

# Clinical Guidelines for Stroke Management 2017

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# Acknowledgements:

- Guidelines Advisory Committee
- Guidelines Content Development Working Groups: leaders and members
- Stroke Foundation staff
- Stroke Foundation Clinical Council and Consumer Council
- All stroke survivors, carers, support groups, consumer groups, health professionals/clinicians, professional associations/organisations, and industry groups who were involved in the development process or provided feedback/comments during the review process

# Why are clinical guidelines important?

- › Key to establishing effective, high quality, consistent and safe healthcare practices and policies
- › Among the most common mechanisms for translating research into practice and policy – they bridge the gap between original research and clinical practice
- › Are developed after consideration of an entire body of relevant research evidence on a topic
- › Improve health outcomes and save costs, as best-practice is recommended, not ineffective practices

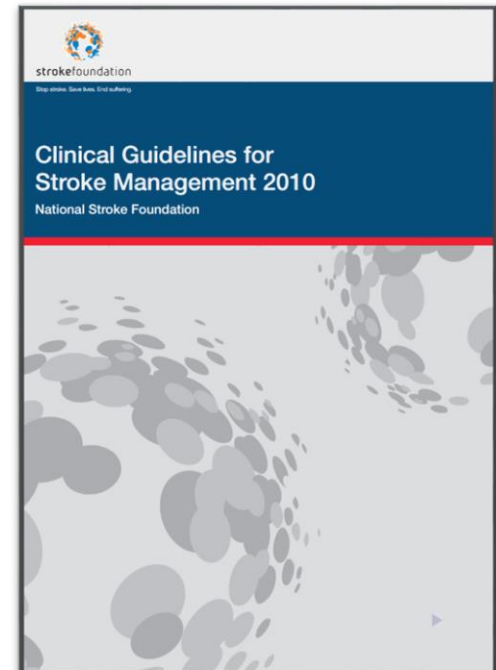
# Background

**Since 2002:** Stroke Foundation has been developing stroke guidelines

**September 2010:** the *Clinical Guidelines for Stroke Management 2010* were approved by the National Health and Medical Research Council (NHMRC)

**Every 5 years:** the NHMRC requires clinical guidelines be kept current and relevant

**July 2015:** Stroke Foundation was contracted by the Australian Government Department of Health to update the *Clinical Guidelines for Stroke Management*



# What's so important about the 2017 Clinical Guidelines?

- › The last edition was published in 2010 - The Clinical Guidelines for Stroke Management 2017 updates and supersedes the 2010 version
- › New research, evidence, practice - A lot has happened in 7 years in terms of research undertaken, evidence published, clinical practices, developments in diagnostics and medicines...
- › Recommend best practice for clinicians - The hard work has been done to examine all the new information out there and publish the best recommendations for clinicians in one place
- › Digital platform - the Clinical Guidelines will be the first in Australia to be developed and published on a digital platform accessible on mobile, tablet and desktop

# Purpose of the new Clinical Guidelines

The *Clinical Guidelines for Stroke Management* provides a series of best-practice recommendations to assist decision-making between patient and clinician in the management of stroke and TIA in adults

## Scope of the new Clinical Guidelines

The *Clinical Guidelines* cover the most critical topics of stroke management, relevant to the Australian context:

1. Pre-hospital care
2. Early assessment and diagnosis
3. Acute Medical and Surgical Management
4. Managing Complications
5. Secondary Prevention
6. Rehabilitation
7. Discharge planning and transfer of care
8. Community participation and long-term care

# The Process: 1<sup>st</sup> 12 months

July 2015: Open expression of interest for working party members - almost 100 healthcare professionals and consumers were part of the Guideline development process

