AHRQ Small Conference Grant Final Report

Title of Project: Medication Reconciliation: A Team Approach

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I. Structured Abstract

Purpose: The purpose of this conference, held on March 6, 2009, was to identify key action items and stakeholder organization roles needed to address opportunities and challenges in medication reconciliation.

Scope: A group of key stakeholders from healthcare policy, patient safety, regulatory, professional, technology, and consumer organizations was convened to address a number of issues confronting practitioners and professional organizations regarding effective implementation of medication reconciliation.

Methods: A task force was convened to provide guidance in planning the conference. In preparation for the conference, a literature search was conducted, and past and ongoing medication reconciliation research and education projects were compiled and disseminated to participants. Strategies to keep participants engaged were employed both before and after the conference. At the conference, a large-group plenary and discussion sessions as well as four breakout sessions gave participants the opportunity to discuss issues with the entire group and then contribute iteratively in small groups on four key topics: strategies for implementation; metrics to assess success; literacy and patient empowerment; and community involvement.

Results: Thirty-six key stakeholders representing more than 20 organizations attended the conference. Conference and post-conference discussions and recommendations are included in this report. Both the conference proceedings and a PowerPoint highlighting the proceedings will be distributed electronically to participants, along with recommendations for strategies to disseminate the materials (e.g., websites, publications, presentations).

Key Words: medication reconciliation, medication errors, patient safety

II. Purpose

The goal of the “Medication Reconciliation: A Team Approach” conference was to identify key action items and stakeholder organization roles in addressing opportunities and challenges in medication reconciliation. Specifically, conference objectives were to:

1. Convene a forum of 30-40 stakeholders for discussions on medication reconciliation by experts representing healthcare policy, patient safety, quality, regulatory, professional, technology, and consumer organizations.
2. Expand upon existing knowledge of:
    i. Patient education, literacy, and empowerment and its impact on medication reconciliation;
    ii. Community resources and partnerships to support and augment the clinically based medication reconciliation process;
    iii. Implementation strategies that improve the completion and effectiveness of medication reconciliation; and
    iv. Measurement of the effectiveness and impact of medication reconciliation.
3. Develop interorganizational connections to foster future collaboration on medication reconciliation.
4. Document the findings of these proceedings for use by participating organizations in educating their constituencies.

III. Scope

Several national regulatory and quality agencies, including the Institute for Healthcare Improvement (IHI), The Joint Commission (TJC), and the National Quality Forum (NQF), have recognized the importance of systematic processes that attempt to prevent medication errors for patients during a hospitalization and during the transition into and out of the hospital. Medication reconciliation is one of these processes and is designed to identify and address medication issues around the times of care transitions. Though each agency defines the problem in slightly different terms, each carries the theme of the need to understand a patient’s current and prior medication use while considering what changes need to be made for future care.

Although The Joint Commission (TJC) requires the implementation of the medication reconciliation process for accreditation (NPSG 8), they have recognized the difficulty that many hospitals have had in implementing the process systematically. They announced, effective January 1, 2009, that medication reconciliation evaluations during site visits would continue to be conducted; however, survey findings would not be factored into the organization’s accreditation decision. In addition, survey findings on NPSG 8 would not generate Requirements for Improvements (RFI) and would not

appear on the accreditation report. In 2009-10, TJC will convene a group of stakeholders and re-evaluate and further refine NPSG 8, resulting in an improved NPSG 8 that both supports quality and safety of care and can be more clearly implemented by the field in 2010.

Despite the challenges in implementing medication reconciliation, it remained clear that medication reconciliation was a worthwhile effort for patient safety. Therefore, in 2008, the SHM proposed to convene a meeting of the key stakeholders at the policy, quality, consumer, and clinical levels to discuss medication reconciliation and make recommendations to address several central of issues confronting practitioners as well as professional organizations.

