>
	- medical reason for fall and secondary injury	
	- trip/trauma reason for fall/secondary injury	<b>Orthopedic Surgery</b>
<b>Intracranial Bleed</b>	If operable or potentially operable lesion	<b>Neurosurgery</b>
	If non-operable lesion	
	- intubated	<b>ICU</b>
	- non-intubated, Civic Campus	<b>Neurosurgery Neurology Internal Medicine Family Medicine</b> } On a rotational basis, admissions to be recorded.
	- non-intubated, General Campus	<b>Neurology</b>
<b>Lung abscess</b>	All, unless known to Thoracic Surgery	<b>Respirology</b>

<b>Oncology Problem</b> (including complications of therapy)	See attachment C	
		<b>Thoracic</b>
<b>Palliative Patient</b>	Process to be determined	
<b>Pancreatitis</b>	Gallstone related	<b>General Surgery</b>
	All others	<b>Internal Medicine</b>
<b>Psychogeriatric patient with behavioral problem or acute confusional state</b>	Exclusion of organic cause	<b>Psychiatry</b>
	Organic cause	<b>Internal Medicine</b>
<b>Pulmonary Embolus</b>	If intubated	<b>ICU</b>
	Not intubated, but needs admission	<b>CTU</b>
<b>Pyelonephritis</b>	In setting of obstruction requiring urgent surgical intervention, or followed by Urology.	<b>Urology</b>
	All others	<b>Internal Medicine</b>
<b>Septic Joint</b>	Knee or other peripheral joint	<b>Internal Medicine</b>
	Shoulder, hip Post-Op or Joint Replacement	<b>Orthopaedics</b>
<b>Sickle Cell Crisis</b>	General Campus	<b>Haematology are primary service, but may request CTU, if agreeable, to admit</b>
	Civic Campus	<b>CTU unless patient specifically requests Haematology</b>
<b>Soft tissue injuries or infections potentially needing surgery (i.e. necrotizing fasciitis)</b>	Below wrist	<b>Plastic Surgery</b>
	Below hip/shoulder	<b>Orthopedics</b>
	Trunk	<b>General Surgery</b>
<b>Spinal injuries</b>	Cervical spine	<b>Neurosurgery</b>
	Thoracic/Lumbar Spine	<b>Orthopedic Surgery</b>
	Simple T/L spine compression # for pain management	<b>Consider Family Medicine</b>
<b>Stroke Management</b>	See attachment B:1	
<b>Syncope</b>	If monitoring required	<b>Cardiology</b>
	All others	<b>Internal Medicine</b>

(pending initiation of combined spinal service)

Attachment A – Nephrology (Page 6)

Attachment B – Neurology (Page 8)

Attachment B:1 – Algorithm for Admission of Ischemic Stroke Patients (Page 10)

Attachment C – Oncology (Page 11)

Attachment D – Respiriology (Page 13)

Attachment E – Anesthesia (Page 14)

## Attachment A: **Nephrology**

### **Guidelines for admission:**

Guidelines for admission to the Nephrology CTU includes patients with:

- acute renal failure
- severe hyperkalemia requiring dialysis
- rapidly progressing glomerulonephritis
- new cadaveric or living donor kidney transplants
- renal transplant medical complications
- chronic hemodialysis and peritoneal dialysis patients with nephrology related disorders (e.g. CAPS peritonitis, line sepsis, end-of-life issues, pulmonary edema caused by volume overload)
- nephrotic/nephritic syndrome and complications
- specific complications of renal failure

Patients on chronic hemodialysis or peritoneal dialysis with medical problems not primarily related to their nephrologic conditions, and who require admission should be triaged to the appropriate service. Examples of these diagnoses include:

- the dialysis patient with pneumonia
- the dialysis patient with GI bleed
- the dialysis patient with myocardial ischemia
- the dialysis patient with stroke
- other non-nephrologic medical diagnoses

### **Referral:**

Referral of patient to the Nephrology CTU may be from a variety of sources.

