STATE COMMISSION ON PATIENT SAFETY
ROUND ONE RECOMMENDATIONS
May 26, 2005

Category: Implementing Safety Systems in HCOs

Code 16 (Team) – Team: The submitted testimony recommends: Improvement of team functioning as it relates to patient safety programs and initiatives.

Recommendation #D6:[1] Given that change in health care culture is necessary for the next stage of improvement in patient safety, health care organizations are encouraged to participate in this crucial step by establishing interdisciplinary teams specifically to address the challenges of improving patient safety when such teams are appropriate.[2] HCOs that use teams to address patient safety challenges should establish interdisciplinary team training programs that incorporate proven methods of team management[3] [4] and provide the support necessary for such teams to fulfill their charge.[5]

> **Recommendation #D6a:**[6] To assist HCOs in establishing effective patient safety focused interdisciplinary teams, *an appropriate state-level agency* should serve as a clearinghouse to identify and disseminate best practices for building patient safety teams within facilities[7] [8] [9] [10], e.g., reflect clearly defined organization performance goals in the defined purpose and goals of individual teams[11], use simulator training[12].
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> **Recommendation #D6b:**[13] *Organizations convening teams* to improve patient safety should consciously recruit members with a broad mix of skills and knowledge, including patients and family members.[14] [15] [16][17] [18] [19] [20]
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> **Recommendation #D6c:**[21] *Patient safety teams* should pay particular attention to improving communication among all members of the treatment team including special focus on social dynamics that may adversely affect the transfer of information between treatment team members.[22] [23] [24] [25]

Rationale: While the majority of HCOs are now involved in efforts to improve patient safety to some degree, progress has been slow. Two major barriers to progress, both rooted in the long-standing culture of individual, professional autonomy are: 1) the need to change individual behaviors and 2) the need to change organization behavior to a non-blaming systems-oriented (inter-dependent) approach and to establish new lines of accountability. These potential changes threaten current authority and autonomy.[26] The development of effective teams, shown to be useful in complex situations[27], requires both individual practitioner change and organization change. Neither of these is easy. Therefore, HCOs need specific encouragement and assistance in instituting effective teams for improving patient safety.

Evidence and/or information on comparable initiatives being carried out in other states:

The specific focus on interdisciplinary teamwork and team training is relatively new to health care. Because of its great effectiveness in the aviation industry, there are high hopes for its usefulness in improving patient safety. Much of what was identified for the discussion here was written from this perspective of how it could be useful. There may well be other publications that discuss findings relative to the use of teams in specific care situations. However, the use of teams and the training of multidisciplinary teams do not appear widespread in the health care field at this time.

Techniques for team training draw upon knowledge from the area of human design. One of the most frequently mentioned techniques is crew resource management, 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 healthcare and offered in high-risk areas at Vanderbilt University Medical Center, University of Missouri Healthcare, Kaiser Permanente, the Veteran's Administration hospitals and the within the military healthcare system.[28]

<u>IoM Reports:</u>

In 2000, the 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.[29]

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 that "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, the IoM report on health professions education designated 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.[30] In doing so, it 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" 5 years after *To Err is Human:*
Interest in training physicians, nurses, and other professionals to work in teams seems to be growing. The Accreditation Council on Graduate Medical Education has articulated practice-base learning and systems-based practice as 2 core professional skills for all approved residency training programs.[31] However, few hospitals are noted to have made major investments in patient safety strategies such as teamwork or simulator training.[32] 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 "[c]reating cultures of safety requires major changes in behavior, changes that professionals easily perceive as threats to their authority and autonomy."[33]

Specific to states developing patient safety plans: 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, e.g., a course offered to nursing students and health administration graduate students in their final year and 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.[34]

What do we know about teamwork?
Effective teamwork is not a spontaneous occurrence; it requires the development of specific skills.[35] Crew communication and coordination behaviors are identifiable, teachable, and applicable to high stakes environments. Specific training and reinforcement are needed to establish these behaviors.[36] 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, accountability, and creation and maintenance of interdisciplinary teams.[37]

Evidence is starting to be reported that indicates 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[38], and reduced emergency department clinical errors after teamwork training based on CRM[39].

