**Supplementary Material**

Table of Contents:

eMethods: Consensus Statement Development and Process Results

Appendix Table 1. Working Group Members

Appendix Table 2. Validity ratings by the Society of Hospital Medicine’s Reducing Adverse Drug Events Related to Opioids (RADEO) initiative expert reviewers

Appendix Table 3. Professional Societies Engaged During 30-Day Comment Period

**eMethods: Consensus Statement Development and Process Results**

*Drafting the Consensus Statement:*

The working group drafted and iteratively revised a set of recommendations using a variation on the Delphi Method[9](#_ENREF_9) to identify consensus among group members as follows:

One author (SJH) formulated an initial draft based on a synthesis of the key recommendations extracted from the existing guidelines included in the systematic review. Members of the working group reviewed the drafted recommendations and provided feedback using an electronic survey platform, including rating the perceived validity of each recommendation on a scale from 1-9. We asked them to consider the following criteria in their validity assessment: 1) Is the recommendation evidence-based, or consistent with current, widely held expert opinion, 2) is the recommendation appropriate (i.e., offers patients a favorable balance of potential benefits and risks), and 3) is the recommended approach preferred (i.e., no alternative approach to care is substantially more appropriate).

Validity ratings for each recommendation in this original draft ranged from 5-9, with the mean ratings for each statement ranging from 7.3 to 8.5, indicating a high degree of perceived validity at the outset.

Next, SHM convened an in-person meeting of the working group at SHM headquarters in which the members discussed each of the recommendations and reviewed the anonymized ratings and feedback as a group. Discussion continued until consensus had been reached. After the meeting, the recommendations were refined in response to the discussion during the meeting, and working group members provided comments and feedback on iterative drafts until agreement was reached and all members approved of the draft.

*External Expert Review:*

To obtain additional input from individuals with content expertise in opioid use in the hospital setting, SHM then sent the draft for review by individuals involved in SHM’s Reducing Adverse Drug Events Related to Opioids (RADEO) initiative, including those involved with development of the implementation guide and site leads for the Mentored Implementation program.

SHM requested that each clinician rate the validity of each recommendation on a scale from 1-9 and informed them that ratings would be interpreted as follows: 1-3, statement is not valid; 4-6, statement is of uncertain, intermediate, or mixed validity; 7-9: statement is valid. SHM asked that they assess validity by the same criteria noted above. The survey also included a free-text comment box after each recommendation. The working group pre-defined their threshold for retention of each recommendation as a 7 or higher validity rating by at least 66% of respondents.

We obtained a response from 62 out of 88 (70.4%) survey recipients, including 26 (41.9%) hospitalists, 9 (14.5%) nurse practitioners, 8 pharmacists (12.9%), 7 (11.3%) non-hospitalist physicians, 3 (4.84%) resident physicians, 1 (1.6%) physician assistant, and several others (including registered nurses, nurse anesthetists, an anesthesiologist, a respiratory therapist, a clinical pharmacist medication safety officer, an emergency medicine physician, and an acute care surgeon and surgical intensivist) . The median validity ratings for the recommendations ranged from 8-9 (Appendix Table 2). Each recommendation was considered valid (i.e., rated 7 or greater) by at least 66% of respondents (our pre-specified retention criterion).

*30-Day Comment Period by Relevant Professional Societies, SHM Membership, and PFAC Members:*

SHM then asked leaders from relevant professional societies (Appendix Table 3),SHM members, and SHM PFAC members to review the recommendations and provide comments over a 30-day period (from December 18 to January 17, 2017). Comments were collected through an electronic survey which was emailed to the leadership of each of the societies and to SHM PFAC members, and made available to SHM members through the Hospital Medicine Exchange (HMX) forum.

We obtained a response from 55 SHM members, including 45 adult hospitalists, 4 pediatric hospitalists, 4 nurse practitioners, and 2 residents/fellows; and 33 SHM PFAC members. We obtained a response with input from 8 out of 19 (50%) professional societies approached for comment.

*External Peer Review:*

Finally, the resulting manuscript was submitted to the Journal of Hospital Medicine and revised according to the comments obtained through external peer review.

