

**Recommendations**

These recommendations take into consideration testimony originally coded to 15 (Collab)<sup>1</sup> and 16 (Team)<sup>2</sup>, as well as other sources as noted.

- V1. Health-care organizations should establish inter-disciplinary teams to address the challenges of improving patient safety when such teams are appropriate. Health-care organizations that use teams to address patient safety challenges should:
  - o V1a. Establish interdisciplinary team training programs that incorporate proven methods of team management.
  - o V1b. Provide the support necessary for the teams to fulfill their charge.
  - o V1c. Consciously recruit team members with a broad mix of skills and knowledge, including patients and family members or other consumers, as appropriate
  - o V1d. Pay particular attention to improving communication among all members of treatment teams including special focus on social dynamics that may adversely affect the transfer of information between treatment team members.
- V2. The Michigan Partnership for Safe Health Care should serve Michigan health-care organizations and professionals as a clearinghouse to identify and disseminate “best practices” for building teams to improve patient safety.<sup>3</sup>
- V3. All health-care organizations and professionals concerned with the delivery of health-care services, including the State of Michigan, should expedite the translation of patient safety relevant evidence into practice through supporting and participating in collaborative learning opportunities.
- V4. The Michigan Partnership for Safe Health Care should work with Michigan health-care stakeholder groups, including consumers, to develop and implement a means for these groups to work together on a state-level to:<sup>4</sup>
  - o V4a. Increase awareness of patient safety as an important health-care concern.
  - o V4b. Leverage knowledge, skills, and resources within the state to develop creative strategies for improving patient safety, e.g., address barriers to adoption of information technology within the health-care industry; assist rural health-care professionals and facilities to fully participate in patient safety initiatives; assist primary care providers to apply models and initiatives for improving patient safety to small practice settings; address workforce challenges; address barriers to reporting of adverse events, medical errors, and near misses.

**Rationale**

The unique advantage of using collaborative approaches to address the complex issue of patient safety both within an organization (with multidisciplinary teams) and between organizations (through collaborative learning opportunities and other opportunities for focused and creative problem-solving) is the power to combine the perspectives, resources, and skills of groups of people to create effects that are greater than the sum of their individual efforts would have been.

The majority of health-care organizations are now involved in efforts of some level to improve patient safety and many professionals have participated in collaborative learning opportunities.<sup>5</sup> However, a number of forces in the historical health-care field create barriers to working together both for persons within organizations and for the organizations themselves to work together. Health care’s long-standing underlying culture of individual, professional autonomy makes it difficult to establish truly effective multidisciplinary teams. The need to change individual behavior to an interdependent approach and to establish new lines of accountability when using

teams can threaten current authority and autonomy.<sup>6</sup> Competition for market share and other sources of revenue make it difficult for organizations (and sometimes professionals themselves) to work together.

Working together is not a spontaneous occurrence on any level; it requires the development of specific skills and the institution of processes and structures to support and sustain the desired type of working together. In the case of health-care service delivery, teams of people perform most health care delivered today, yet professional training often remains focused on individual responsibilities. The complexities of team training require a multifunctional (systems) approach, which crosses organizational divisions to allow communication<sup>7</sup>, accountability, and creation and maintenance of interdisciplinary teams.<sup>8</sup> Experience in other industries, notably aviation, has shown that communication and coordination behaviors are identifiable, teachable, and applicable to high stakes environments. Specific training and reinforcement are needed to establish these behaviors in team members.<sup>9</sup> Organizations also need to provide the support necessary for teams to fulfill their charge.<sup>10</sup> For the above reasons, health-care organizations may need specific encouragement and assistance in instituting effective teams for improving patient safety.

To be truly effective, collaboration-based efforts that draw people from different organizations require participants to overcome competitiveness and lack of trust. Collaborative learning opportunities for professionals are important methods for disseminating evidence-based practices for improving patient safety. Professionals however must then return to their own organizations and champion these new practices where a lack of resources may impair the organization's ability to implement them and/or to ensure success.

Broad-based collaboratives that are focused on creative problem-solving and are intended to be long-term interactions between many organizations require nurturing and support to sustain them. When participation is voluntary and the goals of participants' own institutions compete with participation in such a collaborative, it is likely that the collaborative will be unable to consistently sustain its work over time without some mechanism (e.g., integration into another organizational entity) for ongoing coordination and care of "housekeeping functions."

"Working together" across organizations is an important tool for disseminating evidence-based knowledge and skills throughout the health-care industry and for creative problem-solving critical to improving patient safety practices. Multidisciplinary teams also help spread evidence-based best practices within and throughout an organization.<sup>11</sup>

While working together sounds simple, it is clear that it is not. In many ways, "working together" strategies require changes in current health-care culture to be successful. However, they also have the potential for supporting culture changes necessary for improving patient safety. For example, while multi-disciplinary teams require changes in health-care culture to be truly effective, team members who have trained together to achieve an outcome can assist one another to implement necessary new behaviors and can give the important day-to-day positive feedback and coaching that it takes to sustain new behaviors. Team-based training has been called vital to culture change.<sup>12</sup>

## **Evidence for harm reduction**

New evidence indicates the clinical effectiveness of team interventions, for example, rapid response teams associated with a 15% decrease in cardiac arrests, team training in labor and delivery associated with 50% reduction in adverse outcomes in preterm deliveries,<sup>13</sup> reduced emergency department clinical errors after teamwork training based on crew resource management (CRM),<sup>14</sup> and a decrease in unanticipated intensive care unit admissions without increased mortality after introduction of a medical emergency team.<sup>15</sup>

Many collaborative initiatives report process outcomes rather than direct patient health outcomes, assuming that implementation of proven safety processes is a precursor to desired patient harm reduction. More research and evaluation are needed to confirm these associations.