Research underway
At least one of the 15 research projects underway at the 3 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.[40]

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 extending proven techniques of simulation training in anesthesiology into other medical domains, including code teams, ICUs, and neonatal resuscitation.[41]

Pros: [42]

- Improved communication among treatment team members (including patients and their families) with resultant decrease in medical errors caused by miscommunication and dropped hand-offs
- Increased valuing of the role of the patient in the provision of quality health care and patient safety
- Multidisciplinary teams can reach conclusions more rapidly than homogeneous groups (breakdown cultural communication barriers; multi-functional perspective more rapidly exposes systemic blind spots)

Barriers:

- Effective implementation of team interventions will be related to changes in current health care culture, e.g., decreased hierarchical authority structure, less tenacious commitment to individual, professional autonomy, institution of a systems-oriented approach to errors and new lines of accountability[43]
- Cost of developing and implementing team training

Additional comments/concerns:

Implementation steps:

- Survey HCOs to learn what specific support they desire relative to team development and training as well as for broader organization culture change
- Identify an appropriate state-level "site" for a clearinghouse to assist HCOs to institute effective teams and team training and to support HCOs in the institution of broader internal change in organization culture for patient safety improvement via best practices dissemination, including techniques, training, and consultation
- Identify funding needed to start up and sustain the above

Cost: TBD

Implementation Target Date: TBD

Grade: TBD

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[1] Compiled from 1 testimony concern and 3 published documents.
[2] 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.
[3] Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (Eds). Committee on Quality of Health Care in America, Institute of Medicine. (2001). *To err is human: Building a safer health system*. Washington, D.C.: National Academies Press.
[4] Concern – Testimony 212-W (provider) "Effective multi-disciplinary team functioning and communication are critical to preventing adverse events." [W265-266]
[5] Katzenback, J. R. & Smith, D. K. (2003). *The wisdom of teams: Creating the high-performance organization*. New York: HarperCollins Publishers, Inc.
[6] Compiled from 3 of 9 recommendations coded 16 (Team) from 3 informants plus 3 published documents.
[7] Recommendation – Testimony 102-B (hospital) "… I'd like to recommend that the Commission [O 116-117] strongly considers disseminating successful strategies for building patient safety teams within facilities." [O 121-123] "… designed to prevent infectious and noninfectious complications of care." [W 118-119]
[8] Recommendation – Testimony 212-W(provider) "Additionally, ongoing, state-funded, state sponsored safety education programs that focus on innovative approaches to teaching patient safety and effective team functioning including Crew Resource Management, especially in the ER, ICU, and OR settings; simulation training; and medication safety practices would further advance the cause [of improving patient safety]." [W261-165]
[9] Recommendation – Testimony 303-O (educator) "Teamwork and patient advocacy must be encouraged in order to ensure patient safety." [O98-99]

