



Opioid Adverse Drug Event (ADE) Prevention Road Map

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: |
|--------------------------------|---|--|
| Pain assessment and management | <p>FUNDAMENTAL (check each box if “yes”)</p> <ul style="list-style-type: none"> <input type="checkbox"/> The hospital has a leader or leadership team that is responsible for pain management, safe opioid prescribing, development and monitoring of performance improvement activities. <input type="checkbox"/> Standardized pain assessments are used throughout the facility. <ul style="list-style-type: none"> - Facility has defined its pain assessment and nursing applies it consistently, e.g. pain scales or assessment of function. - Avoid prescribing a dose based on pain ratings. While severe pain may require more aggressive analgesic treatment, a nonlinear relationship has been demonstrated between opioid dose and the visual analog scale. There is high variability in individual responses to opioid doses. (RADEO Toolkit) <input type="checkbox"/> The hospital develops patient specific pain treatment plans based on evidence-based practices and the patient’s clinical condition, past medical history and pain management goals. <ul style="list-style-type: none"> - Engage the patient in treatment decisions about their pain management goals. | <ul style="list-style-type: none"> • SHM RADEO Toolkit (Reducing Adverse Drug Events Related to Opioids Implementation Guide) • TJC R3 Report (Issue 11, Aug. 29, 2017) • TJC Hospitals are required to have defined criteria that they will use to screen, assess and reassess pain that are consistent with the patient’s age, condition and ability to understand. • TJC R3 Report (EP 4 Provision of Care) • MN DHS Opioid Guidelines |

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| Pain assessment and management, cont. | <p>ADVANCED (check each box if “yes”)</p> <p><input type="checkbox"/> Standard policies and practices include identifying the need for a pain assessment by a qualified pain specialist (who may be available to consult on-site or externally).</p> <ul style="list-style-type: none"> - Neuraxial pain therapy is managed by anesthesia or a pain management trained practitioner. | <ul style="list-style-type: none"> • ISMP Safety Assessment for High Risk Medication |
| Patient and family education | <p>FUNDAMENTAL (check each box if “yes”)</p> <p><input type="checkbox"/> Patient education includes the impact of opioid therapy on psychomotor and cognitive function.</p> <ul style="list-style-type: none"> - Operating a motor vehicle - Work safety <p><input type="checkbox"/> Patient education includes the potential for serious interactions with alcohol, central nervous system depressants and other opioids.</p> <p><input type="checkbox"/> Patient education includes the potential risks of tolerance, addiction, physical dependency, and withdrawal symptoms associated with opioid therapy.</p> <p><input type="checkbox"/> Patient education includes the principal risks and side effects of opioids (e.g., constipation, the risk of falls, nausea and vomiting).</p> <p><input type="checkbox"/> Patient education includes the safe and secure storage, and disposal of opioid analgesics in the home.</p> <p><input type="checkbox"/> When initiating home-based or ambulatory opioid therapy, patients/ caregivers receive verbal and written information on purpose, action, side effects, and monitoring before discharge.</p> | <ul style="list-style-type: none"> • MN DHS Opioid Prescribing Guidelines • CDC Overdose Prevention • JAMA, Opioids for Chronic pain (2016) • https://doseofreality.mn.gov/drug-takeback/find-a-take-back-location.asp • https://www.cdc.gov/drugoverdose/patients/expectations.html • https://www.cdc.gov/drugoverdose/pdf/Original-PatientPoster-Digital.pdf |
| | <p>ADVANCED (check each box if “yes”)</p> <p><input type="checkbox"/> Patients and families are educated on how to activate the rapid response team.</p> <p><input type="checkbox"/> Patients are educated on non-pharmacologic pain therapy.</p> | <ul style="list-style-type: none"> • TJC R3 Report |

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| <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Patient monitoring practices</p> | <p>FUNDAMENTAL (check each box if “yes”)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Policies and practices define when continuous pulse oximetry and capnography are utilized. <input type="checkbox"/> Policies and practices define alarm thresholds for monitoring respiratory depression and associated staff actions. <input type="checkbox"/> Policies and practices define required nursing assessments for patients who are receiving opioids including vital signs, pain level, respiratory effect/quality and level of sedation. <ul style="list-style-type: none"> - Frequency of monitoring is dependent upon medication and patient characteristics. - Standardized sedation scale is utilized to measure. <input type="checkbox"/> Patients who receive naloxone are monitored for signs of re-sedation and respiratory depression after administration of the reversal agent for a period of time as defined by the facility. <input type="checkbox"/> The facility has preoperative or preadmission instructions that ensure the patient brings their CPAP with them, or has access to a CPAP, if they are expected to be on opioid therapy. <ul style="list-style-type: none"> - Facility policies must support continuation of CPAP therapy if used at home. <input type="checkbox"/> Opioid policies and practices define monitoring and actions associated with opioid related side effects (ie. pruritis, delirium, constipation, allergic reaction). <input type="checkbox"/> Opioid policies and practices clearly specify that supplemental oxygen is used only if oxygen level is lower than desired and only upon a provider order, and after opioid over-sedation is ruled out as a cause of low oxygen levels. <input type="checkbox"/> A standard handoff/transition communication process is in place for all patients receiving opioids which includes the patient’s opioid status (naïve or tolerant); recent pain assessment, sedations score, and medications administered; drug and dose history from previous shift; and history of snoring, obesity and sleep apnea. <ul style="list-style-type: none"> - Care team is aware of risk factors for unintended advancing sedation and respiratory depression. <input type="checkbox"/> The PACU discharge process includes a stabilization period after patient receives an opioid dose to ensure the patient is stable upon transfer. <ul style="list-style-type: none"> - The facility has defined the duration of the stabilization period. | <ul style="list-style-type: none"> • SHM RADEO Toolkit • ISMP Safety Assessment for High Risk Medication (18-19) • Pasero Opioid induced sedation scale • ISMP Safety Assessment for High Risk Medication • Pennsylvania Patient Safety Authority Opioid Knowledge Self-Assessment |

