Complete Summary

GUIDELINE TITLE

Management of patients with stroke: identification and management of dysphagia. A national clinical guideline.

BIBLIOGRAPHIC SOURCE(S)

Scottish Intercollegiate Guidelines Network (SIGN). Management of patients with stroke: identification and management of dysphagia. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2004 Sep. 38 p. (SIGN publication; no. 78). [154 references]

GUIDELINE STATUS

This is the current release of the guideline.

Any amendments to the guideline in the interim period will be noted on Scottish Intercollegiate Guidelines Network (SIGN) Web site.

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Dysphagia as a result of stroke

GUIDELINE CATEGORY

Evaluation
Management
Prevention

Risk Assessment
Screening

CLINICAL SPECIALTY

Family Practice
Geriatrics
Internal Medicine
Neurology
Nursing
Nutrition
Otolaryngology
Physical Medicine and Rehabilitation
Speech-Language Pathology

INTENDED USERS

Dietitians
Nurses
Occupational Therapists
Physicians
Speech-Language Pathologists

GUIDELINE OBJECTIVE(S)

The aim of this guideline is to assist practitioners in reducing the morbidity associated with dysphagia by early detection of swallowing disorders in stroke patients and application of appropriate methods to support food and fluid intake

TARGET POPULATION

Stroke patients throughout the care pathway from initial primary care response, through hospital admission, on to continuing care in the community. The emphasis is on patients in the acute setting.

Note: The guideline does not apply to people with neurological conditions other than stroke or to people with subarachnoid haemorrhage.

INTERVENTIONS AND PRACTICES CONSIDERED

Evaluation/Assessment

1. Initial clinical evaluation of swallowing and nutrition after stroke:
    - Assessing risk of pneumonia (gag reflex, laryngopharyngeal sensory testing, water swallow test)
    - Swallow screening
    - Assessing risk of undernutrition
    - Nutritional screening
2. Assessment:
    - Clinical bedside assessment (CBA)

    - Instrumental assessment, including modified barium swallow (MBS) using videoflouroscopy and fibre optic endoscopic evaluation of swallowing (FEES) using a flexible nasendoscope
    - Other assessments considered, but not recommended: cervical auscultation (CA) and pulse oximetry
3. Provider training for screening and assessments

Management/Prevention

1. Nutritional interventions:
    - Oral nutritional supplementation (considered, but not recommended)
    - Nasogastric (NG) tube feeding
    - Percutaneous endoscopic gastrostomy (PEG) tube feeding
2. Other management issues:
    - Routine nutritional monitoring and interventions
    - Diet modification
    - Texture modification
    - Delivery of oral hygiene
    - Administration of medicines
    - Assessment of communication, cognitive issues, and capacity for decision making

MAJOR OUTCOMES CONSIDERED

- Morbidity associated with dysphagia (pneumonia, lower respiratory tract infections, weight changes, undernutrition or reduced nutritional status)
- Risk of aspiration in stroke patients
- Risk of undernutrition in stroke patients
- Benefits, risks, and efficacy of interventions used to evaluate and manage dysphagia, and prevent complications
- Quality of life

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The evidence base for this guideline was synthesised in accordance with Scottish Intercollegiate Guidelines Network (SIGN) methodology. A systematic review of the literature was carried out using an explicit search strategy devised by a SIGN Information Officer. Databases searched include Medline, Embase, Healthstar, Cinahl, and the Cochrane Library. The main part of the strategy was based on that used by the Cochrane Library. The year range covered was 1980-2001. Internet searches were carried out on various Web sites including the New Zealand Guidelines Programme, the United Kingdom Health Technology Assessment programme, and the United States National Guidelines Clearinghouse. The

Medline version of the main search strategies can be found on the SIGN Web site, in the section covering supplementary guideline material. The main searches were supplemented by material identified by individual members of the development group.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

1++: High quality meta-analyses, systematic reviews of randomised controlled trials (RCTs), or RCTs with a very low risk of bias

1+: Well conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias

1-: Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias

2++: High quality systematic reviews of case control or cohort studies; high quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal

2+: Well conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal

2-: Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal

3: Non-analytic studies (e.g., case reports, case series)

4: Expert opinion

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

All selected papers were evaluated by two members of the group using standard Scottish Intercollegiate Guidelines Network (SIGN) methodological checklists before conclusions were considered as evidence.