The majority of patients will be admitted via the Emergency Department at the General or Civic Campuses of The Ottawa Hospital:

#### **Patients arriving at the General Campus:**

May be assessed by the Emergency physician and referred directly to the attending nephrologist covering Nephrology CTU. Alternatively, patients in the General Campus Emergency Department may be referred to Nephrology after they have been assessed by another service such as General Medicine or other subspecialties. Once the patient is seen by Nephrology, and is considered suitable for admission, the housestaff member of the Nephrology team will complete the admission package, which includes writing admission orders, under the supervision of the attending nephrologist.

#### **Patients arriving at the Civic Campus:**

The Emergency physician will contact the attending nephrologist on call at the Civic Campus regarding the possible need for admission to the Nephrology CTU. The case will be reviewed by the attending nephrologist on-call at the Civic Campus, and, if the case is considered appropriate for admission to the Nephrology CTU at the General Campus, transfer of the patient will be arranged. This should be achieved by direct communication between the attending nephrologists at the Civic and General Campuses. In these cases, the patient should be transferred directly to a hospital bed on 7-NW at the General Campus, bypassing the General Campus Emergency Department. The admission should be performed by the Nephrology CTU housestaff at the General Campus, under the supervision of the attending nephrologist on the CTU. If no bed is available on 7-NW, arrangements should be made for admission to an off-service ward at the General Campus. In situations where there are no

hospital beds available at the General Campus, the patient should be admitted to the Civic Campus, until such time as a General Campus Nephrology CTU bed becomes available.

There are situations where the transfer of a patient from the Civic Emergency Department to the General Campus Nephrology CTU is not appropriate. Examples of these cases include:

- The patient with severe hyperkalemia or fluid overload requiring urgent dialysis.
- The patient with hemodynamic instability or other medical emergency requiring immediate attention. In these situations, the patient should be admitted to the appropriate service at the Civic Campus (which usually will be either the ICU, General Medicine CTU or Nephrology), for stabilization prior to consideration of transfer to the General Campus Nephrology CTU.

A small number of patients (4 maximum) may continue to be admitted to the Civic Campus, under the care of Nephrology. These cases include:

- Patients requiring stays of less than 48 hours, who are otherwise stable (e.g. line sepsis without hemodynamic instability, fluid overload requiring acute hemodialysis, requirement for vascular access creation by radiology). If the patient's stay exceeds 48 hours, or if the patient develops other nephrologic complications, or if the number of nephrology in patients at the Civic Campus exceeds 4, it will be appropriate to transfer the patient to the General Campus Nephrology CTU, bypassing the General Campus Emergency Department.
- Medically stable patients admitted for palliation

