

Stroke Unit Care:

Incorporating best practice acute stroke nursing care into the ward environment

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Healthcare Improvement Unit



Areas Covered

- Definitions of a stroke unit
- Roles of stroke unit nurses
- Stroke unit care overview
- Secondary complications
- Acute & sub acute stroke care overview
- Acute planning for long term issues
- Palliation

Relevance

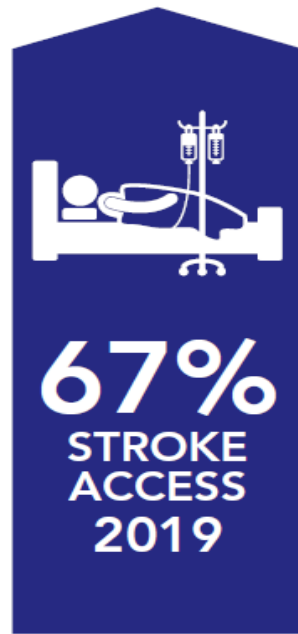
- Place greater value on quality nursing care as intervention within stroke care
- Increase knowledge of potential stroke related complications, particularly those associated directly with nursing care
- Optimise & maximise recovery by both preventing complications, or dealing with them promptly & appropriately
- Identify problems which are specific to stroke nursing

Stroke Units

- Stroke Unit Definition
- Stroke Nursing Role Variations
- Discharge Planning, Care Planning
- Risk Factor Reduction, Stroke Prevention
- Stroke Units = Stroke Nursing
- Nursing Care Paths

Acute Stroke Audit 2019

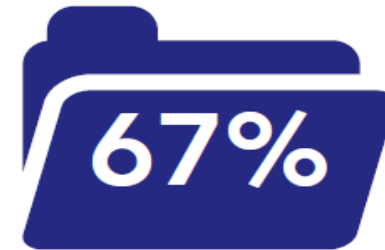
Stroke unit care



Patients who
received stroke
unit care



Routine use of
Clinical
Guidelines



in hospital
WITH
stroke unit



in hospital
WITHOUT
stroke unit

Acute Stroke Audit 2019

More patient care needed



What Makes a Stroke Unit?

- Four overarching quality criteria, taken from Stroke Foundation Acute Stroke Service Framework
 1. System of staff education programs specific to stroke
 2. Stroke team meeting with defined structure & frequency
 3. Stroke team structure
 4. Geographically co-located on 1 ward

Stroke Foundation Guidelines

- All stroke patients should be admitted directly to a stroke unit (preferably within three hours of stroke onset)
- For patients with suspected stroke presenting to non-stroke unit hospitals, transfer protocols should be developed and used to guide urgent transfers to the nearest stroke unit hospital
- All acute stroke services should implement standardised protocols to manage fever, glucose and swallowing difficulties in stroke patients

The Actual Nursing

Day to day nursing care of acute stroke patients

- General nursing care with variations that reduce secondary complications &/or improve outcomes
- Requires stroke specific knowledge & support of stroke team

Rationale:

- Modifying nursing processes directly attributed to improvements in outcomes

Inpatient Stroke Education

- Written education packs
- Bedside patient/carer education
- Post d/c education
- External service providers

Rationale:

- Re-admission avoidance
- Stroke risk reduction
- Quality of life improvement/anxiety reduction

Staff Stroke Education

Coordinate stroke specific education for stroke unit staff

- Run stroke workshops
- Other unit specific presentations
- Development, updating and distribution of Stroke Self Directed Learning Packages

Rationale:

- Maintain stroke unit quality & stroke team composition

Inpatient Stroke Coordination

Role dedicated to overseeing service provision

- Maintenance of stroke unit documents & processes
- Change management/implementation
- New service provision (e.g. lysis & thrombectomy)

Rational:

- Meet all performance indicators set by various national standards and bodies

Outpatient Management

Stroke & TIA clinics

- Public vs private practice billing models

Rationale:

- Admission avoidance
- LOS reduction
- Private practice billing/income
- Diagnosis/coding improvement

