Topic: Guiding Principles — Code: Q

Recommendations

These recommendations take into consideration testimony originally coded to 11 (GuidePrin)[1] and 12 (Ldrship)[2] as well as other sources, as noted.

- Q1. All Michigan health-care stakeholders—including health professionals, organizations, purchasers, regulators and users of health-care services—should continue to transform Michigan's health-care culture to one characterized by a commitment to safety, learning, collaboration, and systems thinking.
  - Q1a. All should acknowledge the complex, dynamic interdependence of people, organizations, processes, and structures within the health-care system.
  - Q1b. All should participate in building environments that support non-blaming approaches to learning from medical errors and near misses.[3]
- Q2. The State of Michigan and all clinical and administrative leaders who influence health-care delivery, all persons involved in the care-giving process, and all who use health-care services should act consistently from a deep commitment to decreasing harm to patients.
  - Q2a. The State of Michigan should provide strong leadership for statewide change to improve patient safety across the continuum of care.[4]
  - Q2b. Michigan regulation and legislation should support collaborative approaches among hospitals, physicians, hospital employees, and health plans to stimulate and improve patient safety and should be non-punitive.[5]
  - Q2c. Health-care organizations should assess their individual cultures to determine what changes are necessary.[6]
  - Q2d. Leaders of health-care organizations should commit human and financial resources to operationalize robust patient safety programs in their institutions.[7]
  - Q2e. Open communication about patient safety at all levels of a health-care organization and by all health-care professionals should be expected. Such communication should include active involvement of patients and their families/caregivers in each patient's own care and the active involvement of health-care consumers/patients/families in the assessment of safety issues and design of safer health care. [8]
  - Q2f. Health-care stakeholders should support and participate in collaborative approaches to learning, problem-solving, and provision of care when appropriate.[9]
  - Q2g: Organizational leaders should ensure that human needs and limitations are taken into account when designing facilities, physical environments, and work processes.[10]
  - Q2h. Health-care stakeholders should focus on specific, discrete improvements in quality and safety designed to yield the largest safety gains; clearly specify desired outcomes and build in timely evaluation of interventions to improve patient safety;[11] [12] [13] [14] and use principles known to support the adoption of innovations in other industries when designing and implementing patient safety initiatives and specific interventions.
  - Q2i: All persons involved in the care-giving process should be engaged in and held accountable for patient safety improvement.

- Q3. Building Michigan's capacity for quality and patient safety should include:[15]
  - Q3a. Training health-care providers and the research community to lead research studies that focus on "how to" deliver therapies that are known to work safely and cost-effectively and how to change culture to ensure safety and quality of care.
  - Q3b. Conducting further research on medical errors in primary care, starting with the development of a taxonomy of errors appropriate for primary care and including assessment of the applicability of the models being imported from other industries to small practice settings.[16]

Rationale

Health care continues to become more complex with more technology, more specialists, more treatment options, and more knowledge generated each day. It is impossible for health-care professionals to function in isolation. The dynamic interdependencies that occur in the provision of health care today create a multitude of opportunities for errors and near misses to occur.

While the majority of health-care organizations are now involved to some degree in efforts to improve patient safety and to create cultures of safety, progress is slow. A number of barriers to progress are noted below but a significant underlying one is the long-standing dominant health-care culture of individual professional autonomy.

Informants at the State Patient Safety Commission hearings during fall 2004 provided a number of recommendations for improving patient safety in Michigan that would require significant changes in the ways that health-care organizations and individual practitioners do things. Taken in total, these recommendations support a call for looking beyond the long-standing dominant model for health-care culture (one based on individual, professional autonomy) to establishing a culture that acknowledges the importance of interactions, interdependencies, and thinking in system terms and makes specific commitment to safety, learning, collaboration, and systems thinking.

Evidence for harm reduction

Starting in the mid-1980s, the American Society of Anesthesiologists (ASA) made two major commitments:

- First, to learning from anesthesia-related medical errors by creating and analyzing a database of information on people injured or killed during anesthesia; and
- Second, of resources to launch and provide ongoing support to a stand-alone foundation (the Anesthesia Patient Safety Foundation) solely devoted to patient safety, which welcomed as members a diversity of health-care stakeholders (physicians, nurses, insurers, product manufacturers).

