Implementing the 2013 PAD Guidelines

Top Ten Points to Consider

Brenda T. Pun, MSN, RN, ACNP, Michele C. Balas, PhD, RN, APRN-NP, CCRN, Judy Davidson, DNP, RN, CNS, FCCM

Abstract and Introduction

Abstract

It has been 10 years since the last publication of the clinical practice guidelines for pain, agitation/sedation, and delirium (PAD). The results of new studies have directed significant changes in critical care practice. Using the Grades of Recommendation, Assessment, Development, and Evaluation (GRADE) methodology, the guidelines were revised, resulting in 32 recommendations and 22 summary statements. This article provides guidance toward guideline implementation strategies and outlines 10 key points to consider. Compared with its predecessor, the 2013 PAD guidelines are less prescriptive in that they recommend approaches to patient care rather than giving specific medication recommendations. This will help focus care teams on the process and structure of patient management and result in more flexibility when choosing specific medications. This article outlines approaches to guideline implementation that take into account the changes in philosophy surrounding medication selection. The manuscript focuses on the areas anticipated to generate the most change such as lighter sedation targets, avoidance of benzodiazepines, and early mobility. A gap analysis grid is provided. The release of any guideline should prompt reevaluation of current institutional practice standards. This manuscript uses the PAD guidelines as an example of how to approach the interprofessional work of guideline implementation.

Introduction

In the past 10 years, many new investigations were conducted, and striking advances were made in the practice of critical care medicine. For instance, the use of drotrecogin alfa for the treatment of severe sepsis emerged and then disappeared.[1] Recommendations regarding tight glycemic control were advocated for and are now relaxed.[2] Due to similar scientific advancements in the areas of pain, agitation/sedation, and delirium (PAD), the American College of Critical Care Medicine (ACCM)/Society of Critical Care Medicine (SCCM) revised the sedation and analgesia clinical practice guideline. This guideline, now entitled "Clinical Practice Guidelines for the Management of Pain, Agitation, and Delirium (PAD) in Adult Patients in the Intensive Care Unit" will affect the day-to-day care of all critically ill patients.[3] Now that the PAD guideline is officially published, it is time to begin the often arduous process of reliably implementing the recommendations in daily practice.

A multidisciplinary committee including nurses, physicians, pharmacists, a medical librarian, and a guideline development expert worked for 6 years to create the latest guidelines. The 2013 PAD guidelines were developed using the best available evidence and no longer includes consensus statements, which in and of itself is a significant change from the prior guidelines. Further, the process of guideline development was structured using the Grades of Recommendation, Assessment, Development and Evaluation (GRADE) methodology, a standardized approach to literature review and analysis.[4,5] The new guidelines contain 32 practice recommendations and suggestions and 22 statements. Understanding and implementing all of this information into clinical practice could be challenging (). Through the presentation of 10 key points, this article provides implementation strategies and highlights specific items from the 2013 PAD guidelines most likely to stimulate practice changes.

Table 1. Checklist for evidence-based practice change: transforming the PAD guidelines into practice

| Review the guidelines and attachments |
| Make an informal "elevator speech" to summarize intent to translate the guidelines into practice |
| Before changing anything |
• Engage the Department of Quality for support in project management

• Review current practice through walk rounds, case reviews, and staff interviews

• Do a gap analysis to determine what should be done versus what is being done

• Ask around and find out the history about why the practice is the way it is

• Make a list of key "stakeholders"
  1. Residents and fellows
  2. Attending physicians
  3. Intensivists/medical director
  4. Nurses
  5. Respiratory therapists
  6. Occupational and physical therapy
  7. Pharmacists
  8. Leaders (managers/directors/educators/clinical specialists) of all disciplines
  9. Information technology/electronic medical record team
  10. Authors of related policies and procedures
  11. Department of Quality

• Interview stakeholders about why it is the way it is

Documents

• Identify related policies, procedures, guidelines, order sets, electronic documentation fields, educational programs, competencies, orientation plans, skills lists, quality monitoring

• Find out the original owners/authors of those documents and include them as early as possible as stakeholders; interview them about the history of the practice

Committees

• Search the appropriate committees for approving the practice change

• Meet the chairs of the committees, give them the elevator speech, and use the formal summary as a backup in writing

• Set dates to present the issue at the committees

• Meet with committee members in advance prior to the meeting to gain support

• Send committee members project information electronically prior to the meetings
Clarify if you are asking for approval or presenting information as FYI

Create a work team to establish priorities for change and associated work tools

Approach committees iteratively for concept, priority, and tool approval

Education/rollout plan

- Create a plan for educating staff about the change
- Use multiple forms of communication
- Solicit a team to support/assist with the education and rollout
- Announce the rollout date and market heavily
- Choose a time for rollout that does not conflict with other organizational objectives
- Monitor change through rounds, collect data on protocol compliance, explore reasons for noncompliance
- Perform academic detailing in the form of bedside rounds to debunk myths, uproot outdated practices, and drive practice change