More information specific to health outcomes is becoming available for interorganizational collaborative initiatives, however. For example:

- The Georgia Partnership for Health and Accountability (Georgia Hospital Association, State regulatory agencies, and health professional groups) reported a 35.8% decrease in mean error rate for targeted medication errors. For more information, see the table on Examples of state-level collaboration on page 9 and endnote 60.
- The Keystone ICU collaborative project, enlisting 72 Michigan hospitals, estimates that by working with participating ICUs on CR-BSI (catheter-related blood stream infections) and VAP (ventilator associated pneumonia), more than 70 deaths were prevented from March through December 2004.<sup>16</sup>
- The BMC2 (BCBSM Cardiovascular Consortium Angioplasty Continuous Quality Improvement Project), involving 18 Michigan hospitals and their associated cardiologists, reported a 27% reduction in mortality.<sup>17</sup>
- The GAP (Guidelines Applied in Practice) Project, a collaborative effort involving MPRO, the Michigan Chapter of the American College of Cardiology, and community health coalitions, led to the development of evidence-based guidelines for diagnosis and management of acute myocardial infarction (AMI) and an estimate that if these procedures were implemented nationwide, the mortality rate of acute heart attack could drop by as much as 25% (with tens of thousands of lives saved).<sup>18</sup>

## Assessment

### Advantages

- Working together in a collaborative manner offers the power to combine the perspectives, resources, and skills of groups of people and organizations and create a whole that is greater than the sum of its parts.
- Successful collaboration generates creative, comprehensive, practical, and transformative thinking.<sup>19</sup>
- Collaborative learning initiatives assist the process of disseminating evidence-based practices for improving patient safety.
- Effective multidisciplinary teams can:<sup>20</sup>
  - o Improve communication among treatment team members (including patients and their families) with resultant decrease in medical errors caused by miscommunication and dropped hand-offs.
  - o Lead to greater valuing of the role of the patient in the provision of quality health care and patient safety.
  - o Reach conclusions more rapidly than homogeneous groups (break down cultural communication barriers; expose systemic blind spots more rapidly).

### Barriers

- Elements of the dominant health-care culture: individual, professional autonomy; organizational and professional competitiveness.
- Fear or distrust of change.
- Cost of developing and implementing team training.

## Implementation

### Further research

- The Commission received testimony recommending the funding of research into interventions to improve communication between nurses and doctors,<sup>21</sup> an important aspect of team building.
- Research and evaluation are needed to confirm the association between strategies such as team building and collaborative initiatives and decrease in patient harm.<sup>22</sup>

### Legislation and/or administrative rules

No specific proposals were made in the testimony. It will be important, however, that regulation and legislation support, and not impede, desired collaborative approaches among hospitals, physicians, hospital employees, and health plans to stimulate and improve patient safety.<sup>23</sup>

### Resources

See research above.

### Incentives

One informant called for the State to provide financial incentives to organizations that implement meaningful patient safety programs and support “evidence-based” collaboratives.<sup>24</sup> Ultimately, the use of multidisciplinary teams, participation in changed practices through collaborative learning initiatives, and participation in collaborative problem-solving groups is likely to lead to decreased costs for organizations from the decrease in morbidity and mortality related service costs. This is not to underplay the initial costs to an organization of start-up for these types of strategies (and financial incentives that encourage trying these may very well help an organization decide to do so). However, the group that faces the most disruption in their understanding of how the health-care world works and their role in it with the calls for formation of multidisciplinary teams and participation in collaborative learning initiatives (that will undoubtedly require changes in medical practice behavior) is physicians. We don’t yet know what incentive(s) will work to get physicians to support and participate in such teams and collaborative learning initiatives (essentially to support change of medical care culture). It seems likely that the incentive(s) would be different for different groups of physicians, possibly associated with specialty, type/size of practice, and individual demographics such as age and location of practice. The question of how to get physician buy-in needs to be explored with the specific physicians. Once specific potential incentives are identified, the incentives must be carefully linked to the desired behaviors and any potentially negative influences of the incentives on other desired behaviors assessed.

### Specific steps and target dates

- By November 2005, the Michigan State Patient Safety Commission will decide that working together will be a specific strategy in its toolbox for fixing Michigan’s patient safety crisis and include recommendations on inter-organizational collaboration and team development in its report to the Governor.
- After the Michigan Partnership for Safe Health Care is established, it will convene relevant stakeholder groups (including consumer representatives) to determine what “forum” will best meet the needs of these stakeholders to creatively problem-solve state-level issues related to patient safety. As part of this task, specific goals should be set, a timeline for progress checks developed, an assessment of resources necessary to support the approach chosen to leverage knowledge, skills, and resources within the

state to improve patient safety should be carried out, as well as identification of funding sources for start up.