Through analysis of the database, the ASA identified simple mistakes that led to deaths and ultimately two innovations that all but eliminated deaths and injuries from "intubation" errors. The Foundation funds research that has led, among other things, to the development of high-tech mannequins that allow anesthesiologists to practice their skills in life-threatening situations. The Foundation also successfully pressed for the innovations developed as a result of database analysis to become part of ASA basic standards of care when hospitals were reluctant to buy the necessary technologies. (Failure to adhere to ASA recommendations can expose hospitals to malpractice liability.)

Anesthesia fatalities dropped from 1 death per 5000 cases to 1 death per 200,000-300,000 cases over the past two decades according to IOM studies.[17] Information on malpractice suits and rates during this time period is included in the endnote.

Assessment

Advantages

- A systems thinking-oriented culture can be expected to speed up improvement of patient safety indicators.
- Developing a culture that acknowledges the dynamic, interdependent nature of health care gives us the freedom to explore more ways to improve patient safety. It frees us from the need to find a person to blame when something bad happens. It also frees us from asking individuals to do the impossible by trying to prevent errors on their own when they do not have control of all aspects of the situation.

Barriers

- Culture change is hard work and takes long-term commitment to the goal.
- Culture change requires careful planning using principles known to support the adoption of innovations in other industries to achieve it and then to sustain it.
- Culture change requires specific attention from top leadership.
- Behavior change by both individuals and organizations will be needed to address practices rooted in the long-standing socialized professional expectation of individual, professional autonomy. Desired changes in both types of behavior may be perceived as threats to the authority and autonomy of professionals.
- Without a common understanding of what we mean by "systems," we can talk past each other with regard to interventions to improve patient safety. We must become sensitive to the interactive aspect of all the variables at play in a situation as well as the more obvious static aspects of what we may identify as the relevant system(s).[18]

Implementation

Further research

- Needs for further research and evaluation appear in the recommendations.

Legislation and/or administrative rules

- No specific requests were made.

Resources

- The text of the recommendations includes a request from testimony that individual health-care organizations commit the resources needed to operationalize patient safety improvement efforts within their organizations.

Incentives

When something as complex (and unsettling) as culture change is involved, incentives are just part of a larger plan for securing the goal. No recommendations from testimony specifically addressed incentives for cultural change, though one informant noted:

> We need goals, very clear measurable goals to say, "Here is where we're going to prioritize. Here is where we're going to make the resources available to achieve these goals." Researchers and health-care leaders need to make sure we develop interventions or programs that are meaningful for the front-line worker who is actually delivering care. We must also have an explicit strategy for spreading what works, including methods to put the information and implementation strategies and

> tools in the hands of providers throughout the country, along with clear expectations for achievement. Then, within a predetermined timeframe, providers should be held accountable for achieving the goals.[19]

While these words were targeted to those leading change on a national level, they are relevant to those working on the state level, as well.

To improve patient safety, health-care organizations and professionals, especially physicians, must be engaged. The culture changes necessary to improve patient safety challenge the underlying assumptions that these groups frequently hold about how the health-care field should work. Those championing change need to: (1) identify what these professionals and organizations would want to receive from changes required to support patient safety improvement, i.e., what would be their reward, (2) use these identified "rewards" as incentives when possible, (3) carefully tie incentives to the behavior desired[20], and (4) assess readiness of the organization or profession/professional to change. The following questions need to be asked.

- Why hasn't this happened before?
- What needs to happen for this to happen?
- What will keep this change going after the initial effort has ended?
- How can the change be institutionalized?

Once incentives are identified and readiness for change has been assessed, an action plan for achieving the change must be developed and internal champions must be identified and recruited to help move the process along within health-care organizations and professional associations.[21]

Health-care organizations must respond to many—and often competing—priorities such as balance sheets, strategic plans, expectations of larger systems of which they are a part. This collection of goals and measures may leave health-care organizations reluctant to respond to calls for steps leading to culture change.

