



## Complete Summary

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### GUIDELINE TITLE

Altered mental states.

### BIBLIOGRAPHIC SOURCE(S)

American Medical Directors Association (AMDA). Altered mental states. Columbia (MD): American Medical Directors Association (AMDA); 1998. 20 p. [17 references]

## COMPLETE SUMMARY CONTENT

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## SCOPE

### DISEASE/CONDITION(S)

Altered Mental States

### GUIDELINE CATEGORY

Diagnosis  
Evaluation  
Management

### CLINICAL SPECIALTY

Geriatrics

### INTENDED USERS

Advanced Practice Nurses  
Allied Health Personnel  
Nurses  
Pharmacists

Physicians  
Social Workers

#### GUIDELINE OBJECTIVE(S)

- To improve the quality of care delivered to patients in long-term care facilities
- To give health care practitioners and other members of the interdisciplinary team a basic process to effectively assess and manage patients with new or ongoing altered mental status, and to try to maximize function and quality of life and minimize risks, complications, functional decline, hospitalization, and death.

#### TARGET POPULATION

Elderly individuals and/or residents of long-term care facilities

#### INTERVENTIONS AND PRACTICES CONSIDERED

- Recognition and diagnosis of altered mental states
- Interdisciplinary care plan that addresses risk assessment and prevention, cause identification and treatment, management of the underlying causes, areas for staff support, patient and family education, prevention and handling of coexisting and complicating conditions, changes in other components of the existing treatment regimen, monitoring and other aspects of the patient's care

#### MAJOR OUTCOMES CONSIDERED

- Hospitalization rate
- Overall survival
- 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 guideline developer relied on the references listed in the Agency for Healthcare Research and Quality (AHRQ) (formerly the Agency for Health Care Policy and Research [AHCPR]) 1996 guideline titled "Recognition and Initial Assessment of Alzheimer's Disease and Related Dementias," as well as references identified via additional Medline searches, pertinent journal articles, and knowledge of current practice.

#### NUMBER OF SOURCE DOCUMENTS

Not stated

#### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

#### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

#### METHODS USED TO ANALYZE THE EVIDENCE

Review

#### DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

#### METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

#### DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The guideline was developed by an interdisciplinary work group using a process that combined evidence- and consensus-based thinking. The groups were composed of practitioners involved in patient care in the institutional setting. Using pertinent articles and information and a draft outline, the group worked to make a simple, user-friendly guideline that focused on application in the long term care institutional setting.

#### RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

#### 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

All AMDA clinical practice guidelines undergo external review. The draft guideline is sent to approximately 175+ reviewers. These reviewers include AMDA physician members and independent physicians, specialists, and organizations that are knowledgeable of the guideline topic and the long-term care setting.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

The steps involved in addressing altered mental states were summarized by NGC:

#### I. Recognition

##### Step 1

1. Determine if the individual has a history of altered mental states (AMS)
  - Review the individual's physical, functional, cognitive, and behavioral history. Document pertinent information (onset, duration, frequency, course, causes or precipitating factors, aggravating/ameliorating factors) about any recent alterations in mental state to help understand and clarify the current situation. Relevant history might include confusion, disorientation, hallucinations, delusions, suspiciousness or paranoia. These symptoms may be constant or periodic, and stable or fluctuating. Changes in nutritional status, eating habits, and physical function may help identify causes or complications of impaired mood or cognition.
  - For new admissions or re-admissions, review available transfer information -including any recent hospital discharge summaries - and other referral data-and the patient's medical, surgical, family, and social history. Also look for related diagnoses in the physician's admission history and physical or a pertinent consultation report. Check current orders for treatments and medications that address behavioral, cognitive, or mood impairments (e.g., anti-depressants, antipsychotics, etc.). Seek information about the baseline mental status and prior diagnostic work-up and management.

##### Step 2

2. Assess the current signs and symptoms of AMS
  - Assess the patient's current physical functional or psychosocial status
3. Document the AMS or disturbed behaviors
  - Assessment categories should include level of consciousness, cognition, mood, behavior, and general function. Use objective and valid measures and well-defined terms to describe and measure mental status and behaviors.
  - Record the results of any assessments in the appropriate location in the medical record

- Quality rather than quantity of documentation is important. Recording information that assists in recognizing and managing problems should be emphasized.

