



Implementing Changes at Your Site to Reduce DTN Time

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Webinar


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Key Changes

1. Pre-notification Protocol
2. Direct to CT
3. Registering patient as *Unknown*
4. Early RAAPID Notification

1. Pre-Notification Protocol

- Work with EMS on notification based on EMS provincial stroke screen
- If there is a red-finding to call ahead stating “STAT! Stroke”

 Alberta Health Services			Stroke Screen		Place Label Here
EMS must obtain critical patient information on scene and complete the Stroke Screen en route.					
Patient last seen neurologically normal Date (yyyy-Mon-dd) Time (hh:mm)		Patient name		Event number	
History provided by <input type="checkbox"/> Patient <input type="checkbox"/> Family member <input type="checkbox"/> Other (specify) _____		Patient last seen by (witness name)		Witness phone	
		History provider name		History provider phone	
Complete Physical Examination Findings below, then continue with screening process →			Is blood glucose level greater than 3.0 mmol/L? <input type="checkbox"/> No → Transport to closest medical facility <input type="checkbox"/> Yes → Continue screening process		
Physical Examination Findings					
Level of Consciousness <input type="checkbox"/> Alert <input type="checkbox"/> responds to Verbal <input type="checkbox"/> responds to Pain <input type="checkbox"/> Unresponsive	Speech <input type="checkbox"/> Normal <input type="checkbox"/> Slurred <input type="checkbox"/> Incomprehensible or mute	Facial Smile <input type="checkbox"/> Normal <input type="checkbox"/> Right-Droop <input type="checkbox"/> Left-Droop	Is one or more red Physical Examination Findings checked? <input type="checkbox"/> No → Transport to closest medical facility <input type="checkbox"/> Yes → Continue screening process		
Arm Strength <input type="checkbox"/> Normal <input type="checkbox"/> Right-Drifts down <input type="checkbox"/> Left-Drifts down <input type="checkbox"/> Right-Falls rapidly <input type="checkbox"/> Left-Falls rapidly	Leg Strength <input type="checkbox"/> Normal <input type="checkbox"/> Right-Drifts down <input type="checkbox"/> Left-Drifts down <input type="checkbox"/> Right-Falls rapidly <input type="checkbox"/> Left-Falls rapidly	Hand Grips <input type="checkbox"/> Normal <input type="checkbox"/> Right-Weak grip <input type="checkbox"/> Left-Weak grip <input type="checkbox"/> Right-No grip <input type="checkbox"/> Left-No grip	Last seen normal to arrival at Primary or Comprehensive Stroke Centre less than 4.5 hours ? <input type="checkbox"/> No → Continue screening process <input type="checkbox"/> Yes → STOP screening process - EMS Stroke Screen is positive. En route, provide early pre-notification to closest Primary or Comprehensive Stroke Centre and notify the triage nurse of an “Acute Disabling Stroke”		

Screening Process

1. Pre-Notification Protocol

- Have a **Patch Form** at your site to activate your team prior to patient arrival
- Can also be used for walk-ins

Stroke PATCH FORM for Stroke Team Activation – Foothills Medical Center
Use for ALL STROKE patients - Please INCLUDE w/ patient chart

Demographics & General Clinical Information			ID here	
<input type="checkbox"/> EMS Patch <input type="checkbox"/> Walk in <input type="checkbox"/> STARS Call	Patch Date: _____ Patch Time: _____ ETA: _____	Name: _____ Date of Birth: _____ Age: _____y <input type="checkbox"/> Male <input type="checkbox"/> Female		
Vital Signs BP: ____/____ P: _____ R: _____ Sats: _____% RA/O ₂ : _____ T: _____°C BGL: _____mmol/L GCS: ____/15 <input type="checkbox"/> Intubated <input type="checkbox"/> _____				
LAST SEEN NORMAL Last Seen Normal Time: _____ Last Seen Normal Date: _____	1 → LSN ≤ 4.5 hours ago?		YES	NO
EMS PHYSICAL FINDINGS OTHER FINDINGS (circle all that apply)	BOLD findings (EMS Red Findings) (tick all that apply)		2 → <u>ONE</u> or more BOLD findings (Aphasic, Plegic, and/or LOC)?	
LOC <input type="checkbox"/> Alert <input type="checkbox"/> Responds to Verbal	<input type="checkbox"/> Responds to Pain <input type="checkbox"/> Unresponsive		YES NO	
Speech <input type="checkbox"/> Normal <input type="checkbox"/> Slurred	<input type="checkbox"/> Mute/Incomprehensible (Aphasic)		YES NO	
Arm Strength <input type="checkbox"/> Normal <input type="checkbox"/> Right – Drifts down <input type="checkbox"/> Left – Drifts down	<input type="checkbox"/> Right – Falls Rapidly (Plegic) <input type="checkbox"/> Left – Falls Rapidly		YES NO	
Leg Strength <input type="checkbox"/> Normal <input type="checkbox"/> Right – Drifts down <input type="checkbox"/> Left – Drifts down	<input type="checkbox"/> Right – Falls Rapidly (Plegic) <input type="checkbox"/> Left – Falls Rapidly		YES NO	
Facial Smile <input type="checkbox"/> Normal <input type="checkbox"/> Left Droop <input type="checkbox"/> Right Droop	N/A		YES NO	
<input type="checkbox"/> If YES to both questions → Activate STAT!Stroke → Page 12991 with the following: <div style="text-align: center;">↓</div> “STAT!Stroke ____y M/F LSN ____:____ (time) Plegic / Aphasic / LOC ETA ____min Bed ____” (!!Circle red finding and include in text page especially if Plegic or Aphasic!!)				
<input type="checkbox"/> If YES to one question → Page Stroke Team @ 00379 to confirm STAT!Stroke <input type="checkbox"/> If NO to both questions and LSN time is between 4.5 and 12hrs → Page Stroke Team @ 00379				