- After the Michigan Partnership for Safe Health Care is established, it will develop specific goals for the proposed clearinghouse that will identify and disseminate “best practices” for building teams to improve patient safety. This process should include the development of a timeline for progress checks, an assessment of resources necessary to support the clearinghouse, and identification of funding to start up and sustain it.

## Testimony overview

### Summary

Based on 15 recommendations coded 15 (Collab) and 9 recommendations coded 16 (Team), plus other evidence from 22 testimonies representing hospitals, health-care providers, educators, consumers, insurers, professional organizations, and other.

### Key findings

- A state-wide means should be developed for health-care organizations and professionals to raise awareness around patient safety, share solutions and best practices, and develop strategies.<sup>25 26 27 28</sup>
- A means should be established where health-care associations can continue to contribute to the improvement of patient safety in Michigan.<sup>29 30 31 32</sup>
- A means should be established for consumers to provide input to health-care providers.<sup>33</sup>
- The State should support true partnerships among insurers, providers, and purchasers to stimulate and improve patient safety.<sup>34 35</sup>
- Stakeholders should join collaborative learning opportunities to learn how to create systematic change in patient safety statewide. The state should provide funding for small-to-medium size practice demonstration projects and financial incentives to organizations that support evidence-based collaboratives.<sup>37 38 39 40 41</sup>
- Successful and innovative approaches to building patient safety teams should be widely disseminated.<sup>42 43 44</sup>
- Patient safety teams should have members with a broad mix of relevant skills and knowledge, including patients and families.<sup>45 46 47</sup>
- Communication between treatment team members needs to be improved along the full continuum of care from patient entry into the system through return to the community, with a special focus on improving communication between nurses and physicians.<sup>48 49 50 51</sup>

## Summary of additional research: Collaboration

### State patient safety coalitions

Coalitions are important forums for stakeholders to share new ideas about error prevention, especially as relationships mature and members feel more comfortable with each other. They offer all parties the chance to test ideas and to learn if there are unanticipated or harmful consequences of actions or policies they are considering—an important benefit, given the lack of well-tested error management models in health care.<sup>52</sup>

Common goals of existing state patient safety coalitions are:

- Sharing information and resources through collaboration;

- Leadership development;
- Creation of a “non-punitive” culture to encourage incident reporting;
- Education and advocacy to inform professionals, policy makers, and the public about error prevention strategies; and
- Avoiding duplication of efforts among the many organizations concerned with patient safety.

To promote best practices and clinical excellence, coalitions create and distribute a variety of tools to promote best practices and clinical excellence. These include:

- Identifying, evaluating, and promoting patient safety best practices;
- Promoting creation of a culture of safety to encourage learning from adverse events and near misses;
- Creating and/or disseminating self-assessment tools for medication errors, leadership practices, or safety culture and encouraging member organizations to use the tools and, in some cases, collecting and reporting results of these initiatives;
- Implementing statewide programs to assess and reduce specific types of adverse events, for example, surgical wound infections;
- Promoting adoption of clinical practice guidelines; and
- Developing or sponsoring important patient safety research projects.

### **Collaboration in other states**

Information on collaborative initiatives and partnerships in other states can be found beginning on page 9.

### **Rural health-care delivery**

Rural health-care delivery poses special challenges to patient safety initiative implementation. Challenges facing health-care providers in rural areas are summarized in the table on page 11.

Evidence shows that rural health-care providers affirm the importance of patient safety and want access to tools and resources to help achieve the goal of improving it.<sup>53 54</sup> They are also very concerned about issues related to reporting and disclosing errors since decisions related to this can have particularly far-reaching consequences in rural settings where people’s lives can intersect every day.

Financial and other constraints, however, may limit the participation of rural health systems in innovative efforts intended to stimulate fundamental re-design of the health-care delivery system. The Institute of Medicine report *Quality through collaboration: The future of rural health* recommends a number of ways federal agencies can assist rural communities in addressing their unique challenges, but it is unclear if or how quickly these recommendations will be implemented. In the meantime, creative solutions may be necessary to assist rural providers to participate fully in patient safety improvement initiatives.

### **Summary of additional research: Teams**

The specific focus on interdisciplinary teamwork and team training is relatively new to health care. While studies of teams in specific health-care situations may be available, it appears that the use of teams and the training of multidisciplinary teams are not yet widespread in health care. Because of its great effectiveness in the aviation industry, however, there are high hopes for its usefulness in improving patient safety.