Key Point #1: Understand the Prescriptive Nature of the Guidelines

The first step in approaching PAD guidelines implementation is to understand the latitude it offers. One striking difference between the 2013 PAD guidelines and its predecessor\[6\] is that the nature of prescriptive authority has changed. Instead of recommending drug A versus B versus C for PAD, the opposite occurs. A specific agent is rarely mentioned unless it is known that the agent may cause harm, and then a recommendation against the use is offered. For example, the guidelines do not recommend use of rivistigmine to treat delirium because of the increased risk of mortality. It is suggested that when sedation is indicated benzodiazepines are not used unless the patient is at risk for alcohol withdrawal syndrome. Further, strategies are promoted rather than agents. It is recommended that sedative medications should be titrated to maintain a light rather than a deep level of sedation, but the choice of sedative medication is left to the prescriber. These changes leave a lot of room for variation in practice. The flexibility afforded within these guidelines is a double-edged sword because it is more difficult to create protocols and standards when more than one option is considered a correct choice. Although this may seem optimal to some, this latitude leaves the work group with a dilemma if the goal is to write a standard order set for patients requiring pain management or sedation in the intensive care unit (ICU). The decision will need to be made regarding how many and which choices to allow within the protocol.

No Recommendation versus Suggest versus Recommend

Because no consensus statements were given in the new guideline, the only recommendations made are those with evidence to support them. As already mentioned, the guideline was developed using GRADE methodology where both quality (high, moderate, low/very low) and strength of recommendation (strong or weak) were evaluated. The guideline indicates a strong recommendation by the wording "we recommend," whereas a weak recommendation is phrased, "we suggest." When there was an absence of sufficient evidence or group consensus could not be reached, "no recommendation" was formally made. The PAD guidelines also include 22 statements, which summarize the literature surrounding a specific topic. Each statement is accompanied by a score for the strength of the evidence supporting the statement.

One approach to guideline implementation could be to sort priorities for change based upon an analysis that reveals a gap with recommended versus suggested practices and current practices. It is important to sort out those where the words suggest versus recommend appear within the statement. Suggestions reflect that the practice statement was made from a lower level of evidence. In these cases it would not be wrong to allow individual variation. Further research could actually change the nature of the evidence and recommendation in the future. However, in statements beginning with the words "we recommend"
there is strong evidence to support the practice, and it would be harder to justify not addressing practice variation. Where no evidence exists to mandate a practice change, consider allowing for individual practice variation. This approach may decrease dramatically the number of changes needed.

Although the PAD guidelines do not contain a specific protocol per se, it provides some direction as to the development of a protocol or order set. It is conceivable that multiple institutions could develop a different protocol and still be in compliance with the recommendations. Knowing this potential for variability is important as implementation plans are made.

Key Point #2: Perform a Gap Analysis and Prepare an "Elevator Speech"

**Gap Analysis**

Performing a gap analysis is an excellent starting point for guideline implementation. A gap analysis is a performance improvement strategy, which formally compares current practice with what is recommended. One method is to start with a list of the recommendations and then review current practice. Data concerning current practice can be obtained from rounds, case reviews, and interviews with staff and should include different shifts and different ICUs, with both novice and experienced staff. It is important not to rely on what is said in committee meetings but to go directly to the clinicians at the bedside. Here you will discover the variation in practice between people regardless of what is said in committees, policies, or standard operating procedures. It will also become clear what has worked in the past versus what processes staff members have developed as work-arounds because of missing, cumbersome, or broken processes.

### Table 2. Gap analysis survey

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<thead>
<tr>
<th>Recommendation strength</th>
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<th>Almost always done</th>
<th>Usually done</th>
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<td>Which tool to use?</td>
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Abbreviations: BPS, Behavioral Pain Scale; CAM-ICU, Confusion Assessment Method for the ICU; CPOT, Critical-Care Pain Observation Tool; EEG, electroencephalography; ICDSC, Intensive Care Delirium Screening Checklist; ICU, Intensive Care Unit; RASS, Richmond Agitation-Sedation Scale; SAS, Sedation Agitation Scale.

The gap analysis could also be sent out as a survey where the guideline recommendations are listed as items that are evaluated in response to their frequency (e.g., always done, usually done, seldom done, never done, comment). The act of sending out a survey would help inform recipients of some of the details within the guideline, but it cannot be relied upon as the only method of data gathering. In regard to the recommendations related to medication use, data could be collected through a Medication Usage Evaluation conducted by the Department of Pharmacy. For example, this strategy would be helpful to determine total use of benzodiazepines in patients who are not at risk for alcohol withdrawal syndrome. Using a grid such as the one in Table 2, which summarizes the data obtained from all forms of data gathering (e.g., interviews, surveys, observation), will reveal the gaps between practice habits and the new recommendations.

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| • Avoid using anti-psychotics in patients who are at risk for torsades de pointes (−2B) | | |
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Abbreviations: BPS, Behavioral Pain Scale; CAM-ICU, Confusion Assessment Method for the ICU; CPOT, Critical-Care Pain Observation Tool; EEG, electroencephalography; ICDS C, Intensive Care Delirium Screening Checklist; ICU, Intensive Care Unit; RASS, Richmond Agitation-Sedation Scale; SAS, Sedation Agitation Scale.

