



MHA’s road maps provide hospitals and health systems with evidence-based recommendations and standards for the development of topic-specific prevention and quality improvement programs, and are intended to align process improvements with outcome data. Road maps reflect published literature and guidance from relevant professional organizations and regulatory agencies, as well as identified proven practices. MHA quality and patient safety committees provide expert guidance and oversight to the various road maps.

Each road map is tiered into fundamental and advanced strategies:

- **Fundamental strategies** should be prioritized for implementation, and generally have a strong evidence base in published literature in addition to being supported by multiple professional bodies and regulatory agencies.
- **Advanced strategies** should be considered in addition to fundamental strategies when there is evidence the fundamental strategies are being implemented and adhered to consistently and there is evidence that rates are not decreasing and/or the pathogenesis (morbidity/mortality among patients) has changed.

**Operational definitions** are included to assist facility teams with road map auditing and identifying whether current work meets the intention behind each road map element.

**Resources** linked within the road map include journal articles, expert recommendations, electronic order sets and other pertinent tools which organizations need to assist in implementation of best practices.

Road map sections	Road map questions (if not present at your hospital or answering no, please see next column for suggested resources)	If specific road map element is missing, consider the following resources:
Infrastructure	<p><b>FUNDAMENTAL</b> (check each box if “yes”)</p> <p><input type="checkbox"/> There is organizational leadership support for a structured delirium program.</p> <p><input type="checkbox"/> An interdisciplinary team is in place to address delirium detection, prevention and management.</p> <ul style="list-style-type: none"> <li>- Team members include at a minimum: nursing, nursing assistants, medical staff, pharmacy staff (with knowledge of geriatrics/delirium), therapy staff, and leadership (e.g. clinical director, nursing director).</li> </ul> <p><input type="checkbox"/> There is a person who has responsibility/accountability and/or serves as a resource for the delirium program.</p> <p><input type="checkbox"/> Initial and ongoing education is provided for all clinical staff.</p> <ul style="list-style-type: none"> <li>- It includes, at a minimum: <ul style="list-style-type: none"> <li>o delirium risk factors</li> <li>o delirium detection</li> <li>o delirium prevention strategies</li> <li>o strategies for management of delirium-related behaviors</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Use the MHA Delirium SBAR to help leadership understand the importance of developing a structured delirium program. <a href="#">MHA Delirium SBAR</a></li> <li>• The AGS Beers Pocket Guide (2019) is a tool that can assist health care providers in improving medication safety in older adults. <a href="#">AGS Beers Pocket Guide</a></li> <li>• Use the informational fact sheet for physicians to share information about delirium diagnosis, its connection to readmission, falls, and length of stay, and the importance of screening and assessments. <a href="#">Delirium Fact Sheet for Physicians</a></li> <li>• The Hospital Elder Life Program is a patient-care centered program that provides optimal care for older persons in the hospital. Consider using its education tools when coordinating care with the family. <a href="#">Hospital Elder Life Program</a></li> </ul>

