TAHOE FOREST HOSPITAL DISTRICT

2021-02-09 Board Quality Committee Meeting

Tuesday, February 9, 2021 at 12:00 p.m.

Pursuant to Section 3 of Executive Order N-29-20, issued by Governor Newsom on March 17, 2020, the Boa
Quality Committee meeting for February 9, 2021 will be conducted telephonically through Zoom.

Please be advised that pursuant to the Executive Order, and to ensure the health and safety of the public b
limiting human contact that could spread the COVID-19 virus, the Eskridge Conference Room will not be ope
for the meeting.

Board Committee Members will be participating telephonically and will not be physically present in the
Eskridge Conference Room.

If you would like to speak on an agenda item, you can access the meeting remotely: Please use this web lin
https://tfhd.zoom.us/j/96153750095

If you prefer to use your phone, you may call in using the numbers: (346) 248 7799 or (301) 715 8592, Meeti
ID: 961 5375 0095

Meeting Book - 2021-02-09 Board Quality Committee Meeting

02/09/2021 Board Quality Committee

TAHOE
FOREST
HOSPITAL
DISTRICT

QUALITY COMMITTEE
AGENDA

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Public comment will also be accepted by email to mrochefort@tfhd.com. Please list the item number you wish to comment on and submit your written comments 24 hours prior to the start of the meeting.

Oral public comments will be subject to the three-minute time limitation (approximately 350 words). Written comments will be distributed to the board prior to the meeting but not read at the meeting.

1. **CALL TO ORDER**

2. **ROLL CALL**
    Michael McGarry, Chair; Alyce Wong, RN, Board Member

3. **CLEAR THE AGENDA/ITEMS NOT ON THE POSTED AGENDA**

4. **INPUT – AUDIENCE**
    This is an opportunity for members of the public to address the Committee on items which are not on the agenda. Please state your name for the record. Comments are limited to three minutes. Written comments should be submitted to the Board Clerk 24 hours prior to the meeting to allow for distribution. Under Government Code Section 54954.2 – Brown Act, the Committee cannot take action on any item not on the agenda. The Committee may choose to acknowledge the comment or, where appropriate, briefly answer a question, refer the matter to staff, or set the item for discussion at a future meeting.

5. **APPROVAL OF MINUTES OF: 11/12/2020** ....ATTACHMENT

6. **ITEMS FOR COMMITTEE DISCUSSION AND/OR RECOMMENDATION**
    6.1. **Safety First**
    6.2. **Patient & Family Centered Care**
        6.2.1. **Patient & Family Advisory Council (PFAC) Update** ....ATTACHMENT
            An update will be provided related to the activities of the Patient and Family Advisory Council (PFAC).

6.3. Patient Safety

   6.3.1. BETA HEART Program Progress Report..**ATTACHMENT**
   Quality Committee will receive a progress report regarding the BETA Healthcare Group
   Culture of Safety program.

6.4. Quality Assurance/Process Improvement Plan (QA/PI)
   Quality Committee will discuss recommendations for QA/PI 2021 Priorities.

6.5. Governance of Quality Assessment (GQA) Tool ....**ATTACHMENT**
   Committee will review the assessment tool and discuss status of 30 core processes the board
   should perform to effectively oversee quality.
   Framework for Effective Board Governance of Health System Quality (2018). Daley Ullem E,
   Gandhi TK, Mate K, Whittington J, Renton M, Huebner J. Boston, Massachusetts: Institute for
   Healthcare Improvement.

6.6. Board Quality Education
   Committee will discuss the following educational article:

   6.6.1. *Aviation and healthcare: a comparative review with implication for patient safety*
   ..ATTACHMENT
   Kapur, N., Parand, A., Soukup, T., Reader, T., & Sevdalis, N. (2015). Aviation and healthcare: a
   comparative review with implications for patient safety. *JRSM open*, *7*(1),
   2054270415616548. https://doi.org/10.1177/2054270415616548

7.   REVIEW FOLLOW UP ITEMS / BOARD MEETING RECOMMENDATIONS

8.   NEXT MEETING DATE
   The next committee date and time will be confirmed.

9.   ADJOURN

TAHOE
FOREST
HOSPITAL
DISTRICT

QUALITY COMMITTEE
DRAFT MINUTES

Thursday, November 12, 2020 at 9:00 a.m.

Pursuant to Section 3 of Executive Order N-29-20, issued by Governor Newsom on March 17, 2020, the Board Quality Committee meeting for November 12, 2020 will be conducted telephonically through Zoom. Please be advised that pursuant to the Executive Order, and to ensure the health and safety of the public by limiting human contact that could spread the COVID-19 virus, the Eskridge Conference Room will not be open for the meeting. Board Committee Members will be participating telephonically and will not be physically present in the Eskridge Conference Room.

1.   CALL TO ORDER
Meeting was called to order at 9:00 a.m.

2.   ROLL CALL
Board: Mary Brown, Chair; Alyce Wong, RN, Board Member

Staff in attendance: Judy Newland, Chief Operating Officer; Harry Weis, President & Chief Executive Officer; Karen Baffone, Chief Nursing Officer; Crystal Betts, Chief Financial Officer; Alex MacLennan, Chief Human Resources Officer; Lorna Tirman, Patient Experience Specialist; Hilary Ward, Pharmacist; Todd Johnson, Risk Manger & Patient Safety Officer; Dorothy Piper, Director of Medical Staff Services; Martina Rochefort, Clerk of the Board

3.   CLEAR THE AGENDA/ITEMS NOT ON THE POSTED AGENDA
Item 6.4. to present after 6.2.1.

4.   INPUT – AUDIENCE
No public comment was received.

5.   APPROVAL OF MINUTES OF: 08/18/2020
Director Wong moved to approve the Board Quality Committee meeting minutes of August 18, 2020, seconded by Director Brown.

6.   ITEMS FOR COMMITTEE DISCUSSION AND/OR RECOMMENDATION
6.1. Safety First
Dr. Shawni Coll, Chief Medical Officer, provided a Safety First on a reminder to wear masks, eye protection and handwashing during the uptick in COVID cases.

6.2. Patient & Family Centered Care
6.2.1. Patient Experience Presentation
Patients shared their experience with the discharge process during COVID restrictions. Discussion was held.

Item 6.4. was presented next.

6.2.2. Patient & Family Advisory Council (PFAC) Update

Lorna Tirman, Patient Experience Specialist, provided an update on the activities of the Patient and Family Advisory Council (PFAC).

Four PFAC 4 members attended a free and virtual conference recently. They were able to come back and report what other PFACs are doing. Everyone returned excited for the new year. One member attended a mental health workshop and saw possibilities of how to engage.

Quality Committee discussed whether or not there was a need to have diverse voices on PFAC. Ms. Tirman is looking into if the Promotora program could be represented on PFAC.

6.3. Patient Safety

6.3.1. BETA HEART Program Progress Report

Quality Committee received a progress report regarding the BETA Healthcare Group Culture of Safety program.

With Dawn's departure, Lorna Tirman will be taking over of BETA HEART Program. The SCORE survey is on schedule to open in February or mid-March. Results will come out in April.

Todd Johnson will still be in charge of rapid response team and early resolution.

TFHS presented last month at the BETA HEART conference.

6.4. High Reliability Team (HRT) Progress Report

Hilary Ward provided an update on the High Reliability Team's activities.

Director Brown asked if the hospital is using it effectively. Ms. Ward stated we continue to work on that but because of COVID a lot of the organization education was put on hold. Ms. Ward will do more outreach to managers and directors on what they can do if there are issues so the organization is aware of resources available.

The beginning of next year will be an opportunity to start the education again with more refined tools.

Director Wong asked if there is there an accreditation the District can receive for High Reliability. Ms. Ward has been speaking with Paul La Sage to learn more about accreditation, what the process is and cost. Accreditation is new for hospitals. We would be first Critical Access Hospital to go through it.

Director Brown asked if Ms. Ward would return and give and update on how high reliability is moving forward.

6.5. Quality Assurance/Process Improvement Plan (QA/PI)

65There have not been any changes on the Quality Assurance/Process Improvement Plan. COO noted the priorities are listed on page 23 of the packet.

This item will be agendized for the February committee meeting.

6.6. Governance of Quality Assessment (GQA) Tool

Framework for Effective Board Governance of Health System Quality (2018). Daley Ullem E, Gandhi TK, Mate K, Whittington J, Renton M, Huebner J. Boston, Massachusetts: Institute for Healthcare Improvement.

The quality assessment tool will remain on the agenda as a reminder that the Quality Committee will focus on education. The committee will score the assessment tool again in 2021 for education purposes and discussion.

6.7. Board Quality Education

Committee discussed the following educational article:

6.7.1. *21st Century CURES Act*

Retrieved on 10/20/20 at: https://www.healthit.gov/cures/sites/default/files/cures/2020-03/InformationBlockingExceptions.pdf

The 21st Century CURES Act Was supposed to go in effect on November 2, 2020 but the government has delayed until April 2021.

Mercy Epic did start the process and have not rolled their efforts back. Any notes (except pathology) are being released to patients and patients are receiving notifications. In April, the District will start auditing when notes are being held.

A California law prohibits the release of a cancer diagnosis in a myChart type of system.

It has been brought up in Medical Executive Committee (MEC) as a burden on the physicians and whether or not physicians will be able to accurately communicate to next physician. There are concerns about documenting accurately without offending patients.

7. REVIEW FOLLOW UP ITEMS / BOARD MEETING RECOMMENDATIONS

-Update on COVID pandemic.
-Receipt of Press Ganey Guardian of Excellence Award.

8. NEXT MEETING DATE

Clerk of the Board will work with Director of Quality on a date for the next committee date and time.

9. ADJOURN

Meeting adjourned at 11:18 a.m.

Patient and Family Advisory Council (PFAC) Summary Report

July 2020 to January 2021

Submitted by: Lorna Tirman, RN, PhD

Patient Experience Specialist

- Some members have shown an interest in serving in other areas of the hospital in addition to the monthly PFAC meetings. Kevin Ward volunteers in the Quality Department tracking our service recovery toolkits. Kevin Ward will also now be serving on our Board Quality Committee, which meets quarterly. Pati Johnson will be serving as a volunteer on our Cancer Committee.

- Meetings focus on improving processes and behaviors to continue to provide the Perfect Care Experience to our community and visitors.

- Plan for 2021 is to continue to review patient feedback and comments from patient experience surveys, help improve quality, safety, and patient experiences. Goals to help educate community on mental health services expand support for community both during and post COVID. Continue to educate community on COVID vaccination, safety as well as access to health care services other than COVID, making sure access is meeting the needs of our community and its growth.

- We agreed to continue to invite departments to PFAC meetings to illicit input where needed, to improve processes or strategies in that specific area.

- At every meeting, an example of a patient complaint is shared, to illicit input on how to best perform service recovery and improve the process so the complaint will not happen again to another patient.

- No meeting in July or August 2020 as per annual PFAC calendar.

- September Meeting: We discussed how important it is to offer FaceTime or calling patient family members during clinic visits or hospital updates to make sure families and patient advocates are kept updated despite not being able to be present in the room with patients. Ken Munsterman, Director of Specialty clinics and the hospitalist service will share this with all providers.

- October Meeting: Harry Weis gave important updates on COVID. Also announced we achieved second place in the "Best Place to Work in Northern Nevada". Lorna to draft article for Pacesetter regarding all caregivers to focus on the importance of communication with patient and family members especially during COVID-19 pandemic.

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- November Meeting: Karyn Grow, Eileen Knudsen, and Natasha Lukasiewich presented to PFAC on increased programs and services for behavioral health patients in the clinics, emergency room, and as outpatients. We will create a one-page flyer that summarizes this information for our community.

- No Meeting in December

- January 2021 meeting: Janet Van Gelder, Jim Sturtevant, and Peter Taylor gave an update on COVID vaccination in the community. Answered questions about availability, safety etc. We also discussed individual PFAC member's goals for 2021, which included completing the flyer on behavioral health services and programs for the community. There was also an interest in continuing to keep community updated on COVID vaccinations as well as how we are billing for COVID patients.   The plan is to identify speakers to come present on these topics at future meetings.

- The Tahoe Forest Hospital Patient and Family Advisory Council meets every month, 9 months in the year. We do not meet July, August, or December.

- Next PFAC Meeting is February 16, 2021.

Current members:

Name of PFAC Volunteer	**Start Date**
1. Doug Wright	2/4/2015
2. Anne Liston	3/9/2016
3. Mary K. Jones	5/17/2017
4. Dr. Jay Shaw	8/11/2017
5. Pati Johnson	3/22/2018
6. Helen Shadowens	5/24/2018
7. Sandy Horn	9/5 /2019
8. Kevin Ward	9/20/2018
9. Parminder Hawkesworth	9/20/2018
10. Violet Nakayama	10/31/2019
11. Alan Kern	2/20/2020

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Beta HEART Progress Report for Year 2021

(Updated January 2021)

Beginning in 2020, Beta Healthcare Group changed their annual Incentive process to be "Annual", meaning that each year the five (5) domains have to be re-validated each year to be eligible for the incentive credit.   General updates for 2021:

- Final workshop was held in mid-October – TFHD presented a disclosure case for all participants
- SCORE Survey for 2020 (year 3 for TFHD) was canceled. Next survey will be February 22- March 15, 2021.
- Lorna Tirman will be taking over as the Beta HEART lead for TFHD effective November 2020.

Domain	History of Incentive Credits (2% annually)	Readiness for next Validation	Goal	Comments
Culture of Safety: A process for measuring safety culture and staff engagement (Lead: Lorna Tirman)	Validated 2019: $13,101 2020: $19,829	100%	Greater than 85% participation in survey	Survey for 2020 canceled – departments continue to work on goals from the 2019 survey. Validated for 2020 SCORE survey for 2021 will be held February 22 to March 15. This will be a topic for the virtual Beta Workshop 1 in February. Currently 17 employees and providers scheduled to attend.
Rapid Event Response and analysis: A formalized process for early identification and rapid response to adverse events that includes an investigatory process that integrates human factors and systems analysis while applying Just Culture principles (Lead: Todd Johnson)	Validated 2020: $19,829	100%	Reinforce education related to timely event reporting and implementation of corrective action items.	Validated for 2020 TFHD incorporates the transparent and timely reporting of safety events to ensure rapid change in providing safer patient care. All investigations utilize "just culture" and high reliability principles, and encourage accountability.
Communication and transparency: A commitment to honest and transparent communication with patients and family members after an adverse event (Lead: Janet Van Gelder)	Validated 2020: $19,829	100%	Reinforce Beta HEART principles through targeted education at meetings, emails, Pacesetter, etc.	Validated for 2020 Disclosure checklist recently updated with Lorna Tirman as one of the primary contacts. This will be a topic for Workshop 2 scheduled April 22-23, 2021.
Care for the Caregiver: An organizational program that ensures support for caregivers involved in an adverse event (Lead: Stephen Hicks)	Validated 2020: $19,829	100%	Proactive support to peers, not just after adverse events	Peer support training for many peer supporters was completed 8/21-22/2020. Validated for 2020 Ongoing training and monthly peer support meetings are being organized by lead, Stephen Hicks. This will be a topic for Workshop 2 scheduled April 22-23, 2021.
Early Resolution: A process for early resolution when harm is deemed the result of inappropriate care or medical error (Lead: Todd Johnson)	Validated 2020: $19,829	100%	"Pacesetter Article" and "Safety Firsts" to enforce the principles of the 5 Domains	Validated for 2020 Early Resolution is the final domain and is only achieved by successfully completing all 4 prior domains. TFHD utilizes the BETA Heart Dashboard to monitor the effectiveness of meeting these goals. Topic for Beta Heart Workshop 3 to be held September 30-Oct.1, 2021

PURPOSE:

The purpose of the Quality Assessment/Performance Improvement (QA/PI) plan is to provide a framework for promoting and sustaining performance improvement at Tahoe Forest Health System, in order to improve the quality of care and enhance organizational performance. The goals are to proactively reduce risk to our patients by eliminating or reducing factors that contribute to unanticipated adverse events and/or outcomes and provide high quality care and services to ensure a perfect care experience for our patients and customers. This will be accomplished through the support and involvement of the Board of Directors, Administration, Medical Staff, Management, and employees, in an environment that fosters collaboration and mutual respect. This collaborative approach supports innovation, data management, performance improvement, proactive risk assessment, commitment to customer satisfaction, and High Reliability tenets to promote and improve awareness of patient safety. Tahoe Forest Health System has an established mission, vision, values statement, and utilizes a foundation of excellence model, which are used to guide all improvement activities.

POLICY:

MISSION STATEMENT

The mission of Tahoe Forest Health System is "*We exist to make a difference in the health of our communities through excellence and compassion in all we do.*"

VISION STATEMENT

The vision of Tahoe Forest Health System is "*To serve our region by striving to be the best mountain health system in the nation.*"

VALUES STATEMENT

Our vision and mission is supported by our values. These include:

   A. Quality – holding ourselves to the highest standards and having personal integrity in all we do.
   B. Understanding – being aware of the concerns of others, caring for and respecting each other as we interact.
   C. Excellence – doing things right the first time, on time, every time; and being accountable and responsible.
   D. Stewardship – being a community steward in the care, handling and responsible management of resources while providing quality health care.
   E. Teamwork – looking out for those we work with, findings ways to support each other in the jobs we do.