### Step 3

4. Determine if the patient is at high risk for developing AMS
  - The physician, nursing and social services staff should collaborate to identify risks and formulate a plan to anticipate, monitor, and evaluate occurrence or progression (e.g., examine lungs and obtain a urinalysis if the patient becomes confused and febrile).
  - Significant alterations in mental state or behavior may require urgent physician input. Examples of such situations are given in the guideline document.

## II. Diagnosis

- Diagnostic efforts should focus on correctly identifying the causes of AMS
- Examples of conditions or situations that may affect mental status include
  - Medications/non-compliance with regimen
  - Fluid or electrolyte imbalance
  - Infections
  - Hypo- or hyperglycemia
  - Recent hospitalization
  - Recent surgery under general anesthesia
  - Recent change in living situation or environment
  - Recent fall or other trauma
  - Significant pain
  - Alcohol or drug abuse
  - Hypo- or hyperthyroidism
  - Nutritional deficiency
  - Recent stroke or seizure
  - Primary metastatic brain tumors or other malignancies
  - Cardiac arrhythmia/myocardial infarction
- Always review the patient's medications, as these are a common source of AMS

### Step 4

4. Define the duration and course of symptoms
  - Define the course (progression, fluctuation, and times of occurrence) and duration (length of time present) of symptoms

### Step 5

5. Determine if a medical work-up is medically necessary, useful, and appropriate
  - The physician must decide if a work-up could be medically useful (i.e., whether testing and examination may better define the patient's current status or the correct cause of his or her problems) and if such information might help guide

management. The physician then should consult with the patient (if possible), the patient's surrogate or family, and appropriate staff to determine if a work-up is appropriate, i.e., whether the potential benefits of any interventions determined by the work-up results outweigh any risks or expense cause by the work-up itself. A work-up may not be indicated if an individual has a terminal or end-stage condition, if the results of the work-up would not change the management of course, if the individual would refuse treatment, in case of advance directives requesting such restrictions, or if the burden or risk of a work-up is greater than the benefit of the treatment.

- An appropriate work-up for AMS may include a history (usually obtained indirectly from the family, staff, and the medical record), physical examination (including a mental status examination), and pertinent diagnostic tests
- Possible diagnostic tests to assess causes of AMS
  - Electrolytes, BUN, glucose, creatinine, serum osmolality/urine sodium (to identify fluid/ electrolyte imbalance)
  - Urinalysis and/or urine culture (if urinary tract infection is suspected)
  - TSH/free T4 (to identify possible thyroid dysfunction)
  - Complete blood count (CBC) (if infection, inflammatory processes, bleeding, or anemia are suspected)
  - Chest x-ray/Oxygen saturation (if pneumonia or pulmonary embolism are suspected)
  - EKG/rhythm strip (if a cardiac arrhythmia or other heart dysfunction is suspected)
  - Albumin (if undernutrition is suspected)
  - Serum drug levels, when appropriate
- Whenever possible, this work-up should take place in the facility. Hospitalization should be avoided, since it in itself is a risk factor for delirium in the elderly
- As part of any work-up, review the patient's medication regimen and determine whether or not it recently has been changed. Even if the regimen has been stable and has not caused adverse reactions in the past, it may contribute to or cause symptoms of newly developed conditions.

## Step 6

6. Determine if delirium is present
  - Delirium is a state of acute confusion, inattention, and altered level of consciousness (LOC), usually abrupt in onset (over several hours to several days).
  - Typical symptoms of delirium may include anxiety, disorientation, tremors, hallucinations, delusions, and incoherence. In patients with dementia, delirium may present as a subtle shift or a marked decline in the usual level of activity or responsiveness. Delirium is commonly related to acute illnesses, heart or lung disease, infections, poor nutrition,

endocrine disorders, medications (including over-the-counter and prescription medications) or alcohol use.

- Some iatrogenic risk factors associated with delirium include:
  - Medications, especially neuroleptics and sedatives/hypnotics
  - Surgery under general anesthesia
  - Presence of an indwelling urinary catheter
  - Use of physical restraints
- If delirium is identified or suspected (regardless of whether the Delirium Resident Assessment Protocol (RAP) is triggered), a physician should be involved as soon as possible so that medical causes may be identified and managed promptly.