Early Activation: Who? How?

- Who should meet the patient at triage?
- Who needs to prepare?
- How do you alert these people?



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 - ED nurse
 - ED physician
 - Others?
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 - CT tech
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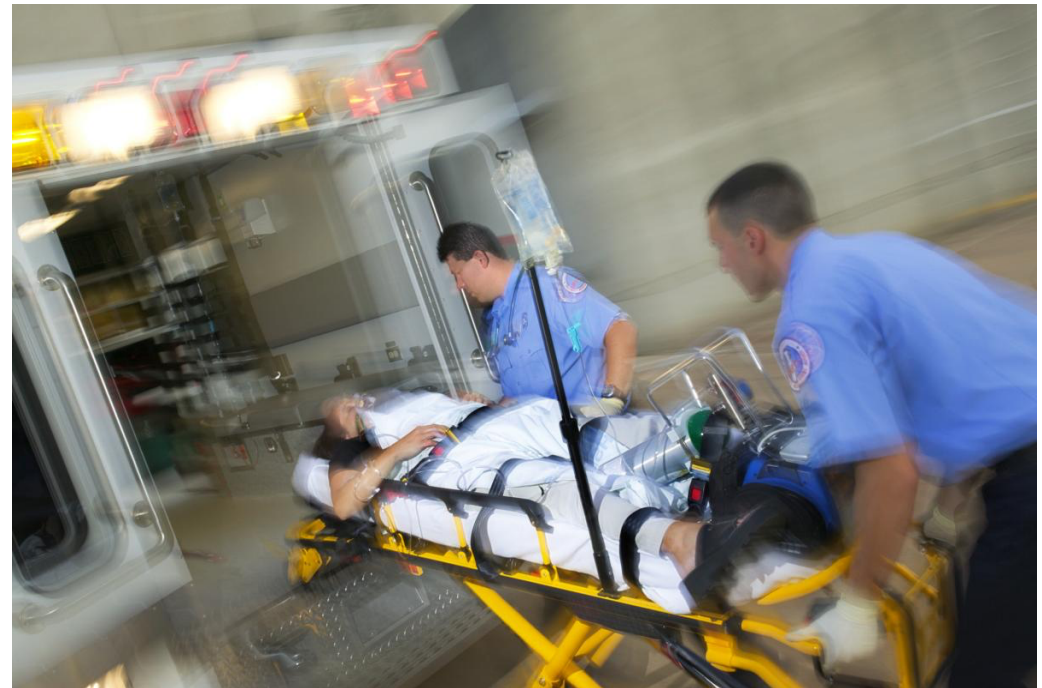
Early Activation: Who? How?

- Who should meet the patient at triage?
 - ED nurse
 - ED physician
 - Others?
- Who needs to prepare?
 - CT tech
- How do you alert these people?
 - Central pager number
 - Overhead page
 - Phone call



2. Direct to CT

- Move patient to CT directly from arrival on EMS stretcher
- Do a quick swarm at triage to ensure patient is stable to go to CT



2. Direct to CT: tPA kit

- Create a tPA kit that for example contains:
 - tPA – boxes of Alteplase (2)
 - Syringes
 - Dosing charts
 - IV catheters etc
 - **Medication to prepare for the unexpected**
 - Graval, Benadryl, Lopressor, Labetalol, Midazolam



3. Register patient as *unknown*

- Registering the patient often introduces the following delays:
 - Obtaining the right information to fully register the patient
 - Submitting orders for the CT
- Use trauma protocols for when a patient is unknown