FOUNDATIONS OF EXCELLENCE

   A. Our foundation of excellence includes: Quality, Service, People, Finance and Growth.
      1. Quality – provide excellence in clinical outcomes
      2. Service – best place to be cared for
      3. People – best place to work, practice, and volunteer
      4. Finance – provide superior financial performance
      5. Growth – meet the needs of the community

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PERFORMANCE IMPROVEMENT INITIATIVES

A. The 2021 performance improvement priorities are based on the principles of STEEEP^{TM}, (Safe, Timely, Effective, Efficient, Equitable, Patient Centered Care) and the Quadruple Aim:
   1. Improving the patient experience of care (including quality and satisfaction);
   2. Improving the health of populations;
   3. Reducing the per capita cost of health care;
   4. Staff engagement and joy in work.

B. Priorities identified include:
   1. Exceed national benchmark with quality of care and patient satisfaction metric results with a focus on process improvement and performance excellence
      a. Striving for the Perfect Care Experience
      b. Identify and promote best practice and evidence-based medicine
   2. Continued focus on quality and patient/employee safety during the pandemic, following CDC and County Health guidelines, and utilizing the following strategies:
      a. Strengthen the system and environment
      b. Support patient, family, and community engagement and empowerment
      c. Improve clinical care
      d. Reduce harm
      e. Boost and expand the learning system
   3. Ongoing survey readiness, and compliance with federal and state regulations, resulting in a successful triennial General Acute Care Hospital Relicensing (GACHLRS) survey
   4. Sustain a culture of safety, transparency, accountability, and system improvement
      a. Continued participation in Beta HEART (Healing, Empathy, Accountability, Resolution, Trust) program
      b. Conduct annual Culture of Safety SCORE (Safety, Culture, Operational, Reliability, and Engagement) survey
      c. Continued focus on the importance of event reporting
   5. Focus on our culture of safety, across the entire Health System, utilizing High Reliability Organizational thinking
      a. Proactive, not reactive
      b. Focus on building a strong, resilient system
      c. Understand vulnerabilities
      d. Recognize bias
      e. Efficient resource management
      f. Evaluate system based on risk, not rules
   6. Support Patient and Family Centered Care and the Patient and Family Advisory Council
      a. Dignity and Respect: Health care practitioners listen to and honor patient and family perspectives and choices. Patient and family knowledge, values, beliefs and cultural backgrounds are incorporated into the planning and delivery of care.
      b. Information Sharing: Health care practitioners communicate and share complete and unbiased information with patients and families in ways that are affirming and useful. Patients and families receive timely, complete and accurate information in order to effectively participate in care and decision-making.
      c. Participation: Patients and families are encouraged and supported in participating in care and decision-making at the level they choose.
      d. Collaboration: Patients, families, health care practitioners, and health care leaders collaborate in policy and program development, implementation and evaluation; in research; in facility design; and in professional education, as well as in the delivery of care.
   7. Promote lean principles to improve processes, reduce waste, and eliminate inefficiencies
   8. Identify gaps in the Epic electronic health record system upgrade and develop plans of correction

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9. Maximize Epic reporting functionality to improve data capture and identification of areas for improvement

C. Tahoe Forest Health System's vision will be achieved through these strategic priorities and performance improvement initiatives. Each strategic priority is driven by leadership oversight and teams developed to ensure improvement and implementation (Attachment A -- Quality Initiatives).

ORGANIZATION FRAMEWORK

Processes cross many departmental boundaries and performance improvement requires a planned, collaborative effort between all departments, services, and external partners, including third-party payors and other physician groups. Though the responsibilities of this plan are delineated according to common groups, it is recognized that true process improvement and positive outcomes occur only when each individual works cooperatively and collaboratively to achieve improvement.

Governing Board

A. The Board of Directors (BOD) of Tahoe Forest Health System has the ultimate responsibility for the quality of care and services provided throughout the system Attachment B – CAH Services). The BOD assures that a planned and systematic process is in place for measuring, analyzing and improving the quality and safety of the Health System activities.

B. The Board:
1. Delegates the authority for developing, implementing, and maintaining performance improvement activities to Administration, Medical Staff, Management, and employees;
2. Responsible for determining, implementing, and monitoring policies governing the Critical Access Hospital (CAH) and Rural Health Clinic (RHC) total operation and for ensuring that those policies are administered so as to provide quality health care in a safe environment (CMS 485.627(a))
3. Recognizes that performance improvement is a continuous, never-ending process, and therefore they will provide the necessary resources to carry out this philosophy;
4. Provides direction for the organization's improvement activities through the development of strategic initiatives;
5. Evaluates the organization's effectiveness in improving quality through reports from Administration, Department Directors, Medical Executive Committee, and Medical Staff Quality Committee.

Administrative Council

A. Administrative Council creates an environment that promotes the attainment of quality and process improvement through the safe delivery of patient care, quality outcomes, and patient satisfaction. The Administrative Council sets expectations, develops plans, and manages processes to measure, assess, and improve the quality of the Health System's governance, management, clinical and support activities.

B. Administrative Council ensures that clinical contracts contain quality performance indicators to measure the level of care and service provided.

C. Administrative Council has developed a culture of safety by embracing High Reliability tenets and has set behavior expectations for providing Safe, Timely, Effective, Efficient, Equitable, Patient Centered Care (STEEEP^{TM}), supporting Triple Aim, and ensures compliance with regulatory, statutory, and contractual requirements.

Board Quality Committee

The Board Quality Committee is to provide oversight for the Health System QA/PI Plan and set expectations of quality care, patient safety, environmental safety, and performance improvement throughout the organization. The committee will monitor the improvement of care, treatment and services to ensure that it is safe, timely, effective, efficient, equitable and patient-centered. They will oversee and

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be accountable for the organization's participation and performance in national quality measurement efforts, accreditation programs, and subsequent quality improvement activities. The committee will assure the development and implementation of ongoing education focusing on service and performance excellence, risk-reduction/safety enhancement, and healthcare outcomes.

Medical Executive Committee

A. The Medical Executive Committee shares responsibility with the BOD Quality Committee, and the Administrative Council, for the ongoing quality of care and services provided within the Health System.

B. The Medical Executive Committee provides effective mechanisms to monitor, assess, and evaluate the quality and appropriateness of patient care and the medical performance of all individuals with delineated clinical privileges. These mechanisms function under the purview of the Medical Staff Peer Review Process. Consistent with this process, performance improvement opportunities are addressed, and important problems in patient care or safety are identified and resolved.

C. The Medical Executive Committee delegates the oversight authority for performance improvement activity monitoring, assessment, and evaluation of patient care services provided throughout the system to the Medical Staff Quality Committee (MS QAC).

Department Chairs of the Medical Staff

A. The Department Chairs:
1. Provide a communications channel to the Medical Executive Committee;
2. Monitor Ongoing Professional Performance Evaluation (OPPE) and Focused Professional Performance Evaluation (FPPE) and make recommendations regarding reappointment based on data regarding quality of care;
3. Maintain all duties outlined by appropriate accrediting bodies.

Medical Staff

A. The Medical Staff is expected to participate and support performance improvement activities.

B. The Medical Staff provides effective mechanisms to monitor, assess, and evaluate the quality and appropriateness of patient care and the clinical performance of all individuals with delineated clinical privileges. These mechanisms are under the purview of the Medical Staff peer review process. Consistent with this process, performance improvement opportunities are addressed, and important problems in patient care or safety are identified and resolved. Annually, the Departments will determine critical indicators/performance measures consistent with strategic and performance improvement priorities and guidelines.

C. The Medical Director of Quality provides physician leadership that creates a vision and direction for clinical quality and patient safety throughout the Health System. The Director, in conjunction with the Medical Staff and Health System leaders, directs and coordinates quality, patient safety, and performance improvement initiatives to enhance the quality of care provided to our patients. The Director communicates patient safety, best practices, and process improvement activities to the Medical Staff and engages them in improvement activities. The Director chairs the Medical Staff Quality Committee.

Hospital Management (Directors, Managers, and Supervisors)

A. Management is responsible for ongoing performance improvement activities in their departments and for supporting teams chartered by the Medical Staff Quality Committee. Many of these activities will interface with other departments and the Medical Staff. They are expected to do the following:
1. Foster an environment of collaboration and open communication with both internal and external customers;
2. Participate and guide staff to focus on patient safety, patient and family centered care, service recovery, and patient satisfaction;
3. Advance the philosophy of High Reliability within their departments;
4. Utilize Lean principles and DMAIC (Define, Measure, Analyze, Improve, Control) process

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improvement activities for department-specific performance improvement initiatives;

5. Establish performance and patient safety improvement activities in conjunction with other departments;
6. Encourage staff to report any and all reportable events including "near-misses";
7. Participate in the investigation and determination of the causes that underlie a "near-miss" / Sentinel/Adverse Event/Error or Unanticipated Outcome and implement changes to reduce the probability of such events in the future.

Employees

A. The role of the individual employee is critical to the success of a performance improvement initiative. Quality is everyone's responsibility and each employee is charged with practicing and supporting the Standards of Business Conduct: Health System Code of Conduct and Chain of Command for Medical Care Issues policies. All employees must feel empowered to report, correct, and prevent problems.
B. The Nursing Leadership Council consist of Registered Nurses from each service area. This Council is an integral part of reviewing QA/PI data, evaluating processes, providing recommendations, and communicating their findings with peers to improve nursing practice.
C. Employees are expected to do the following:
1. Contribute to improvement efforts, including reporting Sentinel/Adverse Event/Error or Unanticipated Outcomes, to produce positive outcomes for the patient and ensure the perfect care experience for patients and customers;
2. Make suggestions/recommendations for opportunities of improvement or for a cross-functional team, including risk reduction recommendations and suggestions for improving patient safety, by contacting their Director or Manager, the Director of Quality and Regulations, the Medical Director of Quality, or an Administrative Council Member.

PERFORMANCE IMPROVEMENT STRUCTURE

Medical Staff Quality Assessment Committee

With designated authority from the Medical Executive Committee, the Medical Staff Quality Assessment Committee (MS QAC) is responsible for prioritizing the performance improvement activities in the organization, chartering cross-functional teams, improving processes within the Health System, and supporting the efforts of all performance improvement activities. The MS QAC is an interdisciplinary committee led by the Medical Director of Quality. The committee has representatives from each Medical Staff department, Health System leadership, nursing, ancillary and support services ad hoc. Meetings are held at least quarterly each year. The Medical Director of Quality, Chief Medical Officer, and the Vice Chief of Staff are members of the Board of Director's Quality Committee.

The Medical Staff Quality Assessment Committee:

A. Annually review and approve the Medication Error Reduction Plan (MERP), Infection Control Plan, Environment of Care Management Program, Utilization Review Plan, Risk Management Plan, Trauma Performance Improvement Plan, and the Patient Safety Plan.
B. Regularly reviews progress to the aforementioned plans.
C. Reviews quarterly quality indicators to evaluate patient care and delivery of services and takes appropriate actions based on patient and process outcomes;
D. Reviews recommendations for performance improvement activities based on patterns and trends identified by the proactive risk reduction programs and from the various Health System committees;
E. Elicits and clarifies suspected or identified problems in the provision of service, quality, or safety standards that may require further investigation;
F. Reviews and approves chartered Performance Improvement Teams as recommended by the

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Performance Improvement Committee (PIC). Not all performance improvement efforts require a chartered team;

G. Reviews progress reports from chartered teams and assists to address and overcome identified barriers;

H. Reviews summaries and recommendations of Event Analysis/Root Cause Analysis (RCA) and Failure Mode Effects Analysis (FMEA) activities.

I. Oversees the radiation safety program, including nuclear medicine and radiation oncology and evaluates the services provided and make recommendations to the MEC.

J. Oversees the Trauma Program and monitors compliance with the Trauma Performance Improvement plan.

Performance Improvement Committee (PIC)

A. Medical Staff Quality Assessment Committee provides direct oversight for the PIC. PIC is an executive committee with departmental representatives within the Tahoe Forest Health System, presenting their QA/PI findings as assigned. The goal of this committee is to achieve optimal patient outcomes by making sure that all staff participate in performance improvement activities. Departmental Directors, or their designee, review assigned quality metrics biannually at the PIC (See Attachment C – QA PI Reporting Measures). Performance improvement includes collecting data, analyzing the data, and taking action to improve. Director of Quality and Regulations is responsible for processes related to this committee.

B. The Performance Improvement Committee will:
1. Oversee the Performance Improvement activities of TFHS including data collection, data analysis, improvement, and communication to stakeholders
2. Set performance improvement priorities and provide the resources to achieve improvement
3. Reviews requests for chartered Performance Improvement Teams. Requests for teams may come from committees, department or individual employees. Not all performance improvement efforts require a chartered team;
4. Report the committee's activities quarterly to the Medical Staff Quality Committee.

SCIENTIFIC METHOD FOR IMPROVEMENT ACTIVITIES

Tahoe Forest Health System utilizes DMAIC Rapid Cycle Teams (Define, Measure, Analyze, Improve, Control). The Administrative Council, Director of Quality & Regulations, or the Medical Staff Quality Committee charter formal cross-functional teams to improve current processes and design new services, while each department utilizes tools and techniques to address opportunities for improvement within their individual areas.

Performance Improvement Teams

A. Teams are cross-functional and multidisciplinary in nature. The priority and type of team are based on the strategic initiatives of the organization, with regard to high risk, high volume, problem prone, and low volume.

B. Performance Improvement Teams will:
1. Follow the approved team charter as defined by the Administrative Council Members, or MS QAC
2. Establish specific, measurable goals and monitoring for identified initiatives
3. Utilize lean principles to improve processes, reduce waste, and eliminate inefficiencies
4. Report their findings and recommendations to key stakeholders, PIC, and the MS QAC.

PERFORMANCE IMPROVEMENT

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EDUCATION

A. Training and education are essential to promote a culture of quality within the Tahoe Forest Health System. All employees and Medical Staff receive education about performance improvement upon initial orientation. Employees and Medical Staff receive additional annual training on various topics related to performance improvement.

B. A select group of employees have received specialized facilitator training in using the DMAIC rapid cycle process improvement and utilizing statistical data tools for performance improvement. These facilitators may be assigned to chartered teams at the discretion of the PIC, MS QAC and Administrative Council Members. Staff trained and qualified in Lean/Six Sigma will facilitate the chartering, implementation, and control of enterprise level projects.

C. Team members receive "just-in-time" training as needed, prior to team formation to ensure proper quality tools and techniques are utilized throughout the team's journey in process improvement.

D. Annual evaluation of the performance improvement program will include an assessment of needs to target future educational programs. The Director of Quality and Regulations is responsible for this evaluation.

PERFORMANCE IMPROVEMENT PRIORITIES

A. The QA PI program is an ongoing, data driven program that demonstrates measurable improvement in patient health outcomes, improves patient safety by using quality indicators or performance improvement measures associated with improved health outcomes, and by the identification and reduction of medical errors.

B. Improvement activities must be data driven, outcome based, and updated annually. Careful planning, testing of solutions and measuring how a solution affects the process will lead to sustained improvement or process redesign. Improvement priorities are based on the mission, vision, and strategic plan for Tahoe Forest Health System. During planning, the following are given priority consideration:
   1. Processes that are high risk, high volume, or problem prone areas with a focus on the incidence, prevalence, and severity of problems in those areas
   2. Processes that affect health outcomes, patient safety, and quality of care
   3. Processes related to patient advocacy and the perfect care experience
   4. Processes related to the National Quality Forum (NQF) Endorsed Set of Safe Practices
   5. Processes related to patient flow
   6. Processes associated with near miss Sentinel/Adverse Event/Error or Unanticipated Outcome

C. Because Tahoe Forest Health System is sensitive to the ever changing needs of the organization, priorities may be changed or re-prioritized due to:
   1. Identified needs from data collection and analysis
   2. Unanticipated adverse occurrences affecting patients
   3. Processes identified as error prone or high risk regarding patient safety
   4. Processes identified by proactive risk assessment
   5. Changing regulatory requirements
   6. Significant needs of patients and/or staff
   7. Changes in the environment of care
   8. Changes in the community

DESIGNING NEW AND MODIFIED

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PROCESSES/FUNCTIONS/SERVICES

A. Tahoe Forest Health System designs and modifies processes, functions, and services with quality in mind. When designing or modifying a new process the following steps are taken:
1. Key individuals, who will own the process when it is completed, are assigned to a team led by the responsible individual.
2. An external consultant is utilized to provide technical support, when needed.
3. The design team develops or modifies the process utilizing information from the following concepts:
   a. It is consistent with our mission, vision, values, and strategic priorities and meets the needs of individual served, staff and others
   b. It is clinically sound and current
   c. Current knowledge when available and relevant, i.e., practice guidelines, successful practices, information from relevant literature and clinical standards
   d. It is consistent with sound business practices
   e. It incorporates available information and/or literature from within the organization and from other organizations about potential risks to patients, including the occurrence of sentinel/near-miss events, in order to minimize risks to patients affected by the new or redesigned process, function, or service
   f. Conducts an analysis, and/or pilot testing, to determine whether the proposed design/redesign is an improvement and implements performance improvement activities, based on this pilot
   g. It incorporates the results of performance improvement activities
   h. It incorporates consideration of staffing effectiveness
   i. It incorporates consideration of patient safety issues
   j. It incorporates consideration of patient flow issues
4. Performance expectations are established, measured, and monitored. These measures may be developed internally or may be selected from an external system or source. The measures are selected utilizing the following criteria:
   a. They can identify the events it is intended to identify
   b. They have a documented numerator and denominator or description of the population to which it is applicable
   c. They have defined data elements and allowable values
   d. They can detect changes in performance over time
   e. They allow for comparison over time within the organization and between other entities
   f. The data to be collected is available
   g. Results can be reported in a way that is useful to the organization and other interested stakeholders

B. An individual with the appropriate expertise within the organization is assigned the responsibility of developing the new process.