Techniques for team training draw upon knowledge from the area of human design. One of the most frequently mentioned techniques is crew resource management (CRM), an interdisciplinary teamwork training developed in aviation. It teaches about the limits of human performance, fatigue and stress, the nature of human error, and countermeasures to mistakes, including pre- and post-event briefings, checklists, cross-checking communication, peer monitoring, crisis response and team decision-making. Because data within the aviation industry (another complex industry) supports CRM's effectiveness in reducing accidents, it has stimulated interest in the patient safety arena. Recently, CRM has been adapted for use in health care and is in use in high-risk areas at Vanderbilt University Medical Center, University of Missouri Healthcare, Kaiser Permanente, the Veteran's Administration hospitals and within the military health-care system.<sup>55</sup>

### **IOM reports**

In 2000, the Institute of Medicine's (IOM's) Committee on Quality of Health Care in America specifically noted that because members of inter-disciplinary treatment teams are trained in separate disciplines they may not appreciate each other's strengths nor recognize potential weaknesses. In addition, treatment team members may not have trained together in the use of technologies in their specific area. After reviewing what had been learned from other high-risk industries, the Committee identified promotion of effective team functioning as one of five principles that could be usefully applied to the design of safe health care, whether in a small group practice, a hospital, or a large health-care system. This principle was reflected in recommendation 8.1, where health-care organizations were called upon to establish interdisciplinary team training programs that incorporate proven methods of team management—to train in teams those who are expected to work in teams.<sup>56</sup>

The Committee suggested use of simulation for training novice practitioners, problem solving, and crisis management whenever possible. However, they cautioned that for team management techniques such as crew resource management to achieve their potential, those using the techniques must understand the nature of team interactions, the etiology and frequency of errors, and the cultures of the individual organizations into which the techniques are introduced. The report also called for the development of a working culture in which communication flows freely regardless of authority gradient—there can be no reprisals and no impediments to information flowing freely. In addition, the Committee stated, "Whenever possible, patients should be a part of the care process." This included attention to each patient's preferences and values and knowledge of his/her condition as well as the types of treatments/technologies (including medications) being received.

In 2003, in a report on health professions education, the IOM identified the ability to work in interdisciplinary teams—to cooperate, collaborate, communicate, and integrate care in teams to ensure that care is continuous and reliable—as one of five core competencies for all health professionals.<sup>57</sup> In doing so, the IOM elevated teamwork to the same level of importance as employing evidence-based practice, applying quality improvement, utilizing informatics, and providing patient-centered care, the other four designated core competency areas.

### **Status of team training "in the field" five years after *To Err is Human***

Interest in training physicians, nurses, and other health professionals to work in teams seems to be growing. The Accreditation Council on Graduate Medical Education has articulated practice-based learning and systems-based practice as two core professional skills for all approved residency training programs.<sup>58</sup> However, few hospitals are noted to have made major investments in patient safety strategies such as teamwork or simulator training.<sup>59</sup> Certainly a need to weigh expending resources in these areas against other initiatives and needs is one reason. However, Leape and Berwick propose another barrier: "medicine's tenacious commitment to individual, professional autonomy" and suggest that "creating cultures of safety

requires major changes in behavior, changes that professionals easily perceive as threats to their authority and autonomy.”<sup>60</sup>

### **Teamwork in other states**

In its report to the governor last year, the Missouri Patient Safety Commission recommended that the Missouri Center for Patient Safety and its education coalition promote the development of interdisciplinary training for health-care professionals. For example, a course offered to nursing students and health administration graduate students in their final year and to second-year medical students at the University of Missouri–Columbia places them in small groups to work on root cause analysis projects. The underlying premise is that if relationships marked by collaboration and respect are fostered among students in training, these relationships will be easier to maintain in the health-care setting.<sup>61</sup>

### **Research underway**

At least one of the 15 research projects underway at the three AHRQ-funded Centers of Excellence for Patient Safety Research and Practice is addressing the translation of best safety practices from aviation to health care by investigating team training and organizational culture.<sup>62</sup>

One of the major activity tracks at the Patient Safety Center of Inquiry at VA Palo Alto Health Care System is Teamwork and Simulation Training. Their focus is on extending proven techniques of simulation training in anesthesiology into other medical domains, including code teams, ICUs, and neonatal resuscitation.<sup>63</sup>

## **Review Panel Round One**

### **Scoring summary**

In Round One, the Review Panel was asked to score each recommendation area on a scale of 1 to 5, where 5=extremely viable, 4=very viable, 3=somewhat viable, 2=potentially viable with changes, and 1=not viable for this project. Average scores for relevant recommendations considered in Round One:

- 15 (Collaboration): 3.5<sup>64</sup> (range 2-5).
- 16 (Team): 3.3 (range 2-5).

### **Notes**

Suggestions from the Review Panel (aggregated and paraphrased here to save space) have been addressed in the Round Two presentation.

- Tie the clearinghouse recommendation to the state-level “center”. Avoid any suggestion that the state regulate health-care organizations in this area.
- Add incentives and other supportive measures (e.g., regulation, marketing) as useful to facilitate the formation of multidisciplinary teams and the use of available resources to improve their functioning.
- Specifically acknowledge to recognize that many collaborative activities are already occurring but lack resources necessary to ensure success. Regulatory, payment, and all systems ought to support collaboration – not get in the way of demonstration projects.
- Build a strong statement of what interorganizational collaboration should accomplish; be less prescriptive re how.
- Use more declarative language, e.g., “every health-care organization and provider has a moral and scientific responsibility to collaborate.”