Societal pressure for patient safety is certainly one force that promotes change within organizations and professions, especially when it comes from multiple directions. Unfortunately, the health-care consumer/patient/resident is rarely in the position to turn down services because of a facility's or professional's unsatisfactory approach to patient safety. It is therefore critical that proxies, including health-care purchasers (employers, insurers, the State) hold health-care organizations and professional accountable for patient safety improvement.

Specific steps and target dates

Because the culture change envisioned in this set of recommendations requires ongoing activity within each organization and by each professional, we have identified no specific steps or target dates.

Testimony overview

Summary

The Commission received 29 relevant recommendations coded 11 (GuidePrin), 5 coded 12 (Ldrship), and 3 coded 01 (StateFocal) as well as other evidence (without specific recommendations) from 18 testimonies representing hospitals, health-care providers, educators, consumers, insurers, professional organizations, and research institutes. The 37 recommendations came from 20 informants.

Key findings

- Michigan has an opportunity to support a shared vision for quality and safety improvements through coordinated leadership from all major stakeholders plus regulation and legislation that support collaborative and non-punitive approaches.[22 23 24 25 26 27 28 29 30]
- There is a need for a change in the culture of safety across the continuum of care as well as before and after entry into the health-care system.[31 32 33]
- Commitment to patient safety must permeate health-care organizations with organizational leaders committing human and financial resources to efforts to decrease harm to patients.[34 35 36 37 38 39 40 41]
- Health-care organizations, payers, and professionals should focus specific, discrete improvements in quality and safety designed to yield the largest safety gains, e.g., evidence-based hospital referral for elective treatment, leverage purchasing power, use critical care medicine certified physicians in ICUs, implement CPOE.[42 43 44 45]
- Improving communication about patient safety errors and processes is at the core of culture change. Improved communication is important for preventing errors (e.g., electronic medical record) and for accountability to governing boards and the public.[46 47]
- Meaningful patient safety programs actively involve patients, families, and staff before, during, and after service use.[48]
- A culture of safety creates state and organizational environments that support learning from errors through not punishing those who report patient safety concerns, analysis of reported data to understand the underlying reasons for errors, using data to make improvement to prevent future errors, and publicly celebrating safety improvement ideas while holding organizations accountable for taking action on errors reported.[49 50 51 52 53 54 55 56 57 58 59 60]
- An environment that encourages reporting of medical errors should be created in the spirit of a "just culture" (shared accountability between individual behavior and system/process components).[61 62 63]
- Respect for patients, families, nurses, and all health-care workers must be so fundamental that jobs and hospital privileges are at risk if standards are not met.[64]
- Another critical factor to improving patient safety is to allow health-care workers to have a stronger voice and more involvement in decision-making in health-care facilities.[65]
- To improve care cost-effectively, we need to learn better how to deliver those therapies that we know work safely and cost-effectively.[66]

Summary of additional research: Michigan

There is undoubtedly much happening at various facilities and health-care systems in the state as efforts go forward to improve patient safety. Information is presented on two organizations that appear to have fairly comprehensive approaches to establishing a safety culture supported by top leadership, Munson Healthcare and Providence Hospital and Medical Centers (part of St. John's Health System and Ascension Health).

As part of their creation of a culture of patient safety, Munson measures culture annually and staff perception of top management commitment to creating a culture of patient safety and doing things about patient safety using an instrument from the Institute for Healthcare Improvement. They compare themselves to 50 other hospitals and share information on how to improve.[67] They have also instituted "leadership walk-arounds" where top management, including the CEO, goes from unit to unit talking with front-line staff and asking them broad questions such as, "What's the next big error or tragedy that about to happen on this unit?" They use staff input to

begin making changes.[68] They reported significant decreases in the incidence of patient falls, nosocomial skin breakdown, and in the rate of medication errors. A number of factors were listed as contributing to this: experiencing early successes; making sure staff know that it is typically systems that set people up to make mistakes; emphasizing that errors are expected to be reported so that the system can be fixed; benchmarking results to best practices in the literature; and engaging staff in general assessment, planning, implementation, and evaluation of solutions to fix the systems of care.[69]