PROACTIVE RISK ASSESSMENTS

A. Risk assessments are conducted to proactively evaluate the impact of buildings, grounds, equipment, occupants, and internal physical systems on patient and public safety. This includes, but is not limited to, the following:
1. A Failure Effect Mode Analysis (FMEA) will be completed based on the organization's assessment and current trends in the health care industry, and as approved by PIC or the MS QAC.
2. The Medical Staff Quality Committee and other leadership committees will recommend the processes chosen for our proactive risk assessments based on literature, errors and near miss events, sentinel event alerts, and the National Quality Forum (NQF) Endorsed Set of Safe Practices.

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a. The process is assessed to identify steps that may cause undesirable variations, or "failure modes".
b. For each identified failure mode, the possible effects, including the seriousness of the effects on the patient are identified and the potential breakdowns for failures will be prioritized.
c. Potential risk points in the process will be closely analyzed, including decision points and patient's moving from one level of care to another through the continuum of care.
d. For the effects on the patient that are determined to be "critical", an event analysis/root cause analysis is conducted to determine why the effect may occur.
e. The process will then be redesigned to reduce the risk of these failure modes occurring or to protect the patient from the effects of the failure modes.
f. The redesigned process will be tested and then implemented. Performance measurements will be developed to measure the effectiveness of the new process.
g. Strategies for maintaining the effectiveness of the redesigned process over time will be implemented.

3. Ongoing hazard surveillance rounds, including Environment of Care Rounds and departmental safety hazard inspections, are conducted to identify any trends and to provide a comprehensive ongoing surveillance program.
4. The Environment of Care Safety Officer and EOC/Safety Committee review trends and incidents related to the Safety Management Plans. The EOC Safety Committee provides guidance to all departments regarding safety issues.
5. The Infection Preventionist and Environment of Care Safety Officer, or designee, complete a written infection control and preconstruction risk assessment for interim life safety for new construction or renovation projects.

DATA COLLECTION

A. Tahoe Forest Health System chooses processes and outcomes to monitor based on the mission and scope of care and services provided and populations served. The goal is 100% compliance with each identified quality metric. Data that the organization considers for the purpose of monitoring performance includes, but is not limited to, adverse patient events, which includes the following:
1. Medication therapy
2. Adverse event reports
3. National Quality forum patient safety indicators
4. Infection control surveillance and reporting
5. Surgical/invasive and manipulative procedures
6. Blood product usage, including transfusions and transfusion reactions
7. Data management
8. Discharge planning
9. Utilization management
10. Complaints and grievances
11. Restraints/seclusion use
12. Mortality review
13. Medical errors including medication, surgical, and diagnostic errors; equipment failures, infections, blood transfusion related injuries, and deaths due to seclusion or restraints
14. Needs, expectations, and satisfaction of individuals and organizations served, including:
    a. Their specific needs and expectations
    b. Their perceptions of how well the organization meets these needs and expectations
    c. How the organization can improve patient safety?
    d. The effectiveness of pain management
15. Resuscitation and critical incident debriefings
16. Unplanned patient transfers/admissions

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17. Medical record reviews
18. Performance measures from acceptable data bases/comparative reports, i.e., RL Datix Event Reporting, Quantros RRM, NDNQI, HCAHPS, Hospital Compare, QHi, CAHEN 2.0, and Press Ganey
19. Summaries of performance improvement actions and actions to reduce risks to patients

B. In addition, the following clinical and administrative data is aggregated and analyzed to support patient care and operations:
1. Quality measures delineated in clinical contracts will be reviewed annually
2. Pharmacy transactions as required by law and to control and account for all drugs
3. Information about hazards and safety practices used to identify safety management issues to be addressed by the organization
4. Records of radio nuclides and radiopharmaceuticals, including the radionuclide's identity, the date received, method of receipt, activity, recipient's identity, date administered, and disposal
5. Reports of required reporting to federal, state, authorities
6. Performance measures of processes and outcomes, including measures outlined in clinical contracts

C. These data are reviewed regularly by the PIC, MSQAC, and the BOD with a goal of 100% compliance. The review focuses on any identified outlier and the plan of correction.

AGGREGATION AND ANALYSIS OF DATA

A. Tahoe Forest Health System believes that excellent data management and analysis are essential to an effective performance improvement initiative. Statistical tools are used to analyze and display data. These tools consist of dashboards, bar graphs, pie charts, run charts (SPC), histograms, Pareto charts, control charts, fishbone diagrams, and other tools as appropriate. All performance improvement teams and activities must be data driven and outcome based. The analysis includes comparing data within our organization, with other comparable organizations, with published regulatory standards, and best practices. Data is aggregated and analyzed within a time frame appropriate to the process or area of study. Data will also be analyzed to identify system changes that will help improve patient safety and promote a perfect care experience (See Attachment D for QI PI Indicator definitions).

B. The data is used to monitor the effectiveness and safety of services and quality of care. The data analysis identifies opportunities for process improvement and changes in patient care processes. Adverse patient events are analyzed to identify the cause, implement process improvement and preventative strategies, and ensure that improvements are sustained over time.

C. Data is analyzed in many ways including:
1. Using appropriate performance improvement problem solving tools
2. Making internal comparisons of the performance of processes and outcomes over time
3. Comparing performance data about the processes with information from up-to-date sources
4. Comparing performance data about the processes and outcomes to other hospitals and reference databases

D. Intensive analysis is completed for:
1. Levels of performance, patterns or trends that vary significantly and undesirably from what was expected
2. Significant and undesirable performance variations from the performance of other operations
3. Significant and undesirable performance variations from recognized standards
4. A sentinel event which has occurred (see Sentinel Event Policy)
5. Variations which have occurred in the performance of processes that affect patient safety
6. Hazardous conditions which would place patients at risk
7. The occurrence of an undesirable variation which changes priorities

E. The following events will automatically result in intense analysis:
1. Significant confirmed transfusion reactions

2. Significant adverse drug reactions
3. Significant medication errors
4. All major discrepancies between preoperative and postoperative diagnosis
5. Adverse events or patterns related to the use of sedation or anesthesia
6. Hazardous conditions that significantly increase the likelihood of a serious adverse outcome
7. Staffing effectiveness issues
8. Deaths associated with a hospital acquired infection
9. Core measure data, that over two or more consecutive quarters for the same measure, identify the hospital as a negative outlier

REPORTING

A. Results of the outcomes of performance improvement and patient safety activities identified through data collection and analysis, performed by medical staff, ancillary, and nursing services, in addition to outcomes of performance improvement teams, will be reported to the MS QAC annually.
B. Results of the appraisal of performance measures outlined in clinical contracts will be reported to the MS QAC annually.
C. The MS QAC will provide their analysis of the quality of patient care and services to the Medical Executive Committee on a quarterly basis.
D. The Medical Executive Committee, Quality Medical Director, or the Director of Quality & Regulations will report to the BOD at least quarterly relevant findings from all performance improvement activities performed throughout the System.
E. Tahoe Forest Health System also recognizes the importance of collaborating with state agencies to improve patient outcomes and reduce risks to patients by participating in quality reporting initiatives (See Attachment E for External Reporting listing).

CONFIDENTIALITY AND CONFLICT OF INTEREST

A. All communication and documentation regarding performance improvement activities will be maintained in a confidential manner. Any information collected by any Medical Staff Department or Committee, the Administrative Council, or Health System department in order to evaluate the quality of patient care, is to be held in the strictest confidence, and is to be carefully safeguarded against unauthorized disclosure.

B. Access to peer review information is limited to review by the Medical Staff and its designated committees and is confidential and privileged. No member of the Medical Staff shall participate in the review process of any case in which he/she was professionally involved unless specifically requested to participate in the review. All information related to performance improvement activities performed by the Medical Staff or Health System staff in accordance with this plan is confidential and are protected by disclosure and discoverability through California Evidence Code 1156 and 1157.

ANNUAL ASSESSMENT

A. The Critical Access Hospital (CAH) and Rural Health Clinic (RHC) Quality Assessment Performance Improvement program and the objective, structure, methodologies, and results of performance improvement activities will be evaluated at least annually (CMS485.641(b)(1)).
B. The evaluation includes a review of patient care and patient related services, infection control, medication administration, medical care, and the Medical Staff. More specifically, the evaluation includes a review of the utilization of services (including at least the number of patients served

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and volume of services), chart review (a representative sample of both active and closed clinical records), and the Health System policies addressing provision of services.

C. The purpose of the evaluation is to determine whether the utilization of services is appropriate, policies are followed, and needed changes are identified. The findings of the evaluation and corrective actions, if necessary, are reviewed. The Quality Assessment program evaluates the quality and appropriateness of diagnoses, treatments furnished, and treatment outcomes.

D. An annual report summarizing the improvement activities and the assessment will be submitted to the Medical Staff Quality Committee, the Medical Executive Committee, and the Board of Directors.

PLAN APPROVAL

Quality Assessment Performance Improvement Plan will be reviewed, updated, and approved annually by the Medical Staff Quality Committee, the Medical Executive Committee, and the Board of Directors.

Related Policies/Forms:

Medication Error Reduction Plan, APH-34

Medication Error Reporting, APH-24

Infection Control Plan, AIPC-64

Environment of Care Management Program, AEOC-908

Utilization Review Plan (UR), DCM-1701

Risk Management Plan , AQPI-04

Patient Safety Plan, AQPI-02

Emergency Operations Plan (Comprehensive), AEOC-17

Employee Health Plan, DEH-39

Trauma Performance Improvement Plan

Discharge Planning, ANS-238

References:

HFAP and CMS

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Framework for Effective Board Governance of Health System Quality

Content provided by:

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For more than 25 years, the Institute for Healthcare Improvement (IHI) has used improvement science to advance and sustain better outcomes in health and health systems across the world. We bring awareness of safety and quality to millions, accelerate learning and the systematic improvement of care, develop solutions to previously intractable challenges, and mobilize health systems, communities, regions, and nations to reduce harm and deaths. We work in collaboration with the growing IHI community to spark bold, inventive ways to improve the health of individuals and populations. We generate optimism, harvest fresh ideas, and support anyone, anywhere who wants to profoundly change health and health care for the better.

The ideas and findings in these white papers represent innovative work by IHI and organizations with whom we collaborate. Our white papers are designed to share the problems IHI is working to address, the ideas we are developing and testing to help organizations make breakthrough improvements, and early results where they exist.

Contents

Executive Summary

The Institute of Medicine (IOM) reports *To Err Is Human* and *Crossing the Quality Chasm* prompted health care leaders to address the patient safety crisis and advance the systems, teamwork, and improvement science needed to deliver safer care to patients.[1,2] Following the IOM reports, research on health care governance practices identified a correlation between health system board prioritization of quality oversight and higher performance on key quality indicators.[3,4,5,6,7] Quality oversight by a board has been shown to correlate with patient outcomes on key quality metrics, and boards that prioritize quality support a leadership commitment to quality and the incentives and oversight to achieve the quality care that patients deserve.

Two main evolutions have made governing quality more complex for trustees and the health system leaders who support them:

- The definition of "quality" has evolved and expanded over the last decade, from a singular focus on safety to an expanded focus on all six dimensions of quality as identified in the *Crossing the Quality Chasm* report.

- The expansion of health systems beyond hospital walls and the addition of population health oversight have created complexity both in terms of *what* to govern to support high-quality care and *how* to oversee quality outside of the traditional hospital setting and across the health care continuum.

Many health system leaders have worked to ensure that their trustees are sufficiently prepared to oversee quality, but the two factors noted above have increased the need for board education and the time commitment for trustees and the health system senior leaders who support them. Therefore, there is a need for a clear, actionable framework for better governance of quality across all dimensions, including identification of the core processes and necessary activities for effective governance of quality.

Ultimately, the most valuable resource of a board is time — both in terms of how much time they allocate and how they use it — to engage in oversight of the various areas of governance. To help health system leaders and boards use their governance time most effectively, this white paper includes three components:

- **Framework for Governance of Health System Quality:** A clear, actionable framework for oversight of all the dimensions of quality;

- **Governance of Quality Assessment:** A tool for trustees and health system leaders to evaluate and score current quality oversight processes and assess progress in improving board quality oversight over time; and

- **Three Support Guides:** Three central knowledge area support guides for governance of quality (Core Quality Knowledge, Core Improvement System Knowledge, and Board Culture and Commitment to Quality), which health system leaders and governance educators can use to advance their education for trustees.

The framework, assessment tool, and support guides aim to reduce variation in and clarify trustee responsibilities for quality oversight, and also serve as practical tools for trustees and the health system leaders who support them to govern quality in a way that will deliver better care to patients and communities.

Background

Research on health care governance practices has identified a correlation between health system board prioritization of quality oversight and higher performance on key quality indicators.[8,9,10,11,12] However, guidance and practices for board oversight of the dimensions of quality beyond safety are highly variable across health systems. Health system leaders and trustees are looking for greater depth and clarity on what they should do to fulfill their oversight of quality. Governance of quality is a long-overlooked and underutilized lever to deliver better care across all the dimensions of quality.

What to Govern as Quality: Expanding from Safety to STEEEP

The IOM report *Crossing the Quality Chasm* established six aims for improvement, a framework for health care quality in the US: care that is safe, timely, effective, efficient, equitable, and patient centered (STEEEP).[13] Safety is an essential component of quality, and health leaders have become more consistent in the governance of the elements of safety (though many health systems still do not dedicate enough time to quality or are quick to push it to the bottom of the agenda).

Yet governance of the other STEEEP dimensions of quality beyond safety is significantly more variable, providing an opportunity for greater clarity and calibration across the health care organizations and leaders that guide governance of quality. Health system leaders and trustees struggle with whether to govern a narrow definition of quality, driven by metrics defined by the Centers for Medicare & Medicaid Services (CMS) or national oversight organizations, versus governing quality's broader dimensions as put forth in the IOM STEEEP framework.

What to Govern as Quality: Expansion and Complexity of Health Systems

Health care leaders now look beyond the hospital walls to the entire system of care and to social and community factors that impact health outcomes. Thus, health system quality has expanded to include improving the health of communities and reducing the cost of health care and the financial burden facing patients. As health care is increasingly delivered in a range of settings beyond the hospital, from outpatient clinics to the home, leaders and trustees are challenged to define and govern quality in these settings.

The nationwide shift in US health care from standalone and community hospitals to larger, integrated care delivery systems has further increased the knowledge required for trustees to fulfill their fiduciary responsibility of governing quality. Finally, by tying revenue to quality performance, many payment models now add executive financial incentives to governance of quality. Health leaders have struggled to frame governance of quality in the context of the expansion and complexity of both single institutions and health systems.

Call to Action

In the 2017 report, *Leading a Culture of Safety: A Blueprint for Success,* board development and engagement was highlighted as one of the "six leadership domains that require CEO focus and dedication to develop and sustain a culture of safety."[14] According to the report, "The board is responsible for making sure the correct oversight is in place, that quality and safety data are

systematically reviewed, and that safety receives appropriate attention as a standing agenda item at all meetings."

Building on this report, the Institute for Healthcare Improvement (IHI) Lucian Leape Institute identified a need for greater understanding of the current state of governance of quality, education on quality for health system trustees, along with the potential need for guidance and tools to support governance oversight of quality. The IHI Lucian Leape Institute understood the importance of developing this forward-thinking and cutting-edge content collaboratively with leading governance organizations and making it available as a public good for all health systems to access and incorporate in a way that would be most helpful to them.

Assessment of Current Governance Practices and Education

To evaluate the current state of board governance of quality, IHI employed its 90-day innovation process.[15] This work included the following:

- **A landscape scan** to understand the current state of governance education offerings and challenges in quality, drawing on national and state trustee education programs. This scan included more than 50 interviews with governance experts, health system leaders, and trustees; and a review of available trustee guides and assessments for governance of quality.

- **A scan of existing peer-reviewed research** on board quality governance practices and the link between board practices and quality outcomes for health systems.

- **An expert meeting** (see Appendix B) attended by health care and governance experts. The meeting provided critical insights and guidance for the work, including the development of a framework for effective governance of health system quality. This group of thought leaders included representatives from the American Hospital Association (AHA), the American College of Healthcare Executives (ACHE), The Governance Institute, leading state hospital associations, health system CEOs and trustees, and national governance and health care quality experts.

