



TAHOE FOREST HOSPITAL DISTRICT

# 2024-02-28 Board Quality Committee Meeting

Wednesday, February 28, 2024 at 12:00 p.m.

Tahoe Forest Hospital - Donner Conference Room

10976 Donner Pass Road, Suite 3, Truckee, CA 96161



## TAHOE FOREST HOSPITAL DISTRICT

### Meeting Book - 2024-02-28 Board Quality Committee Meeting

#### AGENDA

2024-02-28 Board Quality Committee\_Agenda.pdf

ITEMS 1-4: See Agenda

#### 5. APPROVAL OF MINUTES

2023-11-07 Board Quality Committee\_DRAFT Minutes.pdf

#### 6. CLOSED SESSION

#### 7. ITEMS FOR COMMITTEE DISCUSSION AND/OR RECOMMENDATION

##### 7.1. Informational Reports

###### 7.1.1. Patient & Family Centered Care

7.1.1.1. PFAC Summary for Quality Board February 2024.pdf

###### 7.1.2. Patient Safety

7.1.2.1. Beta HEART Domain Update Feb 2024.pdf

##### 7.2. Safety First

No related materials.

##### 7.3. Incentive Compensation Quality Criteria - Standard Work Bundles.pdf

##### 7.4. Quality Assessment- Performance Improvement -QA-PI- Plan-AQPI-05-Draft-Changes.pdf

##### 7.5. Leading\_a\_Culture\_of\_Safety-A\_Blueprint\_for\_Success.pdf

##### 7.6. Board Quality Education

7.6.1. healthcare-data-governance-practice-brief-final.pdf

7.6.2. NEJM AI in Healthcare 2023.pdf

ITEMS 8-10: See Agenda



# QUALITY COMMITTEE AGENDA

Wednesday, February 28, 2024 at 12:00 p.m.  
Donner Conference Room – Tahoe Forest Hospital  
10976 Donner Pass Road, Suite 3, Truckee, CA 96161

**1. CALL TO ORDER**

**2. ROLL CALL**

Michael McGarry, Chair; Robert Barnett, 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: 11/07/2023 ..... ATTACHMENT**

**6. CLOSED SESSION**

**6.1. Hearing (Health & Safety Code § 32155)**

*Subject Matter: Case Review*

*Number of items: One (1)*

**6.2. Approval of Closed Session Minutes**

**6.2.1.** 11/07/2023 Closed Session Board Quality Committee

**7. ITEMS FOR COMMITTEE DISCUSSION AND/OR RECOMMENDATION**

**7.1. Informational Reports**

**7.1.1. Patient & Family Centered Care**

**7.1.1.1. Patient & Family Advisory Council (PFAC) Update..... ATTACHMENT**

Quality Committee will receive an update related to the activities of the Patient and Family Advisory Council (PFAC).

**7.1.2. Patient Safety**

**7.1.2.1. BETA HEART Program Progress Report ..... ATTACHMENT**

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

**7.2. Safety First**

**7.3. Potential Quality Criteria for FY24 President & CEO Incentive Compensation ..... ATTACHMENT**

Quality Committee will discuss potential quality criteria for the Fiscal Year 2024 President and Chief Executive Officer Incentive Compensation Plan.

**7.4. Quality Assessment Performance Improvement (AQPI-05) ..... ATTACHMENT**

Quality Committee will review the Quality Assessment/Performance Improvement Plan and provide input on 2024 priorities.

**7.5. Leading a Culture of Safety ..... ATTACHMENT**

Quality Committee will discuss the key question about our organization’s capabilities and processes related to Leadership Development, including foundational and sustaining strategies.

American College of Healthcare Executives and IHI/NPSF Lucian Leape Institute. *Leading a Culture of Safety: A Blueprint for Success*. Boston, MA (2017) Downloaded on 3/9/22 from <https://www.ihl.org/resources/Pages/Publications/Leading-a-Culture-of-Safety-A-Blueprint-for-Success.aspx>

**7.6. Board Quality Education ..... ATTACHMENT**

Quality Committee will review the following articles related to Business Intelligence/Data Governance and Artificial Intelligence:

**7.6.1.** AHIMA. *Healthcare Data Governance*. Chicago, IL (2022). Downloaded on 10/20/23 from: <https://www.ahima.org/media/pmcb0fr5/healthcare-data-governance-practice-brief-final.pdf>

**7.6.2.** Drazen, J.M., Kohane, I.S., Leong, T.Y. (2023). *Artificial Intelligence in U.S. Health Care Delivery*. *New England Journal of Medicine*, 389: 348-358.

**8. REVIEW FOLLOW UP ITEMS / BOARD MEETING RECOMMENDATIONS**

**9. NEXT MEETING DATE**

The next committee date and time will be confirmed.

**10. ADJOURN**

\*Denotes material (or a portion thereof) may be distributed later.

Note: It is the policy of Tahoe Forest Hospital District to not discriminate in admissions, provisions of services, hiring, training and employment practices on the basis of color, national origin, sex, religion, age or disability including AIDS and related conditions. Equal Opportunity Employer. The telephonic meeting location is accessible to people with disabilities. Every reasonable effort will be made to accommodate participation of the disabled in all of the District’s public meetings. If particular accommodations for the disabled are needed or a reasonable modification of the teleconference procedures are necessary (i.e., disability-related aids or other services), please contact the Executive Assistant at 582-3481 at least 24 hours in advance of the meeting.

# QUALITY COMMITTEE

## DRAFT MINUTES

Tuesday, November 7, 2023 at 12:00 p.m.  
Donner Conference Room – Tahoe Forest Hospital  
10976 Donner Pass Road, Suite 3, Truckee, CA 96161

### 1. CALL TO ORDER

Meeting was called to order at 12:05 p.m.

### 2. ROLL CALL

Board: Michael McGarry, Chair; Robert Barnett, Board Member

Staff in attendance: Harry Weis, President & Chief Executive Officer; Dr. Brian Evans, Chief Medical Officer; Janet Van Gelder, Director of Quality & Regulations; Trent Foust, Director of Nursing; Alix Crone, Patient Experience Specialist; Martina Rochefort, Clerk of the Board

Via zoom: Dr. Joy Koch, Chief of Staff

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

No changes were made to the agenda.

### 4. INPUT – AUDIENCE

No public comment was received.

### 5. APPROVAL OF MINUTES OF: 08/21/2023

Director Barnett moved to approve the Board Quality Committee minutes of August 21, 2023, seconded by Director McGarry.

Open Session recessed at 12:07 p.m.

### 6. CLOSED SESSION

#### 6.1. Hearing (Health & Safety Code § 32155)

*Subject Matter: Case Review*

*Number of items: One (1)*

Discussion was held on a privileged item.

#### 6.2. Approval of Closed Session Minutes

##### 6.2.1. 08/21/2023 Closed Session Board Quality Committee

Discussion was held on a privileged item.

Open Session reconvened at 12:42 p.m.

*Jan Iida, Chief Nursing Officer, and Dr. Annamieka Conway, Medical Director of Quality, joined the meeting during Closed Session.*

### 7. ITEMS FOR COMMITTEE DISCUSSION AND/OR RECOMMENDATION

#### 7.1. Informational Reports

##### 7.1.1. Patient & Family Centered Care

### **7.1.1.1. Patient & Family Advisory Council (PFAC) Update**

No discussion was held.

*Dr. Johanna Koch, Chief of Staff, departed the meeting at 12:43 p.m.*

Director Barnett would like to attend a PFAC meeting.

### **7.1.2. Patient Safety**

#### **7.1.2.1. BETA HEART Program Progress Report**

No discussion was held.

### **7.2. Safety First**

Janet Van Gelder, Director of Quality & Regulation, shared the Health System recently discovered an error with laboratory reporting. There is a team working on the reporting to ensure physicians are receiving the correct reports.

Dr. Brian Evans, Chief Medical Officer, shared Katherine Gaffney has been a great addition to the team with her follow up on items to improve culture of safety.

### **7.3. Leading a Culture of Safety**

Quality Committee discussed the key question about our organization's capabilities and processes related to Leadership Development, including foundational and sustaining strategies in the following article:

American College of Healthcare Executives and IHI/NPSF Lucian Leape Institute. *Leading a Culture of Safety: A Blueprint for Success*. Boston, MA (2017) Downloaded on 3/9/22 from <https://www.ih.org/resources/Pages/Publications/Leading-a-Culture-of-Safety-A-Blueprint-for-Success.aspx>

Director McGarry felt the Board of Directors is included as leadership. There is a huge opportunity to improve communication. He asked if data is being used to measure things. Key points in the article were around the structure of data.

Harry Weis, President & CEO, share the District is actively working on access to care project and developing a decision support team.

Decision support segues into governance.

The need for reliable data will be more critical as we roll out standard work across the organization. We need to reduce the variability across the board.

### **7.4. Board Quality Education**

Quality Committee reviewed the following article: Drazen, J.M., Kohane, I.S., Leong, T.Y. (2023). *Artificial Intelligence in U.S. Health Care Delivery*. New England Journal of Medicine, 389: 348-358.

Director Barnett stated stress in the workplace caused by changes. He thought what was remarkable about the article is how many places there will be changes due to Artificial Intelligence. We have to acknowledge it and think about how to help staff deal with it.

Director McGarry shared we are solving our own problems that we created. We are going to be asked to do more and more with less. The District will have to figure out to maintain with the same human touch.

Director McGarry asked where the District is with data management and use of data. CMO responded his sense is that the data is there but the question is can we pull it easily and analyze it without creating months of work for someone. The District needs to pull data automatically. There are analysts scattered in different areas. We have lots of data but we are challenged to get it out.

*Medical Director of Quality departed the meeting at 1:09 p.m.*

CMO shared the community health needs assessment can be used as a report card of the community. It provides a lot of information such as how many people are smoking or drinking.

Quality Committee discussed if there is a way to see how the community is performing as a whole. Director McGarry views this more as an open dialogue about where are we today. Quality Committee discussed the barriers as there are not a lot of resources for this kind of measurement.