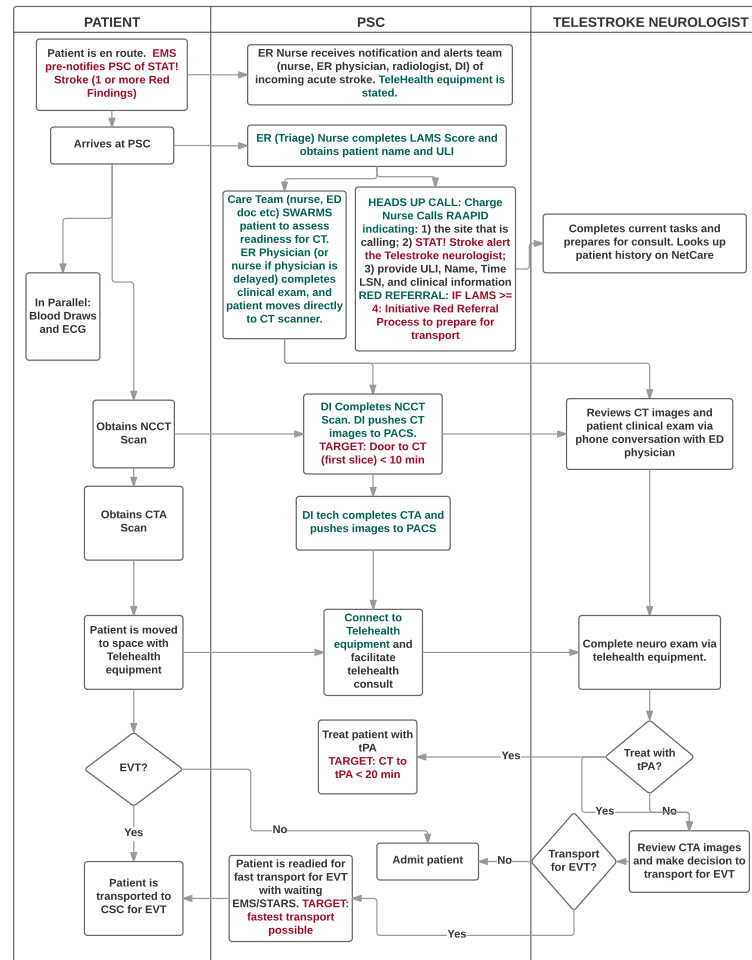
4. Early RAAPID Notification

- When a STAT! stroke patient arrives in the ED (triage), call RAAPID
 - Provide patient name
 - Provide patient ULI
 - Overview of key findings: LSN (within time), key symptoms (left sided hemiplegia)
- In parallel:
 - RAAPID nurse calls stroke neurologist
 - PSC obtains NCCT

