

Executive summary of the Continuity of Care in Medication Use Summit

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On June 5–6, 2007, the American Society of Health-System Pharmacists (ASHP) and the ASHP Research and Education Foundation convened the Continuity of Care in Medication Use Summit to address the role of patient-centered medication lists in promoting continuity of care. Participants included a diverse representation of health professionals (e.g., physicians, pharmacists, nurses, physician assistants), representatives of Agency for Healthcare Research and Quality (AHRQ)-funded Centers for Education and Research in Therapeutics (CERTs), consumers and consumer organizations, and social marketing experts. In addition to facilitating a high-level, multidisciplinary dialogue on the role of the medication list in ensuring continuity of care, specific objectives of the summit were to

1. Reach consensus on a minimum set of data elements to be included in a medication list,
2. Identify and discuss barriers and resolutions to the use of medication lists by consumers, caregivers, and health professionals, and

3. Develop a framework for further research and a national social marketing campaign aimed at enhancing consumer, caregiver, and health professional awareness of integrating the medication list in all aspects of the health care process.

Introduction and background

There is widespread agreement in health care that there are numerous problems in ensuring continuity of care, as health care consumers move across settings and interact with multiple providers from various disciplines. Breakdowns in continuity can lead to poor medication adherence and persistence, as well as errors throughout the medication-use process.

Guest speaker Janet Corrigan, president and chief executive officer of the National Quality Forum (NQF), who opened the summit, framed the importance of continuity of care and expressed recognition by NQF that multiple processes need to be put into motion to address this issue. She acknowledged that widespread recognition and use of a medication list would be a positive

step, with the realization that an electronic health record (EHR) would ultimately be necessary.

Corrigan summarized what she anticipated would be the ultimate outcome from the summit, if successful, saying, “The work today is groundbreaking in that you want consumers and caregivers to take control of their medications. This will encourage higher levels of health understanding and engagement.”

Throughout the summit, a patient-centered medication list was defined as a tool used and owned by the patient to keep a list of his or her current prescription and nonprescription medications and dietary supplements. While many organizations have developed medication list templates, there have not been organized efforts to achieve interdisciplinary consensus on the critical data fields and barriers to use of a patient-centered medication list. This consensus work will guide efforts to embark on further research and a national social marketing campaign aimed at heightening consumer, caregiver, and health professional

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awareness of the critical importance of the medication list.

Before the summit, an online survey was conducted with all participants to obtain input on discussion topics being considered, such as

- Optimal and minimal data elements,
- Barriers to consumer and health care provider acceptance, and
- Opportunities (or mechanisms) for communicating the value and importance of medication lists to consumers, health care providers, and society as a whole.

The survey was sent to 30 participants, with a 70% response rate. Data from the survey were analyzed to determine (1) where there was already general consensus across the disciplines and (2) areas around which dialogue would be needed to reach consensus. Selected data were disseminated to participants throughout the summit to stimulate and focus discussion. Recognizing the diverse multidisciplinary perspectives represented and the widely held desire for interdisciplinary consensus, a working definition of “consensus” was developed early in the summit. The agreed-upon working definition did not suggest that agreement on output from the summit would be unanimous, but rather that all participants would challenge, discuss, and deliberate until they felt they could live with the decisions made by the group and would support them when they left the summit.

Framing the issue of the importance of continuity in medication use

In its landmark report *Crossing the Quality Chasm: A New Health System for the 21st Century*, the Institute of Medicine recognized that “the delivery of care often is overly complex and uncoordinated, requiring steps and consumer handoffs that slow down care and decrease rather than improve safety.”¹ Medication

discrepancies are sometimes caused by breakdowns in continuity. A 2005 study of community-dwelling adults recently discharged from a hospital determined that 14.1% experienced at least one medication discrepancy and 14.3% of consumers in that subset were rehospitalized within 30 days.² Studies regarding the use of medication lists have demonstrated that findings are limited and conflicting.^{3,4}

This summit was a natural continuation of the continuity of care initiatives undertaken by ASHP and its Section of Home, Ambulatory, and Chronic Care Practitioners, including passage of continuity of care and medication reconciliation policy statements by the ASHP House of Delegates in June 2003 and June 2005, respectively, and publication of an ASHP report on continuity of care in medication management.⁵ In that report, the ASHP Continuity of Care Task Force indicated that deficiencies in sharing patient information are a core contributor to the discontinuity of care and a logical precursor to medical errors. The task force called for professional associations to foster interdisciplinary efforts to address practice gaps and establish practice standards that will achieve continuity of care in the medication-use process. The recent addition of a medication reconciliation medication management standard by the Joint Commission also reinforces the need for consumers to maintain accurate information regarding all medications they are using.