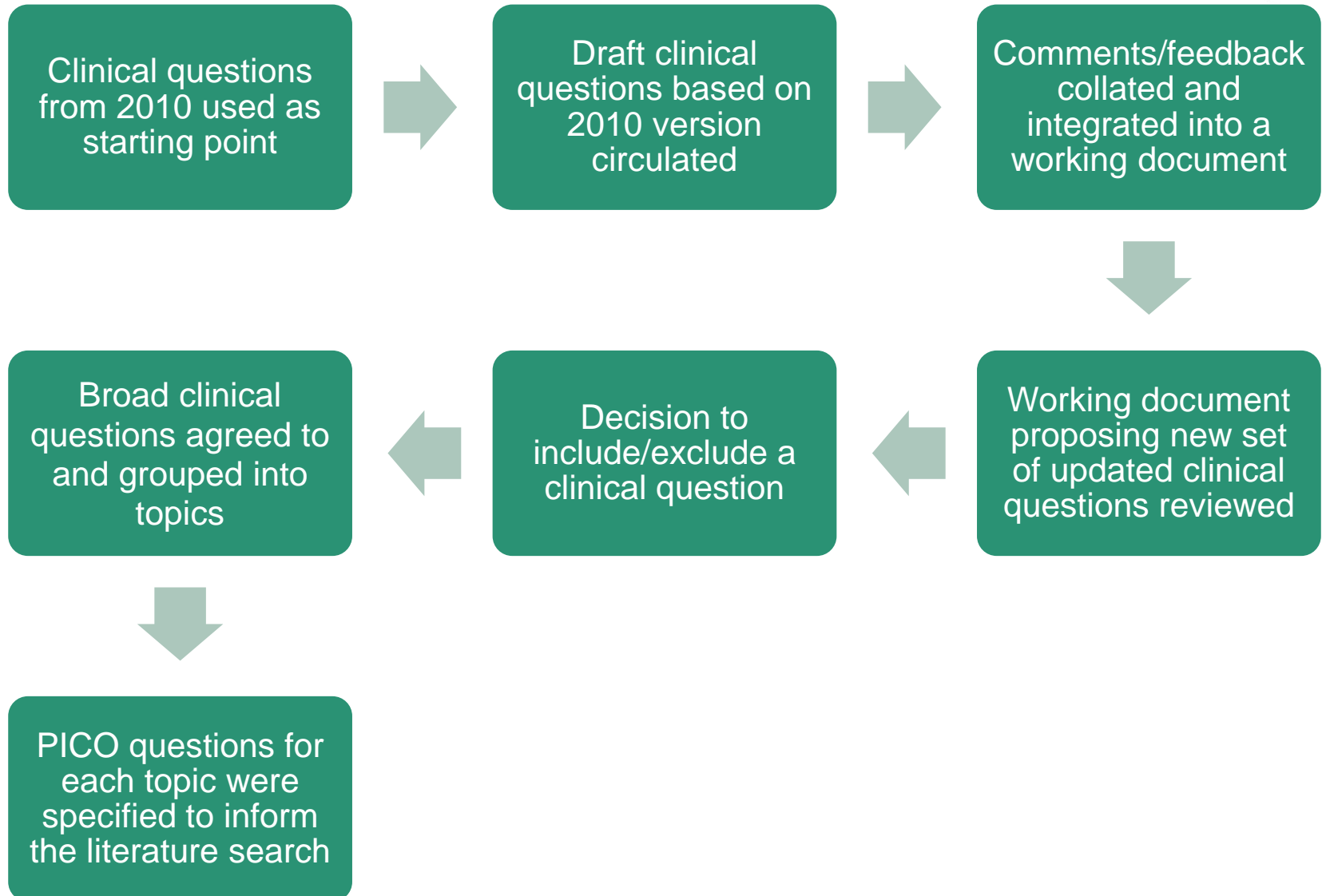
Nov 2015 – Jan 2016: 1<sup>st</sup> literature search; Jun-Jul 2016: 2<sup>nd</sup> literature search

Feb – Jun 2016: Working parties responsible for data extraction from the literature into evidence tables; draft recommendations based on GRADE system

Jul 2016: Finalised draft of Guideline recommendations ready for internal & external reviews

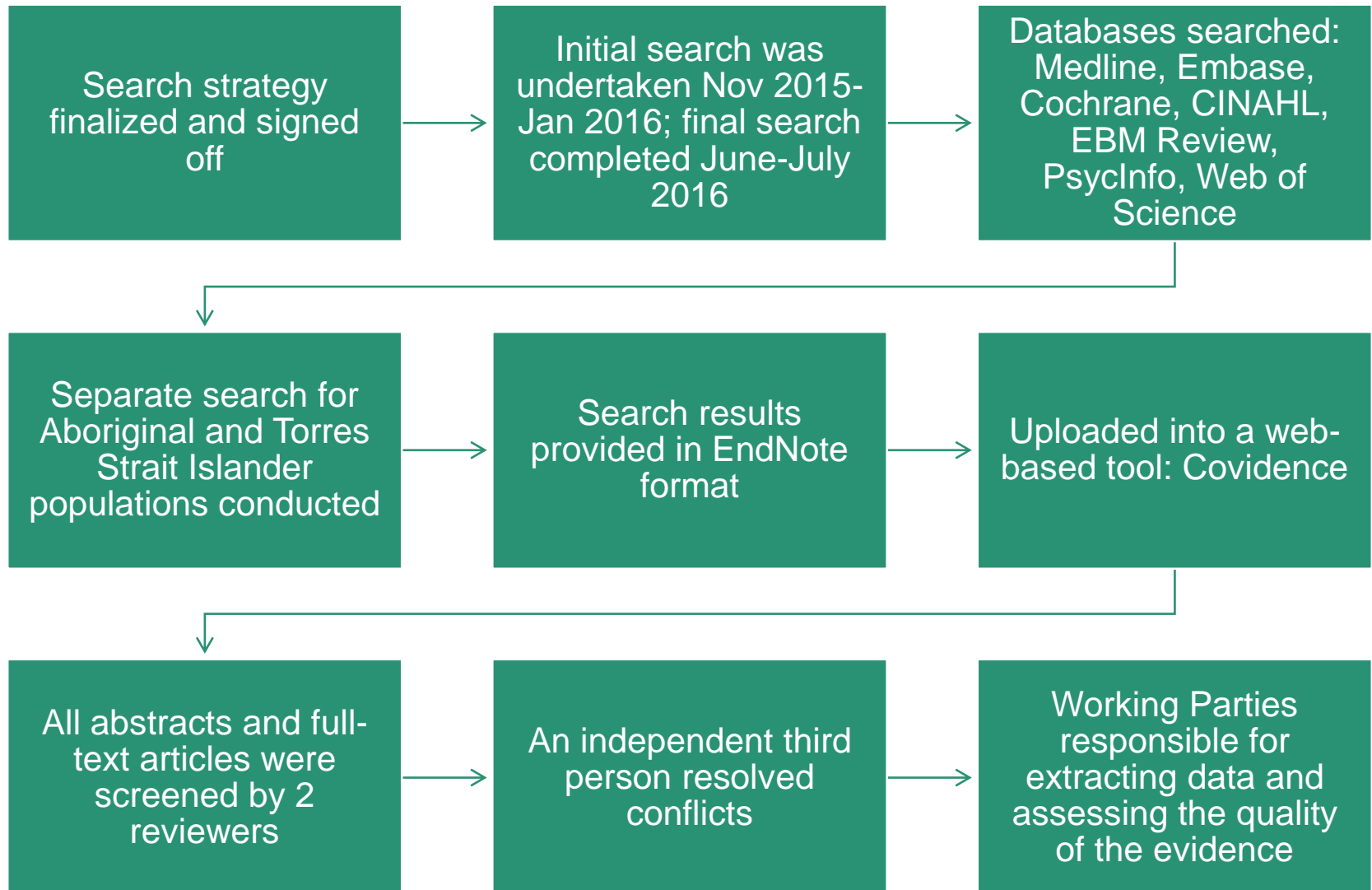
Aug 2016: 2 independent external reviews undertaken using the AGREE II instrument (AGREE II is the new (2010) international tool to assess the quality and reporting of practice guidelines)