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Infrastructure, continued	<ul style="list-style-type: none"> <li><input type="checkbox"/> Education is provided for physicians and residents.               <ul style="list-style-type: none"> <li>- It includes, at a minimum:                   <ul style="list-style-type: none"> <li>o ABC medications that can perpetuate delirium- antihistamines, benzodiazepines and anti-cholinergics</li> <li>o use of other high-risk medications that can perpetuate delirium</li> <li>o recognizing and diagnosing delirium</li> <li>o responding to change in condition</li> <li>o cardiac monitoring</li> <li>o critical care, managing extubation, and sedatives</li> <li>o physician diagnostic coding for delirium</li> </ul> </li> </ul> </li> <li><input type="checkbox"/> Staff responsible for assessing and diagnosing delirium receive training to improve the accuracy of recognition and diagnosis.</li> <li><input type="checkbox"/> Families are invited to participate in, and are educated on, activities they can engage in with the patient to promote cognitive stimulation and help prevent delirium.</li> </ul>	
	<p><b><u>ADVANCED</u></b> (check each box if “yes”)</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> There is a structured process in place for ongoing collaboration between team members in the care of patients at risk for delirium (e.g., incorporating delirium in daily rounds).</li> <li><input type="checkbox"/> A data collection process is in place to track outcomes for ongoing evaluation of the effectiveness of the delirium program and to identify opportunities.               <ul style="list-style-type: none"> <li>- Number of patients developing delirium after admission to the hospital</li> <li>- Number of patients coming to the hospital, either inpatient or outpatient (e.g., ED), with delirium</li> <li>- Number of falls</li> <li>- LOS for patients 65+ and/or in the ICU</li> <li>- Mortality rates for patients 65+ and/or in the ICU</li> <li>- Number of ventilator days</li> </ul> </li> <li><input type="checkbox"/> Volunteers and staff are trained to cognitively engage patients at risk for delirium.</li> <li><input type="checkbox"/> Patient/family education is provided for all patients at risk for delirium.               <ul style="list-style-type: none"> <li>- It includes, at a minimum:                   <ul style="list-style-type: none"> <li>o delirium risk factors</li> <li>o how to recognize delirium</li> <li>o their role in preventing delirium</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• The Institute for Aging Research has created a brochure that informs family members about delirium symptoms and prevention, and also lists interventions they can undertake to help care for a delirious loved one. <a href="#">Delirium: A Guide for Patients, Families, and Caregivers</a></li> <li>• Consider using the ICU Delirium (2010) family brochure to help educate family members on the difference between dementia and delirium and post-discharge implications. <a href="#">Family Education Brochure</a></li> </ul>

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Detection	<p><b>FUNDAMENTAL</b> (check each box if “yes”)</p> <p><input type="checkbox"/> A defined process is in place to identify patients at risk for developing delirium upon admission.</p> <ul style="list-style-type: none"> <li>- Possible approaches include: <ul style="list-style-type: none"> <li>○ assuming delirium risk for patients at highest risk for developing delirium (e.g., patients on ventilators, patients with hip fractures) and instituting prevention efforts at admission;</li> <li>○ using a delirium screening tool (Confusion Assessment Method (CAM)), Nursing Delirium Symptom Checklist (NuDESC)), Neelon and Champagne (NEECHAM) Confusion Scale) for patients in the target population defined by the organization (e.g., patients 65+ or 70+, patients in the ICU);</li> <li>○ using a quick screen, such as the DEAR tool, to pre-screen patients at risk for developing delirium after surgery or another invasive procedure</li> <li>○ A combination of the above strategies</li> </ul> </li> </ul> <p><input type="checkbox"/> A defined process is in place for ongoing monitoring of change in patient risk status for all patients in the delirium risk populations.</p> <p><input type="checkbox"/> A process is in place for physicians to collaborate with nursing staff when diagnosing delirium to capture a full picture of the patient’s baseline and current cognitive status.</p> <p><input type="checkbox"/> The organization has developed an agreed upon set of delirium diagnostic codes.</p>	<ul style="list-style-type: none"> <li>• There are several instruments for the recognition and diagnosis of delirium.  <a href="#">Confusion Assessment Method (CAM)</a>  <a href="#">CAM-ICU</a>  <a href="#">3D-CAM</a>  <a href="#">bCAM</a>  <a href="#">Richmond Agitation and Sedation Scale (RASS)</a>  <a href="#">Neelon and Champagne Confusion Scale (NEECHAM)</a>  <a href="#">Delirium Observation Screening Scale (DOS)</a>  <a href="#">Nursing Delirium Screening Scale (Nu-DESC)</a>  <a href="#">Intensive Care Delirium Screening Checklist (ICDSC)</a>  <a href="#">Delirium Elderly At-Risk (DEAR)</a> </li> <li>• Coding for delirium can be confusing. The American College of Physicians (2015) provides an explanation of the two distinct categories of encephalopathy.  <a href="#">ACP Encephalopathy Coding</a> </li> </ul>
Prevention	<p><b>FUNDAMENTAL</b> (check each box if “yes”)</p> <p><input type="checkbox"/> Sleep hygiene practices/protocols are in place (e.g., determining normal sleep patterns, avoiding daytime napping, increasing daytime stimulation, establishing bedtime routines) to assist patients in maintaining normal sleep/wake patterns.</p> <p><input type="checkbox"/> Patients have access to and are encouraged to use (or assisted in using) sensory aids such as hearing aids, glasses and dentures.</p> <p><input type="checkbox"/> Nutritional and hydration status are assessed.</p> <p><input type="checkbox"/> Nutritional supplements are provided and intake of oral fluids is encouraged.</p>	<ul style="list-style-type: none"> <li>• The National Institute for Health and Care Excellence provides a comprehensive list of delirium guidelines (2010). Included are sleep hygiene protocols and optimal environmental recommendations.  <a href="#">NICE Guidelines</a> </li> <li>• The National Institute for Health and Care Excellence (2010) provides a comprehensive list of delirium guidelines. Included are recommendations for access to sensory aids.  <a href="#">NICE Guidelines</a> </li> </ul>