Flow Map

ACUTE STROKE NEUROLOGY CONSULT

QuICR January 2016

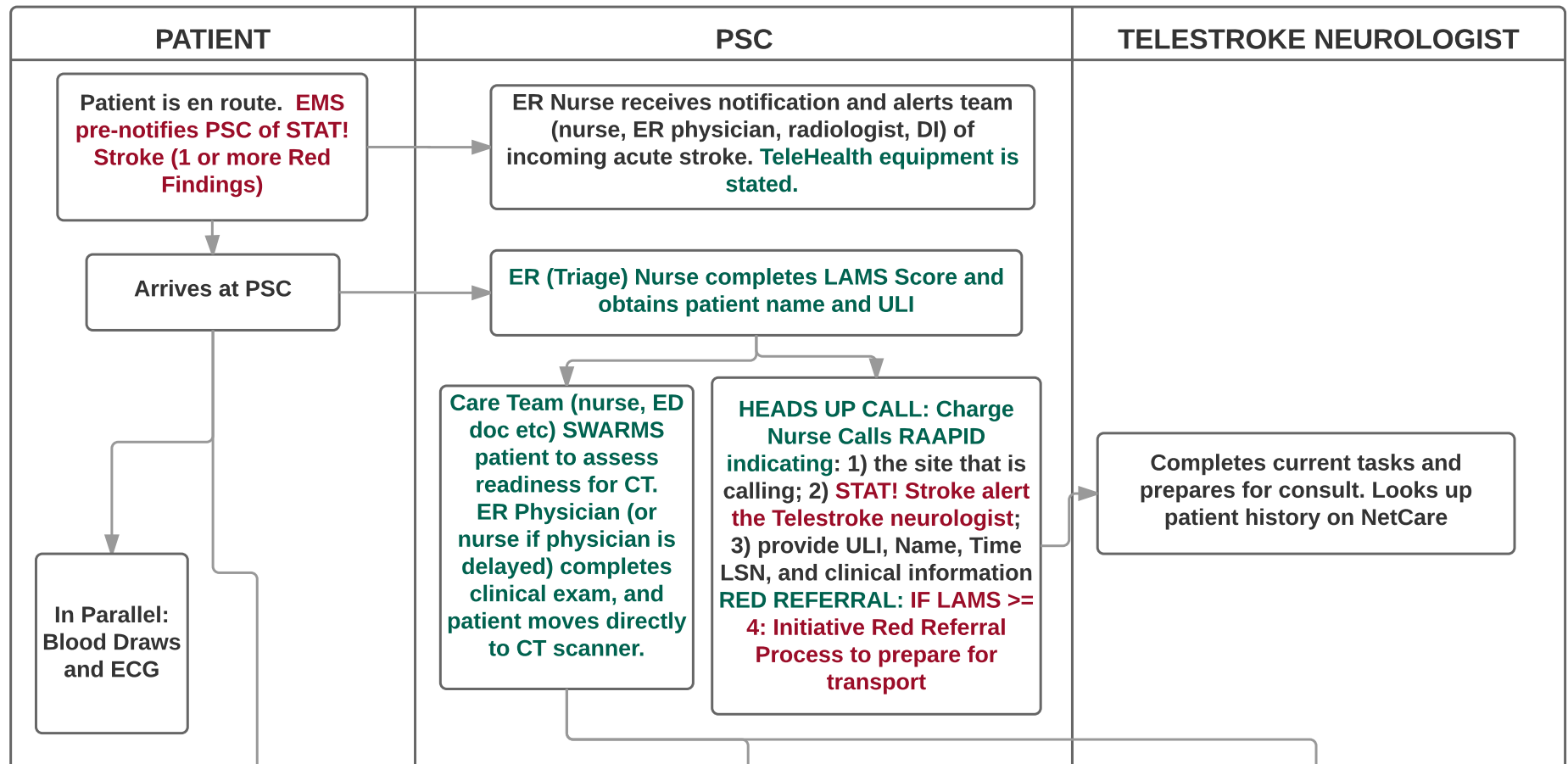


Arrival and Heads up
To RAAPID with LAMS

Imaging
Direct to CT
NCCT -> Push images
CTA -> Push images

Telestroke and decision
to treat with tPA and/or
transport for EVT

Arrival and Heads Up Call (LAMS at Triage)



Other Changes (Change Package)

- EMS
 - Place IV lines en route
- Bloodwork
 - Do not wait for blood work unless there is specific reason (e.g. known use of warfarin)
- CT
 - Standard stroke CT imaging protocol
 - Give tPA in the CT Scanner or Imaging area
- Data Feedback
 - Share door-to-needle times with staff frequently
 - Give awards for fast times

Change Package

Change Ideas

EMS Involvement

- Place IV lines en route

Pre-notification

- Once pre-notification is received, notify stroke/neurology/ED/CT team of incoming stroke
- Create a code stroke protocol
- Look up patient history on electronic system ahead of arrival if possible

ED arrival

- Register patient as unknown to reduce time to enter patient information
- ED, stroke, EMS swarm patient to review history and condition

Change Package (p. 2)

Change Ideas (continued)

Bloodwork

- Use point-of-care INR testing
- Do not wait for blood work unless there is specific situational reason (e.g. known use of Warfarin)

CT

- Go direct to CT on EMS stretcher if patient is stable
- Standard stroke CT imaging protocol

tPA

- Have tPA ready in ED/CT and mix immediately after decision to treat
- Give tPA in scanner

Data Feedback

- Share door-to-needle times with staff and express importance of fast treatment
- Give awards for fastest time

Resources

- DTN Collaborative ***Change Package***

<http://www.ucalgary.ca/quicr/files/quicr/5.-change-ideas.pdf>

<http://www.ucalgary.ca/quicr/quality-improvement/door-needle-initiative#LS1>

- Pre-notification

Webinar: <http://www.ucalgary.ca/quicr/quality-improvement/door-needle-initiative#AP>

EMS Stroke Screen:

http://www.ucalgary.ca/quicr/files/quicr/stroke_screen.pdf

FMC Patch Form for stroke team activation:

http://wcm.ucalgary.ca/quicr/files/quicr/pink_sheet.pdf



Resources Con't

- **tPA Kit**

Presentation at LS 2: <http://www.ucalgary.ca/quicr/quality-improvement/door-needle-initiative#LS2>

FMC Stroke Kit: <http://www.ucalgary.ca/quicr/files/quicr/alteplase-stroke-toolkit-quicr.pdf>

tPA in the scanner:

http://www.ucalgary.ca/quicr/files/quicr/tpa_inct_uah_nov24_15.pdf

Direct to CT (St. Mary's): : <http://www.ucalgary.ca/quicr/quality-improvement/door-needle-initiative#AP>

- **Lots of presentations and recording from other sites:**

— Lethbridge, Red Deer, Westlock, Grey Nuns, Fort McMurray