Director of Quality stated that another training is needed that was offered before Epic came went live. The assumption was made we would not need the resources by using Epic.

#### **8. REVIEW FOLLOW UP ITEMS / BOARD MEETING RECOMMENDATIONS**

-Review process metrics for CEO Incentive Compensation program.

#### **9. NEXT MEETING DATE**

The next Board Quality Committee will be held in February 2024.

#### **10. ADJOURN**

**Meeting adjourned at 1:28 p.m.**





# Patient and Family Advisory Council (PFAC) Summary Report

January 2023 – January 2024

*Alix Crone, DC, CPXP – Clinical Patient Experience Specialist*

## Summary of Monthly Topics

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**February** – Dr. Mark Ruggiero, Medical Director of Pediatrics, introduced our newest program in Pediatric Developmental and Behavioral Health. He is the only pediatric subspecialist at both TFH and in our community. With his background, he is currently able to see about 90% of referred patients without having to make any additional referrals. Currently only accepting from internal Pediatric providers, though goal is to open to outside providers. These evaluations are outpatient based only, and not inpatient psychiatric care. Will be developing relationships with the local schools, and adjust to the needs of the community as well as available resources.

**March** – Abby Thomas, Cancer Center Clinic Manager, presented on our Outpatient Oncology program as well as our newest program, Outpatient Infusions. We discussed the need for transportation assistance to the community, given that there is currently a 52% in-migration of patients from other locations on top of our local capacity. Input/feedback was solicited regarding some ideas or pilot programs that could be explored for our region. We discussed ideas for improving our Outpatient Infusion facility, which has had mixed/negative reviews from patients due to space and ambiance factors.

**April** – Allie Devlin, Patient Access Supervisor, presented information about our Financial Customer Service team as well as billing/insurance services provided. She explained the process of setting up payment plans, how to qualify for setting up payment plans, applying for Financial Assistance, and what to expect from our provided “payment estimates.” Michael Navarro, Manager of Patient Financial Services, provided some clarifying information regarding insurance billing questions.

**May** – Sadie Wangler, Director of Diagnostic Imaging, and Shayna Vosburgh, Manager of DI, presented on our upgraded 3T MRI machine as well as our new AI Mammography software. Highlights include improving availability and access to MRI appointments for patients due to the shorter procedure time, and advanced image quality. New AI software for mammography services have increased breast cancer detection rate by 0.5% Tahoe Forest was one of the first hospitals in the state of California to have this software. They also presented on our \$3.6M grant to upgrade DI services for Incline Village Community Hospital, hopefully to open December 2023.

**June** – Maria Martin, Director of Community Health and Wellness, presented on the findings from the Community Health Needs Assessment completed in 2021, to identify gaps, strengths and opportunities. The 5 key needs fall into the domains of health disparities, chronic disease, prevention and wellness, substance misuse, and mental/behavioral health. Wendy Buchanan, Director of Occupational Health and Wellness, presented on our health education resources available to patients, employees and the community as a whole. They sought feedback from members on advertising/marketing of these services, as well as ideas for other offerings.



# PATIENT AND FAMILY ADVISORY COUNCIL (PFAC) SUMMARY REPORT

January 2023 – January 2024

**September** – We did a round table discussion of some overall updates to the Tahoe Forest Health System, the Strategic Plan, and surveyed the PFAC members for topics/meeting feedback. Harry Weis, CEO, shared a wealth of information to the present members regarding the current state of health care, more specifically rural hospitals nationwide. He presented an overview of our current Access to Care project with Vizient and how we are working collaboratively to meet the needs of our community and improve access to care.

**October** – Katherine Gaffney, Risk Manager, along with Ashley Davis, Patient Safety Officer, presented to PFAC about adverse event analysis at Tahoe Forest and our expectations/relationship with BETA Healthcare Group. We discussed the timeline of disclosure to the family, investigation and fact-finding of the event, and ongoing communication. They presented a patient fall case, wherein the adverse event analysis process/procedures were followed, the opportunities that were identified, and the plans for ongoing implementations to help prevent in the future. Our PFAC members provided input on funding sources, communication needs and policy changes.

**November** – Dr. Brian Evans, CMO, presented on Access to Care (A2C) project underway. Discussed the identified operational deficiencies and gaps as they relate to patient access, and how we are addressing with our contractor, Vizient. He discussed the changes in our “Winning Aspirations” and our commitment to improve the overall health of the community. He discussed that some of the changes will be addressing Medical Staff engagement and finding a standardized operation for our providers. We want to maximize our productivity and efficiency, while still maintaining highest patient satisfaction, quality of care, and patient safety.

**January** – Kat Sigafoose, Director of Patient Access, and Alix Crone, introduced our “Secret Shopper” customer service program idea, and solicited input from the group on how to implement. We discussed areas where customer service needs to be improved, notably the front desk/reception areas where the patient encounter generally begins. We also discussed current safety/security issues involving disruptive patients, and how best to manage expectations with “behavior contracts” and signs. The group had suggestions and input on the most appropriate verbiage, from the patient’s perspective, regarding sign messaging. Signs are currently displayed in the pharmacy and ER. The group also gave suggestion on de-escalation training and skills for all staff, just like the customer service training.

## Current Overview

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- Ongoing goal is to have PFAC identify ways to help educate community on all services offered by TFHS, as well as provide input and feedback on current and future processes and systems.
- Plan for 2023 was to address the current concerns and topics of interests within PFAC and the community – Access to care, behavioral and mental health, senior citizen resources and services, incoming providers, etc. There is also a request from the PFAC to revisit certain topics more frequently (i.e., patient access and scheduling, patient billing/insurance).
- PFAC meets every month, 9 months in the year. We do not meet during the months of July, August, or December.
- Next PFAC meeting is February 20, 2024

# PATIENT AND FAMILY ADVISORY COUNCIL (PFAC) SUMMARY REPORT

January 2023 – January 2024

## Current Members and Start Date

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Pati Johnson	3/22/2018	Kathee Hansen	4/1/2021
Helen Shadowens	5/24/2018	Bill Poland	10/18/2022
Kevin Ward	9/20/2018	Carina Toledo	11/17/2022
Sandy Horn	9/5/2019	Cris Valerio	12/1/2022
Violet Nakayama	10/31/2019	Jane Rudolph-Bloom	1/1/2024
Alan Kern	2/20/2020		

# Beta HEART Progress Report

(February 2024)

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 2024:

- Beta HEART Validation Survey completed May 9, 2023; validated in all 5 domains with a total cost savings of \$152,971
- Beta HEART Validation Survey planned for May 2024, including SCOR Culture of Safety Survey in March 2024

Domain	History of Incentive Credits (2% annually)	Readiness for next Validation	Goal	Comments
<b>Culture of Safety:</b> A process for measuring safety culture and staff engagement (Lead: Ashley Davis, Beta HEART Lead)	Validated 2023: \$30,594.20	0%	-Greater than 60% completion rate for Culture of Safety Survey Pulse Check-In -Achieve Tier 2 in Zero Harm (OB & ED)	<ul style="list-style-type: none"> <li>• Pulse check-in version of SCOR Culture of Safety survey scheduled for March, 2024. Results are expected April, 2024.</li> <li>• TFHD Women &amp; Family Center and Emergency Departments were recognized for achieving Tier 2 in Zero Harm (highest level of recognition for Beta) in 2023.</li> <li>• 12 leaders to attend February 2024 workshop in Palm Desert, CA; topics include Culture of Safety and Rapid Event Response and Analysis.</li> </ul>
<b>Rapid Event Response and analysis:</b> 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: Janet Van Gelder, Ashley Davis)	Validated 2023: \$30,594.20	100%	-75% or greater response time for event analyses within 45 days of event reported -75% or greater response time for closure of action items within 90 days of event reported	<p>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. The Reliability Management Team reviews all action plans to address strength of action items.</p> <ul style="list-style-type: none"> <li>• 12 leaders to attend February 2024 workshop in Palm Desert, CA; topics include Culture of Safety and Rapid Event Response and Analysis.</li> </ul>
<b>Communication and transparency:</b> A commitment to honest and transparent communication with patients and family members after an adverse event (Lead: Janet Van Gelder, Ashley Davis)	Validated 2023: \$30,594.20	100%	75% or greater response time for closure of event within 60 days	<p>Disclosure checklist updated and refined as we update process and leaders trained to respond to events.</p> <ul style="list-style-type: none"> <li>• 12 leaders to attend April 2024 workshop in La Jolla, CA; topics include Communication &amp; Transparency and Care for the Caregiver.</li> </ul>
<b>Care for the Caregiver:</b> An organizational program that ensures support for caregivers involved in an adverse event (Lead: Stephen Hicks, Peer Support Lead)	Validated 2023: \$30,594.20	100%	75% or greater response time for peer supporter deployment made in 0-12 hours	<p>Ongoing training and quarterly peer support and steering committee meetings. Currently have 14 peer supporters available to all staff. We will be interviewing 24 applicants to who want to join the team. Sunshine cart rounds weekly to remind everyone about talk space, peer support and Employee Assistance Program. One peer supporter is now trained in Critical Incident first aid and plans for more peer supporters to go through this training. Plan for Mental Health first aid train-the trainer education in 2024 so we can train new peer supporters in-house.</p> <ul style="list-style-type: none"> <li>• 12 leaders to attend April 2024 workshop in La Jolla, CA; topics include Communication &amp; Transparency and Care for the Caregiver.</li> </ul>
<b>Early Resolution:</b> A process for early resolution when harm is deemed the result of inappropriate care or medical error (Lead: Janet Van Gelder, Ashley Davis)	Validated 2023: \$30,594.20	100%	75% or greater response time for closure of event within 60 days	12 leaders to attend Early Resolution workshop in Huntington Beach, CA in September 2024.