IV. Methods

SHM received a small conference grant from AHRQ in April 2008. The multidisciplinary conference, entitled "Medication Reconciliation: A Team Approach," was held on March 6, 2009, at Northwestern University in Chicago, Illinois. The conference was a combination of a large-group plenary and discussion sessions as well as four iterative breakout sessions. This format gave participants the opportunity to discuss issues and share their experiences with the entire group and then contribute in small groups to each of the four topics.

A task force was convened to provide guidance in the organization of the conference and, in particular, to ensure that the final agenda reflected the interests and needs of the member organizations. The following members served on the Task Force: Jeffrey Greenwald, MD, FHM (SHM), Principle Investigator and Conference Chair; Lakshmi Halasyamani, MD, FHM (SHM); Mark Williams, MD, FHM (SHM); Cynthia LaCivita, PharmD (ASHP Foundation); and Carolyn Brennan (SHM Advisor). SHM staff were Linda Boclair, Project Director, and Lauren Valentino, Project Coordinator.

Monthly Task Force conference calls focused on six major activities:

- Developing the forum where stakeholders could meet to discuss medication reconciliation issues, specifically Patient Education, Literacy, and Empowerment; Community Resources and Partnerships; Implementation Strategies; and Measurement of Success.

- Recruiting key stakeholders from professional, quality, safety, technology, policy, regulatory, and public health organizations and front-line clinicians to represent their respective organizations at this invitation-only conference.

- Reviewing past and ongoing medication reconciliation research and education projects with the intent of providing background information to conference participants.

- Keeping stakeholders engaged both at pre- and post-conference times to ensure sustainability of efforts to address issues and implement recommendations.

- Production of conference proceedings in a format best suited to the target population and dissemination of proceedings through a variety of channels (e.g., websites, seminars and other education programs, journal articles, newsletters).

- Development of a cohort of hospitals' experiences with medication reconciliation, which served as case studies and could promote discussion.

Convening a Forum

In order to raise awareness on a broad scale, the conference brought together a multidisciplinary stakeholder group dedicated to learning from each other and building on the research and education efforts already underway. To achieve both policy-level and front-line impact, the conference committee invited a broad spectrum of stakeholders with varying backgrounds. Discussion and idea sharing were paramount. Bernard Consulting (John Deadwyler, Principal) was contracted to assist with facilitating and documenting conference discussions.

Recruiting Key Stakeholders

Participation of the attendees was by invitation only, and all invitees needed to represent their organization. Identifying and recruiting key stakeholders who could speak on behalf of their respective organizations required significant effort on the part of the task force during the initial months of planning. A broad-based attendance was achieved through targeted outreach via professional organizations, with representation from the policy, quality, safety, and clinical arenas. Contacts were made at the highest levels of the organizations to encourage the "buy-in" needed for post-conference dissemination of proceedings and implementation of recommendations.

The effort to recruit stakeholders was successful with all but two of the 38 invitees attending the conference. The following organizations were represented: **AACN**, American Association of Critical Care Nurses; **AAFP**, American Academy of Family Physicians; **AAP**, American Academy of Pediatrics; **ACEP**, American College of Emergency Physicians; **ACP**, American College of Physicians; **AMA**, American Medical Association; **AMNS**, Academy of Medical Surgical Nurses; **ASHP**, American Society of Health-System Pharmacists; the **ASHP Research and Education Foundation**; **CAPS**,

Consumers Advancing Patient Safety; **CMS**, Centers for Medicare and Medicaid Services; **CMSA**, Case Management Society of America; **IHI**, Institute for Healthcare Improvement**; ISMP**, Institute For Safe Medication Practice; **NCC MERP**, National Coordinating Council for Medication Error Reporting and Prevention; **NQF**, National Quality Forum; **SGIM**, Society of General Internal Medicine; **SHM**, Society of Hospital Medicine; **TJC**, The Joint Commission; **JCR,** Joint Commission Resources; **Massachusetts Coalition for Prevention of Medical Errors**; **Microsoft** Corporation; **Northwestern Memorial Hospital** MATCH Program; **UCSD** Hospital Medicine; **University of Oklahoma** College of Pharmacy - Tulsa; and **KRE Consulting**.