Elevator Speech

Once a gap analysis has been performed and you have identified where the key areas of needed change are, consider making an informal three- or four-sentence "elevator speech" to summarize the fact that you are evaluating the new guidelines to see what can be done to update the current practice at your organization. Frame the elevator speech in the positive. Use the elevator speech anytime you engage anyone in the analysis or the action plan for change or during the change process. The elevator speech should be deliverable in the time it takes you to get from the lobby to your department on the elevator.[8]

For example, The new SCCM guideline for pain, agitation, and delirium was finally published. We are looking at opportunities we might have to improve practice at our medical center. It looks like we are already doing most of what is in the guideline, but there are definitely a few surprising recommendations that we might consider in the future.

The elevator speech should stimulate a discussion. People will naturally take the conversation to where their own point of interest lies, and their response will likely provide insight needed to direct future change.

The implementation of some specific parts of the recommendations (i.e., early mobility) will require more institutional support. An elevator speech may be very useful when one is approaching administrative management to levy for resources and personnel allocation changes. It would also be imperative to engage the Department of Quality, which is responsible for overseeing performance improvements within the organization early in the process. The department may have access to an electronic project management system that will assist you in keeping track of the project progress over time and may provide support to manage the change.

In addition to using an elevator speech to introduce the idea, when soliciting support from either administration or various departments such as the Department of Quality, it would be important to quantify the rationale for change and how the change will improve patient safety and patient outcomes or reduce cost of care. For instance, it can be anticipated that reducing delirium will decrease length of stay and cost of care.[9] Pain management is routinely monitored on patient satisfaction surveys. Reducing agitation may improve both staff safety (injuries related to violence) and patient safety. All of these indicators are keenly aligned to operating objectives overseen by hospital administrators and the Department of Quality. When a business case is made for the change, it is more likely that resources will be provided to conduct the project.[10]

Key Point #3: Focus on the Interprofessional Nature of the Guidelines

Effective management of each of the syndromes of PAD is clearly beyond the scope of any single profession. The recommendations contained in these guidelines (e.g., light sedation, early mobility) demand that the bedside treatment team work together in identifying and aligning patient goals and coordinating care. The successful integration of the new PAD guidelines into everyday practice will therefore likely require intense, sustained, and effective interprofessional collaboration and communication. Although some may find the concept "interprofessional" to be rather intuitive, others may be less familiar with its definition and application in the critical care setting.

The unique characteristics of interprofessional collaborative practice have recently been defined and include the ability to (1) work with individuals of other professions to maintain a climate of mutual respect and shared values; (2) use the knowledge of one’s own role and those of other professions to appropriately assess and address the health care needs of the patients and
populations served; (3) communicate with patients, families, communities, and other health professionals in a responsive and responsible manner that supports a team approach to the maintenance of health and the treatment of disease; and (4) apply relationship-building values and the principles of team dynamics to perform effectively in different team roles to plan and deliver patient/population-centered care that is safe, timely, efficient, effective, and equitable. The development of the PAD guidelines is a beautiful example of a truly successful, interprofessional collaborative effort. Successfully implementing these guidelines in everyday practice will require a similar interprofessional approach.

The importance of performing daily interprofessional ICU rounds cannot be overemphasized. Daily “rounding” allows the ICU team the time to collectively use their clinical expertise, coordinate patient care, determine care priorities, establish daily goals, and plan for potential transfer or discharge. Endorsed by several quality and safety organizations including the Institute for Healthcare Improvement, use of this patient-centered model of care has been associated with reduced patient days, improved satisfaction with care, improvement in overall quality of care, and better communication and collaboration among the ICU team. The shared time of rounding is also a perfect opportunity for all the ICU team members to discuss how the patient is responding to the interventions recommended within the PAD guidelines. In addition to rounding, the use of daily goals sheets/checklists have also been shown to be instrumental in improving interprofessional communication, enhancing coordination of care, and improving patient outcomes. This process may be facilitated by the use of a standardized script that addresses many of these guideline components (example provided in ). Additionally, the Brain Road Map script could be modified to include pain to form the PAD Road Map script (see the article “Delirium Monitoring in the ICU: Strategies for Initiating and Sustaining Screening Efforts” in this issue of Seminars in Respiratory and Critical Care Medicine) Using a script allows for the team to review patient goals, current assessment levels, and current medications and leads the team to a discussion point regarding treatment. Lastly the utilization of bundled care approaches such as the ABCDE bundle, which incorporates many of the recommendations from the PAD guidelines, is another way to align personnel and coordinate care. The components of the ABCDE bundle are awakening and breathing trial coordination, delirium monitoring and management, and early mobility. The American Association of Critical Care Nurses (AACN) has created an online education and implementation resource site for the ABCDE bundle (http://www.aacn.org/pearl-abcd) that includes specific information on each component as well as general information regarding change readiness, implementation roadmaps, and gap analysis guides. Daily interprofessional rounding as well as the utilization of goals checklists, report scripts, and the ABCDE bundle can facilitate clear communication among the interprofessional team.