Tahoe Forest Hospital  
Standard Work Bundles  
2024

We have developed the following concurrent quality metric bundles:

**1. OP-35: Emergency Visits after Outpatient Chemotherapy**

- a. Stakeholders: Kelley Bottomley, Derek Baden
- b. Standard work items
  - i. Initial prevention
  - ii. Symptomatic patients during treatment
    - 1. Evaluations and referrals
- c. Numerator-Chemo patients with validated chemo teach
- d. Denominator-New start chemo patients
- e. **Goal =  $\geq 92\%$**

**2. HAI-6/C-Diff**

- a. Stakeholders: Trent Foust, Nicole Becker
- b. Standard work items
  - i. Testing- call MD before
  - ii. Enteric contact precautions
  - iii. If C-Diff positive- PPE present, private room, hand hygiene observed
- c. Numerator-Patients with bundle items done
- d. Denominator- Patients with 3 or more loose stools in 24 hrs
- e. **Goal  $\geq 90\%$**

**3. Sep-1/Sepsis**

- a. Stakeholders: Trent Foust, Nicole Becker, Ellie Cruz
- b. Standard work items
  - i. 3 hour bundle
  - ii. 6 hour bundle
- c. Numerator- Sepsis patients with 3 and 6 hour bundles verified
- d. Denominator- Sepsis admissions or new sepsis developed
- e. **Goal  $\geq 90\%$**

**4. Falls**

- a. Stakeholders: Trent Foust, Nicole Becker
- b. Standard work items
  - i. Fall risk bundle in place
  - ii. Ambulation status posted (ICU/MS)
- c. Numerator- High fall risk patients with all bundles in place
- d. Denominator- Fall risk patients reviewed
- e. **Goal  $\geq 90\%$**

**5. SSI**

- a. Stakeholders: Calley Corr, Kate Cooper
- b. Standard work items

Tahoe Forest Hospital  
Standard Work Bundles  
2024

- i. Pre-op hair removal
    - ii. CHG Pre-op
    - iii. Nasal Decolonization
    - iv. Oral Decolonization
    - v. Vanco MRSA Positive only
    - vi. Normo-thermia pre-op
  - c. Numerator- TJR patients with all bundles
  - d. Denominator- Elective TJR patients
  - e. **Goal  $\geq 90\%$**
- 6. OP-10: Abdomen CT Use of Contrast**
  - a. Stakeholders: Sadie Wangler, Shayna Vosburgh
  - b. Standard work items
    - i. Exclusion diagnosis present
    - ii. Verified with Provider correct order
  - c. Numerator- Appropriate combined abdomen CT orders
  - d. Denominator- Combined abdomen CT orders
  - e. **Goal  $\geq 90\%$**
- 7. Total Joint Replacements**
  - a. Stakeholders: Danielle Moran, TBD
  - b. Standard work items
    - i. Medical and social clearance
    - ii. Patient education
    - iii. Monitoring/follow-up
      - 1. Sub-items within each category
  - c. Numerator- TJR patients with all bundles
  - d. Denominator- Elective TJR patients
  - e. **Goal  $\geq 90\%$**
- 8. Hospital-Wide All Cause Unplanned Readmissions**
  - a. Stakeholders: Karyn Grow, Anna McGuire
  - b. Standard work items
    - i. TCM referral
    - ii. Follow-up with PCP within 14 days
  - c. Numerator- High risk discharges with bundle items
  - d. Denominator- High risk discharges, score  $\geq 3$
  - e. **Goal  $\geq 90\%$**

Tahoe Forest Hospital  
Standard Work Bundles  
2024

The concurrent bundles are for internal tracking and not reportable to CMS. Previously we have tracked outcome measures, showing noncompliance with the quality metric. The concurrent bundle is being proactive to ensure compliance with the process measure to avoid a negative outcome. We are focused on standard work and adhering to it every time to ensure the best outcome for our patients. Tracking the bundles will be reported out in the form of a numerator (number of patients with quality metric bundle completed) and denominator (total number of patients being measured).





Status **Draft** PolicyStat ID **14820263**



**TAHOE  
FOREST  
HEALTH  
SYSTEM**

Origination	N/A
Date	
Last Approved	N/A
Last Revised	N/A
Next Review	N/A

Department	Quality Assurance / Performance Improvement - AQPI
Applicabilities	System, Truckee Surgery Center

## Quality Assessment/ Performance Improvement (QA/PI) Plan, AQPI-05

### RISK:

Organizations who respond reactively, instead of pro-actively, to unanticipated adverse events, and/or outcomes, lack the ability to mitigate organizational risks by reducing or eliminating contributing factors. This is a risk for poor quality care and patient outcomes.

### POLICY:

The Quality Assessment/Performance Improvement (QA/PI) plan provides 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. An effective plan will pro-actively mitigate organizational risks by eliminating, or reducing factors that contribute to unanticipated adverse events and/or outcomes, in order to provide the highest quality care and service 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 principles 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 utilized to guide all improvement activities.

### MISSION STATEMENT

The mission of Tahoe Forest Health System is *"To enhance 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 strive to be the health system of choice in our region and 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, committing to continuous improvement, and having personal integrity in all we do
- B. Understanding – being aware of the concerns of others, demonstrating compassion, respecting and caring for each other as we interact
- C. Excellence – doing things right the first time, every time, and being accountable and responsible
- D. Stewardship – being a community ~~partner~~ steward in the care, handling, and responsible ~~for safeguarding care and~~ management of ~~health system~~ resources while ~~being innovative and~~ providing quality healthcare
- E. Teamwork – looking out for those we work with, finding 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. People – best place to work, practice, and volunteer~~
- ~~2. Service – best place to be cared for~~
- ~~3. Quality – provide clinical excellence in clinical outcomes~~
- ~~4. Finance – provide superior financial performance~~
- ~~5. Growth – meets the needs of the community~~

A. Our foundation of excellence includes:

- 1. People – aspire for a highly engaged culture that inspires teamwork and joy
- 2. Service – aspire to deliver a timely, outstanding patient and family experience
- 3. Quality – aspire to deliver the best possible outcomes for our patients
- 4. Finance – aspire for long-term financial strength
- 5. Community – aspire to be an integrated partner in an exceptionally healthy and thriving community

# PERFORMANCE IMPROVEMENT INITIATIVES

- A. The ~~2023~~2024 performance improvement priorities are based on the principles of STEEEP™, (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
    - c. Focus on CMS quality star rating improvements, within the 7-measure groups, that fall below benchmark
    - d. Emphasis on Management Systems and standard work process improvement, utilizing lean principles, to improve quality, access, and efficiency
  2. Continued focus on quality and patient/employee safety ~~during the pandemic~~related to infectious diseases, following CDC, State, 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 ~~Healthcare Facilities Accreditation Program (HFAP)~~ and 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, including near misses
  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. Emphasis on achieving highly reliable health care through the following:
- a. A commitment to the goal of zero harm
  - b. A safety culture, which ensures employees are comfortable reporting errors without fear of retaliation
  - c. Incorporate highly effective process improvement tools and methodologies into our work flows
  - d. Ensure that everyone is accountable for safety, quality, and patient experience
7. 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.
8. Promote lean principles to improve processes, reduce waste, and eliminate inefficiencies
9. Maximize Epic reporting functionality to improve data capture and identification of areas for improvement ~~as part of our data governance strategy~~
10. Develop a data governance strategy
- 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 BOD has responsibility for ensuring that CAH services are provided according to acceptable standards of practice, irrespective of whether the services are provided directly by CAH employees or indirectly by agreement or arrangement.
- C. The BOD must take actions through the CAH's QA/PI Program to:
  - 1. Assess services furnished directly by CAH staff, and those services provided under agreement or arrangement
  - 2. Identify quality and performance problems
  - 3. Implement appropriate corrective or improvement activities
  - 4. Ensure monitoring and the sustainability of those corrective or improvement activities
- D. 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™), 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 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 health care outcomes. The Medical Director of Quality, and the Chief Medical Officer, are members of the Board of Director's Quality Committee.

## 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 (Director) 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 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~~, the Code of Conduct (ACMP-1901), and Chain of Command for Medical Plan of Care (ANS-1404) policies. All employees must feel empowered to report, correct, and prevent problems.
- B. The multidisciplinary Patient Safety Committee consists of staff from each service area. This Committee will assist with quality, patient safety, patient experience, and infection prevention. They will evaluate processes, provide recommendations, identify process improvement opportunities, and communicate their findings with peers to improve practice across the Health System.
- C. The multidisciplinary Patient Experience Committee consists of staff from each service area. The Committee will assist with patient satisfaction, and service excellence. They will evaluate processes, provide recommendations, identify process improvement opportunities, and communicate their findings with peers to improve service excellence across the Health System.
- D. 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 Staff Quality Assessment Committee:

- A. Annually review and approve the ~~Quality Assurance Performance Improvement Plan, Medication Error Reduction Plan~~Quality Assurance Performance Improvement Plan (MERPAQPI-05), Infection Control Plan~~Medication Error Reduction Plan (APH-34), Environment of Care Management Program~~Medication Error Reporting (APH-24), Emergency Operations Plan~~Infection Control Plan (AIPC-64), Utilization Review Plan~~Environment of Care Management Program (AEOC-98), Discharge Plan~~Emergency Operations Plan (AEOC-17), Risk Management Plan~~Utilization Review Plan (DCM-1701), Patient Safety Plan~~Discharge Plan (ANS-238), Employee Health Plan~~Risk Management Patient Safety Plan (AQPI-04), Trauma Performance Improvement Plan~~Employee Health Plan (DEH-39), Home Health Quality Plan~~Trauma Performance Improvement Plan, and the Hospice Quality Plan~~Home Health Quality Plan (DHH-1802), and the Hospice Quality Plan (DHOS-1801).~~
- B. Regularly reviews progress to the aforementioned plans.;
- C. Reviews ~~quarterly~~ quality ~~indicators~~indicator reports to evaluate patient care ~~and, and the~~ 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 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 makes recommendations to the MEC.;
- J. Oversees the Infection Control, Pharmacy & Therapeutics, and Antibiotic Stewardship program and monitors compliance with their respective plans.;
- K. Oversees the multidisciplinary Cancer Committee and monitors compliance with the Cancer ~~Program.~~Center quality plan;
- L. 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 annually 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~~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 that focus on high-risk, high volume, or problem prone areas;
3. Guide the department to and/or provide the resources to achieve improvement;
4. 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;
5. 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 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 **biannually, or** as needed. 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** Processes related to the Critical Access Hospital (CAH) National Patient Safety Goals (NPSGs)
  - 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 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~~
    - k. Incorporates the results of:
      - i. performance improvement activities

ii. consideration of staffing effectiveness

iii. consideration of patient safety issues

iv. 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~~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 pro-actively 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 Mode and Effect 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 CAH National Quality Forum Patient Safety Goals (NQFNPSGs) ~~Endorsed Set of Safe Practices~~.
    - 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 pre-construction 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~~goals
  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
17. Medical record reviews
18. Performance measures from acceptable data bases/comparative reports, i.e., RL Datix Event Reporting, ~~Quantros RRM~~ [QCentrix](#), NDNQI, HCAHPS, Care Compare, QualityNet, HSAG HIIN, MBQIP, [HCAI](#), and Press Ganey, etc.
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~~ [radionuclides](#) and radiopharmaceuticals, including the ~~radionuclide~~ [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, [MSQACMS QAC](#), 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.](#)

