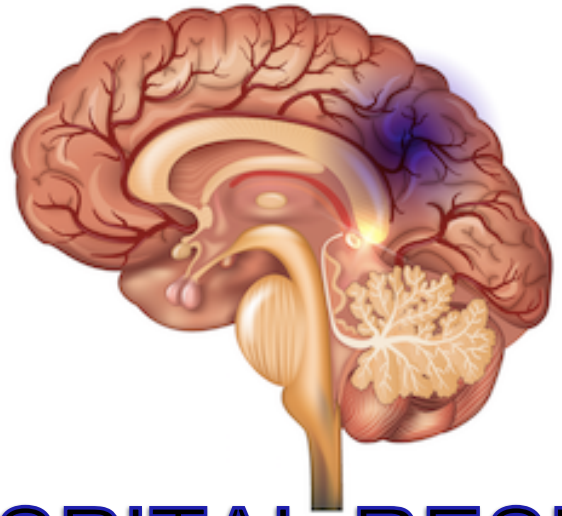
Alberta Health Services

STAT STROKE



IN HOSPITAL RESPONSE

Red Deer Regional Hospital Centre

May 2017

Alberta Health Services

Stroke is a Medical Emergency

F ACE is it drooping?

A RMS can you raise both?

S PEECH is it slurred or jumbled?

T IME to call 9-1-1 right away.

ACT **F A S T** BECAUSE THE QUICKER YOU ACT,
THE MORE OF THE PERSON YOU SAVE.

Why Worry?

- **One of the worst places to be if you have a stroke is in a hospital – CSC 2014**
- Canadian hospital averages - CT scan takes 4.5h for inpatient vs 1.3h for ED patient
- **29%** of inpatients received thrombolysis **within 90 min** of onset vs **72%** coming to ED from community
- Inpatient strokes have longer LOS – 17 vs 8 days
- Less likely to be discharged home (35% vs 44%)
- In-hospital stroke patients are more likely to die

How do we (RDRHC*) compare?

Emergency patient

- Door to CT
  - Canadian = 30 min
  - RDRHC* 2016 = 11 min
- Door to Needle (DTN)
  - Canadian = 75 min
  - RDRHC* 2016 = 30 min

Inhospital patient

- Discovery to CT
  - Canadian = 61 min
  - RDRHC* 5 yr = 69 min
- Discovery to needle
  - Canadian = **138 min**
  - RDRHC* 5 yr = **109 min**

  (1 hour and 49 minutes)

*Median values

5 yr Jan 2012 – Dec 2016

Management of Inpatient Strokes

GOALS:

- To facilitate prompt transfer of stroke inpatients requiring diagnostic imaging, enhanced monitoring, tPA administration and/or endovascular therapy
- To ensure tPA, if indicated, is administered as soon as possible after ischemic stroke symptom onset

What can we do?

- We can respond **F A S T** by

RECOGNIZING STROKE SYMPTOMS

SUDDEN:

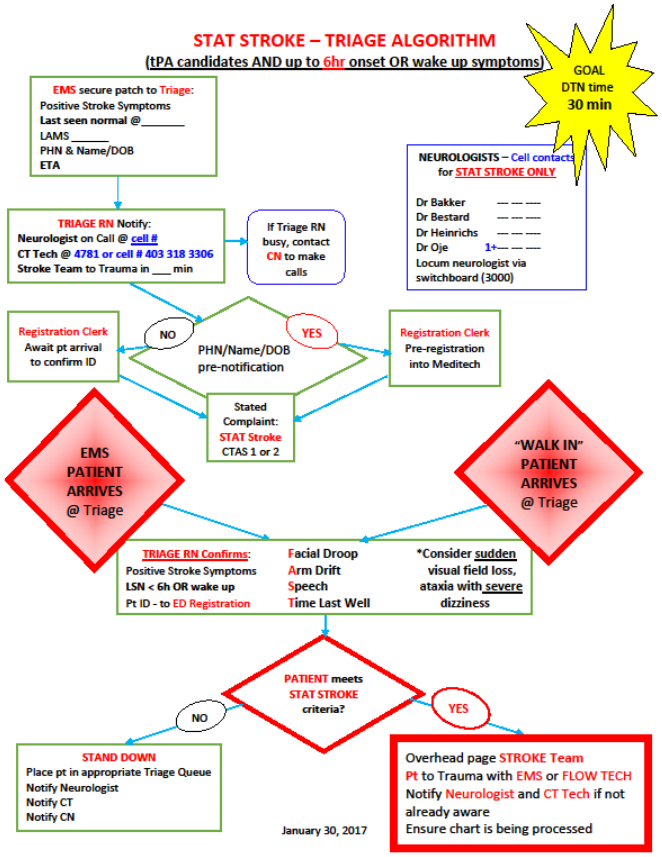
- ❑**WEAKNESS** (UNILATERAL)
- ❑**SPEECH** difficulty
- ❑Vision changes
- ❑Headache
- ❑Dizziness