Reviewing Medication Reconciliation Projects

In an effort to identify past and ongoing medication reconciliation research and education projects, a file of projects submitted by conference participants was created and a literature search was conducted through the Delaware Academy of Medicine. Fourteen organizations submitted projects. Both the file of projects and results of the literature search, in addition to several case studies, were sent to the participants with encouragement to review the documents prior to the conference.

Keeping Stakeholders Engaged

Because most stakeholders were recruited months prior to the conference, we believed that the success of the conference depended, in part, on keeping stakeholders engaged throughout the planning process. One of the first steps was to identify participants to assist with planning and co-facilitating the breakout sessions. Representatives from ASHP, NQF, AACN, and CAPS accepted the invitation and began working with the Task Force.

In addition to the file of projects and annotated bibliography previously mentioned, monthly “MedRec 09” updates were sent to participants informing them of progress. These updates included topics about new developments on the medication reconciliation front and new organizations that joined the invitee list, and the updates also solicited input about how each organization defined “medication reconciliation.”

In an effort to maintain the momentum from the conference, participants were asked at the end of the meeting to complete a commitment form outlining areas on which their organizations could work to improve the organization’s efforts in medication reconciliation. They also completed a conference evaluation at that time. Post-

conference calls were held in April and May 2009 to discuss progress in following up with commitments.

Production and Dissemination of Conference Proceedings

The conference proceedings will be distributed electronically along with recommendations for strategies to disseminate the materials (e.g., websites, publications, presentations). In addition, in response to requests from participating organizations, a brief PowerPoint presentation outlining key issues, questions, and themes will be distributed to participants. This presentation will be oriented toward organizational leadership and will help participants share the conference's message and next steps.

Conference Evaluations

Thirty participants (81%) completed the evaluation survey. Overall, feedback from the conference participants was extremely positive. Participants were asked to name three goals they had for themselves/their organization that they hoped to achieve by attending the conference. The average score of how satisfied they were that they met the goals, on a scale of 1 (not satisfied) to 5 (extremely satisfied), was 4.5.

Following are responses to the question, "How effective was the conference in...," with the scale of 1 (not effective) to 5 (highly effective).

Questions	**Score**
Identifying seminal issues in medication reconciliation requiring further attention.	4.7
Including key stakeholders in the discussion.	4.5
Drilling down to identify key actionable steps.	3.7
Helping individuals/organizations identify their own role/next steps.	4.0
Developing the foundation for improving medication safety practices, specifically in:	
1. Addressing patient-centeredness and literacy.	4.1
2. Understanding the role of and opportunities for communities.	4.0
3. Implementation strategies.	4.0
4. Developing meaningful metrics.	2.9*

*In retrospect, the co-facilitators of this work group concluded that metrics should have been included as the second component of each of the three other work groups, as metrics can only be defined as they relate to desired outcomes. This may explain the lower score for developing meaningful metrics.

Additional comments from the participants:

- Thank you! Timing excellent to move national and regulatory agenda.
- Great meeting. I thoroughly enjoyed participating. Thank you for the invitation.
- I truly appreciate continued energy, collaboration, and organization to continually address this process.
- Organization was really well done. Loved the way the breakouts were structured. The participants were all knowledgeable, involved, and qualified. My energy level stayed high all day - quite a compliment to the committee for an all-day Friday meeting.

An overview of the conference agenda is presented below:

Medication Reconciliation: A Team Approach
March 6, 2009 8 AM-4 PM
Prentice Women's Hospital, Northwestern University
Chicago, Illinois

8:00-8:30 am	Welcome and Overview of Medication Reconciliation: Past, Present, and Future
8:30-8:45 am	Overview of the meeting outcomes Clarification of the focus of the meeting
8:45-9:30 am	Case study presentation and discussion
9:30-9:45 am	Work group assignments
9:45-10:00 am	BREAK
10:00-2:50 pm	Breakout sessions 1-4 (45 min each) and working lunch (Each participant participated in all four sessions in rotation.)
3:00-3:45 pm	Work group reports and facilitated discussion
3:45-4:00 pm	Conference evaluations, commitments, and closing comments

V. Results

Principal Findings

The principal findings below are a result of the conference.