<table>
<thead>
<tr>
<th>Table 3. Potential pain, agitation, and delirium script for use on daily rounds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pain</strong></td>
</tr>
<tr>
<td>• Patient’s pain scores last 24 hours</td>
</tr>
<tr>
<td>• Patient’s current pain medication regimen</td>
</tr>
<tr>
<td>• Is it effective?</td>
</tr>
<tr>
<td>• Can it be changed to a nonopioid regimen?</td>
</tr>
<tr>
<td>• Is patient receiving nonpharmacological methods of pain reduction?</td>
</tr>
<tr>
<td>• Is it effective?</td>
</tr>
<tr>
<td>• Are there alternative strategies to consider?</td>
</tr>
<tr>
<td><strong>Agitation</strong></td>
</tr>
<tr>
<td>• Patient’s target agitation-sedation score</td>
</tr>
<tr>
<td>• Patient’s actual agitation-sedation score</td>
</tr>
<tr>
<td>• Patient’s current sedative medication regimen</td>
</tr>
<tr>
<td>• Is it effective?</td>
</tr>
<tr>
<td>• Are there alternative strategies to consider?</td>
</tr>
<tr>
<td><strong>Delirium</strong></td>
</tr>
</tbody>
</table>

Key Point #4: Start With Pain, Agitation, and Delirium Assessment

Whereas the 2002 guidelines\(^6\) advanced critical care practice to include recommendations that patients be regularly assessed for pain, sedation, and delirium, the recent guidelines raised the bar to include a formal psychometric analysis of the assessment scales and included summary statements endorsing the scales with the best psychometric evaluations \(\)\(^{17}\). For more on this topic, see the article "Psychometric Evaluation of Pain Monitoring Tools in Critical Care" of this issue. Assessment scales are important for both assessing presence and intensity and evaluating response to treatment and therefore are a cornerstone for protocols and treatment plans and are often part of regulatory requirements (e.g., Joint Commission on Accreditation of Healthcare Organizations requirement for pain and sedation scales).\(^{18}\) Using measurement scales establishes a common language for communication in both documentation and verbal report, thus helping the team to work together and synchronize treatment strategies. It is essential that any implementation project start with a review of your institution's PAD assessment scales. The psychometric analyses included in these guidelines are the first of their kind and provide clinicians with a jumpstart by eliminating the need to independently appraise the evidence to choose an assessment tool. Two scales in each domain scored in the "very good psychometric properties" range \(\)\(^{17}\). The decision as to which tool to use in each category is left to local discretion. This choice in tools allows for variation among institutions and yet provides confidence that the tools are really measuring what they are intending to measure. Care should be taken not to modify tools because any change in the wording of the tool invalidates the validity testing and could affect tool performance. This may challenge work teams when they are loading into fixed-character-length fields within the electronic medical record. A valuable overview of sedation-agitation scales is provided in the article "Sedation/Arousal Scales in Critical Care" of this issue. Additionally, an overview of the strategies to optimize delirium recognition is provided by Pun and Devlin in this issue. Below are some special points on pain assessment.

### Table 4. Pain, agitation, and delirium assessment scales with the highest psychometric testing

<table>
<thead>
<tr>
<th>Domain</th>
<th>Tools recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>Patients who can self-report: 0-10 visually enlarged horizontal numeric rating scale(^19)</td>
</tr>
<tr>
<td>Agitation</td>
<td>The Richmond Agitation-Sedation Scale (RASS)(^{65}) and Sedation-Agitation Scale (SAS)(^{66})</td>
</tr>
<tr>
<td>Delirium</td>
<td>Confusion Assessment Method for the ICU (CAM-ICU)(^{67,68}) and Intensive Care Delirium Screening Checklist (ICDSC)(^{69})</td>
</tr>
</tbody>
</table>

Pain Assessment: No Longer Relying on Vital Signs


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Although the 2002 and 2013 guidelines match in that they both recommend that pain be routinely monitored in all adult ICU patients, they do not agree on how pain should be assessed in patients who cannot communicate. There is standard agreement that the best way to assess pain is to ask the patient to self-report using a number scale (0 through 10).\textsuperscript{[19]} However, one of the greatest challenges for critical care nurses is pain assessment in the patient who is unable to self-report. The 2002 guidelines recommended that, for patients who cannot communicate, pain should be assessed "through subjective observation of pain-related behaviors (movement, facial expression, and posturing) and physiological indicators (heart rate, blood pressure, and respiratory rate)."\textsuperscript{[6]} However, the 2013 guidelines explicitly suggest against using vital signs to evaluate pain.\textsuperscript{[3]} The recommendation reads as follows: "We do not suggest that vital signs (or observational pain scales that include vital signs) be used alone for pain assessment in adult ICU patients (−2C)." It is followed by a recommendation that vital signs may be an adjunctive cue that more pain assessment is needed, but should not be part of the pain assessment itself. The removal of vital signs is based on literature showing that changes in vital signs are influenced by many factors and are therefore not accurate measures of pain.\textsuperscript{[20,21]}

Because many critically ill patients are unable to communicate it has been a challenge to accurately and reliably evaluate and document pain assessment and response to pain treatment; as a result a large portion of nurses fail to use pain assessment tools routinely.\textsuperscript{[22]} The 2013 PAD guidelines provide a detailed psychometric evaluation of pain assessment scales for nonverbal patients and note that the most valid and reliable behavioral pain scales are the Behavioral Pain Scale (BPS)\textsuperscript{[21]} and the Critical-Care Pain Observation Tool (CPOT). Consider selecting one of these two tools for future use with nonverbal patients, and if your current standard is to record vital signs as part of pain assessment, this should be changed.