Additional details can be found in the companion document titled "SIGN 50: A Guideline Developers' Handbook." (Edinburgh [UK]: Scottish Intercollegiate Guidelines Network. [SIGN publication; no. 50]), available from the SIGN Web site.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The process for synthesizing the evidence base to form graded guideline recommendations is illustrated in the companion document titled "SIGN 50: A Guideline Developers' Handbook." (Edinburgh [UK]: Scottish Intercollegiate Guidelines Network. [SIGN publication; no. 50], available from the SIGN Web site.

Guideline recommendations are graded to differentiate between those based on strong evidence and those based on weak evidence. This judgment is made on the basis of an (objective) assessment of the design and quality of each study and a (perhaps more subjective) judgment on the consistency, clinical relevance and external validity of the whole body of evidence. The aim is to produce a recommendation that is evidence-based, but which is relevant to the way in which health care is delivered in Scotland and is therefore implementable.

It is important to emphasise that the grading does not relate to the importance of the recommendation, but to the strength of the supporting evidence and, in particular, to the predictive power of the study designs from which that data was obtained. Thus, the grading assigned to a recommendation indicates to users the likelihood that, if that recommendation is implemented, the predicted outcome will be achieved.

Evidence tables are compiled by SIGN executive staff based on the quality assessments of individual studies provided by guideline development group members. The tables summarise all the validated studies identified from the systematic literature review relating to each key question. They are presented in a standard format to make it easier to compare results across studies, and will present separately the evidence for each outcome measure used in the published studies. These evidence tables form an essential part of the guideline development record and ensure that the basis of the guideline development group's recommendations is transparent

It is rare for the evidence to show clearly and unambiguously what course of action should be recommended for any given question. Consequently, it is not always clear to those who were not involved in the decision making process how guideline developers were able to arrive at their recommendations, given the evidence they had to base them on. In order to address this problem, SIGN has introduced the concept of considered judgment.

Under the heading of considered judgment, guideline development groups summarise their view of the total body of evidence covered by each evidence table. This summary view is expected to cover the following aspects:

- Quantity, quality, and consistency of evidence
- Generalisability of study findings
- Directness of application to the target population for the guideline.
- Clinical impact (i.e. the extent of the impact on the target patient population, and the resources needed to treat them)
- Implementability (i.e. how practical it would be for the NHS in Scotland to implement the recommendation)

Guideline development groups are provided with a pro forma in which to record the main points from their considered judgement. Once they have considered these issues, the group is asked to summarise their view of the evidence and assign a level of evidence to it, before going on to derive a graded recommendation.

On occasion, guideline development groups find that there is an important practical point that they wish to emphasise but for which there is not, nor is their likely to be, any research evidence. This will typically be where some aspect of treatment is regarded as such sound clinical practice that nobody is likely to question it. These are marked in the guideline as Good Practice Points, and are indicated. It must be emphasised that these are not an alternative to evidence-based recommendations, and should only be used where there is no alternative means of highlighting the issue.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grades of Recommendation

Note: The grade of recommendation relates to the strength of the evidence on which the recommendation is based. It does not reflect the clinical importance of the recommendation.

Grade A: At least one meta-analysis, systematic review of randomized controlled trials (RCTs), or RCT rated as 1++ and directly applicable to the target population; *or*

A body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results

Grade B: A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; *or*

Extrapolated evidence from studies rated as 1++ or 1+

Grade C: A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; *or*

Extrapolated evidence from studies rated as 2++

Grade D: Evidence level 3 or 4; *or*

Extrapolated evidence from studies rated as 2+

Good Practice Points: Recommended best practice based on the clinical experience of the guideline development group

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

A national open meeting is the main consultative phase of Scottish Intercollegiate Guidelines Network (SIGN) guideline development, at which the guideline development group presents its draft recommendations for the first time. The national open meeting for this guideline was held on 16 May 2002 and was attended by 100 representatives of all the key specialties relevant to the guideline. The draft guideline was also available on the SIGN Web site for a limited period at this stage to allow those unable to attend the meeting to contribute to the development of the guideline.

The guideline was also reviewed in draft form by a panel of independent expert referees, who were asked to comment primarily on the comprehensiveness and accuracy of interpretation of the evidence base supporting the recommendations in the guideline.