Providence reports being in the process of further integrating the concept of a "just" culture in all that they do. St. John Health System is developing training on this to help managers appropriately address errors on their units. Providence has also participated in an organization-wide safety climate survey to assess perceptions of safety and teamwork climates across health-care providers.[70] Providence is part of a larger system (Ascension Health) that has significant focus on patient safety through an initiative called *Healthcare that is Safe* that is part of its "Call to Action" as well as including safety in one of its *Five Areas of Focus for Clinical Excellence*.[71] As part of the *Healthcare that is Safe* initiative, they state:

- Ascension Health is committed to providing excellent clinical care with no preventable injuries or deaths. Studies show that most medical errors are "system" errors, not people errors. We will focus on changing systems of care to prevent mistakes. We will also support a culture change within our organization that makes or that will make reporting errors not only acceptable but expected.
- Ascension Health will strive for clinical excellence across our system by standardizing our good practices and making them national programs. We will launch a system-wide standardized process for measuring and reporting medication errors. We will implement evidence-based models of care which will ensure the highest quality of care for our patients.
- We will track data across the enterprise using dashboard reporting to help us improve the care we provide. We will give patients usable information that will assist them in making their health-care decisions and use this information to identify opportunities to improve the care we deliver.

Summary of additional research: National perspective

Not everyone agrees that culture[72] can be changed, but even those who feel it can be changed do not offer it as a quick and easy process.[73] Regardless, there is a good deal of talk within patient safety circles about "creating the culture change'' to make patient care safe. Various instruments have been used to assist organizations to assess their safety culture or climate and new ones are appearing (e.g., AHRQ's new Hospital Survey on Patient Safety and the Safety Attitudes Questionnaires [SAQ] set currently used as part of the Keystone ICU project). JCAHO stimulated activity around safety culture creation in 2001 when its new patient safety accreditation standards for health-care facilities required organizational leaders to ensure the implementation of an integrated patient safety program throughout the organization. In 2003, JCAHO also began requiring accredited organizations to meet annually specified patient safety goals. Each year the goals and associated recommendations are re-evaluated to determine whether they should be continued or replaced.[74]

IOM reports

According to the Institute of Medicine (IOM) in its report *To Err is Human,* it would be hard to overestimate the underlying, critical importance to medical error reduction efforts of developing a systems-oriented culture of safety. This movement from the focus on blaming the individual for errors and accidents to acknowledging the complex interactive nature of people and processes in today's health care ties directly into the need to establish non-punitive environments and

systems for reporting errors so that adequate data can be collected to assess what is actually happening related to errors. The report is also clear about the necessity of making patient safety an explicit organizational goal clearly supported by top organizational leaders.[75]

In *Keeping Patients Safe: Transforming the Work Environment of Nurses*, the IOM provides a more lengthy discussion of creating and sustaining a culture of safety, including potential barriers (health-care professional unrealistic expectations of clinical perfection, litigation, and regulatory barriers) and perspective on the long-term commitment nature of creating such cultures.[76]

AHRQ reports

The recently available web-based four volume series on *Advances in Patient Safety* contains a number of articles that address various aspects of organizational culture and climate from model development (e.g., relationships between organizational elements such as leadership and outcomes) to implementation (e.g., cultural barriers to learning cultures in residency settings) to systems thinking and patient safety.

