

# EARLY MOBILITY

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A silhouette of a superhero, likely Superman, flying over a city skyline at sunset. The skyline includes recognizable landmarks like the Statue of Liberty, the Empire State Building, and the Space Needle. The background is a gradient of blue and orange.

UK HEALTHCARE



STROKE CARE NETWORK

# DISCLOSURES



- **None to disclose**

# OBJECTIVES



- Discuss literature on mobility of stroke patients
- Summarize protocol changes at UK HealthCare
- Review data from early stroke mobility study
- Illustrate benefits and optimal ways to incorporate early mobility with an interdisciplinary approach

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**Are Stroke patients on bedrest  
until PT/OT evaluation at your  
facility?**

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# LITERATURE REVIEW

# 2021 SYSTEMATIC REVIEW



- Efficacy of very early mobility (VEM) in patients with acute stroke: a systematic review and meta-analysis
- FINDINGS
  - Decreased LOS
  - No increased adverse events
  - No increase in bed related complications
  - No increase in disability rates

Suggests VEM is safe and effective

# AHA/ASA GUIDELINES

- Importance of interdisciplinary approach
- Communication and coordination among team members are paramount in maximizing the effectiveness and efficiency of rehabilitation and underlie the entire guideline. (Winstead, 2016)



# NEURO ICU MOBILITY



- RCTs of early mobilization in neurocritical care patients are lacking, however, there are many small studies showing the safety of mobilizing in the ICU.
- Key Points from literature review
  - Frequency, type and intensity need to be defined.
    - Risk of decreasing collateral circulation/cerebral blood flow
  - Strong collaboration between MD/APP, RN and PT/OT.
  - Strict inclusion and exclusion criteria
- Early ICU mobility can impact
  - Long term survival
  - Physical functioning
  - Quality of life
  - Level of sedation
  - ICU delirium

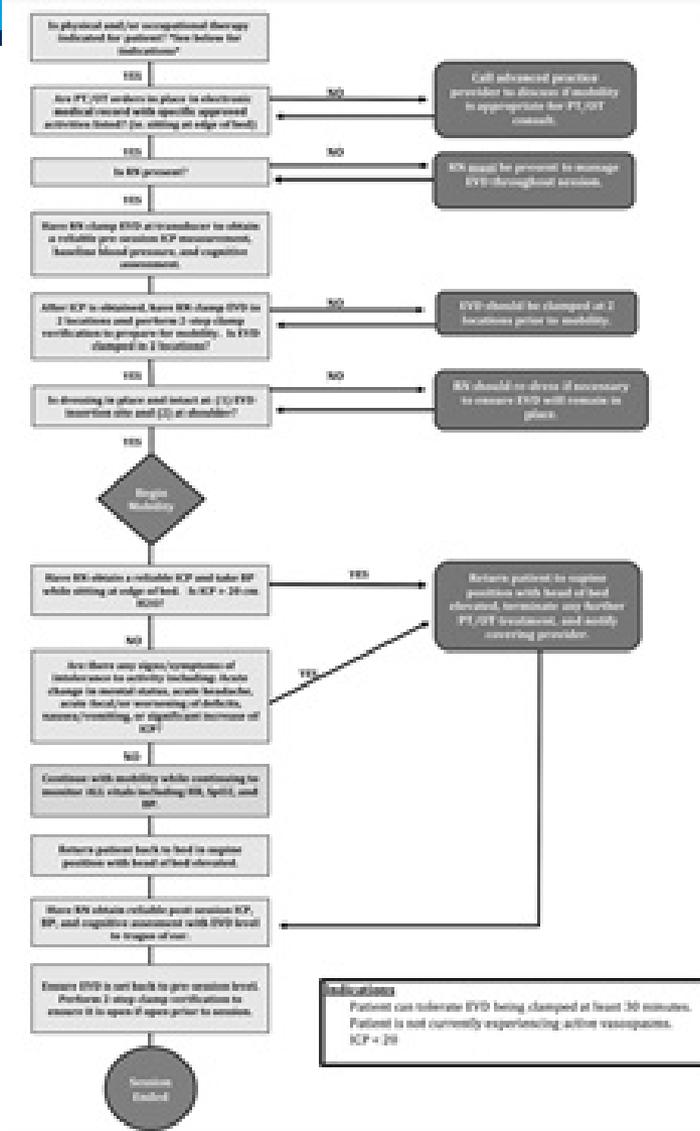
# SAH WITH EVD



- SAH with EVD

- Strict algorithm for patients (ICP < 20, not in active vasospasm)
- Less trachs, shorter ventilator days and decreased ICU LOS (Young et al, 2019, Moyer et al, 2017)
- Feasible and Safe (Young et al, 2019, Moyer et al, 2017, Yataco, 2019)
- ICU LOS didn't differ between control/intervention, however no complications (Moyer et al, 2017)