This summit also complemented the efforts of other organizations and coalitions addressing safe medication use and enhanced continuity of care including the Food and Drug Administration, AHRQ, SOS Rx Coalition, and National Transitions of Care Coalition.

Medication lists versus personal health records versus EHRs

Although the summit’s organiz-

ers understood the importance of personal health records (PHRs) and EHRs in addressing continuity, a conscious decision was made to focus on the medication list rather than a more comprehensive PHR or EHR. This decision was based on a desire to effectively address a critically important component of the larger continuity of care and medication reconciliation processes.

The organizers recognized that electronic transmission of health information, including medication information, to consumers and providers is optimal in comparison to the current array of paper-based systems. However, it is not likely that complete implementation of electronic systems will occur in the next 5–10 years, due, to a large degree, to the lack of access by many individuals to electronic devices and services. Data from the 2003 U.S. Census Bureau report on computer and Internet access in the United States revealed disparities that are likely to affect implementation of an EHR.⁶ The Census Bureau found that 34% of individuals age ≥65 years have computers and 29.4% have Internet access. Additional findings indicate that racial and ethnic disparities exist. The percentages of African Americans and Hispanics who had computers and Internet access in 2003 were 44.6% and 36%, respectively, compared with 64% and 57% for whites, respectively.⁶

Recent guidance from the World Health Organization, Joint Commission International, and the Joint Commission further validated the decision to focus on the medication list.⁷ In a recent report, these organizations emphasized the importance of developing a standardized card or form on which consumers can record their current medication lists.

Basic medication list data elements

Guiding principles. Considering the urgency within health care around the broader issue of con-

tinuity of care, summit organizers believed it was important to establish guiding principles to assist in maintaining focus on the medication list. Consensus was reached on the following principles to guide the work of the summit:

- Neither the problem of nor the solution to documentation of medications exists in a vacuum. To some degree, the solution involves engaging consumers in their own care.
- Successful patient-centered medication list adoption will always be limited by the lack of a national EHR system and the historical predisposition to focus on administrative efficiencies rather than clinical data exchange efficiencies.
- There have to be boundaries around the definition of medication list that are not solely related to data, but also the medication list's usage and assumptions around function, accuracy, and responsible individuals.
- The medication list should contain the minimum data elements that must be included for *individual* usability.
- All medications used by an individual, including prescription drugs, non-prescription drugs, and herbal and dietary supplements, should be listed, regardless of how they are obtained (e.g., clinician-provided samples, Internet, pharmaceutical company assistance program).
- Efforts to initiate widespread adoption of the medication list need to be predicated on consumer behaviors.

It is important to note that these principles narrowed the focus of discussions at the summit to those data elements that could be obtained by and would be helpful to the *individual patient*. Summit participants agreed that flexibility to include additional data elements should be addressed through implementation of medication lists in various settings and by various individuals and health care professionals.

Working definition of the medication list. To ensure clarity during discussions and in subsequent reports, the following working definition of a medication list was agreed upon at the summit: a record of current medications that an individual carries across the continuum of care to stimulate conversation between the individual and his or her health care providers regarding the patient's current medications.

Minimum data elements. Preliminary feedback on minimal data elements to be included in the medication list was retrieved from the presummit online survey report. The collective data were analyzed and categorized as

- “Must-have” data elements (core medication list data elements included in all examples),
- “Borderline” data elements (elements included fairly frequently in medication lists), and
- “Potential” data elements (data that would more likely be part of a broader PHR).

This categorization was used to stimulate discussion at the summit. Participants shared discipline-specific perspectives on the inclusion of proposed data elements in light of the guiding principles and working definition of a medication list. Participants also shared diverse ideas on how to label the data elements to ensure clarity of the medication list and documentation by the consumer of accurate and consistent information in the medication list. Summit participants acknowledged that this discussion created a deeper understanding of the complexity of reaching consensus across multiple disciplines and among individuals with diverse backgrounds. Consensus on minimum data elements to be included in a medication list was reached through a process of dialogue, debate, and negotiation. The appendix lists the consensus-based

data elements determined by summit participants.