1) Consensus among key stakeholders is an essential element in elucidating and addressing the opportunities and challenges in medication reconciliation.

2) A standardized definition of "medication" and "reconciliation," with guiding principles and clearly defined processes, is a prerequisite to addressing specific medication reconciliation issues. Themes that emerged surrounding these definitions included:

a. Patient-centeredness as a key concept in defining a medication reconciliation process.

b. The definition must view medication reconciliation beyond the regulatory context. Reframe medication reconciliation within the context of the entire patient care experience.

3) Electronic health records (personal and provider based) must be standardized and implemented to transfer medication information effectively and efficiently across transitions of care. This requires true integration of electronic data.

4) Developing a public health agenda around medication *safety* as the community-based concept of medication reconciliation, including the use of social marketing, health promotion, and community mobilization to support medication reconciliation that occurs in clinical settings, is important for patient understanding and engagement in the medication reconciliation process.

5) Build on the existing community-based initiatives and infrastructures that exist already in many national organizations to foster collaboration and recognize the importance of patient and community engagement as a national priority for quality and safety.

6) Partnerships are the single most important concept in implementation of the recommendations offered by the stakeholders. By designating a central coordinating body or coalition, the organizations can partner while sharing a common vision and contributing expertise to addressing the myriad of issues in medication reconciliation:

- Health systems must partner with community pharmacy providers to ensure an uninterrupted communication link in both the inpatient and outpatient settings.

- Quality organizations must establish unambiguous and unified medication reconciliation standards across the care continuum through longitudinal discussions with other stakeholders.

- Research and Quality Improvement communities must develop and test interventions and disseminate results.

- Professional societies must collaboratively agree to a standard, patient-centered method to promote and maintain a universal medication reconciliation process.

- Public health systems must partner with community-based organizations to encourage and promote the established standards for medication reconciliation, which include issues of patient literacy.

Outcomes

Thirty-six key stakeholders representing 20 organizations attended the conference. Work during the conference and in two post-conference calls resulted in the identification of key action items and organizational roles and partnerships in addressing opportunities and challenges in medication reconciliation. A majority of the participants committed to continued involvement in a medication reconciliation initiative.

Conference proceedings and a PowerPoint presentation of the proceedings will be sent to participants in August 2009. The PowerPoint presentation will be brief and informative. Its design will capture the attention of busy executives while building the case for the importance of medication reconciliation and the need to address key issues identified by conference participants. Both the conference proceedings and the PowerPoint will be distributed electronically along with recommendations for strategies to disseminate the materials (e.g., websites, publications, presentations).

Details of the Meeting Sessions

Plenary Session

Dr. Jeffrey Greenwald, Task Force Chair and Principle Investigator, welcomed the participants. He then presented “Medication Reconciliation: Past, Present and Future,” an overview of medication reconciliation. He noted that hospitals have been addressing the issue of patient safety for some time. As a result of the increasing appreciation for the significant number of medication errors leading to adverse drug events (ADEs), there has been an increased interest in preventing medication errors. Dr. Greenwald cited examples of national initiatives and the growth in literature addressing medication reconciliation. Professional associations have been active in identifying issues, strategies, and safety principles to assist their constituencies in their efforts to enhance patient safety by improving medication use and safety.

Dr. Greenwald commented on the difficulty experienced by hospitals in implementing medication reconciliation. He reviewed the recent announcement by The Joint Commission (TJC) that, effective January 1, 2009, medication reconciliation evaluations during site visits would continue to be conducted; however, survey findings would not be factored into the organization's accreditation decision. TJC will evaluate and further refine National Patient Safety Goal 8 (NPSG 8), resulting in an improved NPSG 8 that both supports quality and safety of care and can be more readily implemented by the field in 2010.