- B. ~~Tahoe Forest Health System believes that excellent~~All performance improvement teams and activities must be 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 benchmarks, 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).
- C. 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.
- D. 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, benchmarks, and reference databases
- E. 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
- F. 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~~ Medical Staff, ancillary, and nursing services, in addition to outcomes of performance improvement teams, will be reported to the MS QAC at a minimum of annually.
- B. Results of the appraisal of performance measures outlined in clinical contracts will be reported to the MS QAC at a minimum of 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~~ regularly.
- D. The Medical Executive Committee, Quality Medical Director, or the Director of Quality & Regulations will report to the BOD ~~at least quarterly~~ regularly 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~~ discover-ability through California Evidence Code 1156 and 1157.

## ANNUAL ASSESSMENT

- A. The Critical Access Hospital (CAH), and Rural Health Clinic (RHC), Quality Assessment Performance Improvement (QA PI) 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 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. [Refer to Available CAH Services \(AGOV-06\) policy.](#)
- 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:

[Available CAH Services, TFH & IVCH, AGOV-06](#)

[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](#) [Risk Management and Patient Safety Plan, AQPI-02](#)

[Patient Safety Plan, AQPI-02](#)

[Emergency Operations Plan \(Comprehensive\), AEOC-17](#)

[Discharge Planning, ANS-238](#)

[Employee Health Plan, DEH-39](#)

[Quality Assurance and Performance Improvement Program, DHH-1802](#)

[Quality Assurance and Performance Improvement Program, DHOS-1801](#)

## References:

[HFAPACHC](#), CMS COPs, CDPH Title 22, HCQC NRS/NAC

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## Attachments

[A. Quality Initiatives 2023.docx](#)

[B. QA PI Reporting Matrix\\_Measures 2023.xlsx](#)

[C. QI Indicator Definitions 2023.docx](#)

[D. External Reporting 2023.docx](#)

## Approval Signatures

Step Description	Approver	Date
<b>DRAFT</b>		



# Leading a Culture of Safety: A Blueprint for Success



American College of  
Healthcare Executives  
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PATIENT SAFETY  
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# Leading a Culture of Safety: A Blueprint for Success



American College of  
Healthcare Executives  
*for leaders who care®*

## American College of Healthcare Executives

**The American College of Healthcare Executives** is an international professional society of 40,000 healthcare executives who lead hospitals, healthcare systems, and other healthcare organizations. Its mission is to advance its members and healthcare management excellence. ACHE offers its prestigious FACHE® credential, signifying board certification in healthcare management. Its established network of 78 chapters provides access to networking, education, and career development at the local level. In addition, ACHE is known for its magazine, *Healthcare Executive*, and its career development and public policy programs. Through such efforts, ACHE works toward its vision of being the preeminent professional society for healthcare executives dedicated to improving health. **The Foundation of the American College of Healthcare Executives** was established to further advance healthcare management excellence through education and research. The Foundation of ACHE is known for its educational programs — including the annual Congress on Healthcare Leadership, which draws more than 4,000 participants — and groundbreaking research. Its publishing division, Health Administration Press, is one of the largest publishers of books and journals on health services management, including textbooks for college and university courses.

For more information, visit [www.ache.org](http://www.ache.org).



## The National Patient Safety Foundation's Lucian Leape Institute

Established in 2007, the NPSF Lucian Leape Institute is charged with defining strategic paths and calls to action for the field of patient safety, offering vision and context for the many efforts under way within healthcare, and providing the leverage necessary for system-level change. Its members are national thought leaders with a common interest in patient safety. Their expertise and influence are brought to bear as the Institute calls for the innovation necessary to create significant, sustainable improvements in culture, process, and outcomes that are critical to safer healthcare.

For more information, visit [www.npsf.org/LLI](http://www.npsf.org/LLI).



TOGETHER FOR SAFER CARE

## The National Patient Safety Foundation at the Institute for Healthcare Improvement

The Institute for Healthcare Improvement (IHI) and the National Patient Safety Foundation (NPSF) began working together as one organization in May 2017. The newly formed entity is committed to using its combined knowledge and resources to focus and energize the patient safety agenda in order to build systems of safety across the continuum of care. To learn more about our trainings, resources, and practical applications, visit [ihi.org/PatientSafety](http://ihi.org/PatientSafety).



# Letter from the Project Co-chairs

Dear Colleagues:

Healthcare is one of the most complex industries in our world. Amid all of the pressing priorities, we must remember that the elimination of harm to our patients and workforce is our foremost moral and ethical obligation. In our roles as healthcare leaders, we have numerous responsibilities for ensuring the quality of care provided within our organizations, including patient and family experience, improving the health status of our communities, and maintaining the financial sustainability of our organizations. However, one of the most critical roles we must fulfill is ensuring the safety of patients who entrust their lives to our care, as well as ensuring the safety of a workforce—both clinical and non-clinical—that entrusts their livelihoods to our organizations. It is the ultimate duty of leaders to ensure the safety and prevention of unnecessary harm to these individuals and their loved ones. Healthcare executives must address the need to create sustainable cultures of safety throughout a healthcare system full of daunting challenges.

As our organizations aim to continually improve the reliability and safety of care, we can look to resources and successful practices to assist us, our Boards, our executive colleagues, our healthcare professionals, and the entirety of our workforce. The American College of Healthcare Executives (ACHE) and the National Patient Safety Foundation's Lucian Leape Institute (NPSF LLI) have partnered to collaborate with some of the most progressive healthcare organizations and globally renowned experts in leadership, safety, and culture to develop *Leading a Culture of Safety: A Blueprint for Success*. This document is an evidence-based, practical resource with tools and proven strategies to assist you in creating a culture of safety—an essential foundation for achieving zero harm. It is our hope that this guide will inspire and motivate, while providing approaches and tactics leaders can implement in driving cultural change, with the goal of elevating healthcare into the realm of recognized industries that have succeeded in reducing error and harm.

ACHE and NPSF LLI stand ready to assist you on this journey. We invite you to use this guide in both a strategic and tactical manner to direct your efforts in creating and sustaining a culture of safety, and to evaluate your success along your journey to zero harm.

Sincerely,



Gary S. Kaplan, MD, FACMPE  
Co-chair



Charles D. Stokes, RN, BSN, FACHE  
Co-chair

## Acknowledgments

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# The Culture of Safety Imperative

## Harm to Patients and the Workforce

In 1999, the Institute of Medicine (IOM) Committee on Quality of Health Care in America estimated that between 44,000 and 98,000 Americans die each year as a result of medical errors (IOM 1999). More recent estimates place this number closer to 200,000 deaths per year (James 2013). Though deaths due to medical error are notoriously difficult to measure, if this number is accurate within 100,000 deaths, medical error kills four times more Americans each year than motor vehicle accidents. It is important to note that these statistics, while disconcerting on their own, do not account for serious temporary or permanent physical and psychological harm caused by medical error, and they do not include harm to the healthcare workforce. Regardless of the measurement or estimation used, the rate of error and harm in healthcare is astounding, and sweeping, system-wide changes are imperative.

Moreover, when patients experience harm, clinicians find themselves negatively impacted as well. Being involved in an error that results in the harm or death of a patient is devastating for an individual who is committed to serving those who are sick. At its worst, this devastation can lead to self-harm, depression, isolation, and even suicide. The desolation that often results from causing harm is compounded for clinicians who work in organizations without supportive systems. Based on the 2016 Agency for Healthcare Research and Quality (AHRQ) Hospital Survey on Patient Safety Culture's hospital comparative database, only 64% of staff respondents felt that reported mistakes led to positive changes in their organization. Even fewer members of the workforce, only 45%, responded positively to questions related to their organization's non-punitive response to error (AHRQ 2016).

Considering the impact described above, every healthcare executive should prioritize enhancing the safety of patients and the workforce. As an industry, healthcare has taken steps in improving quality and patient safety. However, these small-scale, incremental improvements are not enough. Our immediate work requires a focus on safety not just as a key improvement initiative but as a core value that is fully embedded throughout our organizations and our industry.

In every healthcare organization, the ultimate responsibility for system-based errors and their resulting costs rests with the CEO and Board of Directors. CEOs and Boards will be held increasingly responsible for harm and death caused by error. In the long run, patient and workforce safety will not only be a moral imperative but will likely be critical to sustainability and essential to delivering on value.

Based on data from James and the American Hospital Association, an average, 100-bed hospital committed errors in care that caused the death of 23 patients in 2013. Such statistics indicate that each organization contributed to the preventable death of almost one patient every other week (AHA 2014, James 2013).

## The Business Case for Safety

While the business case for patient safety continues to expand and to change with new regulatory and reimbursement requirements, the general consensus within the healthcare research community is that organizational costs for error and harm are high and will likely increase in the coming years. In addition to the increase in direct cost of care for the impacted patient and family following an error, organizations must also consider personnel costs, regulatory costs, and resource costs including investigation of errors, pursuit of legal defense, and payment of settlements. Perhaps most important to consider are the potentially immense costs related to repairing reputation after a catastrophic event has occurred and been publically reported (Weeks and Bagian 2003). When each of these costs is considered on top of the direct cost of patient care, the business case for improving safety becomes abundantly compelling.