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Prevention, continued	<ul style="list-style-type: none"> <li><input type="checkbox"/> Tethers, such as IVs and Foley catheters, are limited when medically feasible.</li> <li><input type="checkbox"/> Patients showing initial signs of confusion or other signs of delirium should be evaluated to ensure that there is not another underlying cause for these initial signs, such as pain, electrolyte imbalance, incontinence/intestinal problem, or infection.</li> </ul>	<ul style="list-style-type: none"> <li>• The National Institute for Health and Care Excellence (2010) provides a comprehensive list of delirium guidelines. Included recommendations for nutritional supplements and intake of oral fluids. <a href="#">NICE Guidelines</a></li> <li>• The National Institute for Health and Care Excellence (2010) provides a comprehensive list of delirium guidelines. Included are recommendations for evaluating underlying factors. <a href="#">NICE Guidelines</a></li> </ul>
	<p><b>ADVANCED</b> (check each box if “yes”)</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Review for potentially inappropriate medications which can contribute to delirium.</li> <li><input type="checkbox"/> A process is in place on admission to gather information from the patient and family when patient is admitted that will assist staff in providing a familiar environment and routine, such as: favorite television show, hobbies/interests, regular sleeping schedule, and preferences.</li> <li><input type="checkbox"/> Patient information on preferences and routines is easily accessible to staff caring for the patient.</li> <li><input type="checkbox"/> Patients and families are educated on the importance of movement, and strategies are in place to encourage movement, such as encouraging patients to eat meals in the chair rather than the bed, setting goals for early movement and a plan for progressively increasing activity as patient’s condition improves.</li> <li><input type="checkbox"/> Patients and family members are educated on the importance of eating and drinking to prevent delirium.</li> <li><input type="checkbox"/> Patients are engaged in meaningful, stimulating conversations and activities.</li> </ul>	<ul style="list-style-type: none"> <li>• The National Institute for Health and Care Excellence (2010) provides a comprehensive list of delirium guidelines. Included are recommendations for early mobility and physical therapy interventions. <a href="#">NICE Guidelines</a></li> <li>• The Hospital Elder Life Program is a patient-care centered program that provides optimal care for older persons in the hospital. Consider using their education tools when coordinating care with the family. <a href="#">Hospital Elder Life Program</a></li> </ul>

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Medications	<p><b>FUNDAMENTAL</b> (check each box if “yes”)</p> <p><i>Education is provided for prescribers and nurses, which includes:</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Information on medications that perpetuate delirium (e.g., ABCs- antihistamines, benzodiazepines and anti-cholinergics).</li> <li><input type="checkbox"/> Appropriate use of medications to manage delirium-related behaviors resistant to non-pharmacological management techniques.</li> <li><input type="checkbox"/> Non-pharmacological interventions are considered prior to prescribing high-risk medications for older adults, such as: eliminating or reducing the use of bedtime hypnotics through the use of sleep hygiene protocols/practices; and investigating underlying issues related to agitation or pain.</li> <li><input type="checkbox"/> Awareness of the risk of prescribing medications that can perpetuate delirium, such as the ABCs- antihistamines, benzodiazepines, and anti-cholinergics. If these medications are prescribed, they are started at a lower dose for older patients with slow titration and lower maximum dosing.</li> <li><input type="checkbox"/> A process to determine risk factors, including high anti-cholinergic load, which would trigger a medication review for patients at risk for developing delirium.</li> <li><input type="checkbox"/> Medication reviews include considerations for tapering, eliminating, substituting for, or temporarily discontinuing high-risk medications.</li> <li><input type="checkbox"/> Order sets for older adult patients are reviewed for high-risk medications and modified as appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>• The AGS Beers Pocket Guide (2019) is a tool that can assist health care providers in improving medication safety in older adults. <a href="#">AGS Beers Pocket Guide</a></li> </ul>
	<p><b>ADVANCED</b> (check each box if “yes”)</p> <p><i>Education is provided for prescribers and nurses, which includes:</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> If non-pharmacological interventions are unsuccessful, lower-risk medications are tried prior to higher-risk medications.</li> <li><input type="checkbox"/> Dose reduction strategies, such as auto-dose reduction, for high-risk medications (e.g., ABCs- antihistamines, benzodiazepines, anti-cholinergics).</li> </ul>	