There are several challenges facing the stakeholders in addressing medication reconciliation. The first is in implementing medication reconciliation within and across a broad-based system of care, including the issues of interoperability of various IT systems. Assessing the impact of medication reconciliation and accounting for intended and unintended consequences are critical components in a continuous quality improvement effort.

Improving the recognition, understanding of, and approaches to patients with language, literacy, or other identifiable barriers is a challenge to all providers along the continuum of healthcare. Possibly the greatest challenge of all is energizing and mobilizing resources beyond the dyadic relationship of clinician-patient by assessing the role of the community and considering medication reconciliation/medication safety as a public health issue.

Case Studies

In preparation for the conference, Dr. Lakshmi Halasyamani, MD, and Ms. Carolyn Brennan collected a sample of case studies describing the state of medication reconciliation. The following case studies reflected some of the elements of the health systems that have implemented medication reconciliation and were used as an illustrative launching off point for the conference: Saint Joseph Mercy Health System (SE Michigan), Emory University Hospital (Atlanta,GA), Novant Health (North and South Carolina), University of California San Diego Medical Center, Northwestern Memorial Hospital (Chicago, IL), Ochsner Health System (SE Louisiana), Rady Children's San Diego, and Providence Health and Services (Portland, OR, service area).

Participants were asked to review the cases prior to the conference and identify themes that relate to each of the four group topics to be discussed at the conference, namely (1) patient education, literacy, and empowerment; (2) implementation; (3) the role of the community; and (4) metrics. A lively discussion ensued, which was invaluable in enabling participants to share their experiences and identify common interests before proceeding to their individual breakout sessions.

Conference Discussions: Breakout Sessions

Breakout Session: Community resources and partnerships to support and augment the clinically based medication reconciliation process

Understanding the community role in medication reconciliation is important, because the majority of healthcare, including medication management, occurs outside of the healthcare setting and involves patients and their caregivers. The beliefs and attitudes of patients and their caregivers are influenced by their environments (i.e., communities). Communities can be defined geographically, by social networks, or by institutional relationships (patients who receive their care from a particular clinic or hospital), just to name a few examples. By using a public health (or ecological) model of health, the power of the community can be utilized to effect medication management, as evidenced by the success of other community engagement programs designed to improve the public's health (e.g., tobacco cessation, bicycle helmets, and safe sex practices). As with other public health initiatives, the public must understand the risks and the appropriate interventions to keep themselves safe. Public health research, strategies, and tools can be effective in addressing medication safety. Engaging providers is critical to the success of these initiatives.

Key opportunities for development include building on existing community-based initiatives and infrastructures in many of the organizations represented at the conference. Patient and community engagement is a national priority for quality and safety, with systems in place at many of the organizations for dissemination of information. Several organizations, including the AMA, IHI, SHM, CMSA, and the Academy of Medical Surgical Nurses, identified resources within their organizations that they could utilize to initiate community-based medication reconciliation programs. Health information technology is also a national priority that builds the infrastructures essential for improving medication safety. One such project is the regional health information organizations (RHIOs).

Barriers to development are the lack of a clear imperative to convey the importance of medication reconciliation at the community level and the fact that medication safety is not viewed as a public health problem. There clearly is no focused message with a slogan and a "face" to represent the issue.

Possible solutions include defining the issue and avoiding limiting the focus to TJC's medication reconciliation mandate, which is primarily addressing processes in clinical settings. The discussions and interventions should be broadened to address

medication safety to effectively engage the community. Communities of many types should be targeted, especially those that include patients and providers.