AuSCR

Maintain AuSCR database (Australian Stroke Clinical Registry)

- National registry
- Provides local data
- 3 month follow up phone call

Rationale:

- Collate data to ascertain service improvement requirements



Meeting National Standards



Standard 1:
Governance for
Safety and Quality in
Health Service Organisations



Standard 2:
Partnering with Consumers



Standard 3:
Preventing and Controlling
Healthcare Associated Infections



Standard 4:
Medication Safety



Standard 5:
Patient Identification and
Procedure Matching



Standard 6:
Clinical Handover



Standard 7:
Blood and Blood Products



Standard 8:
Preventing and Managing
Pressure Injuries



Standard 9:
Recognising and Responding to
Clinical Deterioration in
Acute Health Care



Standard 10:
Preventing Falls and
Harm from Falls

Stroke Foundation, Stroke Connect

Referral of all eligible patients for follow up

- Meets National Health Care Standard 2
- Stroke Foundation recommended consumer feedback
- Compliments patient education processes

Rationale:

- Consumer feedback is a requirement of health care service provision
- Collate feedback to ascertain service improvement requirements

Stroke Foundation Audits

National Stroke Foundation organisational survey, acute audit & rehab audits

- Outlines best practice clinical indicators
- National comparison of services

Rationale:

- Compare data from previous years and other sites to ascertain service improvement requirements

Research

Site Coordinator

- Assist external researchers to access your site/staff in research projects
- Initiate local research
- Liaise with research governance offices & principle investigators

Rationale:

- Improve site's outcomes/recognition/image
- Useful for in acquiring executive support

SSCN Stoke Unit Endorsement

Maintain SSCN stoke unit endorsement status annually

- Complete AuSCR data entry >75% cases
- Admission targets >75% to stroke unit
- Maintain quality indicators
- Maintenance of previous of Stroke Unit documents & processes

Rationale:

- Incentive payments

Bureaucracy

Compile business case for ongoing stroke nursing FTE creation/support

- Reporting to validate financial benefits, improved patient outcomes

Rationale:

- Keep your job
- Make your role permanent
- Expand your FTE

The Outcome

A successful coordinator can lead a service to

- Better patient outcomes
- Efficient care processes
- Cost neutral service
- Reduced staff turnover
- Rewarding workplace/team

Rationale:

It's nice to have a great job!

Discharge Planning Day 1

- Family &/or Multidisciplinary Conference with the Doctor, Social Worker, Physiotherapist, Speech Pathologist & Occupational Therapist to decide what services/resources will be needed when the person gets home
- Minimum of carers/NOK included this may be the whole family
- Discharge plan can change as patients' condition or recovery alters

Risk Factor Reduction Day 1

- Pharmaceuticals to modify coagulation, cholesterol, heart arrhythmias & blood pressure + infection if required
- Monitoring & management of diabetes
- Assist smoking cessation with patches + QUIT referral
- The *Dr Carroll talk* “You can never be too thin, too rich or too beautiful”

...and Prevent

- Stroke is considered a 'life style' disease. Like heart disease lifestyle modification can decrease risk of stroke significantly
- Monitor patients & relatives for risk factors
- Make them aware through interview & education
- Refer to external programs where ever possible

Risk Factors

- Age
- Race
- Family history
- Hypertension
- Diabetes
- Smoking
- Blockage of carotid artery/ies
- High cholesterol
- Obesity &/or sedentary lifestyle
- Atrial fibrillation



The
COACH
Program

for people
with long term
health conditions

Concerned? Make the change.

Lighten Up
to a healthy lifestyle

It's time to ditch your diet and get real about your health and happiness.

Learn how to be more active, enjoy healthy food, cope with stress, and manage your weight.

Gain skills for a lifetime of health for you and your family.

Get your health & happiness on track

Acute Stroke Units as a Treatment?