# Evidence Review





# Literature search



# The Process: 2<sup>nd</sup> 12 months

Nov 2016: Public consultation conducted 1-30 Nov; 54 responses received from individuals/organisations - majority from clinicians working in stroke care; remainder being researchers, stroke survivors, pharmaceutical and medical technology industry members, patient advocacy group, and other healthcare related organisations. 300+ individual comments required response.

Mar 2017: First submission to NHMRC for review

May 2017: Final submission to NHMRC for approval

July 2017: Approved by NHMRC Council

4 Sept 2017: Official launch –Parliament House  
“Stroke Week”

# Challenges

## Volume of the literature

The literature search returned almost 110,000 citations – this was 267% more than compared to the 2010 guidelines search!

After review of all this evidence a final list of over 800 studies used to develop the recommendations across 8 chapters with 69 topics.

The GRADE logo, consisting of the word "GRADE" in bold red capital letters inside a red rectangular border, which is itself inside a light blue rectangular box.

**GRADE**

## The use of GRADE

The Clinical Guidelines followed GRADE methodology: Grading of Recommendations, Assessment, Development and Evaluation - an internationally recognised guideline development approach

The GRADE framework was a new approach for the Stroke Foundation and the working parties for evaluating evidence and formulating recommendations

# Strength of recommendations

The GRADE process uses only 2 categories for the strength of recommendations:

## Strong recommendation

1. Strong recommendations: where guideline authors are certain that the evidence supports a clear balance towards either desirable or undesirable effects (ie. Strong 'for' recommendation, strong 'against' recommendation)

## Weak recommendation

2. Weak recommendations: where the guideline authors are not as certain about the balance between desirable and undesirable effects as the evidence base isn't as robust (ie. Weak 'for' recommendation, weak 'against' recommendation)

# What about when there was a lack of evidence?

## **Consensus-based recommendation**

For questions where there is either a lack of evidence or insufficient quality of evidence on which to base a recommendation but the guideline authors believe that advice should be provided, statements are developed based on consensus and expert opinion (guided by any underlying or indirect evidence)

## **Practice Point**

For questions outside the search strategy (i.e. where no systematic literature search was conducted), additional considerations are provided

## 250 recommendations!!

GRADE enabled a consistent approach throughout the Guidelines development and allowed for formulation of almost 250 'strong' or 'weak' recommendations, consensus-based recommendations and practice points

# Research gaps

This list is not exhaustive but identifies areas discussed in the Clinical Guidelines where further research is needed, or where an intervention should be considered within the framework of conducting research:

- › Aboriginal and Torres Strait Islander populations
- › Early assessment & diagnosis (Imaging)
- › Acute medical & surgical management (ICH, neuroprotection, dysphagia)
- › Rehabilitation and recovery post-stroke, particularly in relation to interventions related to physical deficits, communication and cognition
- › Managing complications (Spasticity, fatigue)
- › Community participation & long-term care (self-management, peer support, carer support)



## The use of MAGICapp

The Clinical Guidelines used an online guideline development and publishing platform known as MAGICapp:

**M**aking **G**RADE the **I**rresistible **C**hoice

whose built-in templates are based on the GRADE methodology

The Clinical Guidelines have been published in a multi-layered platform on MAGICapp - allows the reader to view the recommendations first, then drill down into the research, key information, rationale and practical information for each recommendation



## Why use MAGICapp?

- MAGICapp enabled collaboration between multiple authors across various geographic locations: almost 100 people across Australia and New Zealand were involved in the guideline development process; the use of MAGICapp meant people didn't need to be in the one location at the one time, or meeting via teleconference or videoconference to work on a document; editing could be seen easily and incorporated quickly.
- MAGICapp ensured a standard approach in reviewing evidence and formulating recommendations consistent with GRADE methodology: all working party members were using the same tools, templates and review process; the inbuilt GRADE templates also meant that the evidence base and decision-making process leading to the recommendations is clearer and more transparent for those using the Clinical Guidelines.

- › MAGICapp allows for interactive online publication format and easy access to the Clinical Guidelines: the online format allows access anywhere, anytime, by anyone; you don't need to hunt for a physical hardcopy of the Clinical Guidelines.
- › MAGICapp facilitates future Clinical Guideline updates: the online format also allows easy editing, and updating, incorporating new evidence and making changes can occur quickly and be published the same day.

# Guidelines in context



strokefoundation

## Rehabilitation Stroke Services Framework

2013



strokefoundation

Stop stroke. Save lives. End suffering.