[10] Kohn, Corrigan, & Donaldson, p. 149 (importance of establishing team training programs to improve interdisciplinary working together in tightly coupled situations, e.g. use of adapted crew resource mgt techniques).
[11] Katzenback & Smith
[12] Welsh, A., Frost, M., & Weepie, N. (2004). Patient safety simulations: Driver of cross-functional collaboration. *Patient Safety & Quality Healthcare*. 2, 26-28.
[13] Compiled from 4 of 10 recommendations coded 16 (Team) from 4 informants plus 3 published documents.
[14] Recommendation – Testimony 303-O (educator) "Teamwork and patient advocacy must be encouraged in order to ensure patient safety." [O98-99]
[15] Recommendation – Testimony 403-O (consumer) "Third, local consumers should be nurtured and used as partners to help local families solve the system's problem." [O58-59]
[16] Recommendation – Testimony 827-W (professional organization) "Social work should be involved regarding social supports and resources to assist with safe care and follow-up after discharge. A discharge planner should be available to coordinate a patient's discharge care including follow-up physician appointments, occupational therapy and physical therapy care, durable medical equipment, home medical equipment and supplies." [W96-100] "It [patient safety] should include many disciplines including physicians, nurses, occupational therapists, pharmacists, physical therapists, nursing aides, social workers, discharge planners, employers, third party payers, government agencies, and consumer groups" [W121-124]
[17] Recommendation – Testimony 825-W (professional organization) "The Michigan Academy of Physician Assistants supports and promotes the utilization of physician assistants in the health care team. The physician/PA team is a strong means to supplying quality, safe and accessible health care to the citizens of Michigan." (W112-114)
[18] Katzenback & Smith
[19] Reinertsen, J. L., Pugh, M. D., & Bisognano, M. (2005). *Seven leadership leverage points for organization-level improvement in health care*. Retrieved 5.16.05 from http://www.ihi.org/IHI/Products/WhitePapers/SevenLeadershipLeveragePointsWhitePaper.htm
[20] Kohn, Corrigan, & Donaldson, p. 150 (include the patient in safety design and the process of care)
[21] Compiled from 3 of 10 recommendations coded 16 (Team) from 3 informants plus 1 published document.
[22] Recommendation – Testimony 819-B (professional organization) "MHHA recommends that the Commission give consideration to methods to improve communication along the full continuum of care from patient entry into the system through return to the community, particularly as related to specific medication orders and patient history of such conditions as MRSA (Methotrexate Resistance Staphylococcus Aureus)." [W31-35] [This recommendation appears in the database twice because it is coded 16.08 (Team/PerfBench and 16.22 (Team/MedPrac). It is considered as coded to Team one time.]
[23] Recommendation – Testimony 208-O (provider) "So I believe that the solution to this problem should involve taking steps to offer mentorship for new grad nurses, something that's often being done right now with other nurses, but maybe start involving physicians and other healthcare team members in that process to mentor to those new grads and help establish more of a peer relationship and help these new grads feel comfortable talking to physicians, which can often be an intimidating experience when you're a new nurse." [O53-62]
[24] Recommendation – Testimony 305-W (educator) "Therefore, the first recommendation to the Commission is to fund research into interventions to improve communication between nurses and physicians." [W98-99]
[25] Wong, J. & Beglaryan, H. (2004). *Strategies for hospitals to improve patient safety: A review of the research.* Ontario, Canada: The Change Foundation. Retrieved 4.17.05 from http://www.changefoundation.com/tcf/TCFBul.nsf/(S001)/047539287C3D43A585256E3100486DF4: "Communication problems are one of the main causes of adverse events and should be the

focus of improvement efforts. The Institute for Safe Medical Practices Canada reports that approximately 10 per cent of serious adverse drug events occur as a result of flawed communication." P.14

[26] Leape and Berwick

[27] Katzenback & Smith: "In any situation requiring the real-time combination of multiple skills, experiences, and judgments, a team invariably gets better results than a collection of individuals operating within confined job roles and responsibilities. Teams are more flexible than larger organizational groupings because they can be more quickly assembled, deployed, refocused, and disbanded, usually in ways that enhance rather than disrupt more permanent structures and processes. [When a clear performance objective is defined] "[t]eams are more productive than groups that have not clear performance objectives because their members are committed to deliver tangible performance results. P15 "Teams naturally integrate performance and learning. By translating longer-term purposes into definable performance goals and then developing the skills needed to meet those goals, learning not only occurs but endures. P5

[28] 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

[29] Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (Eds)

[30] 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.

[31] Leape & Berwick

[32] 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.

[33] Leape & Berwick

[34] Missouri Commission on Patient Safety

[35] Wong & Beglaryan

[36] 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

[37] 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

[38] Leape & Berwick

[39] Morey, Simon, Jay, et al.

[40] 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

[41] 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

[42] Many of the pros were derived from Welsh, Frost, & Weepie

[43] Drawn from Leape & Berwick