- Stroke unit care provides comprehensive acute care & early rehabilitation programs
- Stroke unit care is associated with reduced morbidity & mortality, & better outcomes compared with general ward management
- Better outcomes are attributed to immediate access to diagnostics, continuity of care from a specialised MDT, stricter adherence to clinical protocols, & access to rehabilitation

Acute Stroke Units

- An ASU follows a structured care path to ensure the care offered to acute stroke clients adheres as closely as practical to the National Stroke Foundation's **Clinical guidelines for stroke prevention and management 2017**
- The ASU length of stay (LOS) is determined by stroke type & severity, then suitability for discharge, rehabilitation, discharge with increased home services, or future placement in an extended or residential care facility

The Team Across Admission

- ASU care incorporates complication reduction/management, education & rehabilitation, so essentially the 'Stroke Team' remains the same across the entire admission
- Doctors, nurses, CHIP nurses, physiotherapists, occupational therapists, speech therapists, dieticians, social workers, pharmacists (& MH specialists if required) all play a part

Stroke Care Pathways

- If all Australian stroke survivors had access to coordinated stroke care, outcomes would improve to 900 more people surviving stroke, 1500 more people regaining independence & 1500 people returning home post stroke
- Whilst starting in hospital & continuing to rehab, interventions & support ideally carry on post discharge

Secondary Complications

- Stroke Complications
- Medical Complications
- Nursing Care Complications
- Which is Which???

Secondary Complications

- Pneumonia
- Urinary tract: incontinence, retention & infection
- Deep vein thrombosis
- Pulmonary embolus
- Impaired skin integrity (injuries, excoriation)
- Hyper & hypoglycaemia

Secondary Complications

- GI bleeding
- Seizures
- Bowel: incontinence & constipation
- Delirium
- Depression
- Falls
- Pressure Injuries