Key Point #5: Provide Intense, Sustained, Interprofessional Education

An essential step in the PAD guidelines implementation is to provide thorough education for the care team. Create a plan for educating staff about the change using multiple forms of communication. Solicit a team to support/assist with the education and rollout. Announce the rollout date, and market heavily. Although formal education is essential, this cannot be relied upon as the sole mechanism to motivate change at the bedside.\textsuperscript{[23]} Adding rounding with a purpose\textsuperscript{[24]} and academic detailing\textsuperscript{[23]} will further stimulate change in practice behaviors. Rounding with a purpose connotes collection of data during bedside visits to see if practice has changed. Academic detailing is a similar term meaning to provide 1:1 or small group feedback and education at the point of care.

Fold protocol compliance into interdisciplinary rounds or intensivist rounds. Know that without direct observation and feedback the change will be thwarted. Divide the work of protocol compliance rounding to cover both shifts. Round with a purpose, collecting data on change compliance for at least 6 weeks. Even with direct orders to perform a task, staff may have varying compliance with completing the order. Identify reasons for noncompliance. These reasons may be due to broken or cumbersome processes or inadequate staffing, not defiance. Roberts et al found that the hours of staff education, prior experience with performing the task as requested, and severity of illness of the patient affected compliance with daily sedation interruption.\textsuperscript{[25]} Given this, it is important to provide education, yet also to explore other reasons for elements of noncompliance. Some staff simply stop at "what if?" because they have no positive experience with providing care in the manner requested. Using positive case examples from early successes can help overcome this resistance. In the updated guidelines,\textsuperscript{[3]} either daily interruption or consistent light level of sedation is advocated. When patients are found to be oversedated on rounds, debunking myths about the benefits of deep sedation could occur without blame while cognitively reframing benefit versus risk to the patient. Report back results at appropriate committees and develop action plans as appropriate to the root causes of protocol noncompliance. Post improvements visibly to staff. Widespread education is essential for getting the entire team up to speed on the new policies and protocols and establishing the expectation for individual members of the clinical team.

Key Point #6: Focus on Light Sedation

At first glance the recommendations in the 2013 guidelines to maintain "light sedation" might not seem that different from the 2002 recommendation.\textsuperscript{[9]} However, it is important to note there are subtle differences which are essential for staff to grasp as this is implemented. The 2002 recommendation stated that sedative dose should be titrated "to a defined endpoint," whereas the recent guidelines explicitly recommend sedation be titrated by either "daily sedative interruption or a light target level" and outlines the ultimate goal as being a light level of sedation that would allow "patient responsiveness and awareness that is..."
demonstrated by ability to purposefully respond to commands."[3,6] The 2013 recommendation flips the order of the recommendation emphasizing that the primary goal for all patients is light sedation. The goal is the least amount of sedation to keep the patient as lightly sedated as possible from the beginning of sedation initiation and throughout the duration of therapy. The nurse is primarily responsible for sedation delivery and dose titration. Coordination with the treatment team is necessary to establish the target sedation level goals. Coordination with respiratory therapists is required to optimize daily sedative interruption and breathing trials. Sedation light enough to allow for participation in care is necessary for nurses to work with the physical therapist to achieve early mobility. It is now more than ever a team approach to optimizing sedation.

Lightly Sedated Patients Will Change the ICU Environment

Despite recent evidence and guidelines, there is still a tendency for patients to be excessively sedated.[26–28] In a recent survey, ~ 30% of respondents were not using a sedation protocol and 55% were practicing daily awakening trials on less than half of ICU days.[29] A cohort study by Weinert and Calvin found that 32% of patients were assessed by research personnel as unarousable, with 21% having no spontaneous motor activity, and little variation over time.[27] Sedation was considered adequate by clinical personnel 83% of the time, with only 2.6% of patients considered oversedated by the clinical team. This discrepancy of clinician perception of adequate sedation is a clear indication that there is a need to define what adequate sedation is, and to use an assessment tool to enhance communication of goals.

Although the recommendation since 2002 has been to provide less sedation, bedside clinicians are largely not meeting the goal. Dammeyer et al[30] point out that this could be linked to empathy and the fact that nurses are the primary witnesses of the agitation associated with ICU care. Throughout time, nurses have fundamentally been taught to minimize discomfort. Misconceptions are often based on assumptions and lack of understanding of the literature.[30] Thus, the key to preventing oversedation and to producing a lightly sedated ICU environment is in education regarding the risks of oversedation, including adverse psychological effects, ICU-acquired weaknesses, and complications of immobility to include atelectasis, pneumonia, and pressure ulcers.[31] Lastly, misconceptions are most easily deconstructed when hearing directly from patients. Connect staff members with firsthand accounts from patients describing their critical care stay, such as journal articles written by survivors and patient videos (e.g., www.ICUdelirium.org). The first-person experience is a powerful teaching tool that will help staff to engage in the implementation project on a more personal level.[32]