- Integrate idea of a “place” for organizations and professionals concerned with the delivery of health-care services plus consumers to work together on patient safety at a state level into other recommendations in this area. Consider a virtual structure, maybe a “clearinghouse” e.g., web-based where existing collaboratives can share their efforts.

## **Examples of state-level collaboration in other states**

### **Minnesota**

The Institute for Clinical Systems Improvement, a collaborative of 50 medical groups and hospital systems (including 55 hospitals and 7400 physicians) was formed in 1993 to establish structure for concerted action around evidence-based health care throughout the state. It has collaboratively developed guidelines and trains and coaches members in system improvement - “The most difficult passage on the road to evidence-based health care is achievement of systems thinking in our organizations.”<sup>65</sup>

### **Wisconsin**

Between August 2001 and July 2002, the Wisconsin Patient Safety Institute collaborated with MetaStar, Wisconsin’s CMS-designated “quality improvement organization” to field a medication safety practices improvement project. The effort included a clearinghouse of resources, guest speakers, monthly phone calls, the formation of groups focused on self-selected medication safety practices, coaches for the groups, monthly statistical progress reports that tracked process outcomes/quality indicators and a final learning congress/celebration. At the end of the project, progress on the desired outcomes ranged from 60-100%.<sup>66</sup>

### **Georgia**

The Partnership for Health and Accountability is a comprehensive, voluntary patient safety program developed by the Georgia Hospital Association in association with State regulatory agencies and health-care professional groups. Its purpose is to translate research or care innovation into broader clinical practice through the active processes of dissemination and implementation. Examples of programs in each of these areas can be found in Table 1 reproduced in the Endnote section. Two outcomes noted: 88% of hospitals reported data for CQIP in 2003-04 and the mean error rate for targeted medication errors decreased 35.8%.<sup>67</sup>

### **Colorado**

The mission of the Colorado Patient Safety Coalition is to foster development of a statewide culture of patient safety in Colorado. This is accomplished by: e.g., promoting collaborative efforts and programs among facilities and health professionals.<sup>68</sup>

### **Maryland**

One of the foci of the Maryland Patient Safety Center is collaboration and education. It facilitates education activities and collaborative workshops for providers to share information, best practices, lessons learned and implement system changes. The Maryland Patient Safety Collaborative Workspace is a place where health-care providers work together to study the causes of unsafe practices and put practical improvements in place to prevent errors. Collaborative Patient Safety Teams will receive coaching, tools, and measurement strategies to both improve care and track progress (CUSP, Comprehensive Unit-based Safety Program) and then work through interventions shown to impact quality and safety of care and ultimately reduce mortality in Maryland hospitals.<sup>69</sup>

## Missouri

The 2004 report to the Governor calls for a new private Missouri Center for Patient Safety to act as a leadership vehicle for patient safety improvements and be a resource for health-care organizations, professionals, and consumers. It should:

- Provide leadership for improvements in patient safety.
- Develop and promote minimum patient safety standards for health-care organizations and professionals.
- Establish a “consumer coalition” to make the patient a more active, better-informed member of the treatment team.
- Act as a research institute for the collection, analysis, and sharing of patient safety data.
- Promote the use of best practices in all health-care settings.
- Assist health-care organizations in developing counseling resources and support groups for patients and facilities affected by adverse events and outcomes.
- Develop and promote undergraduate, graduate, and continuing education curricula on patient safety through an “education coalition.”
- Assist outpatient settings, such as smaller physician practices, in developing patient safety models that adapt to their size.
- Develop and implement award/recognition programs for outstanding patient safety achievements.
- Adopt a common terminology and data sets for patient safety in Missouri.
- Act as the state patient safety organization if federal legislation passes.<sup>70</sup>

<b>Rural Health Care Provider Challenges<sup>71</sup></b>
<i>Financial stability for health delivery systems:</i>
<ul style="list-style-type: none"> <li>▪ Small scale and low hospital operating margins impact ability to afford innovations</li> <li>▪ Continued concerns about equity of Medicare payments to physicians; lowered payments from Medicaid have heavily impacted providers</li> </ul>
<i>Data</i>
<ul style="list-style-type: none"> <li>▪ Rural-specific comparative data needed on some aspects of the care process (e.g., ER care, stabilization, and transfer services for AMI)</li> <li>▪ Redesign of payment program may leave rural communities behind depending on the applicability of standardized performance measures &amp; performance-based payment approaches to rural providers</li> </ul>
<i>Customized tools to fit local needs</i>
<ul style="list-style-type: none"> <li>▪ How to adapt quality improvement knowledge and tools (e.g., evidence-based reports, practice guidelines, standardized performance measure sets) when clinical care may need to be viewed within the broader context of population health and community-wide collaborative structures in order to support an integrated approach to decision-making</li> <li>▪ Need for flexibility in developing QI programs so as to have the greatest impact in the rural context, e.g., regional base may make more sense than individual provider base</li> </ul>
<i>Information and communication technology</i>
<ul style="list-style-type: none"> <li>▪ Little or no access to Internet (let alone high-speed connections) and populations with minimal ICT experience</li> <li>▪ Surcharges and administrative fees levied by LATA networks can make data exchange prohibitively expensive</li> <li>▪ Most rural systems are in critical need of financial and technical assistance to establish electronic health records and secure platforms for health data exchange</li> <li>▪ Health professionals and consumers need access to online information sources and technical assistance with online applications such as distance monitoring. Health professionals need distance education programs.</li> </ul>

## Endnotes

<sup>1</sup> Code 15 (Collab) was used to identify testimony recommending encouragement of programs and/or initiatives where organizations make a commitment to work together in a collaborative manner (e.g., shared goals and commitments) to solve complex patient safety challenges.