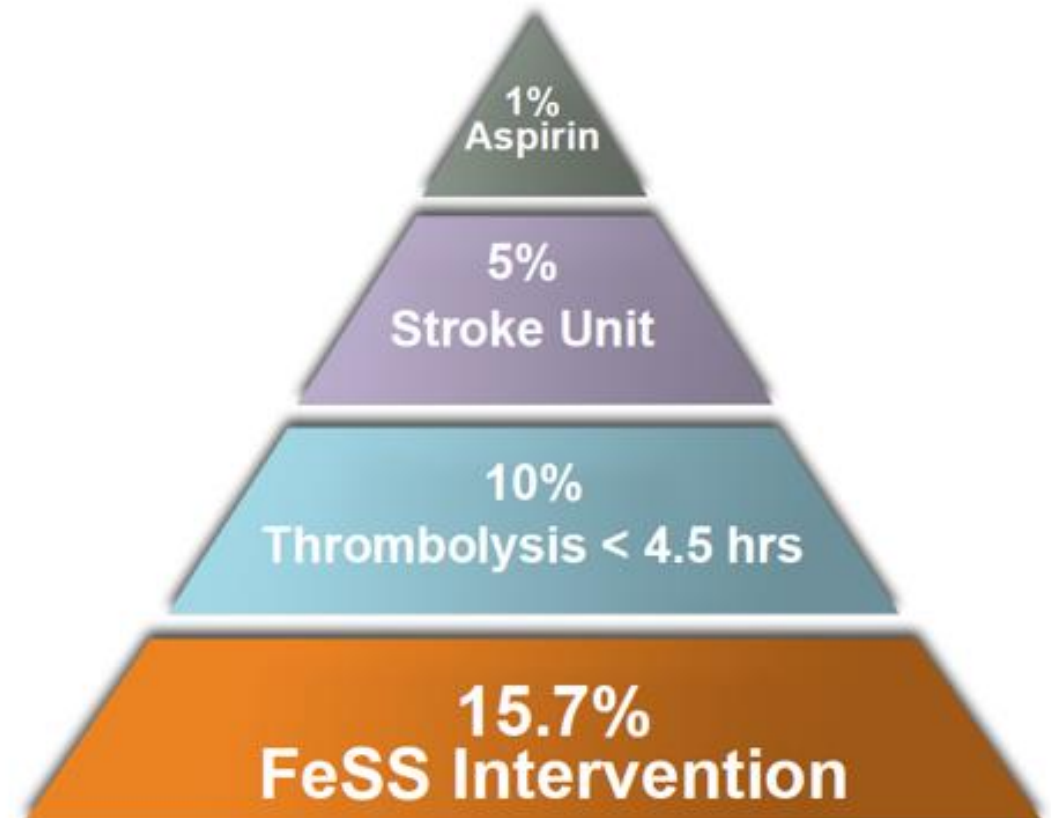
Secondary Complications

- Dehydration
- Malnutrition
- Pain
- Extension of stroke
- Keep in mind: changes in status may be gradual (“brewing” pneumonia) or rapid (PE)
- **Death from these complications more common than from stroke itself!**

FeSS

- Clinical protocols: to manage Fever, Sugar and Swallowing (NI)
- Significant reduction in death and disability in 90 days post stroke
- 15.7 % more likely to be alive and independent

Clinical Significance



How Bad Will It Be?

- Constant cerebral perfusion pressure depends on adequate systemic blood pressure. Systemic hypotension from any reason can result in global cerebral ischemia
- Hypercoagulable state increases the progression and extent of microscopic thrombi, exacerbating vascular occlusion
- Elevated body temperature is associated with greater cerebral ischemic injury
- Hyper & hypoglycaemia can adversely influence the size of an infarct

Observations & Interventions

Reviews

- Medical r/v, +/- admission asap. **MET on arrival (code blue)**
- Speech pathologist r/v on arrival, else swallow assessment to be completed by trained nursing staff A/H with speech pathologist follow up r/v **4 hours!**
- Physiotherapist, occupational therapist & dietician r/v within 48 hours of admission **before discharge!**
- Referrals to social work, Community Health Interface Program, Age Care Assessment Service, mental health =/- neuropsychology & pharmacy as indicated

Observations & Interventions

Monitoring/Observations

- Neuro + standard obs 4th hourly - QID (more frequently where acuity indicates)
- Blood sugar monitoring QID for 72 hours
- Report any significantly abnormal observations as per MET criteria
- Neuro obs can be ceased after 72 hours or on advice of medical officer
- **WTU on admission**

Observations & Interventions

Hypoxia

- Aim to keep O2 levels >95%
- If <95% reposition client to improve airway
- Supplemental oxygen only if then required
- Medical review to ascertain origin of hypoxia

Observations & Interventions

Blood pressure

- Continue normal BP meds (via NGT if necessary) unless hypotensive
- If SBP > 220 medical r/v to consider 5mg GTN patch/ IV hydralazine or r/v of oral antihypertensives
- ICH <140 systolic
- Rapid changes (more than 10-20%) should be avoided so as to decrease risk of stroke extension

Observations & Interventions

Blood Glucose

- Aim to keep between 4 & 7.5mmol, but don't aggressively manage this range
- Continue normal diabetic medications (via NGT if necessary)
- Medical r/v for insulin infusion or more appropriate glycaemic therapy if $>10\text{mmol/l}$ or for known diabetics

Observations & Interventions

Fever

- Keep temperature <37.5 if possible
- If temperature >37.5 consider antipyretics & perform infection screening
- Monitor physical limitation or surrounds being cause of fever

Observations & Interventions

Antiplatelet/ Anticoagulation therapy

- Medical r/v for commencement of Aspirin/**antiplatelets** if CT/MRI scan excludes haemorrhage **ASAP**
- Warfarin is normally reserved for known AF or cardio-embolic source, **NOACS now preferred**

DVT prophylaxis

- Medical r/v for low dose s/c anticoagulation in high risk clients
- SCDs, not TEDS