Of particular interest: Presentation of an organizational model that highlights change management issues critical for sustained success of patient safety initiatives. Four implications for health-care organizations are offered:

- Change must consistently target multiple organization components (e.g., not just clinical or just technological).
- Participants in the delivery process must play distinct roles in managing change (e.g., especially important for senior management to play an active role in establishing patient safety as an important and urgent priority).
- Change must be implemented using support structures and multiple tactics integrated in a long-term plan (important that tactics are consistent with each other and aligned with the purpose of change).
- Change must be institutionalized by providing health-care workers with the capabilities and opportunities to engage in continuous safety improvement (e.g., role redesign and retraining for these roles).[77]

Summary of additional research: Other states

Of six state patient safety centers, most plan to foster creation of a culture of safety. Florida and Oregon include such goals in their mission statements. Maryland and Pennsylvania include them in their "planned activities." The patient safety centers as a group recommend beginning patient safety efforts by focusing on creating a culture of safety.[78]

Missouri's report to the governor includes the recommendation to "Create a culture of safety focusing on a system-oriented approach to reducing patient harm."[79]

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 regarding relevant recommendations considered in Round One:

- 11 (GuidePrin) and 12 (Ldrship): 4.2 (range 3-5)

Notes

The following suggestion from the Review Panel (and others too specific to detail here) has been addressed in the Round Two presentation.

- Address incentives for changing culture, e.g., how can society be motivated to spring into action so errors become politically incorrect? Drive change by focus on dissemination of information about outcomes & how to implement (so is easy for others to implement in other organizations. Look at other culture changes (smoking, drunk driving).

Endnotes

[1] Code 11 (GuidePrin) was used to identify testimony recommending strong, clear, and visible attention to patient safety that permeates "how an organization conducts its business" (it's practices and methods) so that there is no question that patient safety is a goal of the organization and is strongly embraced and used as a guiding principle.

[2] Code 12 (Ldrship) was used to identify testimony recommending enhancement of leadership within an organization to foster, develop, and implement patient safety systems.

[3] See also recommendations in Safeguard Safety Data & Sources (Code J) and Collect & Use Data (Code K).

[4] The State's role is further defined in other recommendation sets.

[5] Testimony 828W:96-98, professional organization.

[6] Testimony 213W:197-199, health-care provider.

[7] Testimony 205W:168-172, health-care provider.

[8] See also recommendations in Patient-Centered Care (Code R).

[9] See also recommendations in Working Together (Code V).

[10] See also recommendations in Design Safe Care (Code T).

[11] 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.

[12] Testimony 906W:159-164, other.

[13] Leape, L. L. (2005). Prologue: Where the rubber meets the road. *Advances in patient safety, Vol 3.* Retrieved 5.22.05 from http://www.ahrq.gov/downloads/pub/advances/vol3/Leape.pdf

[14] Testimony 906W:71-94, other. Excerpt from concern: However, despite there being great examples of people executing interventions and achieving really dramatic results, for the most part, we haven't evaluated all that much. In some of these pockets the results that we've achieved have far exceeded our expectations, but they haven't been as widespread and as diverse as we need. If we were to ask many healthcare leaders around this country to tell us how do they know they're safer than five years ago, it is likely we would either get no answer or "I believe I am", or a whole variety of different measures. As a country, we haven't made the investments needed to learn what it means to be safer, to prioritize our efforts, and to help providers reinvent healthcare. We've just said we want higher quality, safer care. Our efforts now are like Brownian Motion, we're going in many directions. In the absence of goal-setting, in 2009 at the ten-year anniversary of the IOM, we will still not be able to answer the question, "Are we safer?"

[15] Testimony 906W:46-50; 56-69, other.

[16] Fetters, M. D. (2002). Medical error in primary care. In M. M. Rosenthal and K. M. Sutcliffe (Eds.) *Medical error: What do we know? What do we do?* (pp.58-83). San Francisco: Jossey-Bass.