Research and Landscape Scan Highlights

(Note: An in-depth assessment of the current state of board governance of quality and trustee education in support of quality is available in the companion document to this white paper, *Research Summary: Effective Board Governance of Health System Quality*.[16])

The IHI Lucian Leape Institute's research scan, evaluation of governance education in quality, and expert interviews indicated that most trustee education on governance of quality focuses primarily on safety, meaning that such education often does not prepare trustees for governing the other dimensions of quality as defined by the STEEEP framework and the IHI Triple Aim,[17] which also considers population health and health care cost. In the boardroom, quality is often a lower priority than financial oversight. Epstein and Jha found that "quality performance was on the agenda at every board meeting in 63 percent of US hospitals, and financial performance was always on the agenda in 93 percent of hospitals."[18]

Our interviews indicated that the financial and cultural implications of poor quality of care are not often formally considered, noting a difference between putting quality on a board meeting agenda and having a dedicated discussion about quality. Many trustees, while motivated to ensure high-quality care, lack a clear understanding of the necessary activities for effective quality oversight

(the "what" and "how" of their governance work); IHI's research identified the need for more direction on the core processes for governance of quality.[19] Some trustees noted that they were at the mercy of the quality data and information presented to them by their organization's leadership team; they lacked ways of confirming that their quality work was aligned with work at other leading health care organizations and industry best practice.

Health care leaders observed that the many guides and assessments they referenced often had varying recommendations for core governance activities on quality, especially for dimensions of quality beyond safety. We analyzed the available board guides or tools for board members and hospital leaders to evaluate their quality governance activities. The review of existing assessments from national and state governance support organizations identified that many focus on board prioritization of quality in terms of time spent and trustee "commitment" to governance based on a trustee self-assessment. Many assessments offer specific recommendations for key processes to oversee safety, such as reviewing serious events and key safety metrics in a dashboard. However, most assessments offer more variable guidance on the core processes to govern the STEEEP dimensions of quality beyond safety, quality outside of the hospital setting, and overall health in the communities the health systems serve.

With so many assessments and guidance recommending different processes and activities, it is not surprising that those who support trustees struggle to clearly define the core work of board quality oversight. Trustees and health care leaders alike identified a need for a simple framework that sets forth the activities that boards need to perform in their oversight of quality and for calibration across governance support organizations to support a simple, consistent framework.

Barriers to Governance of Quality

The IHI research team sought to understand and identify ways to address the many barriers to governance of quality identified in interviews and the published literature. The most common barrier identified was trustees' available time to contribute to a volunteer board. Often, health care leaders and trustees identified that expectations for trustee engagement on quality issues are not presented with the same clarity and priority as financial and philanthropic expectations for governance. Many interviewees noted that trustees are less confident in the governance of quality because of its clinical nature, which, in many cases, necessitates learning new terminology and absorbing concepts unfamiliar to trustees without a clinical background.

Many trustees and health care leaders we interviewed identified the CEO as the "gatekeeper" for the board, stewarding access to external resources and guidelines related to the board's role in health care quality, often not wanting to overwhelm or burden the trustees, given the demands on their time. However, even when the trustees and health care leaders interviewed indicated that they did have dedicated time and commitment to quality, they were not clear as to whether the specific set of processes or activities they currently had in place were the best ones for effective governance of quality.

Based on insights from IHI's research, landscape scan of current guidance on quality oversight, and extensive interviews, a new framework for governance of quality was created through a collaborative effort of thought leaders and health system leaders to provide clarity, support, and reduced variation in what boards should consider for their oversight of quality. The framework identifies the foundational knowledge of core quality concepts and the need to understand the systems for quality control and improvement used in health systems. The framework also recognizes that board culture and commitment to quality are essential.

A new Governance of Quality Assessment identifies the core processes of board governance of quality, providing a tool for boards and health system leaders to calibrate the governance oversight work plan. When these core processes are approached consistently, organizations can advance governance of quality that, based on previously cited studies, will support the health system's performance on quality.

Current State of Board Work and Education in Health System Quality

- **Governance of quality is primarily focused on safety.**

  Board education in quality is available but inconsistently accessed by trustees; education focuses primarily on safety, with variable exposure to other dimensions of quality.

- **Governance of quality is hospital-centric, with limited focus on population or community health.**

  Most board education emphasizes in-hospital quality; it does not guide boards in oversight of care in other health system settings or in the health of the community.

- **Core processes for governance of quality core are variable.**

  Board quality educational support offerings tend to emphasize general engagement in the form of time, structure, and leadership commitment to quality governance; they focus less on the specific activities (especially beyond safety) and core processes trustees need to employ to oversee quality.

- **A clear, consistent framework for governance of health system quality is needed.**

  Utilizing a consistent framework and assessment tool for key board-specific processes for quality oversight will help improve governance of health system quality and deliver on patient and community expectations for quality care.

- **A call to action to raise expectations and improve support for board governance of health system quality is needed.**

  A multifaceted approach is needed to break through the barriers to trustee oversight of quality, including a greater call to action, clearer set of core processes with an assessment of that work, and raised expectations for time to govern quality.

Framework for Governance of Health System Quality

Achieving better quality care in health systems requires a complex and multifaceted partnership among health care providers, payers, patients, and caregivers. The IHI Lucian Leape Institute's research scan, evaluation of governance education in quality, and expert interviews made it clear that board members, and those who support them, desire a clear and consistent framework to guide core quality knowledge, expectations, and activities to better govern quality. To help make progress in this area, the IHI Lucian Leape Institute convened leading governance organizations, health industry thought leaders, and trustees (see Appendix B) to collaboratively develop a new comprehensive framework and assessment tool for governance of quality.

The framework and assessment tool are designed with the following considerations:

- **Simplify concepts:** Use simple, trustee-friendly language that defines actionable processes and activities for trustees and those who support them to oversee quality.

- **Incorporate all six STEEEP dimensions of quality:** Understand quality as care that is safe, timely, effective, efficient, equitable, and patient centered (STEEEP), as defined by the Institute of Medicine.

- **Include community health and value:** Ensure that population health and health care value are critical elements of quality oversight.

- **Govern quality in and out of the hospital setting:** Advance quality governance throughout the health system, not solely in the hospital setting.

- **Advance organizational improvement knowledge:** Support trustees in understanding the ways to evaluate, prioritize, and improve performance on dimensions of quality.

- **Identify the key attributes of a governance culture of quality:** Describe the elements of a board culture and commitment to high-quality, patient-centered, equitable care.

IHI worked with the expert group to establish an aspirational vision for trustees: With the ideal education in and knowledge of quality concepts, every trustee will be able to respond to three statements in the affirmative (see Figure 1).

Figure 1. Vision of Effective Board Governance of Health System Quality

I understand the domains of and key concepts underlying quality care.

I understand the process to assess, prioritize, and improve care.

Our board culture demonstrates a commitment to delivering quality for all patients.

Having established the vision, the expert group proceeded to define the core knowledge and core processes necessary to realize this vision, resulting in the development of a Framework for Governance of Health System Quality (see Figure 2).

Figure 2. Framework for Governance of Health System Quality
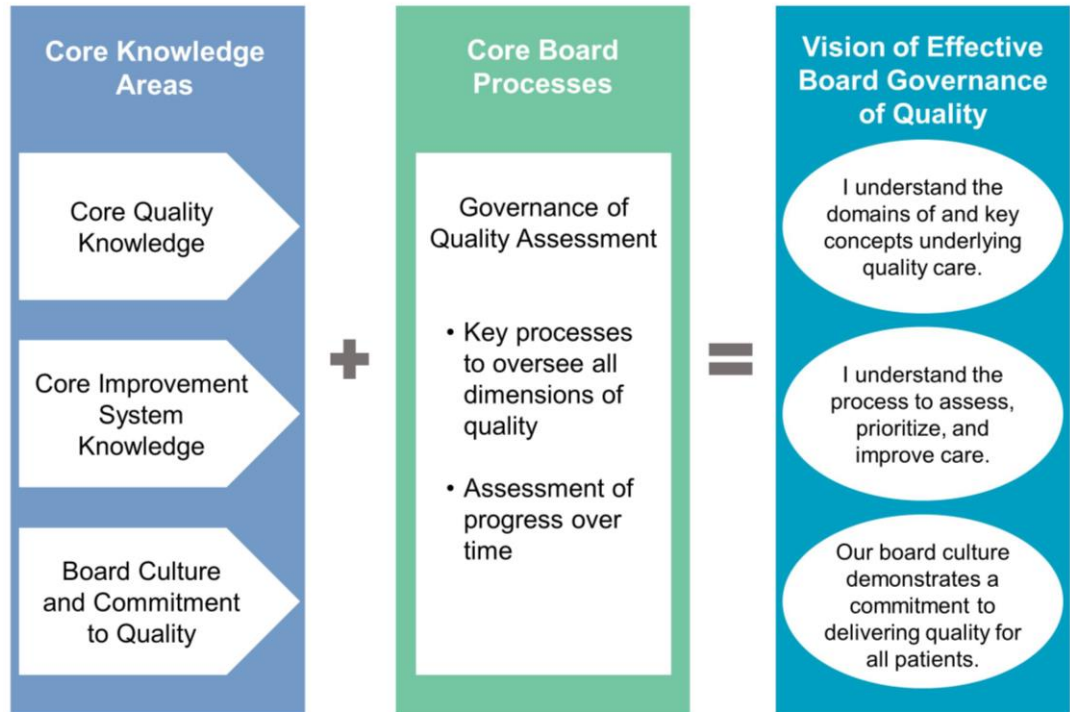
At the heart of the framework [CENTER] is the Governance of Quality Assessment (GQA), which outlines the key processes and activities that, if well performed, enable trustees to achieve the vision of effective board governance of quality [RIGHT]. The GQA serves as both a **roadmap of the key processes the board should undertake** to oversee all dimensions of quality, and an **assessment of how well the board is doing** with respect to those processes.

The expert group also identified three core knowledge areas [LEFT] that support the effective execution of the core processes and activities outlined in the GQA: Core Quality Knowledge, Core Improvement System Knowledge, and Board Culture and Commitment to Quality. The expert group's suggestions for core knowledge are assembled into three support guides (see Appendix A).

Together, the GQA and the three support guides aim to reduce variation in current governance recommendations and practices and to establish a comprehensive framework for the core knowledge and key activities for fiduciary governance of quality. Health system leadership and governance educators can use these tools to calibrate and advance their educational materials for trustees and develop ongoing education.

Patient-Centered Depiction of Quality

The expert group supported the use of a patient-centered framework, like the one introduced at Nationwide Children's Hospital in Ohio,[20] to display the core components of quality and drive home the direct impact they have on care. There is a compelling case for conveying this information to the board using a patient lens, as trustees may find the patient perspective on quality more motivating and actionable than the STEEEP terminology.

This reframed model also bundles some elements of STEEEP together in a way that represents the patient journey and avoids some of the health care terminology that can be off-putting to trustees. For example, the STEEEP dimensions of timely and efficient care are combined into "Help Me Navigate My Care." The STEEEP dimensions of equitable and patient-centered care are aggregated into "Treat Me with Respect." Figure 3 presents a visual representation of the core components of quality from the patient's perspective, with the patient at the center of the delivery system.

Figure 3. Core Components of Quality from the Patient's Perspective

Keep Me Safe
*Safe

Provide Me with the Right Care
*Effective

Patient

Help Me Stay Well

Treat Me with Respect
*Equitable, Patient centered

Help Me Navigate My Care
*Timely, Efficient

*IOM STEEEP dimensions of quality: Safe, Timely, Effective, Efficient, Equitable, and Patient centered

The new framework and assessment tool will reveal areas for quality improvement to many CEOs and board members. It will take time for board members and health system leaders to incorporate those additional elements of quality into their agendas and work plans, but the changes will help to better align their quality oversight with patient expectations and the evolution, expansion, and complexity of health care delivery. Maintaining the status quo with regard to quality governance will not best serve patients or health systems, which face increasing complexity of patient-, population-, and community-based care in the coming years.

Governance of Quality Assessment: A Roadmap for Board Oversight of Health System Quality

The Governance of Quality Assessment (GQA) serves as both a **roadmap of the key processes the board should undertake** to oversee all dimensions of quality, and an **assessment of how well the board is doing** with respect to those processes. The GQA employs a set of concrete recommendations for 30 core processes of quality oversight organized into six categories, and provides a high-level assessment of board culture, structure, and commitment. The resulting GQA scores (for each core process, each category, and overall total) provide a roadmap for health care leaders and trustees to identify what to do in their work plan — and to assess their progress over time.

Most current board assessments primarily cover elements of safety, patient satisfaction, and/or board culture related to quality oversight. Most assessments do not identify the specific processes for quality oversight beyond safety and do not equally address all the dimensions of quality, including population health and care provided outside of the hospital. Variation across assessments may create confusion among trustees about what really is optimal in the oversight of quality.

The GQA aims to ensure that health system board quality oversight extends beyond the hospital to include the entire continuum of care. While many trustees understand concepts and frameworks like STEEEP and the IHI Triple Aim, they often have difficulty translating those concepts into specific activities they must perform. The GQA is specific, actionable, and tracks the processes that enable excellent quality governance. The GQA is designed for trustees and those who support them; it is written in straightforward, actionable, and trustee-centered language.

GQA Core Processes and Scoring

The Governance of Quality Assessment provides a snapshot of a total of 30 core processes organized into six categories that a board with fiduciary oversight needs to perform to properly oversee quality. The 30 core processes were developed by the expert group based on their expert opinions combined with insights gathered from more than 50 additional interviews of governance experts and health executives in the research and assessment phase of this work.

As referenced in the companion research summary to this white paper,[21] there are limited evidence-based recommendations on core processes for governance of quality beyond a few structural recommendations such as time spent, use of a dashboard, and having a dedicated quality committee. The GQA puts forth a set of core processes for governance of quality that were collaboratively developed, evaluated, and ranked at the expert meeting.

The GQA should be utilized by health systems and results tracked over time to validate the assessment's effectiveness. Certainly, there are additional quality oversight actions a board could undertake (and many already do) beyond those identified in the GQA. However, the expert group and interviewees identified the core processes in the GQA as a starting point for calibration and improvement. With a commitment to learning and improvement, and in recognition of the dynamic nature of health care, the GQA should also be revised as appropriate to incorporate the insights from new research in the boardroom.

The GQA includes a scoring system (0, 1, or 2) for trustees and health system leaders to assess the current level of performance for the 30 core processes, the six categories, and overall. Scores are totaled so that trustees and health care leaders can establish baseline scores (for each process, category, and overall) and then track their progress over time.

Bringing the GQA to the Boardroom

Health system CEOs should complete the GQA annually with their board chair and quality committee chair(s) and/or quality committee to establish a baseline for assessing their current state of oversight of quality; to identify opportunities for improvement; and to track their GQA scores over time as a measure of improving board quality oversight. It is also useful to have the senior leaders who interface with the board complete the GQA to understand and assess their role with respect to trustee oversight of quality.

Once the respondents have completed the GQA, senior leaders and trustees may choose to focus on the lowest-scoring areas to identify improvement strategies. Within larger health systems, the GQA is a useful tool to evaluate the work of multiple quality committees and create a system-wide work plan and strategies for board oversight of quality. We recommend that boards complete the GQA annually to monitor their performance and progress.

The GQA can also be used to guide discussions about which activities should be conducted at which level of governance in the case of complex systems (e.g., which processes are or should be covered in local boards, the system quality committee, and/or the overall health system board). In addition, the assessment can be used as a tool for discussion in setting agenda items for the board or quality committees.

Finally, governance educators might also use the assessment to help design their educational sessions for board members, targeting educational content to the areas where the clients need more support or education.

The expert group also recommended that the assessment tool be utilized for future research to compare how systems are performing relative to each other, collecting data longitudinally to identify which elements of the GQA are most correlated with various components of quality performance and other metrics of culture and management known to be associated with excellence.

Governance of Quality Assessment (GQA) Tool

This assessment tool was developed to support trustees and senior leaders of health systems in their oversight of quality of care by defining the core processes, culture, and commitment for excellence in oversight of quality. A guiding principle in the development of this assessment was for the board to view their role in quality oversight comprehensively in terms of the Institute of Medicine STEEEP dimensions (care that is safe, timely, effective, efficient, equitable, and patient centered) and the IHI Triple Aim.

The Governance of Quality Assessment (GQA) tool should be used to evaluate the current level of performance for 30 core processes in six categories, to identify areas of oversight of quality that need greater attention or improvement, and to track progress over time.

Instructions

The Governance of Quality Assessment organizes the health system board's quality oversight role into six categories that include a total of 30 core processes a board with fiduciary oversight should perform to effectively oversee quality.

Health system CEOs should complete the GQA annually with their board chair and quality committee chair(s) and/or quality committee.

For each item in the assessment, the person completing the assessment should indicate a score of 0, 1, or 2. Scores are then totaled for each category and overall.

Score	Description
0	**No activity:** The process is not currently performed by the board, or I am unaware of our work in or commitment to this area.
1	**Infrequent practice:** The board currently does some work in this area, but not extensively, routinely, or frequently.
2	**Board priority:** The board currently does this process well — regularly and with thought and depth.