## Attachment B: **Neurology**

### Policies for Admissions to the Neurology CTU (January 8, 2001)

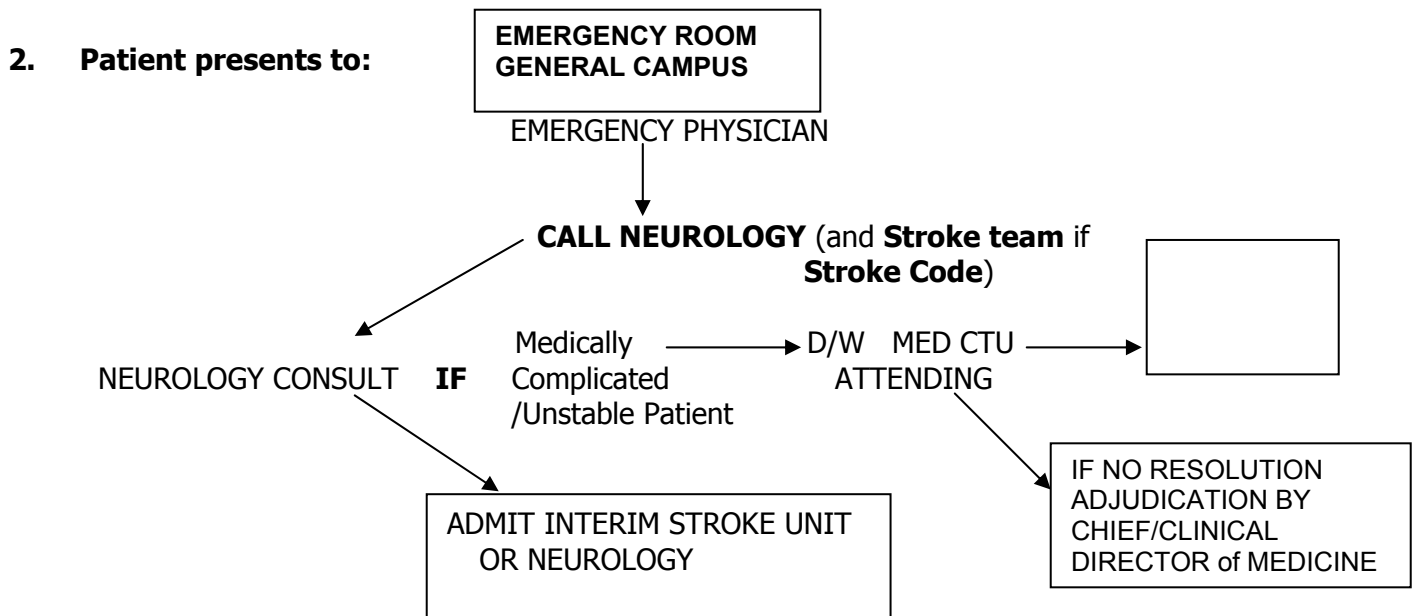
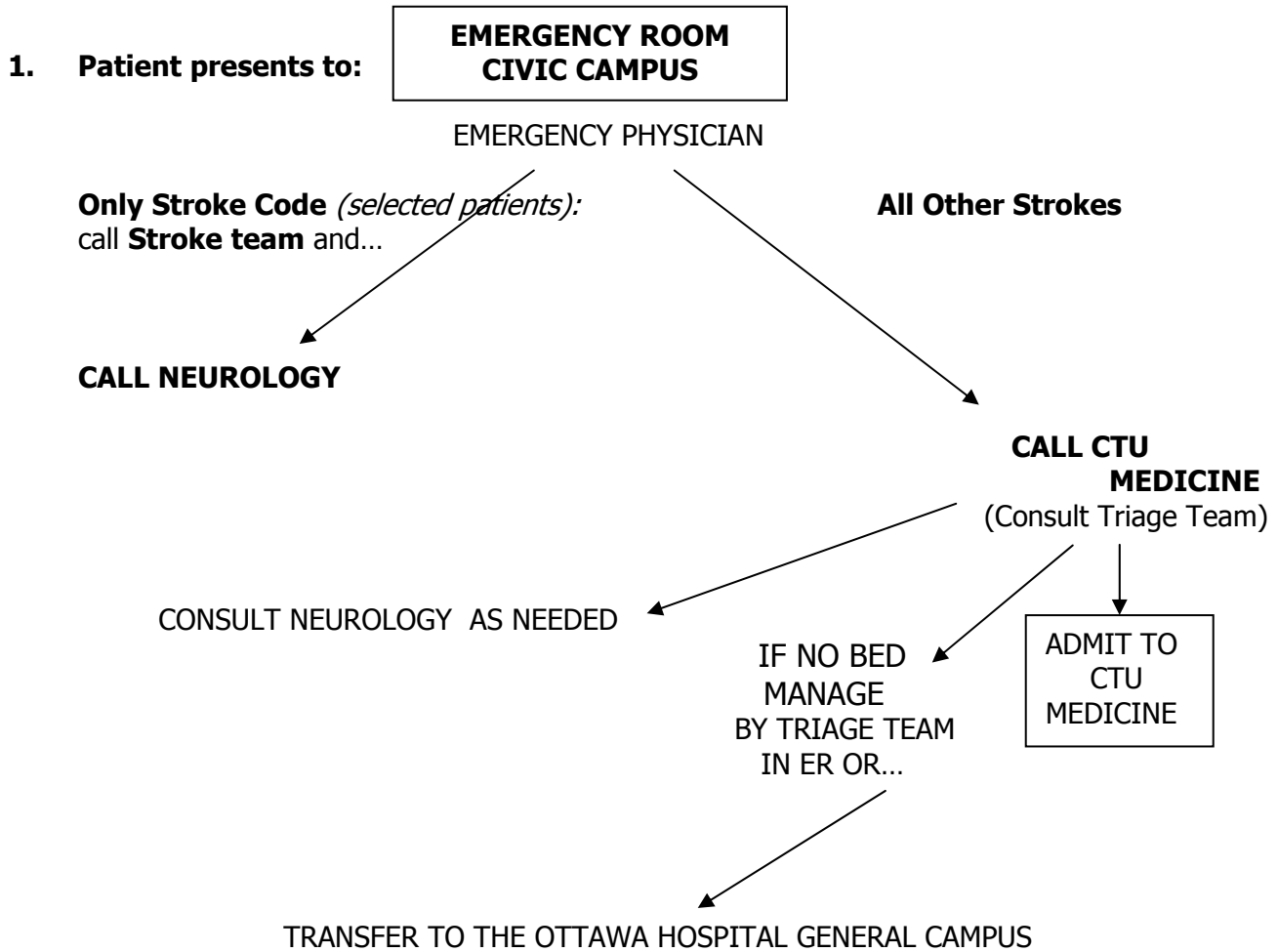
It is the primary presenting problem, not the category of patient or to which service they have belonged to in the past which determines the most appropriate service for admission.