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| Patient monitoring practices, cont. | <p>ADVANCED (check each box if “yes”)</p> <p><input type="checkbox"/> The facility utilizes a rapid response team that can be activated by staff or family to assist with possible opioid over-sedation events.</p> | |
| Patient risk stratification | <p>FUNDAMENTAL (check each box if “yes”)</p> <p><input type="checkbox"/> Standard policies and practices include defining and identifying if a patient is opioid naïve or tolerant.</p> <ul style="list-style-type: none"> - This information is used to guide the prescriber in dosage decisions. <p><input type="checkbox"/> Standard policies and practices include the assessment and documentation of risk factors for respiratory depression.</p> <ul style="list-style-type: none"> - The facility uses a validated, standardized sedation scale (e.g., Pasero Opioid-Induced Sedation Scale [POSS]) to guide the assessment and early detection of unintended advancing sedation during opioid therapy. - See RADEO toolkit, Table 2, Page 20, “Risk Factors for Opioid-Induced Respiratory Depression”. <p><input type="checkbox"/> Opioid safe policies and practices include review of concomitant non-opioid medications that increase risk of additive sedation when administered with opioids.</p> <ul style="list-style-type: none"> - Non-opioid medication review includes benzodiazepines and sedative hypnotics. | <ul style="list-style-type: none"> • ISMP Safety Assessment for High Risk Medication • SHM RADEO Toolkit • Sleep Apnea Screening: <ul style="list-style-type: none"> - BERLIN Questionnaire - STOP Bang • Pasero Opioid induced sedation scale |
| Pharmacy practices | <p>FUNDAMENTAL (check each box if “yes”)</p> <p><input type="checkbox"/> The facility has processes to prevent errors caused by mixing up concentrated and dilute oral liquid opioids.</p> <ul style="list-style-type: none"> - Limited override list at automated dispensing cabinet. - Strategies include using barcode scan verification of product ingredients, draw up patient-specific doses in pharmacy, restrict concentrated product stock to pharmacy. | <ul style="list-style-type: none"> • ISMP Safety Assessment for High Risk Medication • ISMP Guidelines for Safe Preparation for Sterile Compounds |

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| Pharmacy practices, cont. | <ul style="list-style-type: none"> <input type="checkbox"/> The facility has processes in place to prevent compounding errors associated with all opioid infusions prepared in the pharmacy. <ul style="list-style-type: none"> - Infusions include: continuous IV, neuraxial and PCA. - Strategies include: stage checking, barcode scan verification of product ingredients, gravimetrics, robotic image recognition. <input type="checkbox"/> Opioid policies and practices state that where appropriate, only dose forms that are needed for starting doses are available as over-ride items in automated dispensing cabinets. <ul style="list-style-type: none"> - For example: Morphine 2 mg syringes are available, but 4 mg syringes are not available on over-ride. <input type="checkbox"/> The facility has processes in place to prevent misconnections and wrong route errors. <ul style="list-style-type: none"> - Prevention efforts should address pumps, tubing, standard labeling, pharmacy dispensing processes. <input type="checkbox"/> The facility has processes in place to differentiate look-alike sound-alike medications. <ul style="list-style-type: none"> - Tall man lettering - Storage <input type="checkbox"/> The facility uses Smart infusion pumps with drug libraries for the IV administration of all opioids (including PCA and neuraxial infusions), with functionality employed to intercept and prevent wrong dose and wrong infusion rate errors, when available. | <ul style="list-style-type: none"> • MHA Controlled Substance Diversion Prevention Roadmap |
| Prescribing and administering guidelines | <p>FUNDAMENTAL (check each box if “yes”)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Opioid policies and practices provide guidance on dosing for opioid naïve, opioid tolerant and patients with conditions at high-risk for opioid adverse drug events. <ul style="list-style-type: none"> - Practices support that orders for PCA prohibit the routine use of basal dosing in the opiate naïve patient. When initiating orders for opioids, computer order entry systems default to the lowest initial starting dose and frequency, and alert practitioners when a dose adjustment is required due to age, renal or liver impairment, or when patients are prescribed other sedating medications. - Long-Acting opioids are not utilized to treat acute pain or pain in opioid naïve patients. | <ul style="list-style-type: none"> • SHM RADEO Toolkit • ISMP Safety Assessment for High Risk Medication • ISMP Best Practices for Hospitals 2018 • TJC R3 Report (Issue 11, Aug. 29, 2017) |