One of the first critiques of the daily interruption of sedation was that it would be cruel to awaken patients in the ICU every day. However, follow-up evaluations of patients who have experienced daily sedative interruptions reported no adverse psychological affects.[33,34] In fact, Kress et al found daily sedation interruption may be helpful in preventing untoward psychological consequences such as posttraumatic stress disorder (PTSD) symptoms,[33] and when coordinated with other therapies it helps to provide opportunities for therapies such as early mobility and it maximizes patients' ability to participate. [35–37] ICU-related PTSD may actually be associated with delusional memory rather than real memory.[38] This suggests that deeper sedation states, which do not allow patients to have clear thinking so as to separate real and delusional memories, increase patient risk of developing PTSD and/or chronic anxiety from the ICU experience. Part of the education process could include strategies that help the less sedated patients remember, interpret, and cope with their ICU experience. Although not specifically addressed within the guideline, diaries have been demonstrated to significantly improve the mental health of both patients and their families.[39–41] Helpful information on how to start a diary program can be found at www.icudiary.org.[42] Staff may also benefit from a strategic approach toward encouraging families to engage the less sedated patient with appropriate activities while visiting. A detailed approach can be found in articles describing facilitated sense-making, a theoretical model for family-centered care in the ICU.[43,44]

Key Point #7: Use Nonbenzodiazepine Sedation Strategies

The 2002 guidelines included two specific recommendations for the use of benzodiazepines: "Lorazepam is recommended for the sedation of most patients" and "Midazolam or diazepam should be used for rapid sedation of acutely agitated patients."[6] Whereas the 2013 PAD guidelines include only one recommendation in the section entitled "Choice of Sedation" and it states, "We suggest that sedation strategies using non-benzodiazepine sedatives (either propofol or dexmedetomidine) may be preferred over sedation with benzodiazepines (either midazolam or lorazepam) to improve clinical outcomes in mechanically ventilated adult ICU patients."[3] This shift, from recommending a benzodiazepine (e.g., lorazepam) for most patients to recommending a nonbenzodiazepine strategy, is a significant change. Benzodiazepines have been used as a sedative in intensive care for decades.
This particular recommendation has a substantial impact on the design/redesign of sedation protocols and will no doubt result in a lot of discussion among the implementation work groups and those tasked with implementing new sedation guidelines. These discussions should include at least physicians, nurses, and pharmacists who will need to decide how to create a sedation algorithm that avoids benzodiazepines for most patients but allows it for specific cases such as those at risk for alcohol withdrawal syndrome.

Nonbenzodiazepine sedation is a weak recommendation and not without debate. Some continue to argue that benzodiazepines are not harmful and are most affordable and thus should have widespread use in the ICU. Others argue that benzodiazepines lead to worse outcomes and, because alternatives (i.e., propofol and dexmedetomidine) are available, they should be avoided for most ICU patients. However, there are a few points about benzodiazepines that everyone seems to agree on. As the PAD guidelines authors note in the text of the manuscript, benzodiazepines remain important "for treating anxiety, seizures, and alcohol or benzodiazepine withdrawal" and that this drug class is "important when deep sedation, amnesia, or combination therapy to reduce the use of other sedative agents is required." There is an additional (weak) recommendation in the delirium section of the guideline that states, "We suggest that in adult ICU patients with delirium unrelated to alcohol or benzodiazepine withdrawal, continuous IV infusions of dexmedetomidine rather than benzodiazepine infusions be administered for sedation in order to reduce the duration of delirium in these patients." It is clear that benzodiazepines still have a role in critical care; however, they are now retained for a specific subset of patients.

Key Point #8: Expect "Confusion" Regarding the Role of Antipsychotic Medications

Some of the more surprising changes in the new PAD guidelines are the statements and recommendations regarding the role haloperidol plays in the prophylaxis and treatment of ICU delirium. In the 2002 guidelines, haloperidol was recommended as the preferred agent for the treatment of delirium in critically ill patients. This recommendation, as the authors acknowledge, was based on a series of case reports that suggested utility in the management of acutely agitated or delirious patients. The 2013 PAD guidelines provide no recommendation (for or against) haloperidol and concludes that there is "no published evidence that treatment with haloperidol reduces the duration in adult ICU patients." Although no studies have shown that haloperidol is effective in decreasing the duration of delirium, one pilot study reported a 20% reduction in delirium duration in patients who received the atypical antipsychotic quetiapine, when compared with placebo. This evidence resulted in a summary statement in the guideline that "atypical antipsychotics may reduce the duration of delirium in adult ICU patients." It may be that quetiapine or one of the other atypical antipsychotics would be helpful in treating delirium, but more studies are needed to confirm this. This is a big change from the 2002 guidelines, in that there are no recommendations to use any medication for the treatment of delirium.

If the clinical team decides to treat delirious patients with antipsychotics, it will be necessary to monitor patients for arrhythmias and QTc prolongation. The guideline suggests against using antipsychotic medications in patients who are at risk for torsades de pointes. Routine electrocardiography/telemetry monitoring for patients receiving these medications should be added to the institution's delirium management protocol. It may also be helpful to educate your colleagues on common QT-prolonging conditions and medications in which antipsychotics should be used, avoided, or given cautiously, to highlight just how ubiquitous these conditions are in the critical care setting.