## Mobilization of Patients With an EVD



# LITERATURE REVIEW



- Prolonged bedrest delays time to rehabilitation assessment and thus potentially increases length of stay
- Collaboration is key- requires a multidisciplinary approach
- Progressive mobility with ICU population may be safest with close monitoring of blood pressure and neurologic status

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**Does your facility wait 24 hours to mobilize patients post thrombolytic agent?**

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**EARLY MOBILIZATION  
POST ALTEPASE IMPLEMENTATION**



## Purpose:

- Assess the current attitudes of nursing staff regarding mobilization of post –thrombolysis patients
- Assess the safety of early mobilization of AIS patients post –IV rt-PA infusion and/or thrombectomy

## Led by :

Stroke Program Director:  
Dr. Jessica Lee

Stroke  
Coordinator: Margie  
Campbell

PT/OT: Katie Reckner  
and Megan Polly

Nursing: PCM Leah  
Perkins, CNS Alissa Saas  
and Donna Ricketts

# QI PROJECT BACKGROUND



Early mobility may capitalize on an early and narrow window of neural plasticity and neuronal reorganization to compensate for connections lost from the injury (Kumar, 2020).

Bedrest for a minimum of 24 hours post-administration of rt-PA potentially delays time to rehabilitation assessment and thus increases length of stay.

Value-based payment models are driving systems to reduce lengths of stay and cost of care.

# QI IMPROVEMENT PROJECT



- The exact risks of mobilization following IV rt-PA and the duration of time that patients should be maintained on bedrest is unknown.
- Limited data regarding the safety of early mobilization of patient with AIS after having received IV rt-PA.

# MEDICATION REVIEW



Pharmacokinetically, 50% of rt-PA is cleared within 5 minutes of completion infusion.

80% is eliminated within 10 minutes of completion.

Despite the short half-life of IV rt-PA there remains apprehension regarding the safety of early mobilization.

# QUALITY IMPROVEMENT PROJECT AIMS



## Aim

Aim 1) Assess the attitudes of nursing staff regarding early mobilization

## Aim

Aim 2) Measure the impact on LOS following an early mobilization protocol post IV-tpa

## Aim

Aim 3) Compare the incidence of falls and other complications pre- and post-implementation of early mobility protocol

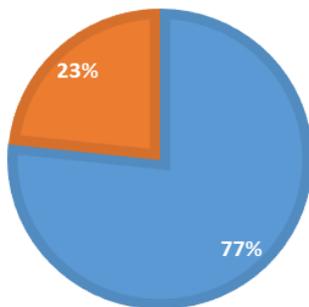
# EARLY MOBILITY SURVEY



## Pre- Intervention

WOULD YOU BE COMFORTABLE MOBILIZING YOUR PATIENT PRIOR TO AN EVALUATION BY PT/OT?

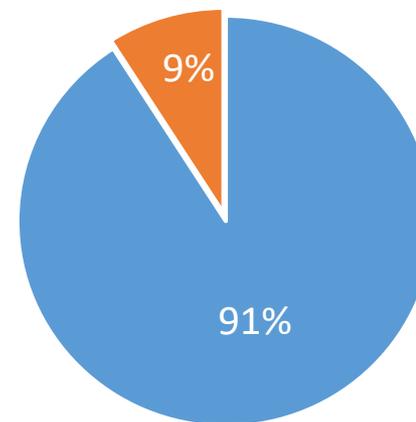
■ Yes ■ No



## Post Intervention

Are you comfortable mobilizing your patient prior to an evaluation by PT/OT?

■ Yes ■ No



# EARLY MOBILITY QI CASE CONTROL STUDY



- Group 1 (n=109)
- Mean time from rt-PA bolus to PT/OT assessment was 38 hours 55 minutes
- Average LOS was six days
- Group 2 (n=81)
- Mean time from bolus to PT/OT assessment of 22 hours 29 minutes, with an average
- Average LOS of 4.42 days.

# QI MOBILITY ORDERS



For patients with NIHSS <8 and neurologically and hemodynamically stable, maintain bedrest for 1 hour post infusion of IV rt-PA

For patients with NIHSS  $\geq 8$  or isolated severe aphasia impairing the ability to follow commands, and who are neurologically and hemodynamically stable, maintain bedrest for 6 hours post infusion of IV rt-PA and evaluation by PT.

For any patient receiving endovascular therapy, who are hemodynamically and neurologically stable, maintain bedrest for 8 hours post-procedure and evaluated by PT.