Road map sections	Road map questions (if not present at your hospital or answering no, please see next column for suggested resources)	If specific road map element is missing, consider the following resources:
Prevention/ management of behaviors	<p><b>ADVANCED</b> (check each box if “yes”)</p> <p><input type="checkbox"/> A decision-support tool is in place to guide pharmacological management of delirium-related behaviors, such as psychosis-like symptoms, that are resistant to non-pharmacological management techniques.</p> <p><input type="checkbox"/> The decision-support tool emphasizes: the use of non-pharmacological management techniques; the fact that medications do not treat delirium and can increase the risk of perpetuating delirium; and the role of PRNs.</p> <p><input type="checkbox"/> The organization has a process to rapidly put more emergent strategies in place for patients assessed as positive for delirium with behaviors that are not re-directable (e.g., severe agitation, combativeness).</p> <ul style="list-style-type: none"> <li>- Strategies may include, but are not limited to: <ul style="list-style-type: none"> <li>○ crisis response team/process</li> <li>○ phone call to physician/psychiatrist/APRN</li> <li>○ delirium order set</li> </ul> </li> </ul>	
Emergency department	<p><b>FUNDAMENTAL</b> (check each box if “yes”)</p> <p><input type="checkbox"/> Education is provided for all emergency department clinical staff.</p> <ul style="list-style-type: none"> <li>- It includes, at a minimum: <ul style="list-style-type: none"> <li>○ delirium risk factors</li> <li>○ delirium detection</li> <li>○ strategies to avoid perpetuating delirium, which include, as a minimum: <ul style="list-style-type: none"> <li>• sensory (e.g., ensure patients have glasses, hearing aids, dentures, pocket talkers)</li> <li>• appropriately assessing and managing pain</li> <li>• avoiding high-risk medications or minimizing exposure (i.e., lower dosages)</li> <li>• avoiding unnecessary procedures that may perpetuate delirium, such as unnecessary catheter use</li> </ul> </li> </ul> </li> </ul>	