## A Case Study in Culture:

Mr. Jones is a previously healthy 55-year-old man, with a recent history of shortness of breath that is related to exercise. He has been referred by his primary care physician for a cardiology consultation, at which a stress test is ordered. The results of the stress test indicate a positive finding for potential heart disease. These results are not communicated back to his primary care provider, and although they are sent to the referring cardiologist, he is away at a conference. Mr. Jones receives no communications about the results of his test. One week later, Mr. Jones presents to the emergency department with chest pain and is diagnosed with an acute myocardial infarction. Upon further review of his medical records, the care team reviews his past test results and learns about the positive stress test. Mr. Jones requires placement of a stent to open his coronary artery, and requires rehabilitation prior to discharge to his home due to reduced cardiac function. One week after discharge from inpatient rehabilitation, Mr. Jones returns to his primary care physician, who realizes that Mr. Jones is not taking one of the new cardiac medications that was ordered by his inpatient team.

## A Tale of Two Organizations: Which is more like yours?

### ORGANIZATION A:

The inpatient team notifies the patient safety department about the missed test result, and a root cause analysis is performed to determine why Mr. Jones' critical test result was not communicated to either him or his cardiologist. Action steps from the root cause analysis focus on re-educating the stress test department about the policy for communication of abnormal test results.

The lessons from the root cause analysis are not shared beyond the safety team. The action plan is not presented to the leadership team or the Board for approval, and does not include metrics for sustainability. The CEO and Board hear about the event only as a statistic presented quickly at the end of a quarterly Board meeting.

Mr. Jones is not informed about either the missed stress test result or the root cause analysis.

The primary care provider writes a new prescription for the cardiac medication. Mr. Jones ultimately misses several weeks of work.

### ORGANIZATION B:

The inpatient team notifies the patient safety department about the missed test result, and a root cause analysis is performed. Action steps include designing a new process for communication of test results that includes an escalation policy when it is not immediately possible to communicate critical test results to the ordering provider and/or the patient.

The primary care provider ensures that Mr. Jones begins taking the cardiac medication and also notifies the risk management/patient safety department about the delay in medication use. An additional root cause analysis is conducted, with a clear tracing of the breakdown during transition from hospital to rehabilitation and rehabilitation to home, and how and why it may have occurred.

The results of both RCAs, including strong action plans for improvement and metrics for sustainability, are presented to the organization's leadership team for review and approval. The CEO presents the case and action plan at the next quality and safety meeting.

Mr. Jones' care team informs him about these breakdowns in communication, and how they may have contributed to his myocardial infarction and could cause future health issues. His care team extends an apology, as well as an offer for early resolution and compensation that helps Mr. Jones pay for his medical bills, his time away from work, and the additional costs associated with the need for his family to care for him.

Six months later, an assigned member of the leadership team follows up with the frontline care team involved in the event to evaluate and reassess the action plan and review improvement metrics. These results are presented at the next Board meeting.

### DEBRIEF

Many organizations report that their response to handling Mr. Jones' situation is more similar to Organization A than to Organization B. This example is but one of many that illustrate why healthcare must create and improve systems that are committed to zero harm to patients and our workforce.

## Introduction

Dr. Lucian Leape, widely regarded as the father of the modern patient safety movement, has repeatedly stated that “the single greatest impediment to error prevention in the medical industry is that we punish people for making mistakes.” By prioritizing, developing, and sustaining an organizational culture focused on safety, we can drive the future of healthcare to a place where patients and those who care for them are free from harm. It is not only one of many priorities, but is the overriding ethical imperative for all leaders.

AHRQ defines a culture of safety as one “in which healthcare professionals are held accountable for unprofessional conduct, yet not punished for human mistakes; errors are identified and mitigated before harm occurs; and systems are in place to enable staff to learn from errors and near-misses and prevent recurrence” (AHRQ PSNet Safety Culture 2014). The leaders of organizations must set and, more importantly, demonstrate the behaviors and expectations essential to a safe and transparent culture.

To help healthcare leaders achieve their mission of total system safety, ACHE and LLI have partnered to develop this guide, which is intended to assist leaders in creating, shaping, and sustaining the type of culture needed to advance patient and workforce safety efforts. It is designed to inspire, motivate, and inform you as you lead your organization on its journey to zero harm.

The information in this guide comes from industry leaders and experts who have had success in transforming their organizations into system-wide cultures of safety. It is designed for you and your team members to adapt to your organization, wherever you may be on your journey.

### Cultures of Safety Across the Continuum

Because error and harm happen across the continuum, it is imperative that all improvement initiatives also encompass all care settings. While some of the tactics and recommendations throughout this document will be more relevant in certain environments than others, the key principles developed throughout the six domains are applicable to all who oversee the delivery of care—not just hospital settings. This work is intended to be adapted as needed to enhance applicability for all organizations. However, the key concepts—building trust, respect, and enthusiasm for improvement through behaviors and principles that focus on ameliorating systems issues while requiring fair and inclusive practices—are critical to safe care in all settings.



# Leading a Culture of Safety: A Blueprint for Success

This resource is organized into six leadership domains that require CEO focus and dedication to develop and sustain a culture of safety:



Vision

**Establish a compelling vision for safety.** An organization's vision reflects priorities that, when aligned with its mission, establish a strong foundation for the work of the organization. By embedding a vision for total patient and workforce safety within the organization, healthcare leaders demonstrate that safety is a core value.



Trust,  
Respect, and  
Inclusion

**Build trust, respect, and inclusion.** Establishing trust, showing respect, and promoting inclusion — and demonstrating these principles throughout the organization and with patients and families — is essential to a leader's ability to create and sustain a culture of safety. In order to achieve zero harm, leaders must ensure that their actions are consistent at all times and across all levels of the organization. Trust, respect, and inclusion are non-negotiable standards that must encompass the Board room, the C-suite, clinical departments, and the entire workforce.



Board  
Engagement

**Select, develop, and engage your Board.** Governing Boards play a vital role in creating and maintaining safety cultures. CEOs are responsible for ensuring the education of their Board members on foundational safety science, including the importance of and processes for keeping patients and the workforce safe. Boards must ensure that metrics that meaningfully assess organizational safety and a culture of safety are in place and systematically reviewed, analyzed, and the results acted upon.



Leadership  
Development

**Prioritize safety in the selection and development of leaders.** It is the responsibility of the CEO, in collaboration with the Board, to include accountability for safety as part of the leadership development strategy for the organization. In addition, identifying physicians, nurses, and other clinical leaders as safety champions is key to closing the gap between administrative and clinical leadership development. Expectations for the design and delivery of relevant safety training for all executive and clinical leaders must be set by the CEO and subsequently spread throughout the organization.



Just  
Culture

**Lead and reward a just culture.** Leaders must possess a thorough understanding of the principles and behaviors of a just culture, and be committed to teaching and modeling them. Human error is and always will be a reality. In a just culture framework, the focus is on addressing systems issues that contribute to errors and harm. While clinicians and the workforce are held accountable for actively disregarding protocols and procedures, the reporting of errors, lapses, near-misses, and adverse events is encouraged. The workforce is supported when systems break down and errors occur. In a true just culture, all workforce members—both clinical and non-clinical—are empowered and unafraid to voice concerns about threats to patient and workforce safety.



Behavior  
Expectations

**Establish organizational behavior expectations.** Senior leaders are responsible for establishing safety-mindfulness for all clinicians and the workforce and, perhaps even more importantly, modeling these behaviors and actions. These behaviors include, but are not limited to, transparency, effective teamwork, active communication, civility, and direct and timely feedback. These cultural commitments must be universally understood and apply equally to the entire workforce, regardless of rank, role, or department.

The journey toward patient and workforce safety requires vigilance and the highest level of dedication. Safety cannot be merely a strategic priority, but must be a core value that is woven into the fabric of our organizations. A culture of safety demands the involvement and commitment of the full healthcare team, from patients to clinicians to the rest of the workforce. However, an organization cannot be what its leader is not. It is both the obligation and the privilege of every healthcare CEO to create and represent a compelling vision for a culture of safety: a culture in which mistakes are acknowledged and lead to sustainable, positive change; respectful and inclusive behaviors are instinctive and serve as the behavioral norms for the organization; and the physical and psychological safety of patients and the workforce is both highly valued and ardently protected.

## A Note about Disparities in Care

Across the United States, individuals experience great differences in life expectancy and other health outcomes based on social determinants that may include ethnicity, religion, socioeconomic status, geographic location, sexual orientation, and gender identity, among others. It is impossible to envision an organization driving toward zero harm that is not also consciously focused on addressing these disparities.

Professor Margaret Whitehead, head of the World Health Organization (WHO) Collaborating Centre for Policy Research on the Social Determinants of Health, defines equity in health this way: “Ideally everyone should have a fair opportunity to attain their full health potential and, more pragmatically, no one should be disadvantaged from achieving this potential, if it can be avoided” (Whitehead and Dahlgren 2006). The reality of healthcare today is that quality and safety cannot be achieved without equity. Healthcare organizations have the power to address disparities at the point of care and to make an impact on many of the determinants that create these disparities (Institute for Healthcare Improvement 2016). Because equity in health is essential to quality and safety, mitigation of health disparities must be prioritized across the six domains for developing a culture of safety. Not only is creating health equity part of the safety imperative, but it requires many of the same mechanisms recommended throughout this document.

## A Note about Learning Systems

The IOM describes a learning healthcare system as one in which “science, informatics, incentives, and culture are aligned for continuous improvement and innovation, with best practices seamlessly embedded in the care process, patients and families are active participants in all elements, and new knowledge captured as an integral by-product of the care experience” (IOM 2013).