Governance of Quality Assessment Tool (continued)

Category 1: Prioritize Quality: Board Quality Culture and Commitment		
Core Board Process	**Score (0, 1, or 2)**	**Process leads to a:**
1. Board establishes quality as a priority on the main board agenda (e.g., equivalent time spent on quality and finance), and time spent on quality reflects board commitment.		Executive committee/governing board that spends a minimum of 20% to 25% of meeting time on quality Agenda that reflects board oversight of and commitment to quality
2. Health system senior leaders provide initial and ongoing in-depth education on quality and improvement systems to all trustees and quality committee members, and clearly articulate board fiduciary responsibility for quality oversight and leadership.		Board that understands the definition of quality, key concepts, and the system of improvement used within the organization
3. Board receives materials on quality before board meetings that are appropriately summarized and in a level of detail for the board to understand the concepts and engage as thought partners.		Board that is prepared for quality oversight and engaged in key areas for discussion
4. Board reviews the annual quality and safety plan, reviews performance on quality metrics, and sets improvement aims.		Board that takes responsibility for quality and performance on quality
5. Board ties leadership performance incentives to performance on key quality dimensions.		Board that establishes compensation incentives for senior leaders linked to prioritizing safe, high-quality care
6. Board conducts rounds at the point of care or visits the health system and community to hear stories directly from patients and caregivers to incorporate the diverse perspectives of the populations served.		Board that sets the tone throughout the organization for a culture of teamwork, respect, and transparency and demonstrates an in-person, frontline, board-level commitment to quality
7. Board asks questions about gaps, trends, and priority issues related to quality and is actively engaged in discussions about quality.		Board that engages in generative discussion about quality improvement work and resource allocation
Category 1 Total Score: (14 possible)		

Governance of Quality Assessment Tool (continued)

Category 2: Keep Me Safe: Safe Care		
Core Board Process	**Score (0, 1, or 2)**	**Process leads to a:**
1. Board regularly tracks and discusses performance over time on key safety metrics (including both in-hospital safety and safety in other settings of care).		Board that reviews management performance on key safety metrics and holds management accountable for areas where performance needs to be improved
2. Board annually reviews management's summary of the financial impact of poor quality on payments and liability costs.		Board that understands the financial costs of poor safety performance
3. Board evaluates management's summary of incident reporting trends and timeliness to ensure transparency to identify and address safety issues.		Board that holds management accountable to support staff in sharing safety concerns to create a safe environment of care for patients and staff
4. Board reviews Serious Safety Events (including workforce safety) in a timely manner, ensuring that leadership has a learning system to share the root cause findings, learning, and improvements.		Board that holds management accountable for a timely response to harm events and learning from harm
5. Board reviews management summary of their culture of safety survey or teamwork/safety climate survey to evaluate variations and understand management's improvement strategies for improving psychological safety, teamwork, and workforce engagement.		Board that holds management accountable for building and supporting a culture of psychological safety that values willingness to speak up as essential to patient care and a collaborative workplace
6. Board reviews required regulatory compliance survey results and recommendations for improvement.		Board that performs its required national (e.g., CMS, Joint Commission, organ donation) and state regulatory compliance oversight
Category 2 Total Score: (12 possible)		

Governance of Quality Assessment Tool (continued)

Category 3: Provide Me with the Right Care: Effective Care		
Core Board Process	**Score (0, 1, or 2)**	**Process leads to a:**
1. Board ensures that the clinician credentialing process addresses concerns about behavior, performance, or volume and is calibrated across the health system.		Board that understands its fiduciary responsibility of credentialing oversight to ensure the talent and culture to deliver effective patient care
2. Board reviews trends and drivers of effective and appropriate care as defined for the different areas of the system's care.		Board that holds leadership accountable to ensure that the system does not underuse, overuse, or misuse care
3. Board evaluates senior leaders' summary of metrics to ensure physician and staff ability to care for patients (e.g., physician and staff engagement, complaint trends, staff turnover, burnout metrics, violence).		Board that holds senior leaders accountable for the link between staff engagement and wellness with the ability to provide effective patient care
4. Board establishes a measure of health care affordability and tracks this measure, in addition to patient medical debt, over time.		Board that understands that cost is a barrier for patients, and that health systems are accountable to the community to ensure affordable care
Category 3 Total Score: (8 possible)		

Governance of Quality Assessment Tool (continued)

Category 4: Treat Me with Respect: Equitable and Patient-Centered Care		
Core Board Process	**Score (0, 1, or 2)**	**Process leads to a:**
1. Board has patient representation, patient stories, and/or interaction with patient and family councils, and engagement with community advocates at every board and quality committee meeting.		Board that connects its quality oversight role with direct patient experiences to build understanding of issues and connection to patients
2. Board reviews patient-reported complaints and trends in patient experience and loyalty that indicate areas where respectful patient care is not meeting system standards.		Board that reviews senior leadership's approach to evaluating, prioritizing, and responding to patient concerns and values a patient's willingness to recommend future care
3. Board evaluates and ensures diversity and inclusion at all levels of the organization, including the board, senior leadership, staff, providers, and vendors that support the health system.		Board that supports and advances building a diverse and culturally respectful team to serve patients
4. Board reviews the health system's approach to disclosure following occurrences of harm to patients and understands the healing, learning, and financial and reputational benefit of transparency after harm occurs.		Board that understands the link between transparency with patients after harm occurs and a culture of learning and improvement in the health system
5. Board ensures that all patient populations, especially the most vulnerable, are provided effective care by evaluating variations in care outcomes for key conditions or service lines based on race, gender, ethnicity, language, socioeconomic status/payer type, and age.		Board that holds senior leaders accountable for health equity (making sure all patients receive the same quality of care) and prioritizes closing the gaps in outcomes that are identified as disparities in care
Category 4 Total Score: (10 possible)		

Governance of Quality Assessment Tool (continued)

Category 5: Help Me Navigate My Care: Timely and Efficient Care		
Core Board Process	**Score (0, 1, or 2)**	**Process leads to a:**
1. Board reviews metrics related to access to care at all points in the system (e.g., hospital, clinics, behavioral health, nursing home, home care, dental) and ensures that access is equitable and timely for all patients.		Board that oversees senior leadership's strategy to improve care access (e.g., time and ability to get an appointment, wait time for test results, delays) for all patients
2. Board reviews senior leadership's strategy for and measurement of patient flow, timeliness, and transitions of care, and evaluates leadership's improvement priorities.		Board that evaluates the complexity of care navigation for patients and monitors senior leadership's work to integrate care, reduce barriers, and coordinate care (e.g., delays, patient flow issues) to support patients
3. Board evaluates senior leadership's strategy for digital integration and security of patient clinical information and its accessibility and portability to support patient care.		Board that holds senior leaders accountable for a strategy to support patients' digital access, security, and portability of clinical information
Category 5 Total Score: (6 possible)		

Governance of Quality Assessment Tool (continued)

Category 6: Help Me Stay Well: Community and Population Health and Wellness		
Core Board Process	**Score (0, 1, or 2)**	**Process leads to a:**
1. Board reviews community health needs assessment and senior leadership's plans for community and population health improvement.		Board that oversees the development of a community health needs assessment and has identified which population health metrics are most relevant to track for its patients (e.g., asthma, diabetes, stroke, cancer screening, flu vaccine, dental, prenatal, opioid overuse, obesity, depression screening) Board holds senior leaders accountable for reaching goals established to improve key community health issues
2. Board reviews performance in risk-based contracts for population health.		Board that evaluates performance on risk-based contracts for populations and strategies for improvement
3. Board evaluates approach to integration and continuity of care for behavioral health patients.		Board that holds senior leaders accountable for integrating care and tracking care coordination data to support screening, access, and follow-up
4. Board reviews leadership's plans to address social determinants of health, including any plans for integration with social and community services.		Board that understands the essential nature of wraparound services to support the wellness of certain patient populations and oversees the strategic integration with those service providers
5. Board evaluates the health system's strategy for supporting patients with medically and socially complex needs and with advance care planning.		Board that ensures senior leaders evaluate high-utilization groups and key drivers to help those users navigate and manage their care
Category 6 Total Score: (10 possible)		

Total Score for This Assessment: (sum of total scores for Categories 1 through 6)	
Total Possible Score:	**60**

Interpreting the Overall Governance of Quality Assessment Score

Total Score	Board Performance Level
40 to 60	Advanced board commitment to quality
25 to 40	Standard board commitment to quality
25 or Fewer	Developing board commitment to quality

Using GQA Results to Plan Next Steps

After completing the Governance of Quality Assessment, the CEO, board chair, and board quality chair(s) should review the results and use them as the basis for planning next steps.

- **Review the spectrum of GQA scores:** Are the results similar across your board and committees? Compare the variation of scores across your board, quality committee(s), and senior leaders. If there is high variation in scores, it may be an opportunity to consider clarifying expectations and the work plan for quality oversight.

- **Aggregate GQA scores to identify areas for improvement:** Aggregating the GQA scores (overall and for each category) establishes a baseline score to evaluate the current areas of oversight and identify opportunities to better oversee the dimensions of quality that have lower scores. Could the board agenda or work plan be adjusted to make time to address other quality items (i.e., those with low GQA scores)?

- **Set a target GQA score for next year:** Set a target and a plan for improving the GQA score annually. Focus on the elements of the GQA where you have the greatest gap or that are of the most strategic importance to your organization.

We recommend that boards and leadership teams also evaluate time spent discussing quality and trustee confidence in their knowledge of basic quality concepts in tandem with the GQA.

- **Evaluate time allocation to quality:** Track how much time the board spends each meeting discussing quality. Does the time commitment indicate that quality has equal priority in time and attention with finance? Is quality just an item on the agenda without discussion?

- **Use the GQA to identify board education opportunities:** Review both the initial education and the ongoing education of board members on quality. What topics in the framework and GQA are not covered? Do you provide trustees with supplementary reading, useful articles, and educational opportunities in the areas identified in the GQA?

Conclusion

Excellence in quality must be supported from the bedside to the boardroom; patients deserve nothing less. Health system boards are deeply committed to the patients and communities they serve; however, trustees often require support in order to best understand and fulfill their fiduciary responsibility and commitment to the patients and communities they serve. Trustee knowledge of quality and improvement concepts is essential to their governance role. To be effective, trustees must also pair this knowledge with an effective board culture and a clear set of activities that support oversight of quality.

The framework, assessment tool, and support guides presented in this white paper were created through collaboration with leaders in health care and governance. The immediate goal of these resources is to reduce variation in board oversight of quality and to provide an improved roadmap for health system trustees. The ultimate goal is to ensure that oversight of quality of care for all patients is supported by more effective board education in quality concepts, clarity of core processes for trustee governance of quality, and a deeper board commitment to quality.

Appendix A: Support Guides

The expert group identified three core knowledge areas for effective governance of quality: first, a familiarity with all dimensions of quality; second, an understanding of how improvement occurs in systems; and third, an appreciation of the importance of demonstrating a commitment to quality through the board culture.

Appendix A includes support guides for these three core knowledge areas:

- Support Guide: Core Quality Knowledge

- Support Guide: Core Improvement System Knowledge

- Support Guide: Board Culture and Commitment to Quality

Support Guide: Core Quality Knowledge

The medical terms, health care oversight organizations and processes, and clinical concepts that arise in quality work are often unfamiliar to board members without a medical background, unlike other areas of oversight such as finance. Initial and ongoing education in quality concepts is essential to providing trustees with the necessary context and knowledge for thoughtful engagement.

This support guide is designed to guide hospital leaders and trustee educators in taking the guesswork out of the core quality concepts that are needed to prepare trustees for governance of quality across *all* dimensions and *all* care settings.

The expert group recommended providing governance education to trustees via a simple, patient-centered framework, just as the Governance of Quality Assessment consolidates and clarifies core board processes for governance of quality from the STEEEP dimensions of quality into a patient-centered framework. See Figure 3 (above), which presents the patient at the center of governance quality work, a visual that the expert group found compelling.

All new trustees, not just quality committee members, need to receive a thorough introduction to quality. To oversee quality, board members need fluency in many concepts, which should be introduced in a layered manner (similar to building a scaffold) to avoid overwhelming trustees. An overarching framework that shows how all these elements are necessary for patient care helps connect the dots and build commitment.

Table 1 presents the foundational concepts for board oversight of quality recommended by the expert group, organized by the STEEEP dimensions of quality (care that is safe, timely, effective, efficient, equitable, and patient centered) represented through a patient lens.

Table 1. Foundational Concepts for Board Core Quality Knowledge

Quality Concept	Key Questions	Suggested Educational Concepts
Basic Quality Overview	• What is quality in health care? • What are the benefits of quality? • What are the costs of poor quality? • Who oversees the elements of quality in our organization?	• Brief overview of quality in health care • STEEEP dimensions of quality presented through a patient lens • IHI Triple Aim • Benefits of quality • "Cost" of poor quality: Financial, patients, staff • Quality strategy, quality management • Overview of risk-/value-based care • Structures for quality reporting, assessment, and improvement • Structure for CEO/leadership evaluation
Keep Me Safe *Safe*	• What is safety? • What is a culture of safety? • What are surveys of patient safety culture? • What is "harm"? • What are the types of harm? • How do you decide if an adverse outcome is preventable harm? • How do we learn about harm in a timely manner? • What is our response to harm (i.e., what actions do we take when harm occurs)? • What are the financial and reputational costs of harm? • How do we reduce, learn from, and prevent harm? • How do we track harm in our system and in the industry?	• Preventable harm vs. adverse outcome • Just Culture and culture of safety • Science of error prevention and high reliability • Classification of the types of harm • Knowing about harm: Incident reporting, claims, grievances • Response to harm: Root cause analysis/adverse event review, patient apology and disclosure, legal, learning systems • Costs of harm: Claims/lawsuits, penalties, ratings, reputational, human emotional impact • Harm terminology: HAC, SSI, falls, ADE, employee safety, etc. • Regulatory oversight of safety

Quality Concept	Key Questions	Suggested Educational Concepts
Provide Me with the Right Care *Effective*	• How do we ensure that our health system properly diagnoses and cares for patients to the best evidence-based standards in medicine? • How does leadership oversee whether approaches to care vary within our system? • How do we identify the areas where care is not to our standards? • How do we identify the areas where care is meeting or exceeding our standards? • How do we attract and retain talent to care for patients?	• Evidence-based medicine • Overview of staff and physician recruitment, credentials/privileges, training, retention (burnout, turnover, violence) • Overview of standard of care concept and issues/processes that lead to variation • Trends in care utilization and clinical outcomes • Key care outcomes to be evaluated through an equity lens: race, ethnicity, gender, language, and socioeconomic status
Treat Me with Respect *Equitable and Patient centered*	• How do we evaluate patients' satisfaction and feedback? • What is "equitable care" and how do we evaluate it? • Do some patient groups have worse outcomes? Why? • What is our staff diversity and how may it impact patient care? • How do we ensure that patients are partners in their care? • How do we reduce cost of care? • How do we track medical debt for patient groups?	• Patient satisfaction and patient grievances (e.g., HCAHPS[22]) • Patient-centered care • Care affordability, debt burden • Social determinants of health • Pricing and affordability of care bundles • Total costs of care for conditions • Medical debt concerns/trends • Value-based payment models
Help Me Navigate My Care *Timely and Efficient*	• What do care navigation and care access mean? • What issues result from waiting for care or disconnected care (care that is not timely or efficient)? • Which populations have more complex care needs? What do we do to help them navigate care? • What is the role of a portable medical record and health IT in supporting care navigation?	• Care access, efficiency, and drivers of care navigation • Define "continuum of care" • Focus on key areas that are "roadblocks" in care navigation and their drivers • Define electronic health record, health IT, and the systems to support and secure patient information and patient access

Quality Concept	Key Questions	Suggested Educational Concepts
Help Me Stay Well *Community and Population Health and Wellness*	• What is the difference between population and patient health? • How do we segment patient populations to evaluate population health outcomes? • What unique strategies do/can we deploy to care for and engage areas or populations with worse health outcomes? • How are we compensated (or not) for population health and wellness?	• Define population health vs. patient health[23] • Explain the community health needs assessment (CHNA) • Interpret population health, prevention, and wellness metrics • Define social determinants of health • Explain fee-based vs. risk-based contracts

This support guide can be used as a starting point for hospital leaders and educators to create their system's board education plan, to ensure the concepts are imparted across the dimensions of health care quality to trustees. Health systems will vary in terms of which concepts need to be introduced to all trustees versus only to those who serve on the quality committee. That said, absorbing all these concepts at once would be overwhelming, so teaching the concepts in smaller segments over time is essential, as is reinforcing the concepts with additional learning opportunities and available resources, particularly as new members join the board.

It is also worthwhile to consider different formats for teaching these concepts to various audiences such as a half-day retreat, a full-day education session, or in-depth hour-long programs offered throughout the year. Finally, consider how the concepts should be introduced to new trustees and reinforced for experienced trustees to support a common knowledge base.

Just as most trustees join a board with a conversation about what they can contribute in time, treasure, and talent to support the organization, perhaps there can also be a "learn" expectation to identify the need for continuous growth and learning, even as a trustee, to advance a culture of improvement and quality excellence.

Support Guide: Core Improvement System Knowledge

A 2016 IHI White Paper, *Sustaining Improvement*, identified the drivers of quality control and quality improvement in high-performing organizations and highlighted that boards play an essential role in creating a culture of quality care and quality improvement.[24] Quality knowledge for trustees must include a deep understanding of and comfort with how health system leaders will identify, assess, and improve the elements of care delivery.