The 2013 PAD guidelines now specifically address delirium prevention. According to the new guideline, the only recommended strategy for preventing ICU delirium is the use of early mobilization (see Key Point #10). Additionally, the PAD guidelines suggests against the prophylactic use of haloperidol or any atypical antipsychotics for the prevention of delirium.

Although an in-depth discussion regarding delirium management can be found in the article "Pharmacological Management of Sedation and Delirium in Mechanically Ventilated ICU Patients" in this issue, it is important to highlight a few things that pertain to guideline implementation. The lack of a clear pharmacological treatment strategy could leave many bedside clinicians asking how they are supposed to treat delirium. To prevent this, it is vital to provide education to the critical care team regarding the proper approach to delirium management. The cornerstone of delirium management is to identify and remove the etiology, if possible. Delirium can occur as a direct physiological consequence of a new medical condition (e.g., infection, pneumonia, sepsis). The patient with delirium may have a new medical problem that the ICU team has not yet identified. Delirium can also occur due to substance intoxication or withdrawal or as a side effect of medications. Benzodiazepines
have been identified as an iatrogenic risk factor for the development of ICU delirium and thus serve as a potential modifiable treatment for patients found to be delirious. In fact, the guidelines suggest that "continuous intravenous infusions of dexmedetomidine rather than benzodiazepine infusions be administered for sedation in order to reduce the duration of delirium in these patients" except in patients receiving benzodiazepines for alcohol or benzodiazepine withdrawal. When educating staff on identifying etiology of delirium it may be helpful to use tools such as the THINK delirium mnemonic (as discussed in the article "Delirium Monitoring in the ICU: Strategies for Initiating and Sustaining Screening Efforts" in this issue), which lists potential causes such as toxic situations and new organ failures, hypoxemia, infection and sepsis, nonpharmacological interventions, and potassium (i.e., K+) and other electrolyte abnormalities.

There are no double-blind, randomized, placebo-controlled trials that teach us specifically what to do when a patient is delirious in our critical care setting. It may be most important to reorient staff that our reaction to delirium should be to stop benzodiazepine use (except in alcohol withdrawal), identify the etiology and correct it if possible, implement nonpharmacological delirium management strategies, use light sedation to maintain capacity for early mobility, and, lastly, medicate (with caution).

Key Point #9: Use Nonpharmacological Pain, Agitation, and Delirium Management Strategies

The 2013 PAD guidelines emphasize the importance of using nonpharmacological interventions in the prevention and treatment of PAD. The three strong recommendations include preemptive analgesia and/or nonpharmacological interventions (e.g., relaxation) for patients undergoing chest tube removal, early mobilization whenever feasible to reduce the incidence and duration of delirium, and sleep promotion by optimizing the environment, using strategies to control light and noise, clustering patient care activities, and decreasing stimuli at night. Additionally, a weak recommendation suggests preemptive analgesic therapy and/or nonpharmacological interventions may also be administered to alleviate the pain for other (i.e., non-chest tube) types of invasive or potentially painful procedures.

Although not addressed within the guidelines, several additional nonpharmacological interventions that may be beneficial are mentioned within the text. These interventions include the use of music therapy and relaxation techniques as reasonable complementary therapies in pain management, frequent reorientation to reduce anxiety and agitation, and eye patches and earplugs for sleep enhancement. The authors emphasize throughout the text of the guideline that, prior to administration of medications, care should be taken to identify the etiology whenever patients are assessed to have pain, agitation, or delirium. Although determining the cause of PAD may seem like a relatively straightforward process, it is often exceedingly difficult to do in those patients who are unable to effectively communicate their needs (e.g., patients who are receiving mechanical ventilation or are deeply sedated secondary to medications). The inability to communicate needs effectively is associated with feelings of panic, insecurity, stress, anger, worry, and fear, all of which may be misinterpreted by ICU staff as PAD. It is essential that the ICU team provide these patients a way of effectively communicating their needs. Strategies that may help nonverbal ICU patients communicate their needs include obtaining speech language pathology consults, using communication boards, establishing a reliable yes/no signal, lip reading, and providing patients with tools to write their needs.

Several other nonpharmacological strategies have proven successful at reducing the incidence and duration of delirium outside the ICU setting. For example, the often cited interdisciplinary, Hospital Elder Life Program (HELP) has been successful in not only reducing the incidence of delirium in hospitalized older adults but also as an educational resource, improving hospital outcomes (functional decline), providing nursing education, improving retention of nurses, and enhancing satisfaction and quality of care. Interventions used in this program include, but are not limited to, the use of orientation boards, the provision of cognitively stimulating activities at least three times daily, early ambulation, ensuring patients have needed sensory aids (e.g., glasses, hearing aids), nonpharmacological sleep promotion, interdisciplinary rounds and care planning, and oral volume repletion and assistance with feeding. Although not formally studied in the ICU setting, many of these strategies may be helpful.