## National Acute Stroke Services

Framework 2015

## Acute Stroke Services Framework 2011

## National Stroke Audit

## Acute Services Report 2015

## National Stroke Audit

## Rehabilitation Services Report 2016

[strokefoundation.org.au](http://strokefoundation.org.au)

AUSTRALIAN COMMISSION  
ON SAFETY AND QUALITY IN HEALTH CARE



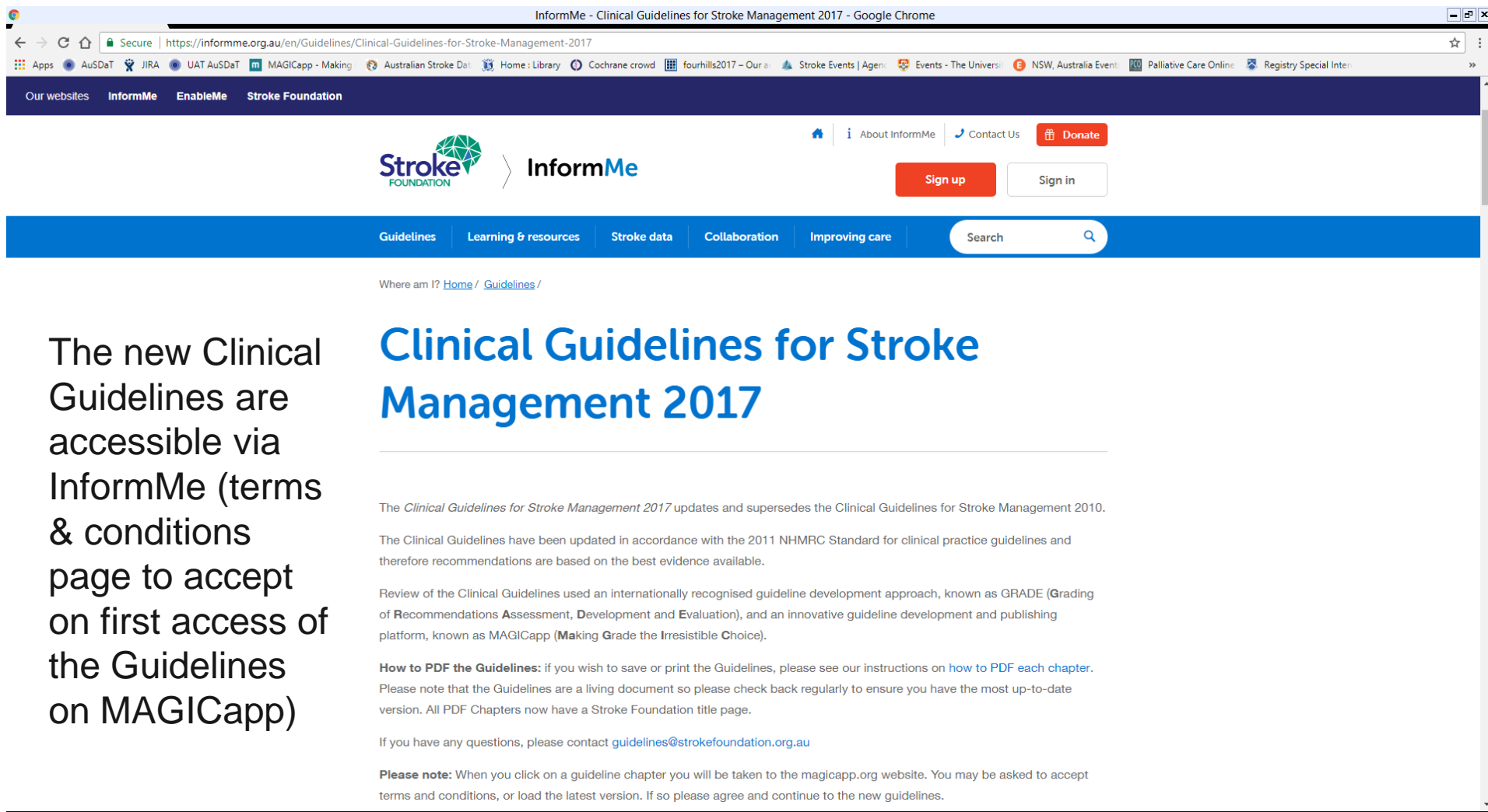
Clinical Care  
Standards



strokefoundation

## Acute Stroke Clinical Care Standard

- \* The Stroke Foundation developed the Acute Stroke Services Framework and the Rehabilitation Stroke Services Framework to guide service planning, monitoring and improvement of appropriate acute and rehabilitation stroke services to support the delivery of best practice care → These documents outline where strokes services should be developed, provides a basis for measuring adequacy of current structures and resources, guide decisions about resource requirements and provide an outline for monitoring of quality of acute stroke care
- \* The Stroke Foundation monitors and measures the delivery of best practice stroke care as described in the Clinical Guidelines for Stroke Management through the National Stroke Audit program. The program is a annual audit of stroke services in Australia that alternates annually between acute services and rehabilitation services. The National Stroke Audit collects both organisational and clinical data, which is analysed at a National, State and Site-level, and is able to reveals gaps in evidence-based practice, and offer opportunities to focus on quality improvement
- \* The Acute Stroke Clinical Care Standard aims to ensure that patients with stroke receive optimal treatment during the acute phase of management. Clinicians and health services can use the Clinical Care Standard to support the delivery of high-quality care. The Clinical Guidelines have incorporated areas that directly align with the Standards statements



InformMe - Clinical Guidelines for Stroke Management 2017 - Google Chrome

Secure | https://informme.org.au/en/Guidelines/Clinical-Guidelines-for-Stroke-Management-2017

Apps AuSDaT JIRA UAT AuSDaT MAGICapp - Making Australian Stroke Data Home : Library Cochrane crowd fourhills2017 - Our Stroke Events | Agency Events - The University NSW, Australia Event Palliative Care Online Registry Special Inter

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## Clinical Guidelines for Stroke Management 2017

The *Clinical Guidelines for Stroke Management 2017* updates and supersedes the Clinical Guidelines for Stroke Management 2010.