Observations & Interventions

Hydration & Nutrition

- NBM until speech pathologist r/v or swallow assessment
- Screen nutritional status & make dietician referral on admission
- Weigh as soon as possible
- Apply speech therapist's recommendations regarding diet consistency & feeding techniques
- IV rehydration until NGT placement if NBM, consider slow rate NG feeding in clients able to maintain a 30' sitting position
- Provide regular mouth care
- Monitor dietary intake at dietician's direction

Observations & Interventions

Continence

- IDCs NOT to be inserted in ED, continence assessment provided within ASU
- If assessed with retention, intermittent catheterisation preferred over IDC
- IDCs to be removed as soon as possible
- Post void bladder scan for 72 hours after admission or TOV
- Monitor bladder & bowel function to determine pattern of continence
- Apply continence management pathway when indicated

Observations & Interventions

Mood

- Routine use of antidepressants to prevent post-stroke depression is not currently recommended
- Clients **screened for** altered mood (e.g. depression, anxiety, emotional lability) should be assessed via mental health referral
- Medical **+/- MH** r/v for people with depression, anxiety or emotional lability, where antidepressants may be indicated

Observations & Interventions

Mobility

- Falls risk to be kept up to date & associated interventions applied
- Sit client out of bed as soon as possible, nurse assessed for safety
- Apply physio therapist's recommendations for transferring, mobilising, limb positioning, sling/splint application & exercise techniques
- Maximising opportunities to mobilise is a priority

Observations & Interventions

ADLs

- Clients with confirmed difficulties to have a management plan formulated
- Occupational therapist to advise nursing staff & carers on techniques & equipment use
- Avoid 'institutionalising' survivors. Make time to allow for self care to be attempted
- Avoid delegating to unqualified staff

Observations & Interventions

Cognition & Perception

- All clients should be screened for cognitive & perceptual deficits
- Occupational therapist to formulate a management plan
- Nursing staff to be advised on specific interventions & techniques

Observations & Interventions

Communication

- All clients should be screened for communication deficits
- Speech therapist to formulate a management plan
- Nursing staff to be advised on specific interventions & techniques to assist early & frequent intervention
- All written health information should be available in an aphasia friendly format

Observations & Interventions

Pressure Ulcer Prevention

- Pressure Ulcer Screening tool to be kept up to date & associated prevention interventions applied
- ASU admissions should have priority access to electric beds, pressure relieving devices when scored as high risk or above

Observations & Interventions

Collaboration & Goal Setting

- Weekly stroke team case conference discussing stroke clients from the previous 7 days should occur
- Family meetings to be facilitated as requested throughout the admission
- Information & education to be readily available to clients, family & staff involved
- Tour to the rehabilitation unit to occur soon after referral, with education sessions & possible day rehab commencing when available
- Early introduction to the *Stroke Support Groups* for interested clients & family members to be offered

Observations & Interventions

Discharge Planning

- Co-ordinated client care amongst multidisciplinary team & family
- Discharge goal setting to be flexible as client recovery rates can vary dramatically in the acute recovery stage
- Once appropriate discharge destination has been determined, commence rehabilitation planning to maximise overall independence to a level as close to pre-stroke status as is likely to be obtained, aiming for best functional status within that setting

Acute Planning for Long Term Issues

- Issues identified during acute phase
- Rehab?
- Physical Disability
- Depression
- Communication Barriers
- Carer Burdon

Nursing Diagnosis Examples

- Self care deficit *related to* impaired mobility, cognitive & communication deficits (toileting, bathing, hygiene, dressing/grooming)
- Risk of impaired skin integrity *related to* impaired mobility & faecal & urinary incontinence
- Faecal & urinary incontinence *related to* neurological impairment & cognitive & communication deficits

Nursing Diagnosis Cont...

- Communication deficit related to cognitive deficit & language barriers
- Risk of imbalanced nutrition & hydration *related to* dysphagia & communication deficit
- Risk of aspiration *related to* mild dysphagia & hemiplegia effecting body position

Nursing Diagnosis Cont...

- Impaired mobility *related to* hemiplegia
- Impaired social interactions *related to* communication deficit & impaired mobility
- Compromised family coping *related to* new disability of a family member & subsequent change in family roles

Rehabilitation?