#### Step 7

7. Identify the presence of depression
  - Signs and symptoms of depression
    - Depressed mood most of the day, almost every day
    - Irritable mood
    - Diminished interest/pleasure in most activities, most of the time
    - Weight loss accompanied by poor appetite
    - Insomnia/hypersomnia nearly every day
    - Psychomotor agitation/retardation
    - Fatigue or loss of energy, worse than baseline
    - Feelings of worthlessness, hopelessness, or helplessness
    - Guilt
    - Change in ability to think or concentrate
    - Recurrent thoughts of death or suicide
    - Social isolation

#### Step 8

8. Identify other causes of AMS
  - Other common medical/neurological causes of AMS
    - Hyper- or hypothyroidism
    - Nutritional deficiencies (Vitamin B12 folate, thiamine, iron, and protein-calorie malnutrition)
    - Multiple small strokes (vascular dementia)
    - Central neurodegenerative disorders (Alzheimer's Disease, Parkinson's Disease, etc.)

### III. Treatment

#### Step 9

0. Determine if interventions are useful and appropriate
  - It is important to review any advance directive or other specific written or verbal instructions from patient or surrogate. Useful, appropriate treatment should address the underlying medical problem and improve or stabilize the patient's functioning and quality of life, consistent with his or her wishes and values

## Step 10

1. Generate an interdisciplinary care plan
  - The care plan should address risk assessment and prevention, cause identification and treatment, management of the underlying causes, areas for staff support, patient and family education, prevention and handling of existing complicating conditions, changes in other components of the existing treatment regimen, monitoring, and other aspects of the patient's care. Team work and communication are important.
  - Changes in the current care plan should be based on skilled assessment and identification of supporting evidence.

## Step 11

2. Initiate the appropriate interventions
  - It is essential to weigh the potential effects of the treatment, including the relative burdens and benefits, on the patient. It also is important to document reasons for not treating an identified cause of AMS
  - If a patient is already taking psychoactive medications, this should always be considered as a possible cause of AMS and reduced or discontinued when possible.
  - Specific considerations in treatment should include functional and social impact, ethical issues, and indirect complications.
  - Impact on personal and social functioning should be evaluated. A patient with AMS may require additional Activities of Daily Living support.
  - Identify and address ethical issues relevant to the individual with AMS and disturbed behavior. These include defining decision making capacity, identifying situation that require informal and formal direct or substitute decision making, and defining possible limitations on medical interventions such as artificial nutrition or hydration, or cardiopulmonary resuscitation (CPR)
  - Decisions about the scope and nature of any interventions should arise from appropriate discussions with the patient or family members, as appropriate, and documented adequately in the medical record. Such decisions may need to be modified if the patient's decision-making capacity improves after treating a cause of AMS.
  - Prevent and manage complications and problems associated with AMS such as impaired mobility and urinary incontinence.
  - Prevent and manage indirect consequences of AMS such as aspiration pneumonia in a tube-fed patient, decreased food intake in patients whose alertness and cognition have been affected by antihypertensive medications, or falls in patients with poor balance who are taking psychoactive and cardiac medications.

## Step 12

3. Educate patients, families and staff regarding the conditions and proposed treatments
  - The physician and other members of the interdisciplinary team should present families and staff with a clear picture of the patient's situation. This information should be updated as new findings or condition changes develop.

#### IV. Monitoring

##### Step 13

0. Monitor and adjust treatment as indicated
  - Document the patient's course carefully, and relate symptoms to various causes and interventions.
  - Documentation should be frequent enough to track the patient's progress and should help communicate critical information to other members of the interdisciplinary team.

##### Step 14

1. Is the individual stable or improving?
  - Examples of situations when current diagnosis and treatment should be reconsidered:
    - Persistent reduced or widely fluctuating level of consciousness
    - Progressive decline in function or worsening of behavior
    - Failure to return to baseline function or behavior
    - Significant physical or functional consequences
    - Flare-ups of other chronic conditions or acute illnesses
  - If the patient is stable or improving, continue appropriate management. The physician should periodically reevaluate and discuss the patient's condition and risk factors with the nursing staff.
  - If the patient declines or remains stable but does not return to his or her previous baseline, it may be important to reconsider the diagnosis or management plan.

#### CLINICAL ALGORITHM(S)

A clinical algorithm is provided that summarizes the steps involved in addressing altered mental states, including recognition, diagnosis, management, and monitoring the condition.

### EVIDENCE SUPPORTING THE RECOMMENDATIONS

#### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The guideline was developed by an interdisciplinary work group using a process that combined evidence- and consensus-based thinking. Scientific research in the long-term care setting is scarce, and the majority of recommendations are based on the expert opinion of practitioners in the field.

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

Following a consistent process to assess and manage patients with altered mental states should help improve their care and quality of life.