1. The following conditions, when complications are not the main or presenting problem, should be appropriate for admission to the Neurology CTU (lacking a Stroke Unit):
  - Stroke – See Attachment B:1
  - TIA – Needing urgent out-patient follow-up
  - Epilepsy of new onset or poorly-controlled, status epilepticus
  - Myasthenia gravis
  - Guillain-Barre and other acute neuropathies, chronic neuropathies of new onset or requiring specific therapy
  - Encephalitis or encephalomyelitis
  - Myelopathies, radiculopathies who are not surgical cases
  - Multiple sclerosis
  - Encephalopathies and comas not due to metabolic, traumatic or overdose problems
  - Parkinson's Disease and other movement disorders of new onset or difficult-to-control
  - New-onset dementia or dementia in a young patient including normal pressure hydrocephalus
  - Weakness (usually acute/subacute) not yet diagnosed that is believed to be neurological (i.e. accompanied by neurological signs)
  - Vertigo, ataxia, diplopia, or visual loss without a clear-cut diagnosis
  - Aphasias or other localizing disorders of cerebral function not yet diagnosed
  - ALS of new onset
  - Intractable headaches
  
2. The following conditions should NOT be admitted to neurology but rather to Neurosurgery:
  - Subarachnoid hemorrhage
  - Subdural hematoma
  - Intracerebral hemorrhages who are operative candidates or potential operative candidates (intracerebral hemorrhages who are clearly not operative candidates to be shared among Neurosurgery, Neurology and Internal Medicine)
  - Spinal cord compression from a mass (tumor, abscess, hematoma etc). Tumors requiring radiotherapy would go to radiation oncology.
  - Metastatic brain tumor with known or unknown primary (multiple mets to Oncology)
  - Primary brain tumor needing biopsy or treatment
  - Head trauma
  
3. The following patients should be admitted to Internal Medicine CTU or Family Medicine:
  - Acute confusion state or behavioral deterioration not clearly due to a neurological problem
  - Overdoses
  - Strokes where active investigations or treatment have little to offer or who have significant concurrent medical problems such as MI, uncontrolled hypertension, sepsis, coagulation disorders, CHF, new cardiac arrhythmias. Other strokes which do not fit the criteria in #1 above.
  - Prolonged coma or persistent vegetative state following generalized cerebral anoxia/ischemia (e.g. cardiac arrest)
  - Generalized weakness NYD that is not clearly neurological (i.e. no neurological signs)

- Chronic dementia (previously investigated) presenting because of social pressures or due to other behavioural problems
- Meningitis
- Neurological complications of HIV (or to ID)

Attachment B:1

ALGORITHM FOR ADMISSION OF ISCHEMIC STROKE PATIENTS : INTERIM STAGE  
May 07, 2004



## Attachment C: **Oncology**

### Admitting Criteria to the Oncology Service

1. Patient must have a pathologically proven diagnosis of cancer
2. Patients with cancer related problems best cared for by the oncology service will include the following:

Patients, who have had only a consultation or a solitary visit to medical or radiation oncology, will not be admitted to an Oncology service but to the most appropriate other service based on the general principles/guidelines outlined in the document.