**Appendix Table 1**

|  |  |  |  |
| --- | --- | --- | --- |
| **Appendix Table 1. Working Group Members** | | | |
| **Name, Degree** | **Academic Titles, Affiliations** | **Clinical Roles, Affiliations** | **Potential Conflicts of Interest** |
| Shoshana J. Herzig, MD MPH | Assistant Professor of Medicine, Harvard Medical School, Boston, MA;  Director of Hospital Medicine Research, Beth Israel Deaconess Medical Center, Boston, MA | Hospitalist, Beth Israel Deaconess Medical Center, Boston, MA | Receives compensation from the Society of Hospital Medicine for her editorial role at the Journal of Hospital Medicine (unrelated to the present work) |
| Hilary J. Mosher, MD | Associate Professor of Medicine, University of Iowa Carver College of Medicine, Iowa City, IA | Hospitalist, Iowa City VAHCS and University of Iowa Hospitals and Clinics, Iowa City, IA | None |
| Susan L. Calcaterra, MD MPH | Assistant Professor of Medicine, University of Colorado Denver, Denver, CO | Hospitalist and Fellow in Addiction Medicine, University of Colorado Denver, Denver, CO | None |
| Anupam B. Jena, MD PhD | Ruth L. Newhouse Associate Professor of Health Care Policy and Medicine, Harvard Medical School, Boston, MA;  Faculty Research Fellow, National Bureau of Economic Research, Cambridge, MA | Hospitalist, Massachusetts General Hospital, Boston, MA | Has received consulting fees from Pfizer, Inc., Hill Rom Services, Inc., Bristol Myers Squibb, Novartis Pharmaceuticals, Vertex Pharmaceuticals, and Precision Health Economics, a consultancy to the life sciences industry (all unrelated to the present work). |
| Teryl K. Nuckols, MD | Associate Professor of Medicine, David Geffen School of Medicine at UCLA, Los Angeles, CA;  Associate Professor of Medicine, Cedars-Sinai Medical Center, Los Angeles, CA;  Director, Division of General Internal Medicine, Cedars-Sinai Medical Center, Los Angeles, CA;  Health Services Researcher, RAND Corporation, Santa Monica, CA | Hospitalist, Cedars-Sinai Medical Center, Los Angeles, CA | None |

**Appendix Table 2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Appendix Table 2. Validity ratings by the Society of Hospital Medicine’s Reducing Adverse Drug Events Related to Opioids (RADEO) initiative expert reviewers** | | | |
| Recommendation | Median | Range | n(%) rating statement as valid (i.e., ≥7) |
| 1 | 8 | 5-9 | 59 (95.2) |
| 2 | 9 | 5-9 | 60 (96.8) |
| 3 | 9 | 3-9 | 56 (90.3) |
| 4 | 9 | 4-9 | 57 (91.9) |
| 5 | 9 | 5-9 | 57 (91.9) |
| 6 | 8 | 2-9 | 53 (85.5) |
| 7 | 9 | 2-9 | 58 (95.1) |
| 8 | 9 | 1-9 | 53 (86.9) |
| 9 | 9 | 6-9 | 58 (95.1) |
| 10 | 9 | 4-9 | 56 (91.8) |
| 11 | 9 | 5-9 | 57 (93.4) |
| 12 | 9 | 5-9 | 57 (93.4) |
| 13 | 9 | 5-9 | 58 (95.1) |
| 14 | 9 | 1-9 | 55 (90.2) |
| 15 | 9 | 5-9 | 54 (88.5) |
| 16 | 9 | 5-9 | 56 (91.8) |

**Appendix Table 3**

|  |  |
| --- | --- |
| **Appendix Table 3. Professional societies engaged during 30-day comment period** | |
| Societies Approached for Input | Provided input? |
| American Academy of Family Physicians | Yes |
| American Academy of Hospice and Palliative Care | No |
| American Academy of Physical Medicine and Rehabilitation | No |
| American Association of Orthopedic Surgeons | No |
| American Board of Internal Medicine | No |
| American College of Chest Physicians | No |
| American College of Emergency Physicians | No |
| American College of Occupational and Environmental Medicine | No |
| American College of Physicians | Yes |
| American College of Surgeons | No |
| American Hospital Association | Yes |
| American Pain Society | No |
| American Society of Addiction Medicine | Yes |
| American Society of Anesthesiologists | Yes |
| American Society of Health-System Pharmacists | Yes |
| The Beryl Institute | No |
| Emergency Care Research Institute | No |
| Society of Critical Care Medicine | Yes |
| Society of General Internal Medicine | Yes |