Selection of a consistent social marketing message is necessary---one that will receive broad support and will engage the community in implementation. Current messages do not address risks or benefits and create no sense of urgency (e.g., “keep a list,” “ask me 3,” “know your meds,” “bring all your medications in a bag,” and “tell your doctor about supplements and herbals,” among others). A suggestion for a powerful message is to refer to highly publicized medical errors, such as Dennis Quaid and his twins, as illustrations of the risks of medication mismanagement.

Resources needed to operationalize these solutions include aligning funding and reimbursement to support the work of medication reconciliation; encouraging collaboration between providers, payors, communities, and public health organizations; and implementing electronic health records (personal and provider based) to transfer medication information effectively and efficiently.

A benefit of pursuing these ends is the ability to impact more lives than can be accomplished through individual dyadic clinician-patient relationship. It is likely that clinically based medication reconciliation will be more effective if it rests on the platform of community-based support and familiarity with the issues at hand. The result will be better health outcomes for the population.

Key action items:

- Clarify the definition of “medication reconciliation,” including the specific roles and responsibilities of all participants (i.e., doctors, nurses, pharmacists - retail and hospital based, patients, caregivers, and communities). The definition and requirements must be setting dependent.

- Develop a public health agenda to address medication safety, including the use of social marketing, health promotion, and community mobilization. View the issue from the broader public health perspective of “medication safety” rather than “medication reconciliation.” Identify the roles of communities in advancing the knowledge base and in dissemination of information.

- Foster partnerships with traditional and nontraditional groups/communities.

Breakout Session: Patient education, literacy, and empowerment and its impact on medication reconciliation

A patient-provider partnership is essential for optimal medication reconciliation. Patient preparation and education are important to ensure patient commitment to and engagement in the medication reconciliation process. Healthcare providers must be proactive and supportive of these activities. Patients must understand the meaning and importance of medication reconciliation, their roles in the process, and the risks involved in the mismanagement of medications.

An active and current medication list is a fundamental tool for optimizing medication reconciliation and should be supplemented with ongoing patient-provider verbal communication. Patients should maintain an active medication list in either a hard copy or electronic format, one that is accessible across both the inpatient and outpatient continuum of care. The list should include over-the-counter products, herbals, and homeopathic medications. Patients (or their caregivers) must assume ownership of the medication list and be proactive in updating the list and in discussing concerns with their providers.

Barriers in addressing medication reconciliation include the lack of a clearly defined process for medication reconciliation. In general, there is a lack of understanding among patients of the importance of managing their medications and the risks in mismanaging medications. Without a process, role responsibility across all care environments is unclear, with no central coordination and accountability. There are no standardized materials, no way of determining the appropriate time for medication reconciliation across the patients' spectrum of illness, and no alignment of incentives to promote effective processes.

A key opportunity for improvement includes staging a national campaign for medication reconciliation by targeting patients, providers, and health systems to create awareness and understanding of the problem and the associated responsibilities. Additional patient-centered approaches include:

- Standardization of medication reconciliation methods that are literacy sensitive and apply universal precautions (i.e., assuming that all patients have literacy issues). These methods should include the development of a uniform medication list with standard elements written in plain language and application of the teach-back technique at all points in the medication reconciliation to verify patient understanding. Develop or refine existing tools for identifying at-risk persons while being sensitive to stigma associated with not understanding.

- Integration of medication reconciliation methods across practice settings, including inpatient and outpatient environments, with a defined method for follow-

up and clearly designated responsibilities for patients and providers. A tool for accomplishing this would be a universally accessible, electronic medication warehouse that can be routinely accessed by patients and providers.

Resources needed to operationalize these opportunities include support at a national level and funding for medication reconciliation intervention development, testing, and dissemination of findings through educational programs targeted to patients, providers, and health systems. Additional resources include personnel to coordinate medication reconciliation programs; universally accessible, electronic medication information warehousing; and a third-party reimbursement system for medication reconciliation activities.

Key benefits of pursuing these ends are improved quality of care and decreased costs as a result of (1) improved patient understanding of their roles in medication management, (2) medication error reduction, and (3) decreased hospital readmission, morbidity, and mortality.