The Clinical Guidelines have been updated in accordance with the 2011 NHMRC Standard for clinical practice guidelines and therefore recommendations are based on the best evidence available.

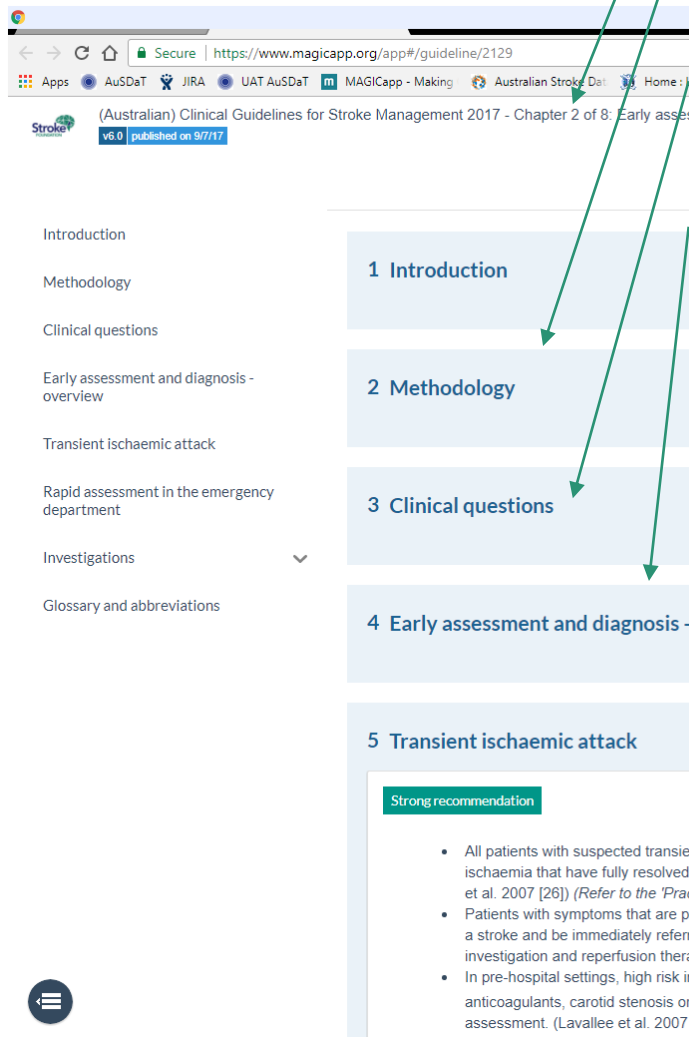
Review of the Clinical Guidelines used an internationally recognised guideline development approach, known as GRADE (Grading of Recommendations Assessment, Development and Evaluation), and an innovative guideline development and publishing platform, known as MAGICapp (Making Grade the Irresistible Choice).

**How to PDF the Guidelines:** if you wish to save or print the Guidelines, please see our instructions on [how to PDF each chapter](#). Please note that the Guidelines are a living document so please check back regularly to ensure you have the most up-to-date version. All PDF Chapters now have a Stroke Foundation title page.

If you have any questions, please contact [guidelines@strokefoundation.org.au](mailto:guidelines@strokefoundation.org.au)

**Please note:** When you click on a guideline chapter you will be taken to the magicapp.org website. You may be asked to accept terms and conditions, or load the latest version. If so please agree and continue to the new guidelines.

- \* Each Chapter is identified
- \* Has information about the Guidelines and the Methodology
- \* Each topic details the Clinical Questions that were used to form the basis for the literature search and recommendation development
- \* Each topic has an overview
- \* Each topic details the Recommendations and whether the Recommendation is 'new' or 'updated' from the 2010 guidelines
- \* Menu of chapter topics located on the left



Secure | <https://www.magicapp.org/app#/guideline/2129>

Apps AuSDaT JIRA UAT AuSDaT MAGICapp - Making Australian Stroke Data

(Australian) Clinical Guidelines for Stroke Management 2017 - Chapter 2 of 8: Early assessment and diagnosis - overview  
v6.0 published on 9/7/17