<sup>2</sup> Code 16 (Team) was used to identify testimony recommending improvement of team functioning as it relates to patient safety programs and initiatives.

<sup>3</sup> See also recommendations related to the Michigan Partnership for Safe Health Care (code P).

<sup>4</sup> See also recommendations related to the Michigan Partnership for Safe Health Care (code P).

<sup>5</sup> A wealth of patient safety-related collaborative learning projects are underway in Michigan with many Michigan organizations taking lead roles and themselves partnering with national experts and funding agencies to develop and implement the initiatives. These include the MHA Keystone Center for Patient Safety and Quality (in particular its current ICU project), the many BCBSM and BCN quality improvement (particularly in the area of information systems) and hospital and physician incentive programs as well as the recent BCBSM Foundation funded project to encourage the sharing of safety-enhancing practices among hospitalists at facilities across SE Michigan, MAHP's Integrating Evidence-based Medicine into Office Practice Systems, MPROs' many education efforts with Michigan professional organizations, health care service providers, and community health coalitions (for example, the Guidelines Applied in

Practice (GAP) Project, the Nation Pneumonia Project, the health literacy training project, the partnering with the Michigan Podiatric Medical Association to develop a diabetic foot assessment training for primary care physicians' offices), the partnering of MICAH and M-PRO to develop transfer metrics appropriate for small and low volume hospital quality improvement efforts, as well as the participation of various facilities in IHI collaborative learning programs, e.g., Quantum Leaps in Medication Safety & Improving ICU Care plus the current 100K Lives Campaign, the Munson Medical Center / Northwestern Michigan College partnering to increase the number of nurses available in their local area (further discussed under the staffing recommendation area), and of course the efforts of the Michigan Health and Safety Coalition itself which include the guidelines for eight areas of hospital care and the Web-based intensive care unit toolkit. This list is based on information provided during the fall 2004 SPSC hearings.

<sup>6</sup> Leape, L. L. & Berwick, D. M. (2005). Five years after *To Err is Human* what have we learned? *Journal of the American Medical Association*, 293, 2384-2390.

<sup>7</sup> Testimony 305O: 53-58, educator. [C]ommunication between the professions does not flow as it should (Greenfield, 1999). For example, in one 6 bed ICU, verbal miscommunication between nurses and physicians was responsible for 37% of all errors (Donchin, Gopher, Olin, Badihi, Biesky, Sprung, et al., 1995). In another ICU study, communication between nurses and physicians was the single factor most significantly associated with excess hospital mortality (Knaus, Draper, Wagner, & Zimmerman, 1986).

<sup>8</sup> Hamman, W. R. (2004). The complexity of team training: what we have learned from aviation and its applications to medicine. *Qual Saf Health Care*, 13 Suppl 1:i72-9. Retrieved 5.19.05 from [http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list\\_uids=15465959](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=15465959)

<sup>9</sup> Morey, J. C., Simon, R., Jay, G. D., et al. (2002). Error reduction and performance improvement in the emergency department through formal teamwork training: Evaluation results of the MedTeams project. *Health Services Research*. Retrieved 7.26.05 from <http://www.psnet.ahrq.gov/resource.aspx?resourceID=1499>

<sup>10</sup> Katzenback, J. R. & Smith, D. K. (2003). *The wisdom of teams: Creating the high-performance organization*. New York: HarperCollins Publishers, Inc.

<sup>11</sup> Testimony 212W:242-249, health-care provider.

<sup>12</sup> Senn, L. E. & Childress, J. R. (© 1999-2001). Leadership strategies: The secrets of reshaping culture. Retrieved 7/25/05 from [http://www.sdlcg.com/sdlsite/Articles/secrets\\_reshape.htm](http://www.sdlcg.com/sdlsite/Articles/secrets_reshape.htm)

<sup>13</sup> Leape & Berwick

<sup>14</sup> Morey, Simon, Jay, et al.

<sup>15</sup> Mickan, S. M. (2005). Evaluating the effectiveness of health care teams. *Australian Health Review*. Retrieved 7/26/05 from [http://www.aushealthreview.com.au/publications;articles/issues/ahr\\_29\\_2\\_05005/ahr\\_29\\_2\\_211-217.asp](http://www.aushealthreview.com.au/publications;articles/issues/ahr_29_2_05005/ahr_29_2_211-217.asp)

<sup>16</sup> BCBS Physician Update (June 2005). Retrieved 7.27.05 from <http://www.bdbsm.com/providers/physup/2005/june/keystone.html>

<sup>17</sup> Testimony 605W:164-191, insurer.