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| <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Prescribing and administering guidelines, cont.</p> | <ul style="list-style-type: none"> <input type="checkbox"/> Opioid policies and practices ensure the facility has a standard conversion tool that is used when changing the opioid medication or route of administration. <input type="checkbox"/> Pediatric weight-based dosing guidelines are in kilograms and are incorporated into the EHR (or otherwise widely available) and utilized. <input type="checkbox"/> Facility defines standard concentrations for all continuous IV and neuraxial infusions. <input type="checkbox"/> Policies and practices define best practice for PRN analgesic prescribing while limiting range orders, therapeutic duplication and guarding against dose stacking. <input type="checkbox"/> Nursing practice guidelines include a process for independent double-check for smart pump programming with new opioid infusion, IV and neuraxial, and PCA starts, and every new bag or setting change thereafter, when available. <input type="checkbox"/> Policies and practices for opioid therapy include titration guidelines for appropriate and safe clinical response. <ul style="list-style-type: none"> - The hospital develops a pain treatment plan based on evidence-based practices and the patient's clinical condition, past medical history and pain management goals. <input type="checkbox"/> Policies and practices for hydromorphone state that starting doses of IV push hydromorphone do not exceed 0.4 mg in the opiate naïve adult patient. <input type="checkbox"/> Policies and practices for morphine state that starting doses of IV push morphine do not exceed 2 mg in the opiate naïve adult patient. <input type="checkbox"/> Opioid policies and practices define resources and processes for managing pain in patients receiving medication assisted therapy (MAT) for Opioid Use Disorders. <input type="checkbox"/> Policies and practices define when the PMP is reviewed, e.g. prior to prescribing opioids for acute pain. <ul style="list-style-type: none"> - PMP: Prescription Monitoring Program - Rationale is to understand patient's opioid use history. <input type="checkbox"/> A pharmacist or pain specialist provides oversight for all dosing of fentanyl patches, transmucosal immediate release fentanyl patches (TIRFs) and methadone. <input type="checkbox"/> An opioid reversal protocol or standing order set is available to nursing/clinical staff if there is an active order for an opioid. <ul style="list-style-type: none"> - Resuscitation equipment, supplemental oxygen and naloxone are available. | <ul style="list-style-type: none"> • MN DHS Opioid Prescribing Guidelines • CDC Guidelines for Prescribing Opioids |

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| Prescribing and administering guidelines, cont. | <ul style="list-style-type: none"> <input type="checkbox"/> Non-opioid medications and non-pharmacological alternatives are routinely utilized in pain management as a tactic to reduce opioid administration in the facility. <input type="checkbox"/> Standard policies and practices include guidelines for initiation and management of opioid therapy based on evidence-based best practice. <ul style="list-style-type: none"> - Policies and pain order sets should be standardized for procedural areas and specialties e.g. endoscopy, orthopedics, surgery, labor and delivery, etc. <input type="checkbox"/> Standard policies and practices include guidelines to administer the lowest effective dose and to replace range orders with discrete options, not ranges, for dosing. <ul style="list-style-type: none"> - Discrete orders state that if X exists, administer XX, if Y exists, administer YY. Does not preclude dosing as guided by bedside order. | |
| | <p>ADVANCED (check each box if “yes”)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Opioid policies and practices define best practice for prescribing opioids at discharge including duration of supply and maximum morphine equivalents for indication for use. <ul style="list-style-type: none"> - For example, injury severity is considered in prescribing home opioid therapy. | |
| Process improvement practices | <p>FUNDAMENTAL (check each box if “yes”)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Adverse event data is collected and reviewed to assess compliance with dose guidelines and monitoring requirements to identify improvement opportunities any time an adverse event related to opioid therapy occurs. <ul style="list-style-type: none"> - Facilities should determine triggers for event review, for example, use of a reversal agent. <input type="checkbox"/> Data are collected and widely available on the rate of naloxone reversal coded as an adverse drug event. | |

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| <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Staff competency and education</p> | <p>FUNDAMENTAL (check each box if “yes”)</p> <p><input type="checkbox"/> Staff are provided latest evidence-based information to guide their pain management practice.</p> <ul style="list-style-type: none"> - Interdisciplinary education on opioid therapy includes a post-test to demonstrate proficiency; covers topics such as dose stacking, dose equivalency, interpretation of vital signs and monitoring equipment. - Interdisciplinary training on opioid therapy includes initial training for new hires and existing staff, including protocols and guidelines. | <ul style="list-style-type: none"> • Opioid Knowledge Self-Assessment (PA Pt. Safety Authority) • SHM RADEO Toolkit |