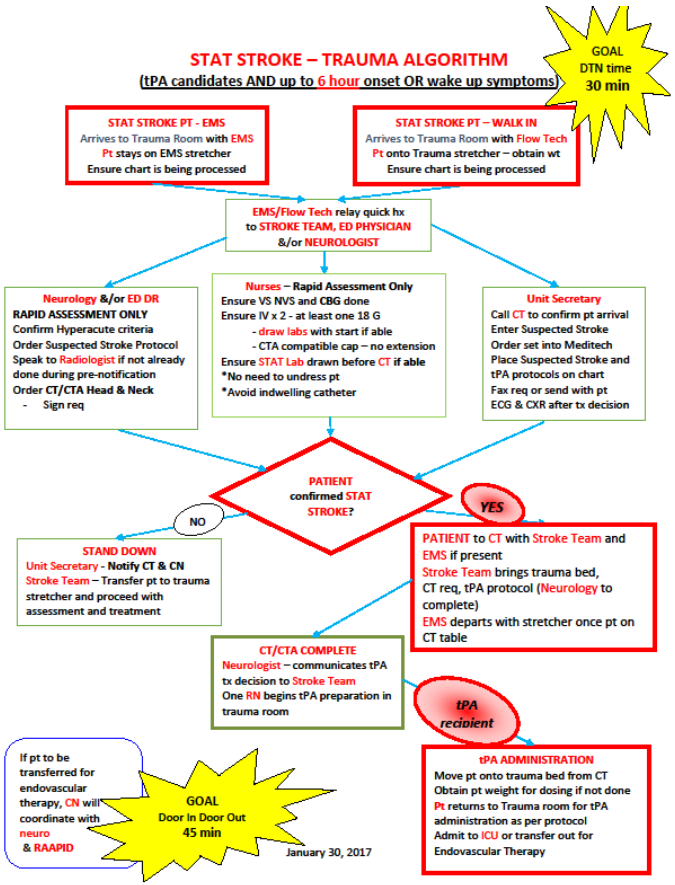
ACT F A S T

RDRHC Strategy

- Recognize and acknowledge need for improvement
- Include key players in planning and implementation
- Focus on positive ED changes as goal and template
- Build on established resources and successes
  - **F A S T** campaign
  - STAT STROKE protocol
  - Neurologists, ACCESS team, DI staff
- Education blitz to all stakeholders – physicians, staff, ACCESS team members, administrators
- Clinical supports – quick references and feedback

ED STAT STROKE Protocol





In hospital STAT STROKE

STAT Stroke is a key descriptive that will activate a rapid, coordinated **IN HOSPITAL response by ACCESS**

- Acute stroke diagnosis
- Within 6 hours of stroke onset OR **stroke-on-awakening**

A **STAT Stroke** is a potential case for acute stroke treatment with thrombolysis and/or Endovascular Treatment (EVT)

Alberta Health Services

Red Deer Regional Hospital Centre

STAT STROKE?

ACT FAST

SIGNS OF STROKE

FACE is it drooping?

ARMS can patient raise both?

SPEECH is it slurred or jumbled?

TIME last seen/known well?