As a final quality control check, the guideline is reviewed by an Editorial Group comprising the relevant specialty representatives on SIGN Council to ensure that the peer reviewers' comments have been addressed adequately and that any risk of bias in the guideline development process as a whole has been minimised.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Note from the Scottish Intercollegiate Guidelines Network (SIGN) and National Guideline Clearinghouse (NGC): In addition to these evidence-based recommendations, the guideline development group also identifies points of best clinical practice in the full-text guideline document.

The grades of recommendations (A-D) and levels of evidence (1++, 1+, 1-, 2++, 2+, 2-, 3, 4) are defined at the end of the "Major Recommendations" field.

Initial Clinical Evaluation of Swallowing and Nutrition after Stroke:

C: All stroke patients should be screened for dysphagia before being given food or drink.

Assessing Risk of Pneumonia

B: The water swallow test should be used as a part of the screening for aspiration risk in stroke patients.

C: Clinical history taking should take into account comorbidities and other risk factors (e.g., smoking or respiratory disease) to identify increased risk of developing aspiration pneumonia.

Swallow Screening

D: Patients with dysphagia should be monitored daily in the first week to identify rapid recovery. Observations should be recorded as part of the care plan.

B: A typical swallow screening procedure should include:

- Initial observations of the patient's consciousness level
- Observations of the degree of postural control

If the patient is able to actively cooperate and is able to be supported in an upright position the procedure should also include:

- Observations of oral hygiene
- Observations of control of oral secretions
- If appropriate, a water swallow test

Nutritional Screening

D: Patients' nutritional risk should be established using a valid and reliable screening procedure suitable for stroke patients. Nutritional screening should be repeated at regular interval throughout the episode of care.

D: Nutritional screening should focus on the effects of the stroke on nutritional status (e.g., presence of dysphagia and ability to eat) rather than previous nutritional status.

D: Nutritional risk should be established within 48 hours of admission to hospital.

D: Results from the nutritional screening process should guide appropriate referral to a dietitian for assessment and management.

D: Nutritional screening should cover:

- Body mass index (BMI)
- Ability to eat

- Appetite
- Physical condition
- Mental condition

Assessment:

Clinical Bedside Assessment

B: A standardised clinical bedside assessment (CBA) should be used by a professional skilled in the management of dysphagia (currently speech and language therapists).

B: The clinical bedside assessment developed and tested by Logemann, or a similar tool, is recommended.

Instrumental Assessment

C: The modified barium swallow test and fibre optic endoscopic evaluation of swallow are both valid methods for assessing dysphagia. The clinician should consider which is the most appropriate for different patients in different settings.

Training for Screening and Assessments:

Screening

D: A training package for nurses should include:

- Risk factors for dysphagia
- Early signs of dysphagia
- Observation of eating and drinking habits
- Water swallow test
- Monitoring of hydration
- Monitoring weight and nutritional risk

Assessment

D: All staff involved in the detection and management of dysphagia should be trained according to the recommendations of the relevant professional body.

D: Standard criteria should be established for the interpretation of the results of radiological and fibre optic assessments.

Nutritional Interventions:

Tube Feeding

D: Patients in the early recovery phase should be reviewed weekly by the multidisciplinary team to ascertain if longer term (>4 weeks) feeding is required.

B: Feeding via percutaneous endoscopic gastrostomy (PEG) is the recommended feeding route for long-term (>4 weeks) enteral feeding. Patients requiring long-term tube feeding should be reviewed regularly.

D: Patient's and carer's perceptions and expectations of PEG feeding should be taken into account and the benefits, risks and burden of care fully explained before initiating feeding.

Other Management Issues:

Effect of Regular Review on Patient Outcome

D: Patients with persistent dysphagia should be reviewed regularly, at a frequency related to their individual swallowing function and dietary intake, by a professional skilled in the management of dysphagia.

Effect of Therapy on Patient Outcome

D: Advice on diet modification and compensatory techniques (postures and manoeuvres) should be given following full swallowing assessment.

D: Texture modified food should be attractively presented and appetising. Patients should have a choice of dishes.

Other Considerations

D: Good oral hygiene should be maintained in patients with dysphagia, particularly in those with PEG or nasogastric (NG) tubes, in order to promote oral health and patient comfort.

D: Hospital and community pharmacists or medicines information centres should be consulted by the professional managing the patient's dysphagia on the most appropriate method of administering medication.