[17] Hallinan, J. T. (2005, specific date unknown). Once seen as risky, one group of doctors changes its ways. Wall Street Journal article provided by John Pappas, Secretary-Treasurer of Michigan Society of Anesthesiologists via e-mail to Thomas Simmer on June 28, 2005. The article also provides information on malpractice impacts associated with the ASA's strategies to decrease harm to patients. The cues that appeared to drive the ASA's initial efforts in the

mid-1980s were a second large malpractice rate increase and bad publicity for the profession in national media (20/20 report). The percent of total malpractice suits filed against anesthesiologists dropped from 7.9% in 1972 (double the percentage of physicians who practiced anesthesiology) to 3.8% (roughly comparable to the percent of physicians who are anesthesiologists) between 1985 and 2001. The size of payment from successful malpractice suits has also declined 46% from $332,280 median payment in 1970s to $176,010 in 1990s (2005 dollars). Claims for serious injuries fell from more than half of anesthesia malpractice claims in 1970s to less than one-third of claims in 1990s. Malpractice rates have also fallen 37% in 20 years from $32,620 in 1985 to $20,572 in 2005 (inflation adjusted dollars).

[18] "Systems" can carry the connotation of being mechanical, orderly, designed, impervious to improvisation, stable, and routinized. It may be harder to see the dynamic aspects of what happens as events unfold, variations in strengths and quality of connections (e.g., handing off a patient from one unit to another), sequences of activities, the ways in which intelligence is woven into work or stripped from it, the ways in which problems are sometimes the outcomes of attempted solutions. All of dynamic flows are present when fallible humans err and compound small oversights into larger adverse events. To spot these flows and their flaws, observers need to pay attention to *organizing* as well as organizations and *relationships* as well as defined systems. The pervasive interdependence of medical care needs to be kept carefully in mind in order to more confidently address issues of patient safety. Weick, K. E. (2002). The reduction of medical errors through mindful interdependence. In M. M. Rosenthal and K. M. Sutcliffe (Eds.) *Medical error: What do we know? What do we do?* (pp.177-199). San Francisco: Jossey-Bass.

[19] Testimony 906W:94-101, other.

[20] Pennsylvania has developed an interesting incentive for hospitals to participate in patient safety improvement programs. The state authorizing legislation states that if healthcare facilities can demonstrate a reduction in what Act 13 calls 'serious events' as a result of complying with protocols developed by the Department of Health and Insurance, they may be eligible for a discount on medical professional liability coverage. The programs currently recommended by the Pennsylvania Patient Safety Authority are "Stand Up for Patient Safety" developed by the National Patient Safety Foundation (NPSF) and the "100,000 Lives Campaign" developed by the Institute for Healthcare Improvement (IHI). Retrieved 6/24/07 from http://www.psa.state.pa.us/psa/cwp/view.asp

[21] Steps based on Rogers, E. M. (1995). Diffusion of innovations (4th edition). New York: The Free Press. Daft, R. L. (1995). Innovation and change. In Organization theory and design (5th ed.) (pp. 261-296). Minneapolis/St. Paul: West Publishing Co. Other characteristics of a specific change that are related to its adoption are: (1) Degree to which the change is perceived as better than what precedes it; (2) Compatibility with existing values, past experiences, felt needs of potential adopters; (3) Simplicity in understanding and use; (4) Degree to which the change can be "tried out" on a limited basis; (5) Degree to which results are visible to others; and (6) Fit of the organization change strategies with constraints / expectations posed by external stakeholders.

[22] Testimony 204W:70, health-care provider.

[23] Testimony 204W:70-71, health-care provider.

[24] Testimony 213W:8-10; 136-144, health-care provider.

[25] Testimony 302W:399-400; O:112-114, educator.

[26] Testimony 828W:96-98, professional organization.

[27] Testimony 906W:133-136; 138-141, other.

[28] Testimony 906W:198-203; 211-213; 230-241, other

[29] Testimony 105O:209-213; 215-219; W:117-121; 157-158;182-184, hospital.

[30] Testimony 106W:28-31, hospital.

[31] Testimony 605B:P3, L30-31, insurer.

[32] Testimony 827W:70-73; 80-84, professional organization.

[33] Testimony 830W:23-25; 106-110, professional organization.

[34] Testimony 213W:8-10; 136-137; 145-153; 165-167; 116-123; 201-202; 128-133; 184-190; 197-199, health-care provider.

[35] Testimony 104O:99-112, hospital.

[36] Testimony 827W:101-105, professional organization.

[37] Testimony 103O:22-37, hospital.

[38] Testimony 104O:9-13; 32-36; 48-51, hospital.