### POTENTIAL HARMS

Restraints and/or psychoactive medications used to treat patients with altered mental states can sometimes introduce additional risks, such as injury, sedation, or increased confusion.

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

This clinical practice guideline is provided for discussion and educational purposes only and should not be used or in any way relied upon without consultation with and supervision of a qualified physician based on the case history and medical condition of a particular patient. The American Medical Directors Association and the American Health Care Association, their heirs, executors, administrators, successors, and assigns hereby disclaim any and all liability for damages of whatever kind resulting from the use, negligent or otherwise, of this clinical practice guideline.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

The implementation of this clinical practice guideline (CPG) is outlined in four phases. Each phase presents a series of steps, which should be carried out in the process of implementing the practices presented in this guideline. Each phase is summarized below.

- I. Recognition
  - Define the area of improvement and determine if there is a CPG available for the defined area. Then evaluate the pertinence and feasibility of implementing the CPG
- II. Assessment
  - Define the functions necessary for implementation and then educate and train staff. Assess and document performance and outcome indicators and then develop a system to measure outcomes
- III. Implementation
  - Identify and document how each step of the CPG will be carried out and develop an implementation timetable
  - Identify individual responsible for each step of the CPG
  - Identify support systems that impact the direct care
  - Educate and train appropriate individuals in specific CPG implementation and then implement the CPG

#### IV. Monitoring

- Evaluate performance based on relevant indicators and identify areas for improvement
- Evaluate the predefined performance measures and obtain and provide feedback

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better  
Living with Illness

### IOM DOMAIN

Effectiveness  
Patient-centeredness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

American Medical Directors Association (AMDA). Altered mental states. Columbia (MD): American Medical Directors Association (AMDA); 1998. 20 p. [17 references]

### ADAPTATION

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

### DATE RELEASED

1998 (reviewed 2003)

### GUIDELINE DEVELOPER(S)

American Health Care Association - Professional Association  
American Medical Directors Association - Professional Association

### SOURCE(S) OF FUNDING

Funding was provided by educational grants through Bayer Pharmaceuticals, Eisai, Inc./Pfizer, Eli Lilly & Company, Merck & Company, Novartis Pharmaceuticals, Parke-Davis, and Wyeth-Ayerst Laboratories.

### GUIDELINE COMMITTEE

Steering Committee

## COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Members: Sarah Greene Burger; Thomas J. Cali, PharmD; Laura Fain, RN; Janet George, RN; Janet M. Harrington, MSN; Carolyn Harris, RN; Keith Knapp; Steven Levenson, MD, CMD; Geri Mendelson, RN, M.Ed., MA; Reg Warren, PhD; Christine Williams, M.Ed.

## FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

## GUIDELINE STATUS

This is the current release of the guideline.

According to the guideline developer, this guideline was reviewed by the original Steering Committee and is still considered to be current as of Jan 2004. This review involved new literature searches of electronic databases followed by expert committee review of new evidence that has emerged since the original publication date.

## GUIDELINE AVAILABILITY

Print copies: Available from the American Medical Directors Association, 10480 Little Patuxent Pkwy, Suite 760, Columbia, MD 21044. Telephone: (800) 876-2632 or (410) 740-9743; Fax (410) 740-4572. Web site: [www.amda.com](http://www.amda.com).

## AVAILABILITY OF COMPANION DOCUMENTS

The following companion documents are available:

- Guideline implementation: clinical practice guidelines. Columbia, MD: American Medical Directors Association, 1998, 28 p.
- Dementia. Columbia, MD: American Medical Directors Association; 1998. 32 p.

Print copies: Available from the American Medical Directors Association, 10480 Little Patuxent Pkwy, Suite 760, Columbia, MD 21044. Telephone: (800) 876-2632 or (410) 740-9743; Fax (410) 740-4572. Web site: [www.amda.com](http://www.amda.com).

The guideline developers recommend that the guideline should be used in conjunction with the "Nursing Facility Minimum Data Set and Resident Assessment Instrument" (MDS/RAI), as well as with appropriate "Resident Assessment Protocols" (RAPs).

These tools are available from the U.S. Health Care Financing Administration (HCFA), 7500 Security Boulevard, Baltimore, Maryland 21244; Telephone: (410) 786-3000; Web site: [www.hcfa.gov](http://www.hcfa.gov).

## NGC STATUS

This summary was completed by ECRI on July 12, 1999. The information was verified by the American Medical Directors Association as of August 8, 1999.

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