Summit participants agreed that patients should be instructed to always carry their medication list with them and to review it with all health care providers. There was general agreement that other literacy-sensitive use instructions would need to be developed.

Summit participants agreed that the minimum data elements should be validated and finalized by a health literacy specialist to ensure clarity of data elements, their meaning, and ease of use. In addition, participants felt that the data elements should be piloted through focus groups, surveys, or other assessment activities to (1) validate relevance, (2) test ease of use of the medication list, and (3) obtain critical input on overcoming barriers to implementation and use of the list. They recommended that the pilot include participation of individual patients, caregivers, and health professionals.

Barriers to acceptance and use of a medication list

Through the preassessment survey and the summit discussions, participants focused on barriers to the use of medication lists. These barriers were categorized as consumer or caregiver barriers and health professional barriers.

Consumer or caregiver barriers.

Three major consumer or caregiver barriers were identified: perceived value, usability, and portability.

Perceived value was determined to be influenced by the consumer or caregiver's awareness of the medication list's importance to effective and safe medication use, availability of incentives, and perception that the health provider values the list based on its integration into care processes.

Potential resolutions identified at the summit include

1. Conducting a social marketing and educational campaign targeting con-

sumers, health professionals, payers, regulatory bodies, and others, and

2. Creating and promoting incentives. Regulatory bodies, payers, health providers, and others involved with health care delivery need to be encouraged to provide incentives, such as reduced copayments or preferential service, if a medication list is used by the consumer.

Usability was determined to be dependent primarily on the individual and may involve such personal characteristics as the consumer's vision, literacy level, language spoken, cognitive ability, and assistance of a provider or caregiver. Usability is also determined by the amount of time it takes an individual to complete or update his or her medication list.

Potential resolutions to usability challenges include testing and validating the medication list's ease of use with consumers and caregivers, providing clear directions and making the list visually simple to use, making the list available in multiple languages, getting commitment from health care providers to provide assistance and motivation, and integrating the list into existing systems (e.g., physician's office, pharmacy, insurance).

Portability was defined by summit participants as the ease and ability of the medication list to be carried by the individual "across the continuum of care." Primary considerations are size and the medium used. Longer term, the focus will be on transferability and flexibility across mediums and systems (e.g., electronic compatibility), adaptability to technological advances, and ensuring integrity.

Health professional barriers. Health professional barriers identified at the summit included (1) duplicative and additive workflow, (2) misaligned financial incentives across the continuum of care, (3) low reliability of the current health care system, (4) misperception of increased liability, (5) lack of evidence

to validate the importance of the medication list, and (6) failure by the public to adopt the list.

Concerns about duplicative and additive workflow may discourage health professionals from implementing medication lists into their practices. Participants determined that these barriers can be minimized at the individual level by sharing best practice guidelines concerning accountability for the medication list, clearly defining the roles of the patient and clinician, making the medication list part of the patient's record, and collaborating with consumers to set goals. At the professionwide level, potential resolutions include coordinating implementation with the Joint Commission and other safety groups to expedite adoption, demonstrating the clinical value of the medication list in the delivery of care, providing incentives, and working with pharmacy benefits managers and others to find ways to populate prescription information on the medication list.

Misaligned financial incentives may affect the integration of personal medication lists into health care processes. Currently, there are limited financial incentives to drive health professional use of patient medication lists. This issue can be addressed by implementing financial incentives, such as payment for updating medication lists and meeting performance standards and measures. Productivity incentives and collaborative marketing might also encourage providers to implement medication lists.

Low reliability of the current health care system may serve as a barrier to providers' use of data from other sources. Promoting a culture of safety and quality in the current health care system will involve engaging and holding leaders of health organizations accountable for safety performance, educating health professionals on the link between consumer safety and medication use, enhancing and expanding collaborative

working environments across health providers through effective handoffs, and fostering transparency of and accountability for clinical outcomes.

Summit participants expressed that a misperception of increased liability could significantly slow the adoption of medication lists by health professionals. Participants believed that in the short term, practical discussions about the risks and benefits of using medication lists will help alleviate this misperception; the passage of time and gradual introduction of the medication list will also help. Collective efforts must be initiated to (1) advance the adoption of legislation and regulation to ease provider liability and (2) advocate for the provision of malpractice insurance discounts related to the use of medication lists.

Lack of evidence to validate the importance of the medication list suggests the need for both increased public and private funding to support research regarding the role of the list as a component of the medication-use process. The current evidence in the biomedical literature regarding the value of medication lists is limited and conflicting. Organizations interested in advancing use of medication lists need to conduct rigorous research that validates their positive impact on patient outcomes.