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Emergency department, continued	<p><b>ADVANCED</b> (check each box if “yes”)</p> <p><input type="checkbox"/> If an older patient is admitted as an inpatient from the ED, a process is in place to encourage family members to bring in sensory aids if they were not initially brought to the hospital.</p> <p><input type="checkbox"/> Delirium risk, any known specific prevention strategies, and all medications administered in the ED are communicated to the inpatient staff, if patient is admitted, or to the next setting of care.</p>	
ICU/short- long-term ventilated patients	<p><b>FUNDAMENTAL</b> (check each box if “yes”)</p> <p><i>Prevention strategies are in place for all ICU patients which include, at a minimum:</i></p> <p><input type="checkbox"/> Sleep hygiene practices/protocols are in place, such as determining normal sleep patterns, avoiding daytime napping, increasing daytime stimulation, and establishing bedtime routines, to assist patients in maintaining normal sleep/wake patterns.</p> <p><input type="checkbox"/> Patients have access to and are encouraged to use (or assisted in using) any sensory aids such as hearing aids, glasses or dentures.</p> <p><input type="checkbox"/> Tethers, such as IVs and Foley catheters, are limited when medically feasible.</p> <p><input type="checkbox"/> Patients are engaged in meaningful, stimulating conversations and activities.</p> <p><input type="checkbox"/> Patients showing initial signs of confusion or others signs of delirium should be evaluated to ensure that there is not another underlying cause for these initial signs, such as pain, electrolyte imbalance or incontinence/intestinal problem, or infection.</p> <p><i>For ventilated patients, the following additional strategies are incorporated:</i></p> <p><input type="checkbox"/> Assess pain using a valid and reliable pain monitoring instrument.</p> <p><input type="checkbox"/> Use of analgesic first to treat pain before treating with a sedative. If unable to maintain goal RASS score, consider IV push medications before beginning continuous sedation.</p>	<ul style="list-style-type: none"> <li>• The Agency for Healthcare Research and Quality (2017) provides best practice recommendations for making the hospital environment less stressful for patients. Consider using this resource when establishing sleep hygiene and environmental protocols. <a href="#">AHRQ Safety Program for Mechanically Ventilated Patients</a></li> <li>• The National Institute for Health and Care Excellence (2010) provides a comprehensive list of delirium guidelines. Included are recommendations for addressing cognitive impairment. <a href="#">NICE Guidelines</a></li> <li>• The Society of Critical Care Medicine (2018) provides best practice recommendations for developing evidence-based, patient-centered protocols for preventing and treating pain, agitation, and delirium, immobility and sleep disruption in critically ill patients. Consider utilizing this resource when establishing pain assessment protocols. <a href="#">Pain, Agitation, and Delirium Guidelines</a></li> <li>• The Society for Critical Care Medicine provides best practice recommendations for reducing the duration of ventilation via spontaneous awakening trials and the focused stopping of sedative medications. Consider using this resource when establishing protocols/standards. <a href="#">ICU Liberation</a></li> </ul>

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ICU/short- long-term ventilated patients, continued	<input type="checkbox"/> Daily awakening and breathing coordination trials (stop sedatives every day, following established protocols to identify patients appropriate for trials, and if needed, restart at sedation of 50 percent previous dose, titrating as needed).	
	<p><b>ADVANCED</b> (check each box if “yes”)</p> <input type="checkbox"/> A process is in place to gather information from the patient and family when patient is admitted that will assist staff in providing a familiar environment and routine, such as: use of hearing aids and glasses, favorite television show, hobbies/interests, regular sleeping schedule, and preferences.	<ul style="list-style-type: none"> <li>The AGS Beers Pocket Guide (2019) is a tool that can assist health care providers in improving medication safety in older adults. <a href="#">AGS Beers Pocket Guide</a></li> <li>According to the Society of Critical Care Medicine, early mobility is a preventative form of rehabilitation that can reduce delirium rates in the ICU. Consider this resource when establishing an ICU early mobility program. <a href="#">ICU Liberation</a></li> </ul>

**ADVANCED**

(check each box if “yes”)

- A process is in place to gather information from the patient and family when patient is admitted that will assist staff in providing a familiar environment and routine, such as: use of hearing aids and glasses, favorite television show, hobbies/interests, regular sleeping schedule, and preferences.
- Daily multi-disciplinary rounds are in place in the ICU to coordinate delirium prevention and management strategies.
- Daily rounds include: review of the results of daily awakening and breathing control trial, level of sedation, medications, and progressive mobility status.

*Prevention strategies are in place for all ICU patients which include, at a minimum:*

- Review for potentially inappropriate medications which can contribute to delirium.
- Patients and families are educated on the importance of movement, and strategies are in place to encourage movement and set goals for early movement and a plan for progressively increasing activity as patient’s condition improves.

*For ventilated patients, the following additional strategies are incorporated:*

- Monitor level of agitation/anxiety and sedation with reliable tool (e.g., RASS tool) at least every shift.
- Establish a goal of maintaining patients at a lighter RASS score (i.e., goal of 0 to -1).
- If additional sedation is required, use non-benzodiazepine sedative.
- A decision-support tool is in place to assist staff in using physiologic criteria to incorporate daily progressive mobility.
- Early and progressive mobilization/movement is provided based on patient’s daily physiological status.