[39] Testimony 104O:9-15, hospital.

[40] Testimony 807O:60-69, professional organization.

[41] Testimony 205W:168-172, health-care provider.

[42] Testimony 606W:37-40; 245-261; 279, insurer.

[43] Testimony 606W:37-40; 245-256, insurer.

[44] Testimony 606W:27; 37-40; 245-259, insurer.

[45] Testimony 606W:37-40; 245-252; 260-261, insurer.

[46] Testimony 213W:8-10; 136-137; 145-153, health-care provider.

[47] Testimony 906W:174-178, other.

[48] Testimony 827W:80-84, professional organizations.

[49] Testimony 104O:52-55; 67-75, hospital.

[50] Testimony 105W:16-19; 123-132; 160-163; O:24-29; 220-240, hospital.

[51] Testimony 106O: 146-149; 117-118; 164-165; 172-191; 243-253, hospital.

[52] Testimony 103O: 22-46, hospital.

[53] Testimony 204W:91-94, health-care provider.

[54] Testimony 807O:60-69, professional organization.

[55] Testimony 816W:72-74, professional organization.

[56] Testimony 906W:159-164, other.

[57] Testimony 828W:96-98, professional organization.

[58] Testimony 106O:149-151; 61-64; 69, hospital.

[59] Testimony 106W:31-34; O:46-56, hospital.

[60] Testimony 204B: Eighth, publicly celebrate safety improvement ideas generated. No location given, health-care provider.

[61] Testimony 606W:32-39, insurer.

[62] Testimony 213W:165-167;116-123; 201-202, health-care provider.

[63] Testimony 608W: 32-39, insurer.

[64] Testimony 303O:171-174, educator.

[65] Testimony 419W:300-302, consumer.

[66] Testimony 906W:46-50; 56-69, other.

[67] Testimony 104O:55-66, hospital.

[68] Testimony 105O:438-457, hospital.

[69] Testimony 105O:43-98; W:28-56, hospital.

[70] Testimony 213W:161-165; 191-194, health-care provider.

[71] Retrieved 7.23.05 from http://www.ascensionhealth.org/ht_safe/main.asp

[72] Culture is the set of values, guiding beliefs, understandings, and ways of thinking that is shared by members of an organization and is taught to new members as correct. Its critical functions are to: (1) Integrate organizational members so they know how to relate to one another. It guides day-to-day working relationships and communication between people. (2) Help the organization adapt to the external environment. It guides how an organization meets goals and how it deals with outsiders. Daft, R. L. (1995). *Organization theory and design 5th edition*. Minneapolis/St. Paul, MN: West Publishing Co. Glossary P. 576; P. 333.

[73] "Culture changes only after you have successfully altered people's actions, after the new behavior produces some group benefit for a period of time, and after people see the connection between the new actions and the performance improvement. Kotter, J. P. (1996). *Leading change.* Boston, MA: Harvard Business School Press. P. 156

[74] Page, A. (ed). (2004). *Keeping patients safe.* Washington, D. C.: The National Academies Press. P. 303.

[75] Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (Eds). Committee on Quality of Health Care in America, Institute of Medicine. (2001). Chapter 8: Creating safety systems in health care organizations. *To err is human: Building a safer health system*. Washington, D.C.: National Academies Press. Retrieved 3.28.05 http://www.iom.edu/topic.asp?id=3718

[76] Page, A. Chapter 7: Creating and sustaining a culture of safety.

[77] Ramanujam, R., Keyser, D. J., & Sirio, C. A. (2005). Making a case for organizational change in patient safety initiatives. *Advances in patient safety, Vol. 2.* Retrieved 5.31.05 from http://www.ahrq.gov/downloads/pub/advances/vol2/Ramanujam.pdf

[78] Rosenthal, J. & Booth, M. (2004, October). *Flood Tide Forum: State patient safety centers: A new approach to promote patient safety.* Retrieved 3/28/05 from http://www.nashp.org/Files/final_web_report_11.01.04.pdf

[79] 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