Introduction

Methodology

Clinical questions

Early assessment and diagnosis - overview

Transient ischaemic attack

Rapid assessment in the emergency department

Investigations

Glossary and abbreviations

1 Introduction

2 Methodology

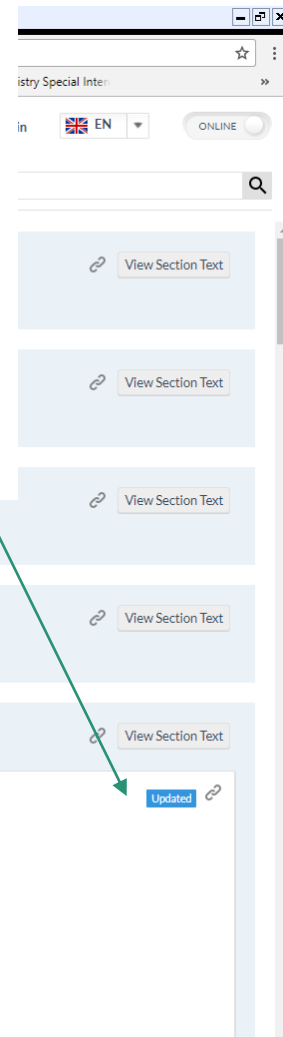
3 Clinical questions

4 Early assessment and diagnosis - overview

5 Transient ischaemic attack

**Strong recommendation**

- All patients with suspected transient ischaemic attack (TIA), i.e. focal neurological symptoms due to focal ischaemia that have fully resolved, should have urgent clinical assessment. (Lavalley et al. 2007 [25]; Rothwell et al. 2007 [26]) (Refer to the 'Practical Information' section for further useful information)
- Patients with symptoms that are present or fluctuating at time of initial assessment should be treated as having a stroke and be immediately referred for emergency department and stroke specialist assessment, investigation and reperfusion therapy where appropriate. (Lavalley et al 2007 [25]; Rothwell et al. 2007 [26])
- In pre-hospital settings, high risk indicators (e.g. crescendo TIA, current or suspected AF, current use of anticoagulants, carotid stenosis or high ABCD<sup>2</sup> score) can be used to identify patients for urgent specialist assessment. (Lavalley et al. 2007 [25]; Rothwell et al. 2007 [26])



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Updated

Research evidence Key info Rationale Practical info References

## Benefits and harms

The risk controls and initial management (26)). The

## Quality of evidence

The evidence is largely based on implementing rapid access to specialist services (Rothwell et al. 2007 [26]). This introduces the effect without accounting for other factors such as the widespread use of cardiovascular risk management. However, the baseline rate of recurrent stroke is reduced.

## Preference and values

Some patients may prefer rapidly accessing specialist services. It is important to mind that the best evidence assessment is achieved.

## Resources and other considerations

**Resources considerations**  
There is evidence from an outpatient clinic was not necessary for patients presenting to the clinic.

**Implementation considerations**  
There are organisations that have documented processes also collected on what is available.

## Quality of evidence

The evidence is largely based on implementing rapid access to specialist services (Rothwell et al. 2007 [26]). This introduces the effect without accounting for other factors such as the widespread use of cardiovascular risk management. However, the baseline rate of recurrent stroke is reduced.

Research evidence Key info Rationale Practical info References

Transient ischaemic attack (TIA) is a clinical diagnosis. It is important to investigate the cause of the attack and to manage it appropriately (26)).

Research evidence Key info Rationale Practical info References

## Distinguishing transient ischaemic attack (TIA) from other presentations:

Research evidence Key info Rationale Practical info References

- [25] Lavalée PC, Meseguer E, Abboud H et al : A transient ischaemic attack clinic with round-the-clock access (SOS-TIA): feasibility and effects.. The Lancet. Neurology 2007;6(11):953-60- Pubmed
- [26] Rothwell PM, Giles MF, Chandratheva A et al : Effect of urgent treatment of transient ischaemic attack and minor stroke on early recurrence of stroke (the TACS trial): a randomised controlled trial (England) 2007;370(9596):1432-42- Pubmed

Research evidence Key info Rationale Practical info References

Ischaemia that have fully resolved, should have urgent clinical assessment. (Lavalée et al. 2007 [25], et al. 2007 [26]) (Refer to the 'Practical Information' section for further useful information)

- Patients with symptoms that are present a stroke and be immediately referred for investigation and reperfusion therapy when appropriate.
- In pre-hospital settings, high risk indicators include: anticoagulants, carotid stenosis or high A assessment. (Lavalée et al. 2007 [25], R

## Summary

One UK study (EXPRESS) measured the rate of recurrent stroke before and after the set-up of a TIA clinic, in which patients with suspected TIA were immediately assessed and treated (Rothwell et al. 2007 [26]). The 90-day risk of recurrent stroke in the patients referred to the study clinic was 10.3% (32/310 patients) before the clinic and 2.1% (6/281 patients) after (adjusted hazard ratio 0.20 CI 0.08-0.49, p=0.0001). The reduction in risk was independent of age and sex, and early treatment did not increase the risk of intracerebral haemorrhage or other bleeding. A French study (SOS-TIA) set up 24/7 rapid TIA clinic attached to a large urban stroke unit hospital (Lavalée et al. 2007 [25]). They also found an 80% reduction in day recurrent stroke rate compared to that predicted by the ABC tool (1.24% actual vs 5.96% expected risk).

Both studies have high methodological quality but it is questionable the comparators represent the true rate of recurrent stroke in the population. On the other hand, the large scale of risk reduction shows that rapid assessment and treatment is likely to be beneficial for patients with suspected TIA.

Research evidence Key info Rationale Practical info

## Rapid assessment and treatment vs Control

All adults with suspected TIA

1 Outcomes Summary

Outcome

Timeframe

Recurrent stroke

90 days

1 Critical

Based on data

OK

Substantial net benefits of the recommended alternative

Moderate

View Section Text

Updated

Further information is available via the “view section text” button

The Recommendations tab provides information on:

- > Key info (Benefits & harms; Quality of evidence; Preferences & values; Resources considerations – contains audit indicator information)
- > Rationale
- > Practical info
- > References
- > Research evidence



# Recommendations

## **Chapter 1:**

Covers: pre-hospital care

## **Chapter 2: Early assessment and diagnosis**

Covers: Transient ischaemic attack; Rapid assessment in the emergency department; Investigations: Imaging, Cardiac investigations