Organizations might take many approaches to improvement — from Total Quality Management, to Lean, to high reliability, to the Model for Improvement. Trustees need to understand their health system's improvement methodology and ensure that the health system has the people, processes, and infrastructure to support its improvement efforts.

Trustees might ask health system leaders the following discussion questions to gain an understanding of the organization's improvement system:

- What is the organization's system of improvement, in terms of both evaluating performance and prioritizing areas for improvement?

- How were major quality improvement efforts selected in the last two years? What criteria were used and evaluated to measure their impact?

- How does quality improvement cover the entire health system versus in-hospital improvement only?

- What analytic methods do leaders use to gather insight from the entire system to inform improvement initiatives? What are the gaps in the information and analytics?

- Recognizing that quality improvement is most sustainable when frontline staff members are engaged, how do senior leaders ensure that frontline staff lead quality improvement work, are actively providing ideas for improvement, and are willing and encouraged to speak up?

Health care leaders may educate board members on their organization's improvement system in many ways. For example:

- Virginia Mason Health System board members travel to Japan to learn about the Toyota Production System and Lean principles that Virginia Mason also employs.[25]

- The pediatric improvement network called Solutions for Patient Safety dedicates significant effort to board education on their high-reliability method of improvement and the board's role in understanding the core knowledge of safety and analyzing performance.[26]

- The board at St. Mary's General Hospital in Kitchener, Ontario, "sought out new knowledge about Lean through board education sessions, recruited new members with expertise in Lean and sent more than half of the board to external site visits to observe a high-performing Lean healthcare organization."[27]

Boards must understand how health system leaders perform the functions of quality planning, quality control, and quality improvement throughout the organization — and how that quality work is prioritized and resources are allocated. A 2015 article describes the process that Johns Hopkins Medicine undertook to ensure that the health system could map accountability for quality improvement throughout the organization, from the point of care to the board quality committee.[28] Similarly, in an article for The Governance Institute's *BoardRoom Press,* leaders from Main Line

Health shared their effort to delineate the flow and tasks of the oversight of quality from the boardroom to the frontline operations.[29] While the Johns Hopkins and Main Line Health approaches are unique to their systems, the essential idea they advanced is that a board and leadership should define the components of quality improvement work in their system and identify the accountability for those components throughout the system.

In addition to understanding accountability for quality throughout a health system, it is also essential for trustees to develop analytical skills to review data and engage meaningfully with leadership in generative dialogue about trends in the data. As part of their quality oversight role, health system boards need to understand the organization's key metrics and periodically review areas of performance that are outside of or below established expectations.

Also, educational training for trustees should teach them how to review data over time and request that data be benchmarked against other leading organizations to help them evaluate improvement opportunities. In IHI's interviews, some trustees noted that the way data are presented often impacts their ability to gain insights to oversee and engage leaders in discussions on quality performance and progress of quality improvement efforts.

In her work with health system trustees, Maureen Bisognano, IHI President Emerita and Senior Fellow, challenges boards that they should be able to answer four analytic questions pertaining to quality:[30]

1. Do you know how good you are as an organization?

2. Do you know where your variation exists?

3. Do you know where you stand relative to the best?

4. Do you know your rate of improvement over time?

A board that understands management's system of improvement and is analytically capable of tracking performance will be able to confidently answer those four questions. The board plays a critical role in holding health system leaders accountable for improvement results and should be a thought partner in the system's quality improvement efforts. Understanding the system of improvement and the ways in which an organization identifies and prioritizes areas for improvement is an essential function of quality governance.

Support Guide: Board Culture and Commitment to Quality

A board that understands quality concepts and the organization's system of improvement may still be unable to fulfill its commitment to safe, high-quality, and equitable patient care if it does not also have a culture of commitment to quality and a structure that ensures that the quality functions are effectively carried out. Essential elements of board culture and commitment to quality are incorporated in the Governance of Quality Assessment in recognition that a board that governs quality must not only know the key processes to oversee quality, but also oversee them in a way that demonstrates a cultural commitment to quality.

Many individuals and organizations have contributed thought leadership on building a culture for governance of quality in health care, including leading governance experts (such as Jim Conway, James Reinertsen, Larry Prybil, and James Orlikoff), The Governance Institute, the American Hospital Association, and a few leading state hospital associations. With guidance from the expert group, this support guide focuses on elements of governance culture, structure, and commitment that are unique to supporting trustee oversight of and engagement in quality.

The expert group identified five high-level attributes of board culture and commitment to quality, as described below.

Set Expectations and Prioritize Quality

Quality needs to be a priority for all board members, not completely delegated to the quality committee(s), even if the quality committee is doing more of the oversight. Quality is demonstrated as a board priority in many ways, including dedicating time to engage in discussion about quality issues on board meeting agendas, and linking some component of executive compensation to performance on quality metrics.

For example, before a trustee joins the Virginia Mason Health System board, they are sent a compact (that is then reviewed annually) to reinforce core expectations of trustees, which includes quality oversight.[31] Stephen Muething, Co-Director, James M. Anderson Center for Health System Excellence, Cincinnati Children's Hospital Medical Center, notes that Cincinnati Children's initially assigns all new board members to serve on the quality committee for their first year on the board, indicating that quality is so essential to their operations that every board member must develop core knowledge in quality.

Still, for too many boards, quality is not central to trustee education and not allocated sufficient time for learning and generative discussion.

Build Knowledge Competency and Define Oversight Responsibility of Quality

Knowledge and a clear work plan form a foundation for confident and thoughtful engagement in quality. Once trustees have been educated and are confident in their understanding of the core concepts, health system leaders need to work with trustees to define which issues the quality committee(s) will manage and which issues will be discussed by the entire board. This delineation of activities needs to be clearly articulated in the annual work plan for each group and will vary based on the size, scope, and structure of each organization.

Create a Culture of Inquiry

Board oversight of quality is not intended to micromanage the work of senior leaders, but to engage in thoughtful inquiry to ensure that organizational performance aligns with the expectations established by both leaders and trustees. For example, Henry Ford Health System has an annual quality retreat for its board quality committee and the quality committees of its hospitals and business lines. The trustees and health system leaders use this retreat as a time to dive deep on education, evaluate performance in depth, and have small group discussions to evaluate both quality and governance practices.[32]

Diversity also adds to the culture of inquiry by bringing differing perspectives and community representation to the quality discussions. The size of board and committee meetings can prohibit in-depth dialogue; building in time for small group interactions can help support a culture of inquiry.

Be Visible in Supporting Quality

Boards can support health system leaders in their efforts to improve quality in many ways, including conducting rounds, visiting the point of care, and thanking frontline staff for their contributions to improving care quality and safety. Health system leaders can provide guidance on the best ways for trustees to be visible in supporting quality in the organization.

Focus on the Patient

The board can also support quality work by including time on the agenda to hear patient stories, which personalizes the data. For example, board chair Mike Williams described how "Children's National Medical Center in Washington, DC, has strengthened board engagement with their frontline clinical teams to focus on safety, quality, and outcomes of clinical care. Their 'board to bedside' sessions discuss important topics of care and then move to the bedside to experience how changes are being implemented and gather experiences of patients."[33]

The elements of this support guide are reinforced in the Board Quality Culture and Commitment section (Category 1) of the Governance of Quality Assessment (GQA). Boards that carry out the core processes of governance of quality without a deeper culture and commitment to quality will be more likely to have a "check the box" mentality that the expert group identified as less likely to demonstrate leadership and commitment to advancing quality within the health system in a way that patients deserve.

Appendix B: IHI Lucian Leape Institute Expert Meeting Attendees

Advancing Trustee Engagement and Education in Quality, Safety, and Equity

July 12, 2018

- Paul Anderson, Trustee, University of Chicago Medical Center

- Evan Benjamin, MD, MS, FACP, Chief Medical Officer, Ariadne Labs; Harvard School of Public Health; Harvard Medical School; IHI Faculty

- Jay Bhatt, DO, Senior Vice President and Chief Medical Officer, American Hospital Association; President, Health Research & Educational Trust

- Lee Carter, Member, Board of Trustees, Former Board Chair, Cincinnati Children's Hospital Medical Center

- Jim Conway, MS, Trustee, Winchester Hospital, Lahey Health System

- Tania Daniels, PT, MBA, Vice President, Quality and Patient Safety, Minnesota Hospital Association

- James A. Diegel, FACHE, Chief Executive Officer, Howard University Hospital

- James Eppel, Executive Vice President and Chief Administrative Officer, HealthPartners

- Karen Frush, MD, CPPS, Chief Quality Officer, Stanford Health Care

- Tejal K. Gandhi, MD, MPH, CPPS, Chief Clinical and Safety Officer, Institute for Healthcare Improvement; President, IHI Lucian Leape Institute (Meeting Co-Chair)

- Michael Gutzeit, MD, Chief Medical Officer, Children's Hospital of Wisconsin

- Gerald B. Hickson, MD, Senior Vice President for Quality, Safety, and Risk Prevention, Vanderbilt Health System; Joseph C. Ross Chair for Medical Education and Administration, Vanderbilt University Medical School; Board Member, Institute for Healthcare Improvement

- Brent James, MD, MStat, Member, National Academy of Medicine; Senior Fellow and Board Member, Institute for Healthcare Improvement

- Maulik Joshi, DrPH, Chief Operating Officer, Executive Vice President, Integrated Care, Anne Arundel Medical Center

- Gary S. Kaplan, MD, FACMPE, Chairman and CEO, Virginia Mason Health System; Chair, IHI Lucian Leape Institute; Board Member, Institute for Healthcare Improvement

- John J. Lynch III, FACHE, President and CEO, Main Line Health

- Kedar Mate, MD, Chief Innovation and Education Officer, Institute for Healthcare Improvement

- Patricia McGaffigan, RN, MS, CPPS, Vice President, Safety Programs, Institute for Healthcare Improvement; President, Certification Board for Professionals in Patient Safety, IHI

- Ruth Mickelsen, JD, MPH, Board Chair, HealthPartners

Appendix C: Members of the IHI Lucian Leape Institute

- Gary S. Kaplan, MD, FACMPE, Chairman and CEO, Virginia Mason Health System; Chair, IHI Lucian Leape Institute; Board Member, Institute for Healthcare Improvement

- Tejal K. Gandhi, MD, MPH, CPPS, Chief Clinical and Safety Officer, Institute for Healthcare Improvement; President, IHI Lucian Leape Institute

- Donald M. Berwick, MD, MPP, President Emeritus and Senior Fellow, Institute for Healthcare Improvement

- Joanne Disch, PhD, RN, FAAN, Professor ad Honorem, University of Minnesota School of Nursing

- Susan Edgman-Levitan, PA, Executive Director, John D. Stoeckle Center for Primary Care Innovation, Massachusetts General Hospital

- Gregg S. Meyer, MD, MSc, CPPS, Chief Clinical Officer, Partners HealthCare

- David Michaels, PhD, MPH, Professor, Department of Environmental and Occupational Health, Milken Institute School of Public Health, George Washington University

- Julianne M. Morath, RN, MS, President and CEO, Hospital Quality Institute of California

- Susan Sheridan, MIM, MBA, DHL, Director of Patient Engagement, Society to Improve Diagnosis in Medicine

- Charles Vincent, PhD, MPhil, Professor of Psychology, University of Oxford; Emeritus Professor of Clinical Safety Research, Imperial College, London

- Robert M. Wachter, MD, Professor and Chair, Department of Medicine, Holly Smith Distinguished Professor in Science and Medicine, Marc and Lynne Benioff Endowed Chair, University of California, San Francisco

Emeritus Members

- Carolyn M. Clancy, MD, Assistant Deputy Under Secretary for Health for Quality, Safety and Value, Veterans Health Administration, US Department of Veterans Affairs

- Amy C. Edmondson, PhD, AM, Novartis Professor of Leadership and Management, Harvard Business School

- Lucian L. Leape, MD, Adjunct Professor of Health Policy, Harvard School of Public Health

- Paul O'Neill, 72nd Secretary of the US Treasury

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[33] Interview with Michael Williams, MBA, Board Chair, Children's National Medical Center, on February 8, 2018.

Governance of Quality Assessment (GQA) Tool

This assessment tool was developed to support trustees and senior leaders of health systems in their oversight of quality of care by defining the core processes, culture, and commitment for excellence in oversight of quality. A guiding principle in the development of this assessment was for the board to view their role in quality oversight comprehensively in terms of the Institute of Medicine STEEEP dimensions (care that is safe, timely, effective, efficient, equitable, and patient centered) and the IHI Triple Aim.

The Governance of Quality Assessment (GQA) tool should be used to evaluate the current level of performance for 30 core processes in six categories, to identify areas of oversight of quality that need greater attention or improvement, and to track progress over time.

Instructions

The Governance of Quality Assessment organizes the health system board's quality oversight role into six categories that include a total of 30 core processes a board with fiduciary oversight should perform to effectively oversee quality.

Health system CEOs should complete the GQA annually with their board chair and quality committee chair(s) and/or quality committee.

For each item in the assessment, the person completing the assessment should indicate a score of 0, 1, or 2. Scores are then totaled for each category and overall.

Score	Description
0	No activity: The process is not currently performed by the board, or I am unaware of our work in or commitment to this area.
1	Infrequent practice: The board currently does some work in this area, but not extensively, routinely, or frequently.
2	Board priority: The board currently does this process well — regularly and with thought and depth.

Governance of Quality Assessment Tool (continued)

Category 1: Prioritize Quality: Board Quality Culture and Commitment		
Core Board Process	Score (0, 1, or 2)	Process leads to a:
1. Board establishes quality as a priority board on the main board agenda (e.g., equivalent time spent on quality and finance), and time spent on quality reflects board commitment.		Executive committee/governing that spends a minimum of 20% to 25% of meeting time on quality Agenda that reflects board oversight of and commitment to quality
2. Health system senior leaders provide definition initial and ongoing in-depth education on quality and improvement systems to all trustees and quality committee members, and clearly articulate board fiduciary responsibility for quality oversight and leadership.		Board that understands the of quality, key concepts, and the system of improvement used within the organization
3. Board receives materials on quality before board meetings that are appropriately summarized and in a level of detail for the board to understand the concepts and engage as thought partners.		Board that is prepared for quality oversight and engaged in key areas for discussion
4. Board reviews the annual quality and safety plan, reviews performance on quality metrics, and sets improvement aims.		Board that takes responsibility for quality and performance on quality
5. Board ties leadership performance compensation incentives to performance on key quality dimensions.		Board that establishes incentives for senior leaders linked to prioritizing safe, high-quality care
6. Board conducts rounds at the point of care or visits the health system and community to hear stories directly from patients and caregivers to incorporate the diverse perspectives of the populations served.		Board that sets the tone throughout the organization for a culture of teamwork, respect, and transparency and demonstrates an in-person, frontline, board-level commitment to quality
7. Board asks questions about gaps, trends, and priority issues related to quality and is actively engaged in discussions about quality.		Board that engages in generative discussion about quality improvement work and resource allocation

Category 1 Total Score:
(14 possible)

Governance of Quality Assessment Tool (continued)

Category 2: Keep Me Safe: Safe Care		
Core Board Process	Score (0, 1, or 2)	Process leads to a:
1. Board regularly tracks and discusses performance over time on key safety metrics (including both in-hospital safety and safety in other settings of care).		Board that reviews management performance on key safety metrics and holds management accountable for areas where performance needs to be improved
2. Board annually reviews management's summary of the financial impact of poor quality on payments and liability costs.		Board that understands the financial costs of poor safety performance
3. Board evaluates management's summary of incident reporting trends and timeliness to ensure transparency to identify and address safety issues.		Board that holds management accountable to support staff in sharing safety concerns to create a safe environment of care for patients and staff
4. Board reviews Serious Safety Events (including workforce safety) in a timely manner, ensuring that leadership has a learning system to share the root cause findings, learning, and improvements.		Board that holds management accountable for a timely response to harm events and learning from harm
5. Board reviews management summary of their culture of safety survey or teamwork/safety climate survey to evaluate variations and understand management's improvement strategies for improving psychological safety, teamwork, and workforce engagement.		Board that holds management accountable for building and supporting a culture of psychological safety that values willingness to speak up as essential to patient care and a collaborative workplace
6. Board reviews required regulatory compliance survey results and recommendations for improvement.		Board that performs its required national (e.g., CMS, Joint Commission, organ donation) and state regulatory compliance oversight
Category 2 Total Score: (12 possible)		

Governance of Quality Assessment Tool (continued)

Category 3: Provide Me with the Right Care: Effective Care		
Core Board Process	Score (0, 1, or 2)	Process leads to a:
1. Board ensures that the clinician fiduciary credentialing process addresses concerns about behavior, performance, or volume and is calibrated across the health system.		Board that understands its responsibility of credentialing oversight to ensure the talent and culture to deliver effective patient care
2. Board reviews trends and drivers of effective and appropriate care as defined for the different areas of the system's care.		Board that holds leadership accountable to ensure that the system does not underuse, overuse, or misuse care
3. Board evaluates senior leaders' summary of metrics to ensure physician and staff ability to care for patients (e.g., physician and staff engagement, complaint trends, staff turnover, burnout metrics, violence).		Board that holds senior leaders accountable for the link between staff engagement and wellness with the ability to provide effective patient care
4. Board establishes a measure of health care affordability and tracks this measure, in addition to patient medical debt, over time.		Board that understands that cost is a barrier for patients, and that health systems are accountable to the community to ensure affordable care
Category 3 Total Score: (8 possible)		