While this guide focuses on developing and sustaining a culture that drives patient and workforce safety outcomes, a CEO’s accountability for developing and supporting a learning system is equally important. Change implementation is a vast interdisciplinary undertaking that requires all aspects of a safety culture, from safety science knowledge, to trust, respect, and visionary leadership (Friedman 2015). The design of learning systems may vary—from high reliability to Six Sigma™ to the Toyota Production System and other Lean methodologies—but the key characteristics are the same. Zero harm to patients and the workforce is only possible with both a robust culture of safety and an embedded organizational learning system.

# Recommendations for Use of This Guide

This guide was developed for CEOs and other executive leaders in order to provide a useful tool for assessing and advancing an organization's culture of safety. It can be used to help determine the current state of your organization's journey, inform dialogue with your Board and leadership team, and help you set priorities. The six domains are intended to be discussed with your Board, your leadership team, your workforce, and your community. These domains are interdependent, and each domain is an essential element that must be addressed along your journey. This guide contains recommendations for developing and evaluating plans to flourish in each of the six domains, and resources for helping you move forward and make measurable progress in your journey.

The high-level strategies and practical tactics in this guide are divided into two levels: foundational and sustaining. The foundational level provides basic tactics and strategies essential for the implementation of each domain. The sustaining level provides strategies for spreading and embedding a culture of safety throughout the organization. However, it is important to note that the journey to zero harm is more complex than this simple two-level structure. Each organization will be at a different place on the spectrum from developing the foundation of a culture of safety to embedding and sustaining these principles. An organization may work on strategies and tactics across the two levels, or may be at various levels of progress across each of the domains. In organizations that lack an empowering vision statement or trust and respect among leadership, clinicians, and the workforce, it may be most effective to begin improvement initiatives in these two domains. The keys to developing and sustaining a culture of safety are honest and transparent evaluation of your organization's current state, identification of gaps and goals, and an action plan that engages all members of the Board, leadership team, and workforce.

### **Whether an organization is just beginning the journey to a culture of safety or is working to sustain its safe culture, the following steps are recommended:**

- ✓ Share this document with your Board Chair and leadership team.
- ✓ Complete the self-assessment with input from your Board, leadership team, clinicians and the frontline workforce, and patient and family representatives, as appropriate.
- ✓ Develop action plans based on an understanding of the current state of your organization. Use assessment results to frame discussions with your leadership team and the Board that focus on identifying ways to close gaps and aligning the direction of your organization with key safety and culture initiatives.
- ✓ Share the outcomes of the assessment, action plans, and progress with your senior leadership team, the Board, your workforce, and your patients and families, as appropriate and helpful.
- ✓ Ask for periodic feedback from your Board, your leadership team, and the workforce.
- ✓ Refer to this guide as a resource for systematic check-ins and adjustments, as needed.



# A Culture of Safety: The Six Domains



## Vision



## Establish a Compelling Vision for Safety

**GOAL: COMMIT TO DEVELOP, COMMUNICATE, AND EXECUTE ON AN ORGANIZATIONAL VISION OF ZERO HARM TO PATIENTS, FAMILIES, AND THE WORKFORCE.**

To engage and inspire all clinical and non-clinical healthcare professionals and the public, an organization’s vision should reflect long-term, aspirational goals. This vision must be clearly aligned with the organization’s mission, which establishes the foundation of what an organization does.

A compelling vision enhances performance, promotes change, motivates individuals, and provides context for decision making (Lipman 1996). Clearly articulated, a strong vision addresses the why, the how, and the when of the aspirational goal (Lipman 2003). Many CEOs of healthcare organizations strive to include safety among their top strategic priorities, and this objective must be clearly reflected as a core value in the vision and mission statements. The CEO is responsible for launching the critical first step of establishing safety as the most important part of what everyone does, every day.

	Foundational	Sustaining
<p><b>Strategies</b></p> <p><i>Overarching strategies for implementation at the CEO level</i></p>	<ul style="list-style-type: none"> <li>✓ CEO takes responsibility for educating himself/herself on how to develop vision and lead a culture of safety</li> <li>✓ CEO communicates and models a shared vision of zero harm to patients, families, the community, and the workforce</li> <li>✓ CEO communicates genuine, clear messages about vision, conveying purpose of safety culture to everyone, in all settings, repeatedly and for the long term</li> <li>✓ CEO communicates how vision is critical to organizational success</li> <li>✓ CEO prioritizes measurement, gap analysis, and improvement of culture of safety as foundational for vision</li> <li>✓ CEO gains additional understanding of safety by participating in full harm investigation, including disclosure and apology and root cause analysis</li> </ul>	<ul style="list-style-type: none"> <li>✓ CEO and leadership team provide consistent, personalized messaging about the importance of safety and zero harm</li> <li>✓ CEO relays importance and urgency of safety vision to both internal and external audiences</li> <li>✓ CEO practices transparency and shared accountability between Board and leadership team regarding vision and relevant measurement and reporting</li> </ul>

## Vision



## Establish a Compelling Vision for Safety

A compelling vision with patient and workforce safety as a core value is essential to achieving safe care. Zero harm is the aspirational “North Star.” Healthcare CEOs demonstrate their belief that safety is a primary, non-negotiable goal by working with their Board, clinical leadership, and workforce to develop such a vision, to embed it in their organization, and to demonstrate their commitment and energize frontline workers through direct involvement in safety activities (NPSF 2015).

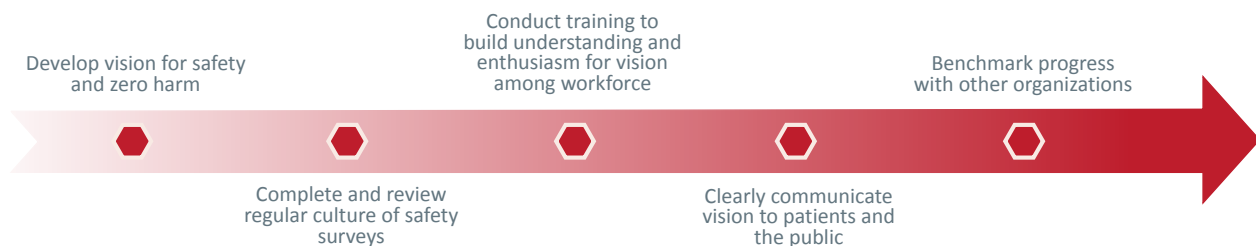
The first step for a CEO in creating this vision is to understand, acknowledge, and communicate the current state of their organization. A successful vision statement may be developed by top management and shared with the organization, or created in partnership with the workforce. The key is that the vision statement must encompass all organizational interests and engage the entire workforce. Visions that offer long-term perspective and include a degree of difficulty or stretch are often the most powerful. Finally, a vision statement should be clear and concise, allowing it to be easily remembered, repeated, and communicated (Kantabutra and Avery 2010).

Leaders must work with their teams, in direct partnership with physicians, nurses, and other clinical and non-clinical leaders, to assess the internal and external landscape of their organization. They must consider safety metrics, clinicians’ attitudes and perceptions, patient and family experiences, and current practices, as well as trends and events that affect or might affect the healthcare industry. Landscape analysis is often accomplished through tactics including focus groups, safety culture surveys, safety rounds, analysis of safety metrics and reporting, and other diagnostic approaches. As one team of management researchers tell us, “The best way to lead people into the future is to connect with them deeply in the present” (Kouzes and Posner 2009). Understanding and communicating the current state enables leaders to connect and work with their teams and clinical experts to create a shared vision that can inspire everyone within the organization and the community.

While it is important to get input and buy-in from all levels when developing a vision, CEOs must be the ones to define and model the vision. Leaders at every level need to be visible in their commitment to patient and workforce safety and vocal about supporting actions that align with the organizational vision.

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A clear and aspirational vision inspires the workforce and the public. The CEO works with the Board, leadership team, clinicians, and workforce to develop and embed this vision.



## Vision



## Establish a Compelling Vision for Safety

Organizational Readiness Level	Foundational	Sustaining
<p><b>Tactics</b></p> <p><i>Examples of tactics that may be implemented to create change at each of these levels</i></p>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Work with select individuals throughout the organization to develop understanding of key organizational interests and goals</li> <li>✓ Work with leadership team to develop aspirational end state (e.g., zero harm) that will be incorporated into vision</li> <li>✓ Communicate the definition and importance of a culture of safety</li> <li>✓ Build awareness of current state through culture surveys, observations, and focus groups, and communicate this throughout the organization</li> <li>✓ Include zero harm vision in all communications from leaders at all levels, and keep this communication simple, consistent, and repetitive</li> <li>✓ Include equity of care as part of vision statement and communicate the definition and importance of health equity</li> <li>✓ Conduct training and information sessions for all employees to build understanding and enthusiasm for the vision</li> <li>✓ Spend time on all floors and units communicating the connection of culture of safety and vision to the work of the frontline</li> </ul>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Clearly articulate your vision to the workforce and the public</li> <li>✓ Benchmark culture progress and best practices with other similar organizations (e.g., participate in collaboratives)</li> <li>✓ Develop and implement a recognition program for leaders, clinicians, and the workforce based on growth and adherence to vision</li> <li>✓ Establish organizational goals that address safety and disparities in care</li> </ul> <p><b>To engage clinical leaders:</b></p> <ul style="list-style-type: none"> <li>✓ Include physician, nursing and other clinical leaders in development of vision statement and strategic plan</li> </ul> <p><b>To engage patients and families:</b></p> <ul style="list-style-type: none"> <li>✓ Clearly communicate the vision statement and values to patients</li> <li>✓ Incorporate patient and family stories, along with statistics, when discussing vision at the Board level</li> <li>✓ Include patient feedback in the development of vision statement</li> </ul>
<p><b>Assessing Execution</b></p> <p><i>List of questions that should be asked to further assess and measure progress</i></p>	<p><b>YES / NO</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <input type="checkbox"/> Are the CEO and leadership team able to clearly communicate the vision to all parties, in both internal and external interactions?</li> <li><input type="checkbox"/> <input type="checkbox"/> Can all members of the organization articulate the vision for safety and how it relates to their individual work?</li> <li><input type="checkbox"/> <input type="checkbox"/> Is a patient safety and quality dashboard (which includes safety culture metrics) utilized and regularly reviewed in the context of organizational vision?</li> </ul>	

Trust, Respect, and Inclusion



Value Trust, Respect, and Inclusion

**GOAL: ESTABLISH ORGANIZATIONAL BEHAVIORS THAT LEAD TO TRUST IN LEADERSHIP AND RESPECT AND INCLUSION THROUGHOUT THE ORGANIZATION REGARDLESS OF RANK, ROLE, OR DISCIPLINE.**

Trust, respect for others, and inclusion are essential to creating environments that are both physically and psychologically safe. Building trust involves managing conflict and making the environment safe for communicating bad news. It also involves practicing honesty, inclusion, transparency, and respect with everyone. Each member of the workforce must feel compelled and empowered to uphold mutual accountability and speak up for safety. Healthcare leaders develop trust within their organizations by having authentic relationships and conversations. For example, undertaking humble inquiry, asking questions to which you do not already know the answer, and building relationships based on genuine curiosity and interest all help leaders find information that might otherwise elude them (Schein 2013).