Key action items:

- Quality organizations must establish medication reconciliation standards across the care continuum.
- Research and Quality Improvement communities must develop and test interventions and disseminate results.
- Professional societies must agree to a standard, patient-centered method to promote and maintain a universal medication reconciliation process.
- Health systems must partner with community pharmacy providers to ensure an uninterrupted communication link in both the inpatient and outpatient settings.
- Public health systems must encourage and promote the established standards for medication reconciliation, which include issues of patient literacy.

Breakout Session: Implementation strategies that improve the completion and effectiveness of medication reconciliation

A significant and fundamental issue in implementation strategies is the need for a standardized definition of “medication reconciliation,” including parameters for defining a medication. The lack of standardization in the definition often leads to misunderstanding of the intent of medication reconciliation and, as a logical consequence, variable implementation. Clarity of definitions and consensus are essential before addressing any of the other strategies discussed in this section.

Strategies for improving implementation can be addressed by defining guiding principles and processes for medication reconciliation, including but not limited to the following:

(1) Gaining consensus on the format, data elements, and accessibility of a formatted universal medication list is an initial strategy for improving implementation. Additional topics to address are the clarification of brand name versus generic versus alternative medications, security of patient information, ease of access for all involved in the process, and ownership and responsibility for maintaining the list. Although medications are exempt from HIPAA, this is not a widely known fact. A common electronic medical record platform is also a consideration in attempting to standardize a medication list format, as is a consistent method of accessing records (e.g., paper vs. electronic of various settings).

(2) Empowering patients to own their medication lists requires a well-designed patient education process, strategies for teaching healthcare providers how to best communicate and educate patients about their medication lists, and mechanisms for measuring the effectiveness of the educational process. Language barriers, low literacy, legal concerns, patient's ownership of care, perception of time required by providers, reliability of information, and lack of reimbursement for non-visit interactions can all be barriers to empowering patients. Successful implementation requires a well-designed, patient-centered medication reconciliation process.

(3) Responsibility and accountability must be clearly defined and assigned to individuals and/or teams (with a designated leader) along the continuum. Because roles differ at each step in the process (e.g., admissions, inpatient, outpatient) someone must "own" the process and ensure that it is done. There needs to be a patient-centered approach, with team members collectively responsible for outcomes. Addressing needs proactively, allocating resources, and sending the "message" are roles of top management in laying the foundation for a successful medication reconciliation program and will be assisted by alignment of pay structures. Without clarity and support from the organization's leadership, it is unlikely that medication reconciliation will be successful.

(4) Determine key risk factors for suboptimal medication reconciliation (e.g., repeat hospitalizations, age, number of medications, trigger/problem medications, English proficiency, literacy status, etc.).

Additional issues that must be addressed to ensure successful implementation include addressing medication reconciliation in the context of patient and provider priorities,

avoiding duplication of work by leveraging and consolidating existing work, and recognizing the impact of team dynamics and organizational culture.

Key action items:

- Develop a universally accepted definition for medication reconciliation.
- Identify common goals, each supported by standardized practices.
- Within various clinical roles, identify the key priorities.
- Identify an executive champion.
- Develop a universal format for the medication list.
- Adopt the Continuity of Care Record as a national standard.
- Narrow the focus to medications prescribed and OTCs recommended by your physician, at least initially. *Note: Caution was expressed in the large group to narrowing the focus, especially with respect to certain complicated treatments.*
- Develop a toolkit to educate patients on what to disclose to their provider and the impact of nonprescription treatments on care.
- Develop a provider toolkit to better understand how the patient perceives use of medications, including a standard script for providers to use in dialogue with patients.

Breakout Session: Measuring the effectiveness and impact of medication reconciliation

Medication reconciliation should be viewed as a continuous quality improvement process with various phases of development, implementation, measurement, analysis, and impact assessments on health outcomes. Neither process nor outcome measurements can be adequately defined without a system in place. In defining a system, one must identify the audience(s) for the measures along with accountability and enforcement (via payment or public reporting) and determine who wants these measures and who will agree to be the standard bearer.