# MOBILITY ORDERS CURRENT STATE



**Mobility Orders** Accept Cancel

Frequency:

Starting:    For:

At:

Starting: **Today 0918** Ending: **Until Specified**

Activity:

**Stroke Guidelines:**

- For patients with NIHSS < 8, and are hemodynamically and neurologically stable, maintain bedrest for hour post IV thrombolytic infusion
- For patients with NIHSS > 8 or isolated severe aphasia, impairing ability to follow verbal commands, who are hemodynamically and neurologically stable, maintain bedrest for 6 hours post IV thrombolytic infusion and assessed by OT/PT
- For all patients undergoing endovascular treatment, with or without IV thrombolytic infusion, maintain bedrest for 8 hours post procedure and assessed by OT/PT

Weight Bearing:

Spinal Precautions:

Bracing Orders:

**Next Required** Accept Cancel



# HOW DID WE MAKE THE CHANGE?



Education,  
Education, Education

Electronic Health  
Record Updates

Real Time  
Auditing/Coaching



**REHAB THERAPY**

# INDICATIONS FOR REHAB THERAPY



- **All patients with confirmed AIS, ICH, SAH or undergoing stroke work-up**
  - Follow post IV thrombolytic and post thrombectomy guidelines
- All elderly patients regardless of stroke status
- Patients deemed high fall risk
- Patients admitted with subacute/chronic stroke
- Patients with suspected vestibular dysfunction (Polly, 2021)

# EXCLUSION TO REHAB THERAPY



- Heavy sedation
- Pending GOC discussion
- Pending operative intervention
- RASS > +2 or < -2

(Polly, 2021)

# CASE SCENARIO 1



- 42 year old female admitted 9 am with left side weakness and facial droop
- Outside window for IV thrombolytics
- Determined to have large vessel occlusion and goes emergently to angio for thrombectomy
- NIHSS: 12.
- Goal SBP <180

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**Is this patient ready for PT/OT  
on day of admission?**

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# CASE SCENARIO 1



- No, the patient is not ready the day of admission due to post thrombectomy bedrest orders x 8 hours.
- Patient is not intubated on day 2 of admission and NIHSS now 8.
- What therapy is initiated day 2?

# CASE SCENARIO 1



- Examination starts immediately upon entering the room with observation
  - Posture / positioning
  - Spontaneous movement
  - Behavior
  - Vital signs
  
- Examinations should be thorough but efficient

# CASE SCENARIO EXAM



- **Social history**
- **Cognition**
- **Vision/visual motor/visual perception**
- **Speech/language**
- **Pain**
- **Strength**
- **Sensation**
- **Muscle tone**
- **Coordination**
- **Transfers**
- **Posture**
- **Balance**
- **Gait**
- **Fall risk**
- **ADL performance**

# CASE 1 MOBILITY



- MAX assist for supine to sit
- Edge of bed balance MAX assist with delayed protective reactions
- BP is stable
- Patient transfers out of bed with Dep assist of 2 persons for a stand pivot transfer

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**What level of mobility is appropriate for nursing to assist?**

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# CASE SCENARIO 1



- Keep in mind nursing comfort levels vary.
- We would recommend B in this scenario as long as the patient is not agitated, overly impulsive, or needs to remain in restraints.

# CASE 1 RECOMMENDATIONS



- Patient was independent prior and participates throughout examination
- Recommend acute rehab
- Implementing a discharge plan can decrease LOS

# CASE SCENARIO 2



- 60 year old male patient admitted with left SDH and requires intubation for airway protection
- PT/OT is deferred first 3 days of hospital stay due to patient intubated and sedated along with difficulty with BP control
- Sedation stopped on day 4 and BP stable.
- Pt remains intubated

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**Is the patient ready on day 4  
to initiate PT/OT services?**

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# CASE 2



- Interdisciplinary communication is highly needed in this scenario, but typically yes
- PT/OT perform evaluation. If family is present, we gain vital information regarding the patient's prior level of function.

# CASE 2



- Nursing reports the patient hasn't been following commands, but able to open eyes with some visual tracking noted.
- Often arousal level improves when sitting upright.
  - Can assess level of awareness to affected side and sitting balance
  - Is there apraxia with giving a patient functional objects to use?
  - Was the RASS able to improve during the session?

# CASE 2 RECOMMENDATIONS



- LTAC
- Ongoing assessment with updates as patient progresses

# CASE SCENARIO 3



- 84 year old female diagnosed with left cerebellar CVA. NIHSS:2 Admitted 7 pm and no contraindications to PT and OT initiating evaluations the next morning.
- Pt requires supervision for performing bed mobility, contact guard assist for sitting balance EOB due to slight truncal ataxia and dizziness that nearly resolves within 5 minutes of sitting upright.
- Pt ambulates 200 ft with ataxia and left veer, minimal assist and requires assist for object avoidance on the left side.

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**Should this patient ambulate  
with nursing assist?**

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# CASE 3



- Yes.... BUT
- Communication with nursing is key for patient safety especially since this patient has ataxia and left veer.
- Encourage regular staff assisted trips to the restroom to maintain continence and encourage sitting up in the chair during the day with safety measures.

# CASE 3



- Is this patient safe to discharge home?
- Acute rehab is recommended; however, patient has capacity and refuses. Pt chooses to return home.
- Patient is a fall risk. Recommend home with strict 24 hour assist and follow up with continued home health vs out-patient PT/OT services.

# TAKES A TEAM



- This work is a collaborative effort.
- Thank you to Dr. Jessica Lee for initiating and promoting this work
- Also huge thanks to Margie Campbell
- And always, we cannot do this work without our amazing PT/OT and nursing staff!

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