Governance of Quality Assessment Tool (continued)

Category 4: Treat Me with Respect: Equitable and Patient-Centered Care		
Core Board Process	Score (0, 1, or 2)	Process leads to a:
1. Board has patient representation, patient stories, and/or interaction with patient and family councils, and engagement with community advocates at every board and quality committee meeting.		Board that connects its quality oversight role with direct patient experiences to build understanding of issues and connection to patients
2. Board reviews patient-reported complaints and trends in patient experience and loyalty that indicate areas where respectful patient care is not meeting system standards.		Board that reviews senior leadership's approach to evaluating, prioritizing, and responding to patient concerns and values a patient's willingness to recommend future care
3. Bhwoard evaluates and ensures diversity advances and inclusion at all levels of the organization, including the board, senior leadership, staff, providers, and vendors that support the health system.		Board that supports and building a diverse and culturally respectful team to serve patients
4. Board reviews the health system's approach to disclosure following occurrences of harm to patients and understands the healing, learning, and financial and reputational benefit of transparency after harm occurs.		Board that understands the link between transparency with patients after harm occurs and a culture of learning and improvement in the health system
5. Board ensures that all patient leaders populations, especially the most vulnerable, are provided effective care by evaluating variations in care outcomes for key conditions or service lines based on race, gender, ethnicity, language, socioeconomic status/payer type, and age. Category 4 Total Score:		Board that holds senior accountable for health equity (making sure all patients receive the same quality of care) and prioritizes closing the gaps in outcomes that are identified as disparities in care

(10 possible)

Governance of Quality Assessment Tool (continued)

Category 5: Help Me Navigate My Care: Timely and Efficient Care		
Core Board Process	Score (0, 1, or 2)	Process leads to a:
1. Board reviews metrics related to access to care at all points in the system (e.g., hospital, clinics, behavioral health, nursing home, home care, dental) and ensures that access is equitable and timely for all patients.		Board that oversees senior leadership's strategy to improve care access (e.g., time and ability to get an appointment, wait time for test results, delays) for all patients
2. Board reviews senior leadership's complexity strategy for and measurement of patient flow, timeliness, and transitions of care, and evaluates leadership's improvement priorities.		Board that evaluates the of care navigation for patients and monitors senior leadership's work to integrate care, reduce barriers, and coordinate care (e.g., delays, patient flow issues) to support patients
3. Board evaluates senior leadership's strategy for digital integration and security of patient clinical information and its accessibility and portability to support patient care.		Board that holds senior leaders accountable for a strategy to support patients' digital access, security, and portability of clinical information
Category 5 Total Score: (6 possible)		

Governance of Quality Assessment Tool (continued)

Category 6: Help Me Stay Well: Community and Population Health and Wellness		
Core Board Process	Score (0, 1, or 2)	Process leads to a:
1. Board reviews community health needs assessment and senior leadership's plans for community and population health improvement.		Board that oversees the development of a community health needs assessment and has identified which population health metrics are most relevant to track for its patients (e.g., asthma, diabetes, stroke, cancer screening, flu vaccine, dental, prenatal, opioid overuse, obesity, depression screening) Board holds senior leaders accountable for reaching goals established to improve key community health issues
2. Board reviews performance in risk-based contracts for population health.		Board that evaluates performance on risk-based contracts for populations and strategies for improvement
3. Board evaluates approach to integration and continuity of care for behavioral health patients.		Board that holds senior leaders accountable for integrating care and tracking care coordination data to support screening, access, and follow-up
4. Board reviews leadership's plans to essential address social determinants of health, including any plans for integration with social and community services.		Board that understands the nature of wraparound services to support the wellness of certain patient populations and oversees the strategic integration with those service providers
5. Board evaluates the health system's strategy for supporting patients with medically and socially complex needs and with advance care planning.		Board that ensures senior leaders evaluate high-utilization groups and key drivers to help those users navigate and manage their care
Category 6 Total Score: (10 possible)		

Total Score for This Assessment: (sum of total scores for Categories 1 through 6)	
Total Possible Score:	60

Interpreting the Overall Governance of Quality Assessment Score

Total Score	Board Performance Level
40 to 60	Advanced board commitment to quality
25 to 40	Standard board commitment to quality
25 or Fewer	Developing board commitment to quality

Using GQA Results to Plan Next Steps

After completing the Governance of Quality Assessment, the CEO, board chair, and board quality chair(s) should review the results and use them as the basis for planning next steps.

☐ Review the spectrum of GQA scores: Are the results similar across your board and committees? Compare the variation of scores across your board, quality committee(s), and senior leaders. If there is high variation in scores, it may be an opportunity to consider clarifying expectations and the work plan for quality oversight.

☐ Aggregate GQA scores to identify areas for improvement: Aggregating the GQA scores (overall and for each category) establishes a baseline score to evaluate the current areas of oversight and identify opportunities to better oversee the dimensions of quality that have lower scores. Could the board agenda or work plan be adjusted to make time to address other quality items (i.e., those with low GQA scores)?

☐ Set a target GQA score for next year: Set a target and a plan for improving the GQA score annually. Focus on the elements of the GQA where you have the greatest gap or that are of the most strategic importance to your organization.

We recommend that boards and leadership teams also evaluate time spent discussing quality and trustee confidence in their knowledge of basic quality concepts in tandem with the GQA.

☐ Evaluate time allocation to quality: Track how much time the board spends each meeting discussing quality. Does the time commitment indicate that quality has equal priority in time and attention with finance? Is quality just an item on the agenda without discussion?

☐ Use the GQA to identify board education opportunities: Review both the initial education and the ongoing education of board members on quality. What topics in the framework and GQA are not covered? Do you provide trustees with supplementary reading, useful articles, and educational opportunities in the areas identified in the GQA?

Aviation and healthcare: a comparative review with implications for patient safety

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Summary

Safety in aviation has often been compared with safety in healthcare. Following a recent article in this journal, the UK government set up an Independent Patient Safety Investigation Service, to emulate a similar well-established body in aviation. On the basis of a detailed review of relevant publications that examine patient safety in the context of aviation practice, we have drawn up a table of comparative features and a conceptual framework for patient safety. Convergence and divergence of safety-related behaviours across aviation and healthcare were derived and documented. Key safety-related domains that emerged included Checklists, Training, Crew Resource Management, Sterile Cockpit, Investigation and Reporting of Incidents and Organisational Culture. We conclude that whilst healthcare has much to learn from aviation in certain key domains, the transfer of lessons from aviation to healthcare needs to be nuanced, with the specific characteristics and needs of healthcare borne in mind. On the basis of this review, it is recommended that healthcare should emulate aviation in its resourcing of staff who specialise in human factors and related psychological aspects of patient safety and staff wellbeing. Professional and post-qualification staff training could specifically include Cognitive Bias Avoidance Training, as this appears to play a key part in many errors relating to patient safety and staff wellbeing.

Keywords

Medical error, patient safety, patients

Comparisons have often been made between safety management in aviation and healthcare.[1,2] This emulation is in the context of major achievements in the field of aviation – despite the number of worldwide flight hours doubling over the past 20 years (from approximately 25 million in 1993 to 54 million in 2013), the number of fatalities has fallen from approximately 450 to 250 per year.[3] This stands in comparison to healthcare, where in the USA alone there are an estimated 200,000 preventable medical deaths every year, which amounts to the equivalent of almost three fatal airline crashes per day. As the renowned airline pilot Chesley Sullenberger noted,[4] if such a level of fatalities was to happen in aviation, airlines would stop flying, airports would close, there would be congressional hearings and there would be a presidential commission. No one would be allowed to fly until the problem had been solved.

In this article, we present a comprehensive review of similarities and differences between aviation and healthcare and the application to healthcare of lessons learned in aviation.

Aviation versus healthcare: how comparable?

Table 1 summarises how aviation compares with healthcare. Some authors have expressed reservations about the analogies between aviation and healthcare,[5–9] and others have noted that industries such as mining[10] and metal manufacture[11] may provide just as valuable safety lessons as aviation. Amalberti et al.[12] have pointed to some inbuilt features of healthcare which may mean that it can never be as ultrasafe as industries such as aviation. In contrast to aviation, Reason[13] has referred to the close personal contact in healthcare and to the 'lethal convergence of benevolence', which may result in the bypassing of protocols, barriers and safeguards, often with patients' best interests at heart.

Review framework

We provide a narrative review of the application of aviation-based human factors interventions in healthcare. As our guiding framework, we have adapted the models developed by Helmreich[14] and by Lawton et al.[15] (Figure 1).

Table 1. Distinctive features of aviation and healthcare.

| Domain	AVIATION	HEALTHCARE
History	• Hundred years	• Hundreds of thousands of years
Key Raw Material	• Aircraft, usually less than 30 years old, serviced every few months	• Human bodies, can live to around 100 years, check-up every 1-2 years or less frequently
Activities	• Pilots operate one or two types of aircraft • Episode usually lasts 1-10 hours, with same crew on board	• Health care professionals have to deal with a wide variety of equipment, diseases and presentations • Duration of inpatient stay may be days or even years, with numerous changeovers of staff
Equipment	• There is a degree of standardisation of displays across aircraft • Most procedures are automated, with multiple back-up systems in place • Information such as weather conditions is automatically available	• There is relatively little standardisation of design across medical equipment • Automation of procedures, and back-up systems, are somewhat variable, with much of healthcare being 'hands-on'
Service Users	• Passengers are healthy • Passengers usually have little knowledge of the crew or aircraft or airline • Crew rarely know names of individual passengers, and the captain will seldom console a passenger personally if things go wrong	• Patients are sick, vulnerable and injured • Patients will often come equipped with well-researched information about their condition, their doctors and their hospital • Staff will know each patient well and may also become familiar with their families. A consultant will generally console a patient if things go wrong.
Service Delivery	• More homogenous • The same crew usually on board a flight • Pilots do not become acquainted with passengers, or have to console them if anything goes wrong • Comfort and luxuries rather than safety can be correlated with ability to pay • There are few subspecialities of pilots and crew	• More heterogeneous with a number of subspecialties involved • Health professionals get to know their patients and build up a rapport with them • Care is personal and patients are often involved in treatment decisions • Quality of care can be related to the ability to pay, especially in developing countries • There are many subspecialities in healthcare
Safeguards	• Many safeguards are in place with a high degree of automatization and computerised support • There are strictly enforceable rules to exclude adverse effects of fatigue or alcohol on pilot's performance	• Limited safeguards, hands-on work, and a relative lack of automatization and computerised support • Lack of strictly enforceable rules to exclude adverse effects of fatigue. Rules about alcohol are seldom made explicit or strictly enforced.
Safety	• Equal for everyone on plane • Fatalities can be over 100 at a time, and usually include the crew of the plane • The setting of targets is relatively infrequent, and rarely conflicts with passenger safety	• Can correlate with ability to pay, especially in developing countries • Fatalities generally involve one person. Staff fatalities directly associated with patient care are very rare. • Targets may often be present, and may on occasions conflict with patient safety
Adverse Events	• Major adverse events are always investigated by a national body • Major adverse events are often featured in the media • Pilot immunity is often part of the reporting culture • Adverse event investigation reports are always published	• Major adverse events are usually only investigated locally, though may occasionally be subject to wider investigation • Major adverse events only occasionally feature in the media • Immunity is not necessarily part of the reporting culture, and disciplinary procedures are wide-ranging • Adverse event investigation reports are seldom published

Latent factors and organisational culture

At least three safety-related cultural attributes appear to distinguish aviation from healthcare. Aviation has much more of a blame-free culture in the case of reporting and owning up to safety incidents; in healthcare, there more often appear to be competing demands between economic factors and safety, with financial pressures and considerations constantly making news headlines; and safety permeates all levels of the business of airlines, whereas in healthcare it is still regarded as the priority of some, not the obligation of all. What is common to both industries is the concept of professionalism, but paradoxically this may sometimes lend itself to corners being cut and social fragmentation between professional groups.[16]

A safety culture toolkit developed in the UK after railway accidents identified the following key features – leadership, two-way communication, employee involvement, learning culture and attitude towards blame.[17] It is widely accepted that along these dimensions the organisational culture in aviation has changed dramatically over the past 30–40 years, but in

Figure 1. This Figure provides a framework for the approach offered in this paper. It is adapted from the models described by Helmreich[14] and by Lawton et al.[15] We distinguish between background 'Latent' factors and more current, situational 'Active' factors. Active failures include lapses, mistakes and violations. We also allow for an analysis of adverse events, but we adopt the more neutral term 'Performance Analysis' to allow for the analysis of high levels of excellence, so that lessons can be learned from such 'positive' behaviours as well as from 'negative' behaviours, which have traditionally been the primary focus of investigations.
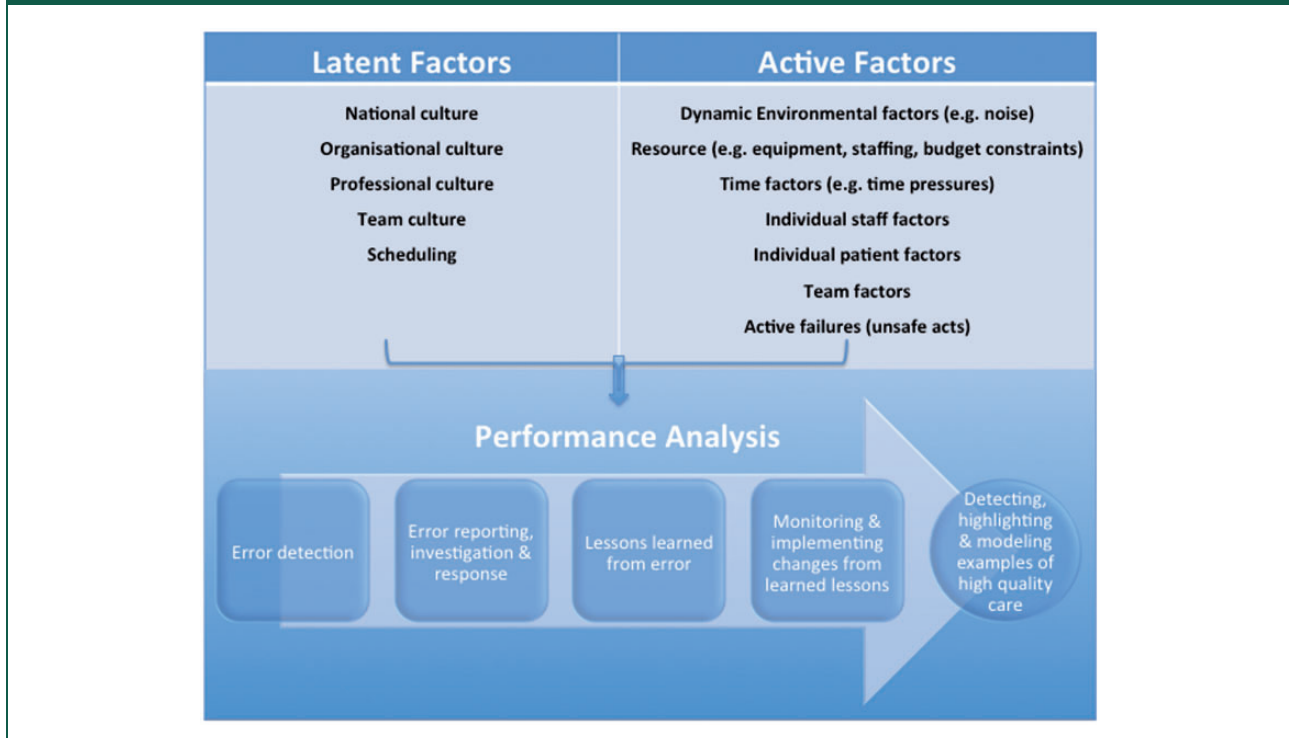
healthcare organisations such as the NHS in the UK there is still the feeling that hierarchies and fear of speaking out persist and that the lack of accountability for those who have transgressed, together with the absence of any apology, perpetuates these cultural limitations.[18] Sullenberger[19] has referred to an era in aviation where pilots 'acted like gods with a little "g" and cowboys with a capital "C"'. Sadly, some of this culture would still appear to remain in parts of healthcare. As Timmons et al.[20] have argued, full and successful implementation of human factors initiatives may be stalled if the culture in an organisation is not accommodating. They found that a six-day human factors training course taken by emergency and perioperative staff appeared to be valued and considered helpful by staff who took part, but that implementation of behavioural changes on the ground was stalled by long-standing cultural and organisational issues. Sullenberger[4] has powerfully argued for patient safety to be embedded in board and financial decision making in healthcare – and noted,

> Safety should be part and parcel of everything we do... Every decision that is made, whether it's

administrative, budgetary, or otherwise, should take safety implications into account because there is such an important business case for doing so... What we have right now, quite frankly, in healthcare are islands – visible islands of excellence in a sea of invisible failures, with risk lurking just below the waterline. We need to widen those islands of excellence. We need to connect these islands with more dry land. We need to address these areas of risk. That is going to require transparency, it's going to require data, it's going to require personal story telling, and it's going to require effective use of health IT.