	Foundational	Sustaining
<p><b>Strategies</b></p> <p><i>Overarching strategies for implementation at the CEO level</i></p>	<ul style="list-style-type: none"> <li>✓ CEO recognizes the critical importance of trust, respect, and inclusion in shaping organizational culture</li> <li>✓ CEO creates expectation for trust, respect, and inclusion, and models these through his or her interactions with every individual at every level of the organization</li> <li>✓ CEO holds the leadership team accountable for modeling trust, respect and inclusion</li> <li>✓ CEO directs policies that empower the workforce to first and foremost act within the guidelines of trust, respect, and inclusion when making decisions</li> <li>✓ CEO establishes the expectation that learning from failures and improving systems is a part of daily organizational activity</li> </ul>	<ul style="list-style-type: none"> <li>✓ CEO establishes expectations and accountability for formal program focusing on trust, respect, and inclusion that includes patients and is implemented across the organization</li> <li>✓ CEO and organization have clear, visible expectations of acceptable behavior and consequences for behaviors that do not meet standards of trust, respect, and/or inclusion</li> <li>✓ CEO establishes transparent practices with the Board, senior leadership, workforce and community, as appropriate</li> <li>✓ CEO takes ownership of partnering with similar organizations, through Patient Safety Organizations (PSOs) or other collaboratives, to share learning and best practices</li> </ul>

## Trust, Respect, and Inclusion



## Value Trust, Respect, and Inclusion

The actions of leaders must be consistent over time and throughout the organization. Behavioral standards and expectations should apply to everyone, without exception. Respect for others—be they patients, family members, peers, or subordinates—is essential for creating and sustaining trust. Developing and holding all leaders and the workforce accountable to codes of conduct or code of ethics can help to solidify the practices and behaviors that encourage trust and respect (Chassin and Loeb 2013).

Beyond modeling behaviors of respect themselves, leaders may need to institute ongoing education for volunteers, students, clinicians, and the workforce about appropriate behavior, and continue to actively encourage changes designed to increase fairness, transparency, collaboration, inclusion, and individual responsibility (Leape et al., 2012).

In pursuing safety as a core value, trust, respect, and inclusion are fostered by CEOs who make and keep commitments to the workforce, who communicate when a problem cannot be fixed immediately, who consistently display a sense of fairness, and who engage in and encourage reciprocal, helping behavior throughout the organization.

CEOs must also display their trust in others. Creating a strong team enables leaders to have confidence in delegating decisions and authority, though trust does not mean believing nothing will ever go wrong. Leaders can expect to continually work on building, sustaining, or repairing trust.

## Cultural Diversity and Respect in the Workplace

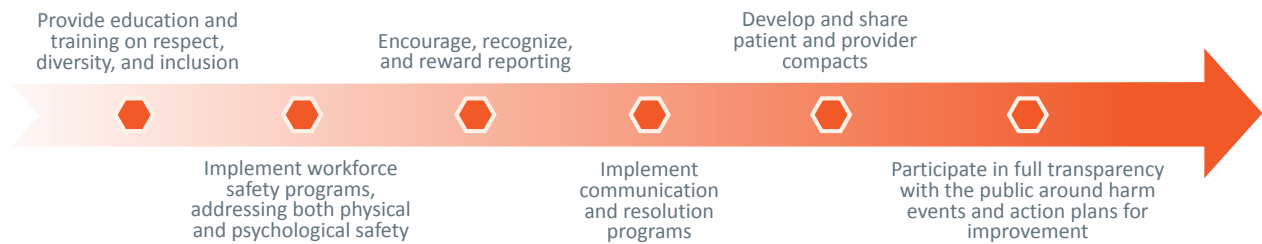
It is imperative that CEOs understand the cultural makeup of both the community and the organization in which they serve. Implementing and modeling behaviors that reflect a respectful and inclusive environment is essential to a culture of safety. This should include placing a high value on the positive impact of greater diversity and inclusion among leadership as well as the workforce. It should also include efforts to evaluate and eliminate disparities in patient care. Unleashing the potential of workforce diversity depends on the establishment of inclusion, the building of trust and respect, and training in skills and behaviors that support an inclusive and respectful organization. With this approach, cultural diversity can be an effective resource for creative problem solving and organizational learning, and can help to identify and ameliorate disparities of care. (EU-OSHA 2013)

## Trust, Respect, and Inclusion



## Value Trust, Respect, and Inclusion

Trust, respect, and inclusion are the foundation of a culture of safety. The CEO develops trust and respect with individuals at all levels of the organization, and, with the Board, holds leaders, clinicians, and the workforce accountable for policies and behaviors that reflect these values.



Organizational Readiness Level	Foundational	Sustaining
<p><b>Tactics</b></p> <p><i>Examples of tactics that may be implemented to create change at each of these levels</i></p>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Commit to implementing and holding all leaders and the workforce accountable for processes and policies related to respect for people, just culture, and managing disruptive behavior</li> <li>✓ Encourage and promote open discussion of safety issues via leadership rounds and reporting systems, and ensure follow-up and feedback</li> <li>✓ Ensure that the workforce has dedicated time to devote to patient safety and safety culture work</li> <li>✓ Implement workforce safety programs to reduce physical and psychological harm to the workforce</li> <li>✓ Clearly define and encourage behaviors that show deference to expertise rather than hierarchy or title</li> </ul>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Aim for total transparency, but explain situations in which the organization is unable to be completely transparent</li> <li>✓ Publicly share available information about events of harm, and plans for managing associated risks</li> <li>✓ Ensure follow-up and feedback on identified safety issues, and be transparent if an issue cannot be resolved promptly</li> <li>✓ Create compacts for leaders that clearly define expected behaviors in trust and transparency as they relate to other leaders, peers, and subordinates</li> <li>✓ Build metrics for respect and trust (e.g., workforce psychological safety, error reporting) into the evaluation process for all leaders</li> </ul>



Trust, Respect, and Inclusion



Value Trust, Respect, and Inclusion

Organizational Readiness Level	Foundational	Sustaining
<p><b>Tactics</b></p> <p><i>Examples of tactics that may be implemented to create change at each of these levels</i></p>	<p><b>To engage your organization (cont):</b></p> <ul style="list-style-type: none"> <li>✓ Recognize and reward reporting with the goal of reducing and eventually eliminating anonymous reporting</li> <li>✓ Provide education and training on diversity and inclusion at every level of the organization</li> <li>✓ Track employee engagement and turnover as a metric to evaluate trust, inclusion, and respect</li> <li>✓ Include care disparity metrics on regularly reviewed patient safety dashboards</li> <li>✓ Translate tools and resources for both patients and the workforce into a variety of languages, keeping in mind cultural context and linguistic idiosyncrasies</li> <li>✓ Adopt communication and resolution/reconciliation programs for patients and families after events of preventable harm</li> <li>✓ Establish patient and family advisory councils</li> </ul>	<p><b>To engage clinical leaders:</b></p> <ul style="list-style-type: none"> <li>✓ Provide training for physicians, nurses, and other clinical leaders around patient engagement and communication</li> <li>✓ Provide cultural competency training for all clinical leaders that is relevant to the patient populations they serve</li> </ul> <p><b>To engage patients and families:</b></p> <ul style="list-style-type: none"> <li>✓ Encourage and enable patients and families to speak up if they notice a risk to safety</li> <li>✓ Ensure that crisis plans address how to communicate with patients and families in the event of an error, regardless of degree of harm</li> <li>✓ Commit to shared decision making and consider patient preferences in all treatment plans</li> <li>✓ Engage patients and families in creating and disseminating patient compacts that include what patients can expect from the organization, their care providers, and the workforce</li> </ul>
<p><b>Assessing Execution</b></p> <p><i>List of questions that should be asked to further assess and measure progress</i></p>	<p><b>YES / NO</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <input type="checkbox"/> Are all clinicians and workforce members provided with training in communicating with patients, including disclosure and apology?</li> <li><input type="checkbox"/> <input type="checkbox"/> Are measures of respect included in all performance assessment tools?</li> <li><input type="checkbox"/> <input type="checkbox"/> Is a formal program for respect and trust in place and evaluated regularly?</li> <li><input type="checkbox"/> <input type="checkbox"/> Is there systematic training on diversity and inclusion for both the clinical and non-clinical workforce?</li> <li><input type="checkbox"/> <input type="checkbox"/> Do the Board and leadership team regularly create and evaluate improvement plans for addressing disparities in patient care?</li> </ul>	



## Board Engagement



## Select, Develop, and Engage Your Board

**GOAL: SELECT AND DEVELOP YOUR BOARD SO THAT IT HAS CLEAR COMPETENCIES, FOCUS, AND ACCOUNTABILITY REGARDING SAFETY CULTURE.**

Boards of healthcare organizations oversee the fiduciary performance, reputation, and key performance outcomes of an organization, including those related to quality, safety, and culture. The accountability for safety is shared between the CEO and the Board. The CEO is responsible for guaranteeing Board education on the importance of safety, ensuring that the Board understands quality and safety metrics, and recommending the appropriate representation of safety expertise on the Board, which could mean a safety expert from another field. In line with the CEO’s responsibilities, 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. It is imperative that safety be a foundational factor in how healthcare Boards make decisions, so that patient and workforce safety culture is a sustainable focus for the organization.