#### **Medical Oncology**

- patients requiring systemic therapy in hospital
- patients with toxicity related to systemic therapy
- clinical problems related directly to their malignancy

#### **Radiation Oncology**

- patients requiring radiation therapy in hospital
- patients with toxicity related to radiation therapy
- complications directly related to their malignancy

#### **Gynaecology Oncology**

- patients presenting with complications of surgery, chemotherapy or needing palliative care related to gynaecological cancer. Gynecological cancer patients, who are primary patients of the Radiation Oncology Division will be admitted under Radiation Oncology for complications related to their malignancy or their treatment

3. Patients with an oncological problem best cared for by other oncology or other specialty services should be admitted to these services with consultation to Medical Oncology for concurrent care where appropriate.

These include the following:

- a. Patients with multiple brain metastases who will require palliative radiation therapy should be admitted to **Radiation Oncology**.
- b. Patients with a single brain metastases or a high suspicion of a spinal cord compression will be managed by **Neurosurgery**.

If surgery is not indicated and patient requires radiation therapy, patients should be admitted to **Radiation Oncology**.

- c. Cancer patients with acute mechanical bowel obstruction, the route of admission will be **General Surgery** for management, with consultation to **Medical Oncology** and subsequent transfer to **Medical Oncology** when appropriate. Patients with inoperable bowel obstruction as judged by the Staff Surgeon or Senior Surgical Resident will be admitted by the appropriate Oncology service.
- d. Patients who have not been on active chemotherapy for the past 6 months or regular patient followed up by **Medical Oncology** and present with the need for palliative care/symptom control should be admitted to **General Medicine/Family Medicine**.
- e. Patients whose main reason for admission is a malignant pleural effusion amenable to a pigtail catheter will be admitted to **Medical Oncology**. Complex effusions requiring drainage by large bore chest tube will be admitted to **Thoracic Surgery**.

4. Oncology patients presenting with problems (chronic or acute) unrelated to their cancer or its treatment should be referred to the most appropriate service:

For example:

- patient with acute CVA/seizures
- patient with acute cardiac/vascular ischemia/arrhythmia
- patient with acute DVT/pulmonary embolism
- patient with unrelated infection
- other acute problems as deemed appropriate

Attachment D: **Respirology**

General Campus – Refer appropriate patients to Respirology

Civic Campus – Patients requiring admission will be transferred to the General Campus. Call the Respirologist on call who will either see that patient at the Civic Campus prior to transfer, or agree to direct transfer to in-patient bed at the General Campus.

If the General Respirology Unit is full, Respirology will still take patients off-service if necessary, but only at the General Campus. Respirology will also admit appropriate cases if General Medicine is very busy.

**Attachment E: Anesthesia – Complication from non TOH Clinic**

Anesthetic complications may occur during the conduct of anesthesia or upon emergence. When anesthesiologists with Active Staff privileges are providing anesthesia care for surgeons with Active Staff privileges in clinics outside of The Ottawa Hospital, such complications may require admission and management in hospital.

The following are criteria for such admissions:

- 1) Anesthetic complications are of a life-threatening or serious nature;
- 2) Admission will be under the service of the surgeon performing the surgery;
- 3) The referring surgeon will contact the admitting surgeon, if different;
- 4) The office of the referring surgeon will contact the Admitting Department;
- 5) The referring anesthesiologist will contact the anesthesiologist on-call;
- 6) The patient may be admitted directly to the PACU or ICU for management, bypassing ED.
- 7) For direct admission to the PACU, the anesthesiologist on-call will consult the nurse in charge of the PACU to ensure that the PACU staff are able to provide care to the patient;
- 8) If the patient is intubated, then the anesthesiologist on-call at the receiving hospital may discuss direct admission to ICU with the intensivist on-call.
- 9) If the receiving hospital is unable to accept the patient, then the referring anesthesiologist will contact the other in-patient site of TOH (anesthesiologist on-call) for transfer. The referring surgeon will be informed of the change.

Emergency Department Admission Algorithm – REVISED MAY 14, 2004