Although the PAD guidelines suggest that most of the nonpharmacological interventions are "low cost, easy to provide, and safe" this does not mean they will be easy to implement in everyday practice. Team members will need resources and encouragement to make the changes a reality. If the presence of a music therapist or healing touch expert is not possible, ICU team members will benefit from education and guidance on how to provide these nonpharmacological approaches to help
patients remain calm through crisis.

Key Point #10: Mobilize Patients Early and Often

It might be striking to some to see a recommendation about mobility in the PAD guidelines. The 2002 guidelines were instrumental in communicating the message that sedation delivery cannot be a compartmentalized part of critical care delivery. Interventions for PAD are interrelated and often influence many additional aspects of the patient's care, including, but not limited to, sleep and mobility. The dangers of immobility, including muscle atrophy, deconditioning, and others, have been well documented.\[31\] Even in 1947, Asher wrote, “Teach us to live that we may dread unnecessary time in bed. Get people up and we may save our patients from an early grave.”\[68\] However, critically ill patients have often been considered too sick and too sedated to benefit from physical and occupational therapies and thus those therapies are usually started toward the end of the ICU stay or even held until the patient is discharged to the ward. Recently studies have explored the benefit of adding early mobility into the daily care of patients receiving lighter sedation.\[36,59,60\] These investigations reported that patients were more likely to return to functional baseline at hospital discharge, reach mobility milestones such as standing transferring and walking, and experience less delirium when compared with patients who did not have early mobility.\[35,36\] This is the only nonpharmacological intervention shown to reduce the incidence and duration of delirium in the ICU.\[35,36\]

The incorporation of early mobility into routine ICU practice requires a team approach and will likely necessitate a work group of its own. Early mobility requires intimate involvement from the rehabilitative services (i.e., physical therapy and occupational therapists) to provide personnel, resources, and training. This early mobility work group will have to decide what resources and personnel are needed to fully implement an early mobility protocol in the ICU. Increasing patient mobility on a grand scale will require creative thinking and possibly a reconstruction of the role boundaries between nursing and the associated therapies. Because it is unlikely that funding will exist for a physical therapist to be present and assist with every out-of-bed experience for each ICU patient, nurses, nursing assistants, and respiratory therapists will need to take an active role in achieving the mobility goal. This may mean that nurses and respiratory therapists will need additional training from physical therapists in how to mobilize patients safely and use assistive devices properly. Additional resources that could aid in an early mobility protocol are the creation of a mobility team consisting of nurses and nursing assistants that round in the unit each day shift providing early mobility to patients.\[37,60,61\] Open source web links are available to review techniques and equipment that can help facilitate patient movement addressing the special needs of intubated patients with multiple lines and tubes.\[62\]

Institutions have written extensively about their efforts to implement early mobility.\[35,63\] and there are even several YouTube videos that can be found by searching for the keywords “early mobility in the ICU.” Early mobility is an intervention that involves many members of the team and requires coordination with other interventions. The challenge will remain with the implementation staff to acknowledge the obstacles and garner creative solutions for bypassing them. The implementation of this particular recommendation may require more thinking outside the box than any others.

Two important things to highlight in initial education and promotional forums are that the long-term impact of early mobility makes a big difference in the lives of ICU survivors and that the phrase early mobility does not mean early ambulation. First, it is critical to present in all educational materials that early mobility helps patients return to their baseline functional status. However, it was not achieved until day 14 in a study by Schweickert and colleagues\[36\] evaluating early mobility versus regular rehabilitation therapy consultation in the ICU setting. At day 14, most patients are out of the ICU. The take-home message is that, even though the ICU staff may not see the direct benefit of early mobility, recovery is better when progressive activity starts very early in the ICU stay. Another important part of the education efforts should be to describe what is meant by early mobility, stressing that it is progressive mobility that is initiated as early as the patient can tolerate.\[61\] There may be misconceptions that it is intended to be early ambulation and that all ventilated patients should be walking. Pohlman et al reported that only 15% of the patients in the Schweickert study qualified for ambulation.\[64\] Early mobility is early movement starting with what patients can tolerate and progressing as the patients tolerate (e.g., active range of motion, sitting up in bed, dangling, standing, transferring, and lastly ambulating). Initial advertisement and education efforts are excellent places to dispel myths and misconceptions, which decreases resistance to change.

Conclusion

Significant advancements have been made in the domains of PAD over the past 10 years since the publication of the previous
version of the clinical practice guidelines. The new guidelines emphasize that pain, agitation and delirium are not isolated problems; they are interrelated, and our ability to provide patient-centered care will necessitate a global understanding and skill to assess and manage these three problems simultaneously.

The implementation of this guideline can be quite daunting considering the number and the complexity of the recommendations. However, there are a variety of strategies to help approach the process. A gap analysis will be the crucial step for identifying areas where current practice lags behind the recommendations. Given the complexity of many of the recommendations it is imperative that interprofessional teams work together in the implementation projects. Although the adoption of the recommendations in full may take months or even years, a foundation of evidence will guide incremental practice changes. The 2013 PAD guidelines require that bedside clinicians have a solid knowledge base of the causes and risk factors of PAD and that they work in coordination with one another to deliver care and optimize patient outcomes.

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