- Not all stroke survivors can access rehabilitation, many feel they don't need it
- Access to rehabilitation services can be hindered by age, cognition, location, financial status
- Alternatives to inpatient rehabilitation may be more suitable for minor stroke
- Ideally, all stroke survivors **should be assessed** for rehabilitation needs & referred accordingly

Depression

- Loss & grief associated with a stroke can compound depression
- Changes to sense of self, role or professional identity, self-image, physical function, intimacy & favourite activities impact
- Changes to life may be overwhelming
- Grief or sense of loss is a normal reaction, but needs monitoring



Cognition & Communication

- Total isolation can occur as receptive & expressive difficulties do not always coincide
- Good cognition can be entirely negated by damaged communication
- Talking or speaking clearly, understanding others talking can make socialising difficult
- Reading & writing ability can be lost
- Understanding & using body language & gestures
- Thinking clearly, concentrating , remembering can be impaired

Carers

- Family & friends are the most valuable support yet receive little themselves
- No one plans on becoming a carer
- Relationship changes may be very frightening & stressful, & resentment is a normal reaction
- Burnout is common, obligation is common
- Discharge care plans are frequently not provided

Cost of Living

- House modifications
- Equipment Adaption
- Therapy equipment
- Modified transport
- GP visits & medication
- Access to innovative treatments
- Disability Support Pension inadequate



Transport

- May have difficulty returning to driving
- Weakness, vision & cognition may be involved
- Doctors need to medically assess driving suitability in most cases
- Modified cars vs. public transport vs. carer support all have cost & availability issues
- Access to health care can be impacted on as a result

Work

- Returning to work can be very difficult
- Physical changes
- Lack of motivation, fatigue, lack of concentration or memory
- Attitudes & policies of the previous employer
- Self-esteem, social contact with workmates, & independence all impacted on



Sex

- Adjusting to the physical & emotional changes after stroke can have an effect on relationships
- In some instances, the ability or desire to have sex may be changed by weakness, difficulty communicating, self image & esteem
- Medications may also affect the ability to have sex

Stroke Palliation

- When?
- How?
- Significance

When?

- A stroke's effect is deemed so profound as to make survival impossible
- A stroke's effect or patient's condition renders surgery unsuitable/ futile
- The predicted or resulting disability results in the survivor choosing death over lifelong disability (advanced health directive or previously voiced wishes)

Stroke Foundation Guidelines

- Stroke patients and their families/carers should have access to specialist palliative care teams as needed and receive care consistent with the principles and philosophies of palliative care
- For patients with severe stroke who are deteriorating, a considered assessment of prognosis or imminent death should be made
- A pathway for stroke palliative care can be used to support stroke patients and their families/carers and improve care for people dying after stroke

How?

- Withdrawal of all measures to prevent secondary complications
- Withdrawal of fluid & nutrition
- Pain management rarely a focus initially, inconsistently identified
- Symptom management very variable
- Stroke palliation poorly managed internationally & locally
- Stroke not a top priority for formal palliation services

Significance

World	Deaths in millions	% of deaths
Ischaemic heart disease	7.25	12.8%
Stroke and other cerebrovascular disease	6.15	10.8%
Lower respiratory infections	3.46	6.1%
High-income countries	Deaths in millions	% of deaths
Ischaemic heart disease	1.42	15.6%
Stroke and other cerebrovascular disease	0.79	8.7%
Trachea, bronchus, lung cancers	0.54	5.9%
Low-income countries	Deaths in millions	% of deaths
Lower respiratory infections	1.05	11.3%
Diarrhoeal diseases	0.76	8.2%
HIV/AIDS	0.72	7.8%
Middle-income countries	Deaths in millions	% of deaths
Ischaemic heart disease	5.27	13.7%
Stroke and other cerebrovascular disease	4.91	12.8%
Chronic obstructive pulmonary disease	2.79	7.2%

Questions