2 Simple Steps

1. Identify the signs and symptoms of an acute stroke

2. Call ACCESS* STAT

@ 403-358-2819 OR ICU @ 4446

*Assessment & Critical Care Early Support Service

ACCESS Support

- Assessment & Critical Care Early Support Service
- ICU/CCU RN and RT
  - CODE BLUE team members
  - Same priority for STAT STROKE
  - Advanced stroke training
- 24/7 support to all facility, including outpatient areas
  - Funded by inpatient budgets based on usage
- Immediate contact with appropriate specialist prn
- Initiate appropriate treatment @ patient location

THE ACCESS TEAM

EARLY INTERVENTION CALLING CRITERIA

AIRWAY

- Threatened obstruction
- Stridor
- Excessive secretions

BREATHING

- Sustained RR over 35 or RR under 8
- Sustained oxygen saturation under 90% (or p02 under 60) despite administration of supplemental oxygen above 8L/min via nasal prongs or simple mask, use of non-rebreather mask or Optiflow (as per Appendix B – Vital Signs form) or significant change from baseline oxygen use
- Grossly abnormal arterial/venous blood gas parameters including:
  1. pH under 7.20
  2. pCO2 under 20 or over 50
  3. or a significant increase in pC02 in patients with chronically elevated pC02

CIRCULATION

- Systolic blood pressure under 90 mmHg for over 15 minutes unless normal systolic blood pressure under 90; then call if 20 mmHg lower than baseline
- Systolic blood pressure over 200 mmHg
- Sustained heart rate over 100 bpm (not including chronic, stable dysrhythmias such as atrial fibrillation)
- Sustained heart rate under 40 bpm with other associated symptoms

DISABILITY/NEUROLOGY

- Declining mental status Glasgow Coma Scale (GCS) <10 and/or unresponsive to verbal ***and*** peripheral stimulus

OTHER

- Serious concern about the patient
- Deteriorating clinical trajectory despite aggressive medical and/or surgical intervention

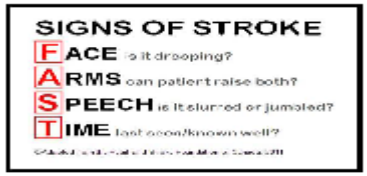
Assessment & Critical Care Early Support Service

403.358.2819

Alberta Health Services

INPATIENT STAT STROKE – ACCESS ALGORITHM

(tPA candidates AND up to 6hr symptom onset OR wake up symptoms)



INPATIENT SUSPECTED STROKE

NEUROLOGISTS on call
Contact via cell phone for STAT STROKE (#s programmed into ACCESS phone)
Dr Bakker
Dr Bestard
Dr Heinrichs
Dr Oje
Locum neurologist via switchboard (3000)

Inpatient Unit call to ACCESS:
Positive Stroke Symptoms per FAST criteria
Last seen normal @_____
Unit & Room # _____

ACCESS RN Confirms:
Positive Stroke Symptoms
Last Seen Normal < 6h OR AWOKE WITH SYMPTOMS
V/S, ChemBG

Facial Droop
Arm Drift
Speech
Time Last Well

*Consider sudden visual field loss, ataxia with severe dizziness

INPATIENT meets STAT STROKE criteria?

NO → Proceed as per ACCESS guidelines

YES →

ACCESS RN initiates "STAT STROKE" response:
Contact Neurologist on call directly @ cell #
(Neuro responsible to contact Radiologist on call)
Direct Charge RN to complete tasks as listed to left
Prepare patient for STAT CT/CTA head and neck –
Ensure IV x 2 - at least one 18 G
- draw stroke labs with start if able
- CTA compatible cap – no extension
Ensure STAT Lab drawn before CT if able (don't delay CT)
Avoid indwelling catheter unless already in situ
Confirm patient weight _____ Kg
Accompany pt to CT (with Primary Nurse) – bring req, tPA protocol + NIHSS (Neuro completes); pump in DI
Obtain tPA drug kit in DI Code Cart – prepare for weight-based administration but do not open vials until ordered

Charge RN - notify regarding "STAT STROKE"
- CT Tech @ 4781 or cell # 403 318 3306
- Lab
- Attending MD
- Next of Kin – decision making

Initiate Suspected Stroke Orders –
Meditech Order Set (Category /S STROKEPRIM)
(CT is priority - do ECG & CXR after tx decision if CT ready)
*HOLD INPATIENT BED

CT +/- CTA COMPLETE
Neurologist – ASAP
communicate tPA tx decision to ACCESS RN

NO tPA →

No tPA
? Transfer out to FMC for EVT via RAAPID South 1-800-661-1700
Transfer to Unit 33, ICU or return to home unit

tPA recipient →

tPA ADMINISTRATION
tPA as per protocol; monitor pt
Transfer to ICU or transfer out for Endovascular Therapy via RAAPID

Feb 1 2017

Inpatient Unit Responsibilities

- **Recognize Suspected Stroke Symptoms**
- Call **ACCESS STAT –** they will initiate **STAT STROKE** response if appropriate
- Further Assess patient along with ACCESS RN
  - Confirm Time patient Last Seen Normal (LSN)
  - Vital signs, ChemBG
  - KEEP pt NPO

  Stay with patient

  HOLD BED until treatment decision is made

Inpatient Unit Responsibilities cont.