Implicit in healthcare comparisons with other safety-critical industries is the message that staff well-being, morale and motivation are key to the safe, successful and profitable delivery of a service and of a supportive organisational culture. As Paul O'Neill, former US Treasury Secretary and CEO of the metal company Alcoa, stated, 'I don't think you can be habitually excellent at everything unless you begin with caring about your workers'.[11] Staff may suffer distress and ill-health for a variety of reasons, ranging

from distress following major complications of a treatment they have carried out[21] to suicide in the context of undergoing investigations by a regulatory body.[22] The Francis Report into whistleblowing in the NHS[18] referred to many cases of whisteblowers and others being badly treated, and sometimes being subject to 'kangaroo courts' by NHS management, with no allowance for Plurality, Independence and Expertise principles to ensure fairness. Invariably, such cases may not only impinge on patient safety and staff wellbeing but may also involve significant expenditure from public funds coupled with financial hardship to staff who have to pay for their own legal costs. Legal settings, such as employment tribunals, are not interested in the implications of such cases for patient safety and staff wellbeing, and may sometimes be seen as weighted in favour of NHS employers, who have financial resources to maximise a legal case, to take an unfavourable ruling to a higher court, etc. In recent years, in the UK health service there have been prominent cases of NHS staff who have suffered as a result of extreme stress – including Eva Clark, the nurse at Mid-Staffordshire hospital, who committed suicide after being bullied at work[23] and Jacintha Saldanha, who committed suicide in December 2012 after suffering the humiliation of mistakenly answering a hoax phone call, pretending to be from the Queen, to the ward where the Duchess of Cambridge was a patient.[24] In both of these cases, the level of support that should have been provided to staff was apparently absent.

The Public Administration Select Committee of the UK House of Commons recommended[25] that the government adopt the proposal set out by Macrae and Vincent[26] for an independent Patient Safety Investigation Agency and this recommendation has been accepted by the government. When adverse events in healthcare seriously affect staff wellbeing, morale and motivation – regardless of whether the origins are poor patient outcome, poor management, etc. – such events need to be given the same urgency as when patients suffer. In line with the above message propounded by Paul O'Neill, it is worth considering whether, in addition to an Independent Patient Safety Investigation Service, a parallel body is put in place, an Independent Staff Investigation and Support Service, so that lessons can be learned when healthcare staff suffer in major ways in the clinical workplace, and so that staff support mechanisms can be readily put in place.[27] The current UK Health Secretary is quoted as stating in June 2015, 'The performance of the NHS is only as good as the support we give to the staff' (https://abetternhs.word press.com/2015/06/10/supervision/), and this needs to be translated into practical changes on the ground.

Active factors

Checklists. The need for checklists is based on the premise that in the execution of procedures the human brain may be subject to three key cognitive limitations: we may forget to retrieve one of a number of steps in a procedure; we may retrieve a step but for one reason or another (e.g. distraction, fatigue) may not remember to carry it out; or we may retrieve the step, remember to carry it out, but execute the action incorrectly. In aviation, there is usually much more in terms of procedural documentation of immediate relevance, such as in Airline Operations Manuals or Quick Reference Handbooks, and Toff[28] has proposed the availability of similar systems in healthcare. In aviation, there appear to be three forms of checklists, one for simple, routine operations; one for more complex operations; and one for emergency procedures (where the checklist may be 'do-verify later' rather than 'read-verify'). Checklists also vary between types of aircraft. Checklists have traditionally been a more integral part of aviation workflow, whereas in medical disciplines such as surgery, they have been a more recent innovation. To this extent, they may be seen to represent a form of 'time out' during an established routine. Medical applications of checklists have included the fields of surgery and infection control,[29–31] and there have also been attempts to reap the benefits of checklists to help avoid errors in medical diagnosis.[32,33]

Catchpole et al.[34] used both aviation and Formula 1 pit-stop expertise to inform the use of checklists to ensure smooth handover between surgery and intensive care. Low et al.[35] focused on the application of checklists on key transition points in surgery, 'flow checklists', so as to ensure that high-risk points such as departure from operating room do not suffer from lapses in procedures being executed. Wadhera et al.[36] showed how such an approach, if applied to key stages of cardiovascular surgery with high cognitive demands, can yield benefits. In a similar vein, Federwisch et al.[37] incorporated staff shift change-over times with a form of checklist by incoming and outgoing nurses to note items such as identification bracelet and IV catheter sites. Schelkun[38] extended the checklist concept to implementing a form of aviation plan in surgical settings – plan the operation taking into account the patient, the injury/illness, and the goals of the operation; decide on details of the operation, noting surgical approach, equipment needed, etc.; put together a surgical equipment checklist; and ensure good communication at every stage of the procedure, including debriefing

afterwards to review what went well and what could have been improved. On the more cautious side, Clay-Williams and Colligan[39] argued that there is variable evidence on the efficacy of checklists in healthcare, that checklists may not be applicable in more complex clinical settings (cf.[6]), and that over-reliance on checklists may detract from other forms of safety. In a similar vein, Catchpole and Russ[40] argued that a checklist is a 'complex socio-technical intervention that requires attention to design, implementation and basic skills required for the task', and that checklists may succeed and fail in healthcare for a variety of reasons.

Training. Training in aviation and training in fields such as surgery have been compared, with aviation training and competency assessment generally considered to be more rigorous and more regimented.[41–43] Initial pilot training normally takes around three years, and becoming a captain will usually take around a further 10 years. Training to become a doctor usually takes around five years, with generally a further 10 years before becoming a consultant. Keeping up with the explosion of knowledge in healthcare is daunting but necessary, even for experienced consultants, but this is not so much the case in aviation. Pilot training is in a variety of settings, on the ground, in an aircraft and always in a simulator. Simulation has also been extended to teamwork and debriefing. Simulators are overall less used in medical training – or they are used less systematically. Pilots have to undergo proficiency checks, usually in a simulator, every six months. Doctors in the UK now undergo re-validation every five years. Pilot training is broken down into core competency skills, and this form of behavioural analysis of the skill training needs is becoming more common in healthcare. Non-technical skills, such as leadership, team working, decision making, situational awareness, managing stress and coping with fatigue, are extensively taught in pilot training, with well-established protocols for behavioural measurements of crew while in flight.[44] It is only in recent years that behavioural marker systems that capture the non-technical skills of healthcare professionals have been developed in medicine, with some areas such as anaesthesia and surgery particularly embracing their value.[28,45–47] When unexpected or emergency situations arise, both doctors and pilots will benefit from a commitment to life-long learning, a good understanding of disasters and how to deal with them and an ability to think flexibly.[48,49] What is more, the personality of the pilot has been considered as part of determining risk-profiles during training, but as yet this has not happened in medicine.[50] In surgery, Lewis et al.[51] have argued that there may persist macho and 'heroism' personalities in surgeons, where improvising or finding a solution over-rides seeking or heeding advice from others in a team.

Crew resource management and sterile cockpit. Crew resource management essentially refers to how members of a team interact and are aware of factors that influence performance. Seager et al.[52] noted five features of crew resource management – cooperation, leadership, workload management, situational awareness and decision making. The 'team' in aviation may primarily be just the pilot and co-pilot, with a degree of hierarchy between the two, whereas the team in surgery or other medical settings may be more diverse, with more distinct roles and with a variable degree of hierarchy. Communication failures may be more likely to occur in healthcare than in aviation cockpit settings for a variety of reasons, including the wide range of staff and distractions/interruptions that are prevalent in many clinical interactions. In healthcare, there is probably a wider range of information, with the reliability and dynamic nature of such information differing from that in aviation. In addition, the effects of introducing aviation-style teamwork training into medicine may vary according to the speciality,[53] and may be determined in part by organisational and attitudinal factors.[54] Although there are usually clear differences in knowledge, skills and experience between a pilot and co-pilot, safety in aviation is encouraged to take priority over deference, with simple measures such as the use of first names in interactions.[51] This is not common practice in healthcare, since it is inherently hierarchical, with resultant barriers to assertiveness.[55] As Ornato and Peberdy[56] argued, some healthcare settings may well benefit from the implementation of aviation procedures such as cross-checks, read-back and 'two challenge rule' (another team member is allowed to over-ride someone if that person has been challenged twice but has failed to respond appropriately). Seager et al.[52] have noted features of crew resource management which could be readily applied to healthcare settings such as the operating theatre, and these include peer monitoring, briefings, defining operating procedures and standards, recognition of fatigue as a factor in performance, regular 'check rides' in the form of assessment in a simulator, blame-free reporting culture, use of checklists and application of the principle of a 'sterile cockpit'. Briefings before and after surgery may be particularly helpful in both encouraging members in the team to stand back and appraise procedures, and also to encourage mutual respect and team bonding between the members.[57–59] Good communication within crew resource management involves respect for each other's roles, and also simple measures

such as direct eye contact, introducing each other, using non-judgemental words and putting safety before self-esteem.

A 'sterile cockpit', which essentially refers to an environment free of unnecessary distractions, may improve patient safety if applied at key points in clinical procedures.[36] A distraction-free environment is especially important when a critical or complex procedure is being carried out, whether it be an intricate stage of a surgical procedure in healthcare or taking off/landing in aviation. There is a high frequency of distractions and interruptions in the work of healthcare professionals,[60] with a negative impact on patient safety.[61,62] A number of studies, such as that by Federwisch et al.,[37] have successfully applied the sterile cockpit idea to medication delivery, where 'DO NOT DISTURB' tabards or signs are visible during medication rounds, so as to reduce the number of distractions. When emergencies arise in a cockpit or in a surgical setting, multiple alarms may be activated, and the ability to notice and respond to key alarms, and to think flexibly, are key for safe outcomes – analogies can readily be made here between airline and medical settings.[49,63–65]

Performance analysis

Investigation of incidents. In the UK, an investigation report by the Air Accidents Investigation Board can involve at least several months of work, with field investigations where appropriate, and detailed background information sought on the equipment and individuals involved. The usual structure of an Air Accidents Investigation Board Report is as follows:

(a) There is firstly a factual summary of the key features of the incident which includes detailed information about the aircraft and the pilot.
(b) There follows a synopsis of the report:
  - An exposition of all the relevant facts of the incident, often with graphs and photographs
  - An analysis of the data gathered with a view to understanding what could have contributed to the incident
  - Conclusions and safety recommendations

Woloshynowych et al.[66] have documented the types of investigations and analyses that are carried out for critical incidents and adverse events in healthcare, and studied 138 papers that provided relevant evidence. They cited systems such as the Australian Incident Monitoring System, the Critical Incident Technique, Significant Event Auditing, Root Cause Analysis, the Organizational Accident Causation Model and the Comparison with Standards approach. They concluded that:

> There was little or no information on the training of investigators, how the data was extracted or any information on quality assurance for data collection and analysis...In most papers, there was little or no discussion of implementation of any changes as a result of the investigations. (p. iii)

Macrae and Vincent[26] have pointed to major limitations in the quality of investigations and monitoring of the implementation of recommendations for improvement in the case of healthcare compared with other industries such aviation. They have argued for an independent investigations agency in the NHS, comparable to the Air Accidents Investigation Board, and to its parallel body in the USA, the National Transportation Safety Board, a recommendation that has been accepted by the UK government. In the USA, a specific aviation safety body was set up in 1998 to bring together stakeholders in government and industry, and was called the Commercial Aviation Safety Team. This team identifies top safety areas through analysis of accident and incident data; it charters joint teams of experts to develop methods to fully understand the chain of events leading to accidents; and it identifies and implements high-leverage safety interventions to reduce the fatality rate in these areas. Pronovost et al.[67] argued for a similar body to be set up within healthcare.

Reporting of incidents. Reporting of incidents has many dimensions, which include the extent to which reporting is blame-free; the readiness to produce a report; the documentation of near-misses; the particular reports which are investigated; the format, investigation and dissemination of reports; the body that investigates and reports on serious incidents; positive or negative consequences for those who have contributed to or highlighted an adverse event; and the resulting action plans. In healthcare, Morbidity & Mortality meetings, where they happen, are often a forum where problematic cases are reported and discussed, and where deaths and serious complications ought to be reviewed to promote learning and improvements in practice. In terms of national reporting, in the UK there is the *National Reporting and Learning Service*, which is one of the largest reporting systems of its type in the world. A key criticism of reporting within healthcare is that the link from error to learning has often not materialised, and few mechanisms are put in

place to ensure that changes have been implemented and errors are not repeated. In aviation, a major incident is often followed by the causes being simulated and becoming part of training, and particular equipment design, procedural or training recommendations being put in place, such as happened after the 2009 Air France plane disaster.[68]

In clinical practice, adverse events such as complications are often considered to be routine, and thus may not be reported. Apart from blame, some doctors may not report near-miss adverse events due to a sense of pride or self-esteem, or due to fear of litigation. There may also be lack of time for reporting and high workload, lack of understanding why reporting is needed, concerns that no beneficial action will follow and in some countries lack of confidentiality or absence of adequate reporting systems in place.[69,70] As has been found in aviation,[71] near-misses may often be as instructive as adverse events.[72] It may be worth translating into healthcare the aviation system of immunity from disciplinary action for the reporting of adverse incidents, apart from cases of gross or wilful negligence.[73] The system used in aviation, Confidential Human Factors Incident Reporting Programme, has now been emulated in the field of surgery – Confidential Reporting System in Surgery – and has been found to work well.[74] Similar schemes, which also encourage the reporting of near-misses, have adopted user-friendly online reporting formats.[75]

Ferroli et al.[76] described how, with the support of aviation specialists, they designed a Patient Incident Reporting System form which was used to record near-misses in a neurosurgical setting. They analysed 14 such incidents and were able to distinguish different types of failures – human factors (the most common), technological factors, organisational factors and procedural factors. Their reporting and analysis system appeared to encourage a no-blame reporting culture. Clinicians rarely keep an audio or video record of their interactions with patients, and the introduction of such recordings is a matter of debate.[77] However, in aviation, 'black boxes' – which record flight data and cockpit conversations – are carried in all commercial aircraft. The idea of documenting all safety failures, however minor, was also highlighted by Bowermaster et al.,[78] who likened their approach to that of using the 'black box' principle in aviation (cf.[79]). Helmreich[14] has described a 'Line Operations Safety Audit' that involved expert observers in the cockpit during normal flights. As well as potential safety threats, such as mountains and adverse weather, types of human error were documented, and fell into several groups – violations (e.g. conscious failure to adhere to procedures), procedural errors (e.g. erroneous entry into flight computer), errors in communication (e.g. misunderstood altitude clearance), lack of proficiency (e.g. inability to program computer-based device), and poor decisions (e.g. decision to navigate through adverse weather). There is scope for emulating aviation by including direct observation of clinical staff as part of routinely evaluating quality of care.[80]

Implications for healthcare

There are many opportunities for safety measures and concepts in high-risk industries such as aviation to be considered for adoption in healthcare, with a need for actions to be proactive and generative, rather than solely reactive to adverse events.[81] A focus on systems rather than individuals, and an examination of 'latent risk factors' that may result in adverse events, are other lessons that we can learn from aviation.[82,83] Naturally, adopting measures from aviation without adapting them for the unique healthcare environment would be unwise, but where this has been done in a systematic but flexible way, clear benefits have been found.[84] Issues such as privacy and patient confidentiality are particularly important in healthcare. In the finance-driven world of healthcare, any safety improvements should ideally have a good economic argument to accompany them, but – as Lewis et al.[51] have argued – making such a case should be relatively easy to do, especially bearing in mind the huge litigation costs of clinical negligence claims.

As happens in safety-critical industries such as aviation, human factors training and related psychological training in patient safety and staff wellbeing need to be an integral part of all NHS staff workplans, from the board-room to the bedside, with dedicated human factors/patient safety psychologists in post. Most major airlines have well-established departments that are staffed by a large team of psychologists/human factors specialists, while this is the exception rather than the rule for major NHS hospitals. The psychology of patient safety and staff wellbeing should be an integral part of the professional training curricula of healthcare staff, staff selection, induction, appraisal, revalidation, merit awards and Continuing Professional Development, so as to gradually develop the appreciation within the healthcare community of the impact of human factors, psychological variables and non-technical skills on safety. Cognitive Bias Avoidance Training could form a key component of such training curricula in view of the key part cognitive decision making plays in a number of adverse incidents,[85] and the potential effectiveness of Cognitive Bias Avoidance Training for reducing diagnostic errors.[86,87] Key bodies, such

as NHS England, the Care Quality Commission and the Department of Health, as well as regulatory bodies such as the General Medical Council, should have resident expertise in human factors and the psychology of safety, together with an ethos that embraces and rewards clinical excellence (cf.[88–90]).

In a recent television interview, Captain Chesley Sullenberger, the senior crew member of the Hudson River aircraft incident, is reported as stating,

> We have purchased at great cost lessons literally bought with blood that we have to preserve as institutional knowledge and pass on to succeeding generations. We cannot have the moral failure of forgetting those lessons and have to relearn them.

It behoves all of those involved in healthcare delivery to have this same urgency of purpose.

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