## **Chapter 3: Acute medical & surgical management**

Covers: Stroke unit care; Assessment for rehabilitation; Palliative care; Reperfusion therapy – Thrombolysis, Neurointervention; Dysphagia; Antithrombotic therapy; Acute blood pressure lowering therapy; Surgery for ischaemic stroke and management of cerebral oedema; Intracerebral haemorrhage (ICH) management - Medical interventions, Surgical interventions; Oxygen therapy; Neuroprotection; Glycaemic therapy; Pyrexia management



## **Chapter 4: Secondary prevention**

Covers: Lifestyle modification – Smoking, Diet, Physical activity, Obesity, Alcohol; Adherence to pharmacotherapy; Blood pressure lowering therapy; Antiplatelet therapy; Anticoagulant therapy; Cholesterol lowering therapy; Carotid surgery; Cervical artery dissection; Cerebral venous sinus thrombosis; Diabetes management; Patent foramen ovale management; Hormone replacement therapy; Oral contraception

## **Chapter 5: Secondary prevention**

Covers: Early supported discharge services; Home-based rehabilitation; Goal setting; Early mobilisation; Sensorimotor impairment – Weakness, Loss of sensation, Vision; Physical activity - Amount of rehabilitation, Cardiorespiratory fitness, Sitting, Standing up, Standing balance, Walking, Upper limb activity; Activities of daily living; Communication - Assessment of communication deficits, Aphasia, Dysarthria, Apraxia of speech, Cognitive communication disorder in right hemisphere stroke; Cognition and perception - Assessment of cognition, Executive function, Attention and concentration, Memory, Perception, Limb apraxia, Neglect

## **Chapter 6: Managing complications**

Covers: Nutrition and hydration - Early hydration, Early feeding; Oral hygiene; Spasticity; Contracture; Subluxation; Shoulder pain; Swelling of the extremities; Fatigue; Incontinence - Urinary incontinence, Faecal incontinence; Mood disturbance - Mood assessment, Treatment for emotional distress, Prevention of depression, Treatment for depression, Treatment for anxiety; Deep venous thrombosis or pulmonary embolism; Falls

## **Chapter 7: Discharge planning and transfer of care**

Covers: Information and education; Discharge care plans; Patient and carer needs; Home assessment; Carer training

## **Chapter 8: Community Participation and long-term care**

Covers: Self-management; Driving; Community mobility and outdoor travel; Leisure; Return to work; Sexuality; Support - Peer support, Carer support

# What has been developed to help implementation?

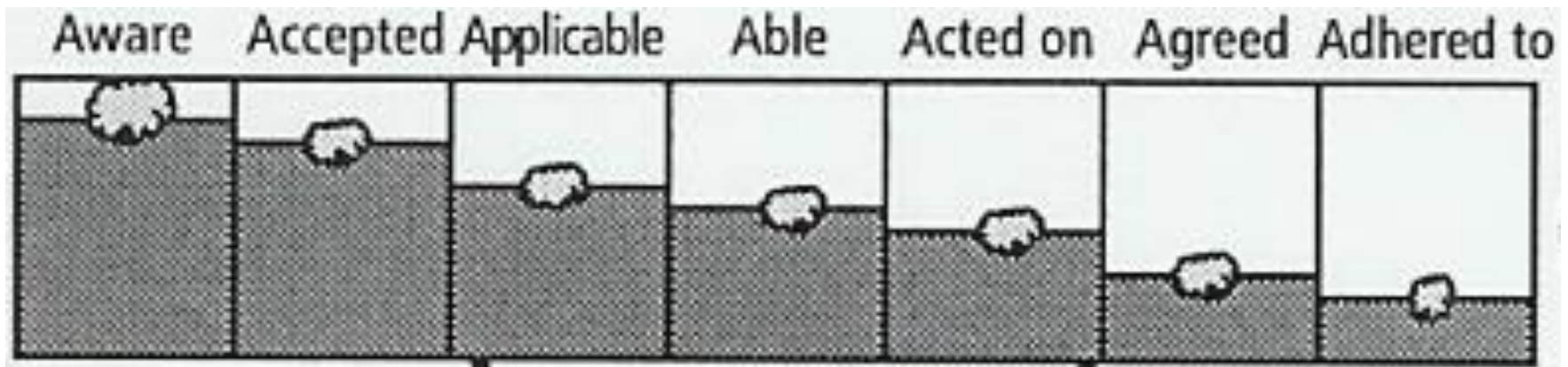
## Supporting resources:

- › 2-pg summary document for healthcare professionals
- › 2-pg plain English summary document for consumer audiences
- › Summary document of the recommendations
- › Summary document of the 2010 vs 2017 recommendations
- › Discipline-specific summary documents