If ACCESS RN identifies that inpatient meets STAT STROKE criteria, will direct Charge Nurse to notify:

- CT Tech @ 4781 or cell 403 318 3306
- Lab
- Attending MD
- Next of Kin – decision making

Initiate Suspected Stroke Orders via Meditech Order Set – ACCESS RN will have (ECG & CXR after CT if ready)

HOLD INPATIENT BED UNTIL TX DECISION MADE

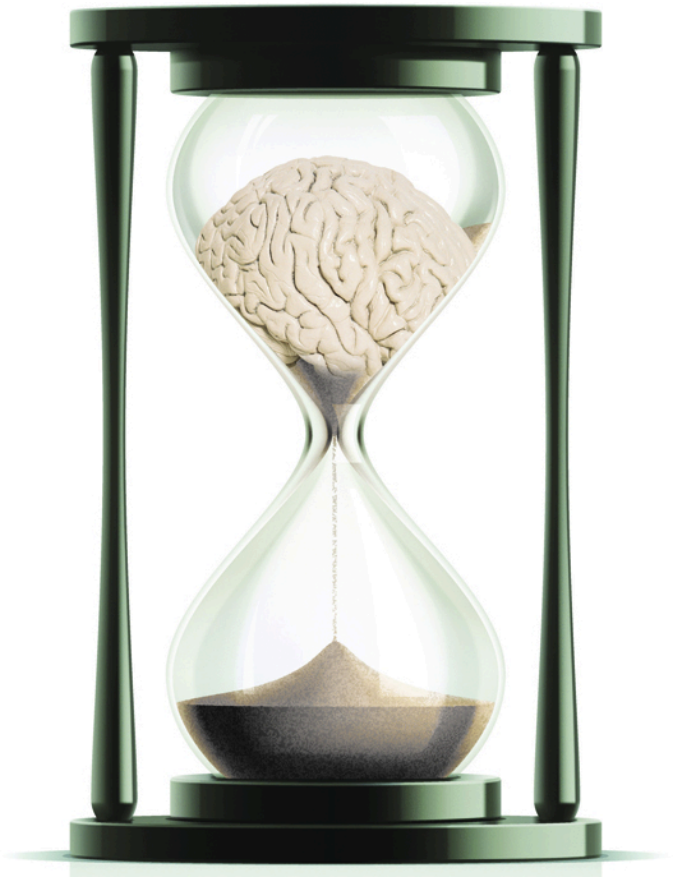
Treatment Decision

- Neurologist
  - Notifies Radiologist re STAT CT/CTA
  - Responds STAT to pt location – inpt unit or CT
  - Examines pt and determines tPA eligibility
  - Completes Order Sets as appropriate
  - Determines and Documents NIHSS
  - Informs ACCESS RN re treatment decision ASAP
  - Contacts RAAPID for EVT candidate
  - Contacts ICU on call for tPA transfer of care prn

Brain Attack!

Time is Brain!

- Get drug in FAST!
- 1.9 million neurons are destroyed each minute treatment is delayed



Patient Transfer

- Patient may be transferred to:
  - ICU (if tPA given or pt unstable)
  - Comprehensive Stroke Centre for further intervention
  - Unit 33 if stable
    - Swap with original unit
- Patient may return to original unit as appropriate

Desired Results

- Thrombolysis of arterial occlusion
- Reperfusion of viable tissue
- Improvement in patient functioning/outcome
  - Improvement can be delayed
- Rehabilitation and reintegration

CANADIAN STROKE BEST PRACTICE RECOMMENDATIONS

Preliminary Results

- Implemented Feb 1, 2017
- 15 STAT STROKE calls to date – ~ one per week
- 9 stroke related
- 6 non strokes
- 1 tPA – 65 minutes from activation to tPA bolus (vs 109)
- 1 case referred out for potential EVT

Questions???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Red Deer Regional Hospital Centre
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ACT FAST
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©Adapted from the Heart and Stroke Foundation of Canada, 2014
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