<sup>18</sup> Testimony 904W:75-82; O:25-30; 35-37, other.

<sup>19</sup> Lasker, R. D., Weiss, E. S., & Miller, R. (2001). Partnership synergy: A practical framework for studying and strengthening the collaborative advantage. *The Milbank Quarterly*, 79, 179-205.

<sup>20</sup> Welsh, A., Frost, M., & Weepie, N. (2004). Patient safety simulations: Driver of cross-functional collaboration. *Patient Safety & Quality Healthcare*, 2, 26-28.

<sup>21</sup> Testimony 305W:98-99, educator.

<sup>22</sup> Hoff, T., Jameson, L., Hannan, E., & Flink, E. (2004). A review of the literature examining linkages between organizational factors, medical errors, and patient safety. *Medical care research and review*, 61(1), 3-37. Retrieved 6.01.05 from <http://mcr.sagepub.com/cgi/reprint/61/1/3> Evidence does exist in aviation and nuclear safety regarding the worth of addressing individual, group, or structural aspects of organizations; it is evidence specific to the patient safety arena that is lacking. This review concluded that there is no systematic body of empirical evidence currently available to support the proposition that organizational variables such as teams, culture change, or leadership make a difference in decreasing medical errors or in enhancing patient safety. This appears to be primarily related to inadequacy of reported detail on linkages between the organizational variables studied and the patient safety dependent variables in the published studies as well as the small number of published studies on anything other than medication errors. In addition, most of the studies did not take a systems perspective but examined single variables without considering interconnected organizational dynamics that may have been taking place. The important issue here is that there is a lack of evidence to guide program development and other interventions. This indicates the importance of clearly defining goals and carrying out evaluation of interventions in a timely manner.

<sup>23</sup> Testimony 828W:96-98, professional organization.

<sup>24</sup> Testimony 212W:259-261, health-care provider.

<sup>25</sup> Testimony 103O:94-97; 101-103, hospital.

- <sup>26</sup> Testimony 808O:203-205, professional organization.
- <sup>27</sup> Testimony 904W:61-62; 65;180-181;189-190; O:19-20; 21; 39-41, other.
- <sup>28</sup> Testimony 105W:16-19; 140-142; 110-112; 182; 188-189; O:24-29; 251-258; 205-208, hospital.
- <sup>29</sup> Testimony 807W:365-367; 422-427; 481-482; 505-506; 531-532, professional organization.
- <sup>30</sup> Testimony 811O:40-46; 55-56, professional organization.
- <sup>31</sup> Testimony 822W:36-47; 122-123; O:36-38; 80-85, professional organization.
- <sup>32</sup> Testimony 810O:133-137; 158-160, professional organization.
- <sup>33</sup> Testimony 405O:164-167; 178-185, consumer.
- <sup>34</sup> Testimony 828W:96-98, professional organization.
- <sup>35</sup> Testimony 606W: 80-82, insurer.
- <sup>37</sup> Testimony 110W:102-121; 100-101; 126-128;94-96, hospital.
- <sup>38</sup> Testimony 904W:61-64; 71; O:19-21, other.
- <sup>39</sup> Testimony 104O:9-13; 156-157, hospital.
- <sup>40</sup> Testimony 204W:134-135, health-care provider.
- <sup>41</sup> Testimony 212W:259-261, health-care provider.
- <sup>42</sup> Testimony 102O:116-117; 121-123; W:118-119, hospital.
- <sup>43</sup> Testimony 212W:161-165, health-care provider.
- <sup>44</sup> Testimony 303O:98-99, educator.
- <sup>45</sup> Testimony 403O:58-59, consumer.
- <sup>46</sup> Testimony 827W:96-100; 121-124, professional organization.
- <sup>47</sup> Testimony 825W:112-114, professional organization.
- <sup>48</sup> Testimony 208O:53-62, health-care provider.
- <sup>49</sup> Testimony 819W:31-35, professional organization.
- <sup>50</sup> Testimony 305W:98-99, educator.
- <sup>51</sup> Testimony 212W:265-266, health-care provider.
- <sup>52</sup> NASHP (National Academy for State Health Policy), Public-private collaboration.  
Retrieved 3.280.5 from [http://12.109.133.213/Files/gnl\\_44\\_patient\\_safety\\_coalitions\\_for\\_the\\_web.pdf](http://12.109.133.213/Files/gnl_44_patient_safety_coalitions_for_the_web.pdf)
- <sup>53</sup> Strategies – Testimony 822-B (professional organization): “As the Commission develops plans to address patient safety issues, MICAH is offering their current expertise and experience to provide advice on inclusion of CAH facilities in the effort. We want to assist in evaluating performance measures, use of centralized collection systems, reporting processes, and development of a partnership program similar to the MPRO project. “ [W 107-111] ”The other opportunity is to work with the MICAH to reach out to the local networking functions currently in place throughout the CAH rural community. “[W 113-114] [Essentially the same in the oral testimony]: “As the Commission develops plans to address patient safety issues, MICAH is offering to assist and help provide advice on how to include small rural hospitals in this effort. This opportunity also allows the Commission to reach out to the local networking functions which currently take place in the small rural communities. Critical access hospital facilities represents critical points of primary care and have formed relationships with their local primary care physicians, clinics, and health departments.” [O 68-79]
- <sup>54</sup> Cook, A. F., Hoas, H., & Guttmanova, K. (2005). From here to there: Lessons from an integrative patient safety project in rural health care settings. *Advances in patient safety (Vol 1)*. Retrieved 5.22.05 from <http://www.ahrq.gov/downloads/pub/advances/vol1/Cook.pdf>
- <sup>55</sup> Missouri Commission on Patient Safety. (2004, July). *Report presented to Governor Bob Holden*. Retrieved 4/13/05 from <http://insurance.mo.gov/aboutMD/issues/patsafety/PatientSafety.pdf>
- <sup>56</sup> Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (Eds). Committee on Quality of Health Care in American, Institute of Medicine. (2001). *To err is human: Building a safer health system*. Washington, D.C.: National Academies Press.
- <sup>57</sup> Greiner, A. C. & Knebel, E. (Eds.). Committee on the Health Professions Education Summit Board on Health Care Services. (2003). *Health professions education: A bridge to quality*. Washington, D. C.: National Academies Press.
- <sup>58</sup> Leape & Berwick
- <sup>59</sup> Wachter, R. M. (2000, November). The end of the beginning: Patient safety five years after ‘To Err is Human’. *Health Affairs – Web Exclusive*. W4-534-545.
- <sup>60</sup> Leape & Berwick
- <sup>61</sup> Missouri Commission on Patient Safety