Process measures should have a mechanism to identify high-risk patients and should be contextually appropriate (e.g., to Emergency Department patients vs. Intensive Care patients; for high- vs. low-risk patients). A core set of measures might be reasonable, with flexibility to enable hospitals to design their own processes and measurements. Diversity among hospitals requires different process measures. Each hospital will define its processes and measures in their own context. Measures should capture patient understanding and avoidance of adverse events (e.g., clinically meaningful improvements).

A key opportunity for development is the identification of successful programs and/or successful components of programs that are measurable and that may be replicable in other organizations, departments, or locations. Scanning for existing and emerging initiatives that include medication reconciliation as a component may point to appropriate metrics. Identify exemplars of medication reconciliation programs that have demonstrated improved outcomes not only within hospitals but also across organizations and transitions. These programs should include rural/urban, academic/ community settings and emphasize patient-centered metrics that focus on episodes of care and transitions of care. Another opportunity is the development of technology, starting with electronic data sources that provide ease and usability of data input and extraction, interoperability, adaptability, and the ability to order and document medications.

The benefits of pursuing these ends include:
(1) Improved quality of care with the identification of appropriate metrics for internal QI, payment, public reporting, and accreditation. Additional metrics that are useful to other entities, such as a Board of Directors, the community, and other community providers may be included.

(2) Improved accountability through reporting for persons or organizations that are critical during transitions of care, both internally (e.g., across staff, departments) and externally (e.g., between sites of care).

(3) Cost containment with identification of linkages between medication reconciliation and outcomes, such as readmissions or serious adverse events and their associated costs.

The key action items:

- Identify funding sources to identify data needs and solutions to inform future measure development.
- Include other care settings (e.g., skilled nursing facilities) and engage key financial providers (e.g., state Medicaid agencies).
- Scan the field for existing/emerging initiatives (e.g., readmissions initiatives) that include medication reconciliation as a component and that may point to appropriate metrics.
- Identify exemplars of medication reconciliation programs that have demonstrated improved outcomes not only within hospitals but also across organizations and transitions, including rural and urban as well as academic and community settings.
- Emphasize patient-focused metrics that focus on episodes of care and transitions of care.

VI. Conclusions

Medication reconciliation continues to be a patient safety priority. This conference brought together stakeholders who are committed to recognizing and building on the work of others to continue the momentum of the conference. The next step is to solidify partnerships and create a well-designed plan to address the recommendations from the conference while aligning with payors and regulatory agencies. By designating a central coordinating body or coalition, specific organizations can partner to take action while sharing a common vision to improve patient safety through their contributions to the medication reconciliation plan.

VIII. Significance

Key stakeholders from healthcare policy, patient safety, regulatory, professional, technology, and consumer organizations came together to discuss medication reconciliation. They identified opportunities for partnerships and proposed specific actions in addressing the myriad of issues confronting practitioners and professional organizations with respect to medication reconciliation. This meeting is a start in building consensus to address the critical issues in this area of patient safety. It is our hope that the recommendations of the stakeholders will be given serious consideration, prioritized based on available resources, and implemented in a timely fashion.

XI. Implications

Left unchecked, failed or inadequate medication reconciliation processes will continue to miss opportunities to identify and correct medication errors, with potentially significant health repercussions for our patients as well as a financial impact for our health systems. Taking seriously the conclusions and recommendations of the stakeholders at this conference should significantly improve medication safety while shining a spotlight on those groups that have been successful in developing processes and procedures to address the issues in medication reconciliation.

XII. Publications and Products

Conference Proceedings: Medication Reconciliation: A Team Approach

PowerPoint: Taking Action to Reduce Medication Errors

Note: Conference Proceedings and PowerPoint will be submitted to the project officer under separate cover. After completion, the title of the PowerPoint may be changed to better reflect the theme.