## Dissemination plan:

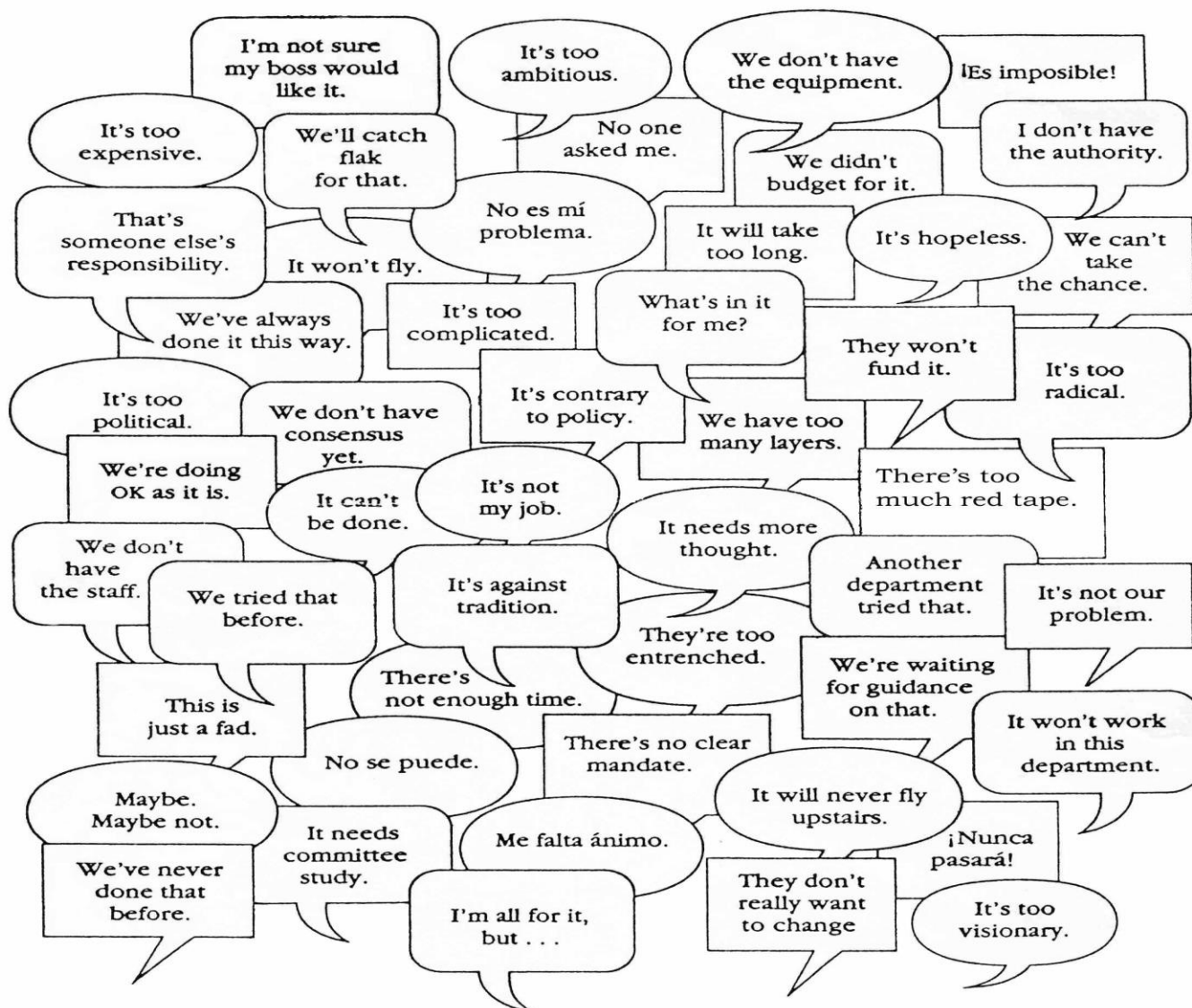
- › Official launch during Stroke Week (media)
- › Presentations at national and state conferences/seminars
- › Circulation electronically to members of the Australian Stroke Coalition; organisations who were approached for review and/or endorsement of the Clinical Guidelines; healthcare professional lists of the Stroke Foundation; research networks including various academic links
- › Information on InformMe, the EnableMe website and the main Stroke Foundation website
- › Publication within relevant journals (coming in 2018)

## Implementation considerations



Lost in translation??

# 50 Reasons Not To Change





## **Implementation assistance:**

- › Education sessions: attending face-to-face meetings/seminars/workshops; hosting internet-based webinars
- › Audit and feedback: data from the National Stroke Audits
- › Update of the Frameworks: Acute and Rehabilitation Stroke Services Frameworks
- › Development of the Quality Improvement and Collaboration sections of InformMe
- › Clinical Network QI work

# Use the Clinical Guidelines to improve quality of stroke care

- › Get a team together
- › Understand local context
- › Make a clear plan
- › Review / evaluate change
- › Share / embed





# Communicate, listen, learn, educate

- › Face-to-face: small groups, larger groups; discipline specific, interdisciplinary
- › Webinars
- › Email
  
- › Discuss, clarify information, evaluate ideas re areas of focus & suggestions for change/implementation
  
- › Learn from others: use your networks to see what others are doing and how and what lessons they have learnt

# Evaluate

- › **Audit and feedback**
- › Data from the National Stroke Audits will be fundamental to the implementation of the Clinical Guidelines
- › Launch of results from the National Stroke Audit Acute Services 2017: Thursday 23 November

## Looking to the future?

It's crucial that clinical evidence is produced in a reproducible and transparent manner, and is easily accessible to those who need it to inform treatment decisions and see where the research/evidence gaps are. Part of why the Clinical Guidelines have been produced on an online web platform that everyone is able to access at any time.

The online tool has helped to standardise the way clinical evidence is stored and displayed, providing a single point of access to existing knowledge and highlighting areas where more research is needed.

The online tool will enable easy updates and new evidence to be incorporated, without having to wait years before a review and update.

## Living guidelines

- ✓ **Capacity for a cycle of regular and rapid updates**
- ✓ **Potential to act on new evidence and data**
- ✓ **Frequency of review for each clinical question prioritised based on the rate of change in that area**
- ✓ **Potential to add new clinical questions**

In partnership, the Stroke Foundation and Cochrane Australia propose to revolutionise the translation of research into clinical practice by creating 'living' stroke guidelines. This will accelerate world class treatment and care for Australians with stroke.