Care of Patients with Dysphagia

D: Staff, carers and, patients should be trained in feeding techniques. This training should include:

- Modifications of positioning and diet
- Food placement
- Management of behavioural and environmental factors
- Delivery of oral care
- Management of choking

The Effect of Communicative or Cognitive Impairment on the Management of Dysphagia Patients

D: Communication, cognitive function, and the capacity for decision making should be routinely assessed in patients with dysphagia.

Definitions:

Levels of Evidence

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4: Expert opinion

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B: A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; *or*

Extrapolated evidence from studies rated as 1++ or 1+

C: A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; *or*

Extrapolated evidence from studies rated as 2++

D: Evidence level 3 or 4; *or*

Extrapolated evidence from studies rated as 2+

Good Practice Points: Recommended best practice based on the clinical experience of the guideline development group

CLINICAL ALGORITHM(S)

Algorithms are provided in the original guideline document for:

- Swallow screening procedure
- Clinical bedside assessment
- Oral care
- Assessment of patient suitability for a percutaneous endoscopic gastrostomy (PEG) tube
- Postdischarge monitoring for patients on home enteral tube feeding

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Implementation of a systematic programme of diagnosis and management of dysphagia within an acute stroke management plan can reduce the occurrence of pneumonia.
- Starting tube feeding early may reduce case fatality and that unless there are strong practical reasons why a percutaneous endoscopic gastrostomy (PEG) tube should be used, early tube feeding should be via a nasogastric (NG) tube.
- Routine nutritional monitoring and interventions (i.e., regular weighing, nutritional analysis, staff attention to swallowing, texture modified diets, and tube feeds) contribute to improvements in nutrition and ensure that dysphagia is not associated with undernutrition in patients surviving beyond one month.
- Diet modification and use of postures or manoeuvres have been shown to be effective in specific individuals using videofluoroscopy and are standard management of dysphagia following stroke.
- Good oral hygiene can prevent oral and dental disease and reduce the risk of aspiration pneumonia.

POTENTIAL HARMS

- Limitations of *modified barium swallow* (MBS) include potential difficulty in transporting stroke patients to a radiology department, exposure to radiation, and the limitations of basing management recommendations on a "snapshot" view of swallowing function.

- *Nasogastric (NG) tubes*: inadvertent placement into the lungs can be a problem, and if unrecognised has serious consequences. Oesophagitis and upper gastrointestinal ulceration may also occur.
- *Percutaneous endoscopic gastrostomy (PEG) tubes*: Minor complications, such as tube displacement, minor skin infection, tube obstruction and leakage are relatively common with a reported rate of 13 to 62%. Major complications, such as gastric haemorrhage, serious abdominal wall infection, peritonitis and gastric fistula are reported in between 3 to 19% of patients. The procedure related mortality is 0 to 2.5%. Long term mortality following PEG placement is high, presumably reflecting the seriousness of the underlying stroke. Mortality rates at 30 days, 6 months, and 12 months are in the range of 20%, 40%, and 50% respectively.
- Both *NG and PEG tubes*: with both types of tube feeding gastric intolerance can occur and may limit adequate delivery of nutrition. Gastro-oesophageal reflux and aspiration are common and neither type of tube feeding reduces the risk of aspiration after stroke.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

This guideline is not intended to be construed or to serve as a standard of care. Standards of care are determined on the basis of all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and patterns of care evolve. Adherence to guideline recommendations will not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgment regarding a particular clinical procedure or management plan must be made by the appropriate healthcare professional(s), following discussion of the options with the patient, in light of the diagnostic and treatment choices available. It is advised, however, that significant departures from the national guideline or any local guidelines derived from it should be fully documented in the patient's case notes at the time the relevant decision is taken.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Implementation of national clinical guidelines is the responsibility of each National Health Service (NHS) Health Board and is an essential part of clinical governance. It is acknowledged that every Health Board cannot implement every guideline immediately on publication, but mechanisms should be in place to ensure that the care provided is reviewed against the guideline recommendations and the reasons for any differences assessed and, where appropriate, addressed. These discussions should involve both clinical staff and management. Local arrangements may then be made to implement the national guideline in individual hospitals, units and practices, and to monitor adherence. This may be done by a variety of means including patient-specific reminders, continuing education and training, and clinical audit.