<sup>62</sup> Keyes, M. A., Ortiz, E., Queenan, D., et al. A strategic approach for funding research: The Agency for Healthcare Research and Quality's patient safety initiative 2000-2004. *Advances in Patient Safety (Vol 4, p. 7-22)*. Retrieved 5.22.05 from <http://www.ahrq.gov/downloads/pub/advances/vol4/keyes.pdf>

<sup>63</sup> Joint Commission International Center for Patient Safety. (2005). Case study: Enhancing patient safety through research. Retrieved 5.22.05 from <http://www.jcipatientsafety.org/show.asp?durki=9701>

<sup>64</sup> One review panel gave two scores (2 and 5). This average reflects averaging these two ratings.

<sup>65</sup> Mosser, G. (2004, October 18). How to grow evidence-based health care in a whole state. Presentation at the Wisconsin Quality and Safety Forum, Eau Claire, WI.

<sup>66</sup> Gold, J. A., Walker, S., Williams, N., Streicher, E., Kosseff, A., Schuch, R. (2002). A local project to affect the adoption of practices aimed at improving the safety of medication use in Wisconsin hospitals. Unpublished manuscript.

<sup>67</sup> Rask, K. J., Naylor, D., & Schuessler, L. (2005). Voluntary hospital coalitions to promote patient safety. *Advances in patient safety (Vol 3, p. 493-505)*. Retrieved 5.22.05 from <http://www.ahrq.gov/downloads/pub/advances/vol3/Rask.pdf>

**Table 1. Examples of PHA programs that facilitate and support practice change**

Dissemination	Implementation
Targeting, tailoring, increasing awareness, changing attitudes, increasing knowledge	Enabling or facilitating change in practice, local change agents, address barriers, local perspectives
Informs hospitals of prevention strategies, high-risk situations, and new guidelines via <ul style="list-style-type: none"> <li>- Safety alerts</li> <li>- E-newsletters</li> <li>- Other publications</li> </ul>	Actively involves influential local providers and administrators on committees and as leaders
Organizes teleconferences/ conferences/ presentations on timely topics of interest	Brings together peers from across the State's medical community
Conducts orientations to new initiatives or tools	Facilitates change via local self-assessment and monitoring components through <ul style="list-style-type: none"> <li>- Clinical studies</li> <li>- Safe medication use improvement plans (targeted medication error rate - mean decreased 35.8%)</li> <li>- Safety issue action plans(e.g., pressure ulcers, patient falls, deep vein thrombosis)</li> <li>- Patient safety award programs</li> </ul>
Facilitates the sharing of data, best practices, and issues among hospitals	Provides administrative structure for improvement activities and reduces the burden on individual hospitals
Provides via the Internet centralized, easy access to <ul style="list-style-type: none"> <li>- Evidence-based practices</li> <li>- Tools such as bulletin board kits</li> </ul>	PHA field representatives provide onsite technical support for improvement processes

<sup>68</sup> Colorado Patient Safety Coalition: Retrieved 4.11.05 from <http://www.coloradopatientsafety.org/>

<sup>69</sup> The Maryland Patient Safety Center: Retrieved 4.11.05 from <http://www.marylandpatientsafety.org/>

<sup>70</sup> Missouri Patient Safety Report. Retrieved 4.13.05 from <http://insurance.mo.gov/aboutMDI/issues/patsafety/PatientSafety.pdf>

<sup>71</sup> Committee on the Future of Rural Health Care, Board on Health Care Services. (2005) *Quality through collaboration: The future of rural health care*. Washington, D. C.: National Academies Press. Retrieved 5.23.05 from <http://www.nap.edu/books/0309094399/html/>