As reflected in the working definition of a medication list developed at the summit—that a medication list is "a record of current medications that an *individual* carries across the continuum of care . . ."—public adoption of and demand for the medication list will ultimately drive medication list use by health professionals. Therefore, education of the public about the safe use of medications is critical to the success of this initiative and to the advancement of continuity of care. Adoption of legislation and regulations to encourage use of medication lists and availability of a flexible, integrated electronic health care system to sup-

port medication lists and EHRs will be necessary to ensure widespread adoption.

Communicating the value of the medication list

Establishing an interdisciplinary, consensus-based, minimum medication list data set and identifying barriers to the use of medication lists are only the first steps in a larger process. A social marketing campaign that incorporates theories regarding health-related behaviors, considers the impact of community and environmental factors on behavior, and identifies processes to affect behavior change is also required.⁸

A primary objective of the summit was to develop a framework for a national social marketing campaign aimed at enhancing consumer, caregiver, and health professional awareness of the importance of integrating the medication list in all aspects of the health care process. As indicated in the discussion of barriers relating to both health professionals and consumers, summit participants agreed that education and awareness of the value of medication lists are critically needed to bring about any change in behavior. A marketing campaign would need to include audience-specific elements, as well as general information targeting society as a whole in order to initiate this culture shift.

Summit participants determined that the two primary target audiences of the social marketing campaign are consumers or caregivers and health professionals. This marketing campaign would be based on identifying needs and desired behaviors of a market segment (target audience) and tailoring messages to the target audience’s specific needs in order to influence its adoption of desired behaviors.

Key concepts to be considered in educating and informing audiences on the use of medication lists include linking the use of medication lists with consumer safety, conveying

the importance that all medications be listed, and positioning the use of medication lists as a partnership between patients and their care providers. In addition, educational efforts need to demonstrate improved outcomes through evidence-based research and push beyond awareness to facilitating sustainable changes in behavior. Efforts targeted to patients must take into account generational perspectives and health literacy. They must also stress individual “ownership” of a medication list.

Setting a research agenda

An evidence base that supports the use of a medication list needs to be established through rigorous research. This research could range from testing the effects of use of the minimum data set to validating approaches to address barriers identified at the summit.

Summit participants identified research questions that relate to impact on patient outcomes, the medication list itself, and users of the list. These are listed in Table 1.

Table 1. Research Questions Related to the Impact on Patient Outcomes, the Medication List Itself, and Users of Medication Lists

<p>Research questions related to the <i>impact</i> (or outcomes) of the medication list should include the following:</p> <ol style="list-style-type: none"> 1. Does use of a medication list improve outcomes? 2. What effect does the medication list have on adverse drug events (particularly, serious adverse drug events)? 3. What are the tangible benefits (dollar value) of the medication list to consumers, society, etc.? 4. Does use of a medication list increase adherence and decrease unscheduled follow-up care? 5. Does reviewing the medication list with a health professional actually improve medication adherence? 6. What are the mechanisms (or points) in the process when a medication list is utilized that have the greatest impact on outcomes? <p>Research questions related to the <i>medication list itself</i> should include the following:</p> <ol style="list-style-type: none"> 1. What educational tools will be provided to participants of a research study? 2. What would be the most effective format/medium for the medication list? 3. Research on terminology to use relative to data elements, to ensure consumers complete the medication list accurately. 4. Research on who is managing the medication lists—consumers, caregivers, and providers. <p>Research questions related to <i>users</i> of medication lists should include the following:</p> <ol style="list-style-type: none"> 1. Studies asking why the medication list was/was not adopted, such as doer/nondoer studies used by the Academy for Educational Development (<i>Elicitation Methodology</i>, Middlestadt et al., 1996). 2. What differentiates users from nonusers within an audience segment? 3. What will motivate consumers to use the medication list? 4. Does the type of health care professional or other helper who assists the consumer influence the perceived value and completeness of the medication list? <ol style="list-style-type: none"> a. Does it relate to characteristics of the helper in terms of expertise, or is it more relationship based? b. Assess accuracy of consumer’s ability to complete the medication list. 5. What is the perceived value (benefits) of the medication list to consumers, society, etc.? 6. How does use of a medication list change consumers’ perceptions of their disease process, medications, etc.