Key Points for Audit

Data should be collected to confirm that:

- Comorbidities and correctable risk factors are assessed on admission
- Nutritional risk is assessed within 48 hours of admission
- Screening for dysphagia takes place before any food/drink is given
- Screening for dysphagia in inpatients is repeated daily for a minimum of one week after initial assessment
- Criteria are in place to highlight the need for referral to a dietitian or speech and language therapist (SLT) and referral procedures are in place
- Documentation of nutritional management of the patient (including justification of the decision not to feed, consistency of modified diets and monitoring of food and fluid intake) is available
- Non-compliance of patients on modified oral intake does not reflect lack of appropriate care
- The patient has received the modified diet and drinks that have been recommended
- A pharmacist is involved/consulted at an early stage
- Multidisciplinary training programmes are in place
- The timing, institution, and complications of tube feeding (nasogastric [NG] and percutaneous endoscopic gastrostomy [PEG]) are recorded
- Named professional in charge of patients discharged with NG or PEG has been identified
- An oral care protocol is in place
- Patients with persistent dysphagia are reviewed
- The relevant information has been imparted to the patient and family/carer in an appropriate format
- Professionals, patients and carers are aware of the forthcoming Clinical Standards for Stroke Services published by NHS Quality Improvement Scotland

IMPLEMENTATION TOOLS

Clinical Algorithm
Quick Reference Guides/Physician Guides

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Scottish Intercollegiate Guidelines Network (SIGN). Management of patients with stroke: identification and management of dysphagia. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2004 Sep. 38 p. (SIGN publication; no. 78). [154 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2004 Sep

GUIDELINE DEVELOPER(S)

Scottish Intercollegiate Guidelines Network - National Government Agency [Non-U.S.]

SOURCE(S) OF FUNDING

Scottish Executive Health Department

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Guideline Development Group: Ms Iris Clarke (*Chair*), Speech and Language Therapist, Raigmore Hospital, Inverness; Mrs Catherine Dunnet (*Secretary*), Head of Speech and Language Therapy Service, Glasgow Royal Infirmary; Ms Jane Camp, Clinical Governance Practice Development Nurse, Gartnavel Royal Hospital, Glasgow; Dr David Campbell, General Practitioner, Irvine; Ms Francesca Chappell, Information Officer, SIGN; Dr Ali El-Ghorr, Programme Manager, SIGN; Sister Hazel Fraser, Stroke Coordinator, Queen Margaret Hospital, Dunfermline; Dr Julian Guse, Consultant Radiologist, Monklands Hospital, Airdrie; Dr Ray Holden, Consultant Gastroenterologist, Monklands Hospital, Airdrie; Dr Romana Hunter, Clinical Lecturer, Dundee Dental School; Dr Roberta James, Programme Manager, SIGN; Mrs Morag Ogilvie, Senior Dietitian, St Johnís Hospital, Livingston; Dr Brian Pentland, Consultant Physician, Astley Ainslie Hospital, Edinburgh; Ms Fiona Small, Physiotherapist, Western General Hospital, Edinburgh; Professor David Stott, Consultant in Geriatric Medicine, Glasgow Royal Infirmary; Ms Fiona Strachan, Senior Dietitian, Woodend Hospital, Aberdeen; Ms Gillian Wilson, Speech and Language Therapist, Victoria Infirmary, Glasgow; Mrs Kathryn Wood, Principal Pharmacist, Tayside Primary Care Trust

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Declarations of interests were made by all members of the guideline development group. Further details are available from the Scottish Intercollegiate Guidelines Network (SIGN) Executive.

GUIDELINE STATUS

This is the current release of the guideline.

Any amendments to the guideline in the interim period will be noted on Scottish Intercollegiate Guidelines Network (SIGN) Web site.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Scottish Intercollegiate Guidelines Network (SIGN) Web site.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Quick reference guide: Management of patients with stroke: identification and management of dysphagia. Scottish Intercollegiate Guidelines Network, 2004 Sep. 2 p. Available in Portable Document Format (PDF) from the Scottish Intercollegiate Guidelines Network (SIGN) Web site.
- SIGN 50: A guideline developer's handbook. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network. (SIGN publication; no. 50). Available from the SIGN Web site.
- Appraising the quality of clinical guidelines. The SIGN guide to the AGREE (Appraisal of Guidelines Research & Evaluation) guideline appraisal instrument. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network, 2001. Available from the SIGN Web site.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on October 22, 2004. The information was verified by the guideline developer on January 26, 2005.

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