Conclusion and next steps

Integration of a patient-centered medication record into health care processes will require the full participation of patients, their caregivers, and health professionals. The minimum data set developed through this summit must be translated into a literacy-sensitive tool (medication list) that patients can use to record their current medications. The medication list should be seen as a tool that stimulates a dialogue between patients and health professionals regarding the patient's current medications. Health professionals, consumer groups, and professional organizations have a responsibility to promote the use of a patient-centered medication list as one tool in the overall medication-use process. A national social marketing campaign that encourages the use of medication lists and recognizes the barriers to their use is long overdue. There is also a need to conduct rig-

orous research that will lead to the optimization of the medicine list in the health care process.

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Appendix—Minimum data elements on consensus-based medication list

Personal Information

- Name
- Date of birth
- Preferred method of contact
- Emergency contact
- Emergency contact preferred method of contact

Medication Reactions

- Allergies
- Other medication-related problems

Current Medication Information

- Brand name and generic name
 - Description
 - Number of tablets/capsules used per dose
 - Use schedule
 - Use instructions
 - Start date
 - Stop date
 - Indication
 - Prescribed/recommended by
- #### Medication List Information
- Date last updated
 - Last updated by whom
 - Date last reviewed with health care provider

Continuity of Care in Medication Use Summit Participants

Russell W. Andrews, M.S.
NexGenisys
Kansas City, MO

Andrew Barbash, M.D.
Holy Cross Hospital
Silver Spring, MD

Cynthia Brennan, Pharm.D., M.H.A.
University of Washington School of
Pharmacy
Seattle, WA

Wm. Ray Bullman
National Council on Patient Information
and Education
Bethesda, MD

Rebecca Burkholder
National Consumers League
Washington, DC

**Bruce Canaday, Pharm.D., BCPS, FASHP,
FAPhA**
Coastal Area Health Education Center
Wilmington, NC

Rebecca W. Chater, M.Ph., FAPhA
Kerr Drug, Inc./KDI Clinical Services
Fayetteville, NC

Kim C. Coley, Pharm.D.
University of Pittsburgh School of
Pharmacy
Pittsburgh, PA

**Connie Commander, RN, CCM, ABDA,
CPUR**
Commander's Premier Consulting
Corporation
Pearland, TX

Maura B. Conry, Pharm.D., M.S.W., LCSW
Shawnee Mission Medical Center
Shawnee Mission, KS

Kenneth R. Epstein, M.D., M.B.A.
IPC—The Hospitalist Company
Denver, CO

**Rollin (Terry) J. Fairbanks, M.D., M.S.,
NREMT, FACEP**
University of Rochester Medical Center
Rochester, NY

Karen B. Farris, Ph.D.
Iowa Center for Education and Research
on Therapeutics
Iowa City, IA

Cynthia Fitzpatrick, RN, B.S.N.
Food and Drug Administration
Rockville, MD

Jon E. Folstad, Pharm.D., BCPS
Louis Stokes VA Medical Center
Cleveland, OH

Rainu Kaushal, M.D.
Weill Medical College of Cornell University
New York, NY

Denise King, RN, M.S.N., CEN
Blue Jay Consulting
Orlando, FL

Trisha Kurtz, RN, B.S.N., M.P.A.
The Joint Commission
Washington, DC

Bob McNellis, M.P.H., PA
American Academy of Physician Assistants
Alexandria, VA

Jimmy R. Mitchell, M.P.H., M.S.
Health Resources and Services
Administration
Rockville, MD

Terri S. Moore, Ph.D., M.B.A.
National Quality Forum
Washington, DC

**Sherrill Peters, B.S.N., ARM, CPHRM,
FASHRM**
Community Health Systems
Franklin, TN

Kevin L. Ross, RN
Critical Care Systems
Nashua, NH

N. Lee Rucker, M.S.P.H.
American Association of Retired Persons
Washington, DC

Ellen Shapiro
Food and Drug Administration
Rockville, MD

Jim Sideras, RN, M.S.N., EMTB
Sioux Falls Fire Rescue
Sioux Falls, SD

John Strand, M.Ed.
Academy for Educational Development
Washington, DC

Maria Suarez-Almazor, M.D., Ph.D.
Houston CERT
Houston, TX

James M. Walker, M.D., FACP
Geisinger Health System
Danville, PA

ASHP and ASHP Research and Education
Foundation Staff
David F. Chen, M.B.A.
Daniel J. Coughlin, Pharm.D., FAACP