	Foundational	Sustaining
<p><b>Strategies</b></p> <p><i>Overarching strategies for implementation at the CEO level</i></p>	<ul style="list-style-type: none"> <li>✓ CEO guarantees Board education on importance of safety, the meaning of quality and safety metrics, and safety culture principles and behaviors</li> <li>✓ CEO ensures Board membership includes clinical, safety, and patient/family representation</li> <li>✓ CEO provides adequate agenda time for review and discussion of safety culture metrics and issues</li> <li>✓ CEO sets up quality and safety committee(s) with Board representation</li> <li>✓ CEO ensures each Board agenda includes time designated for Chief Medical Officer or Chair of Quality and Safety Committee to present safety and quality data</li> <li>✓ CEO develops a robust Board-level patient and workforce safety dashboard that includes culture of safety metrics</li> </ul>	<ul style="list-style-type: none"> <li>✓ CEO works with the Board to set direction, goals, metrics, and systems of mutual accountability for zero harm to both patients and the workforce</li> <li>✓ CEO provides for the appropriate level of oversight of the credentialing and re-credentialing process, including elements of quality and safety</li> <li>✓ CEO works with the Board and/or compensation committee to align executive compensation with patient and workforce safety and culture metrics</li> <li>✓ CEO leverages patient stories and presentations to educate the Board</li> <li>✓ CEO provides opportunities for Board member representation on appropriate safety committees</li> </ul>

## Board Engagement



## Select, Develop, and Engage Your Board

In recruiting new Board members, considerable thought should be given to the competencies, skills, experiences, and diversity needed to create and sustain a culture of safety. These skills may include specific competencies related to leading culture improvement efforts, as well as clinical and safety competencies. Ensuring that there is robust clinical expertise in the Board room is critical to incorporating frontline perspective into all conversations and initiatives, and allows for collaborative leadership in safety efforts throughout the organization (Goeshel et al. 2010). These decisions should also include measures of diversity that ensure the board is representative of the community and workforce it serves. Finally, leaders may encourage Boards or relevant committees to include a patient and family representative and safety experts from relevant industries. These recommendations should be made at the appropriate level based on each unique organization's needs.

A well-rounded and diverse Board empowers and supports the work of the CEO in creating and sustaining a culture of safety. The importance of Board education and training in safety science fundamentals, including just culture, human factors, and systems engineering cannot be overemphasized (NPSF 2015). There is real power in support for the CEO from the Board regarding issues of safety, allowing this focus to cascade to leadership and, ultimately, throughout all levels of the organization.

### Effective Patient and Family Representation on Boards and Committees:

CEOs should consider the following characteristics of effective representation, while keeping in mind the appropriate voice and level of representation of patient/family member(s) to meet the needs of their organization and community:

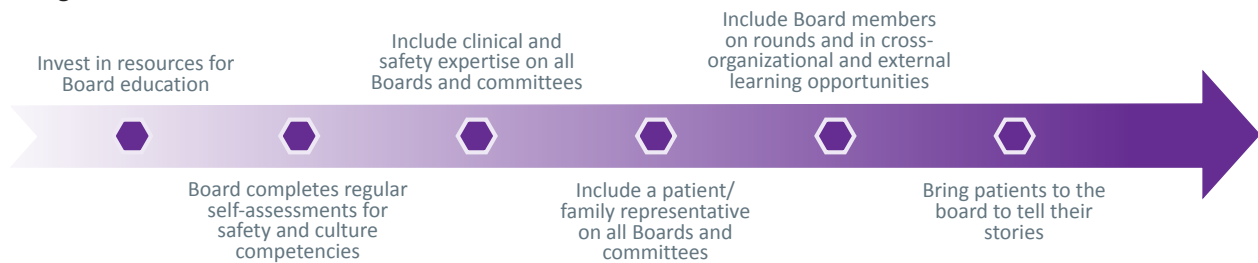
- 1 Culture of the Board encourages total engagement and involvement of patient/family member(s)
- 2 Patient/family member(s) are representative of the community the organization serves
- 3 Patient/family member(s) have representation on quality and safety committee(s) and other committees, as appropriate
- 4 Patient/family representative is provided with ongoing learning opportunities in safety science and safety culture

## Board Engagement



## Select, Develop, and Engage Your Board

An engaged Board plays a key role in organizational culture and safety. The CEO encourages Board competencies and commitment regarding safety, while providing a transparent line of sight between the Board and the rest of the organization.



Organizational Readiness Level	Foundational	Sustaining
<p><b>Tactics</b></p> <p><i>Examples of tactics that may be implemented to create change at each of these levels</i></p>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Establish Board Quality and Safety Committee with oversight responsibility for culture change, safety, and performance improvement</li> <li>✓ Include an individual with safety and culture expertise on Board and appropriate committees, or ensure an advisor with these skills is available to the CEO and the Board</li> <li>✓ Begin each Board meeting with a slide detailing the number and names of patients and staff who experienced harm since last meeting, and include a story about at least one of these individuals</li> <li>✓ Regularly share and discuss a dashboard that includes patient and workforce safety and culture metrics</li> <li>✓ Utilize a Board self-assessment that includes inquiry on safety culture knowledge to determine educational opportunities</li> <li>✓ Identify a list of required Board competencies specific to leading culture improvement</li> </ul>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Encourage the Board to link executive compensation to safety outcomes, while ensuring metrics chosen do not discourage safety efforts</li> <li>✓ Include Board members on guided leadership rounds</li> <li>✓ Align Board dashboards to show safety and quality metrics as segmented by categories related to disparities in care</li> <li>✓ Ask Board members to participate in events to show their support during Patient Safety Awareness Week and to be present at major quality, safety, and culture-related events</li> <li>✓ Bring frontline teams to Board meetings to share their success stories and receive recognition</li> <li>✓ Consider a rotating position on the Board or Quality and Safety Committee reserved for the frontline workforce</li> <li>✓ Request that Board members spend time on all floors and units communicating and supporting the safety agenda</li> </ul>



## Select, Develop, and Engage Your Board

Organizational Readiness Level	Foundational	Sustaining
<p><b>Tactics</b></p> <p><i>Examples of tactics that may be implemented to create change at each of these levels</i></p>	<p><b>To engage your organization (cont):</b></p> <ul style="list-style-type: none"> <li>✓ Discuss whether Board reflects the community your organization serves and implement action plan to address any gaps</li> <li>✓ Invest in resources for Board education, including patient safety science and quality</li> <li>✓ Create a matrix of Board competency needs and seek candidates with those skills in mind</li> <li>✓ Regularly review accreditation survey results with the Board</li> <li>✓ Encourage ample clinical expertise, including physicians and nurses on the Board and/or on Board committees</li> <li>✓ Include a presentation on a current organizational safety culture issue by an expert in safety and quality at each Board meeting</li> <li>✓ Educate Board members on issues of disparities in care</li> </ul>	<p><b>To engage your organization (cont):</b></p> <ul style="list-style-type: none"> <li>✓ Provide Board members with opportunities to learn from Boards and leaders of outside organizations and industries</li> <li>✓ Require Board approval on resolutions to all serious safety events</li> </ul> <p><b>To engage clinical leaders:</b></p> <ul style="list-style-type: none"> <li>✓ Involve physicians, nurses, and other clinical leaders to present clinical and quality improvement efforts regularly to the Board</li> <li>✓ Bring clinical leaders dedicated to culture to Board meetings to share their experience and receive recognition</li> </ul> <p><b>To engage patients and families:</b></p> <ul style="list-style-type: none"> <li>✓ Create positions for patient/family representatives on your Board and on your quality/safety committee(s)</li> <li>✓ Present patient stories at Board and appropriate committee meetings</li> <li>✓ Invite patients to attend Board meetings and personally share their stories and experiences (both positive and negative)</li> </ul>
<p><b>Assessing Execution</b></p> <p><i>List of questions that should be asked to further assess and measure progress</i></p>	<p><b>YES / NO</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <input type="checkbox"/> Does the Board conduct regular self-assessments related to knowledge and understanding of culture of safety?</li> <li><input type="checkbox"/> <input type="checkbox"/> Are programs in place to build competencies in culture improvement for Board members?</li> <li><input type="checkbox"/> <input type="checkbox"/> Is the amount of time spent on quality and safety during each Board meeting tracked and at least comparable to time spent on finance and other items?</li> <li><input type="checkbox"/> <input type="checkbox"/> Do performance assessments for the CEO include the organization’s safety activities and measures of culture?</li> <li><input type="checkbox"/> <input type="checkbox"/> Do patient safety and quality leaders participate in at least a portion of all Board meetings?</li> <li><input type="checkbox"/> <input type="checkbox"/> Is a patient and/or workforce story presented at each Board meeting?</li> </ul>	

## Leadership Development



## Prioritize Safety in Selection and Development of Leaders

### GOAL: EDUCATE AND DEVELOP LEADERS AT ALL LEVELS OF THE ORGANIZATION WHO EMBODY ORGANIZATIONAL PRINCIPLES AND VALUES OF SAFETY CULTURE.

Healthcare CEOs, in collaboration with the Board, are responsible for establishing the direction and accountability for the design and delivery of their organization-wide leadership development strategy. Within this strategy, it is imperative that safety is part of the education for both current and emerging leaders. It is the responsibility of the CEO to establish the priority for safety and culture in the development of leaders at all levels and in all departments across the organization.

Emphasis on safety education can also help close the gap between administrative and clinical leadership, providing all leaders with the shared goal of driving toward a culture of safety for the betterment of the organization and the patients they serve. Identifying and developing physician, nursing, and other clinical leaders as champions for safety is a key responsibility of the CEO. Numerous studies indicate the positive impact clinical leaders can have on culture and safety, particularly in an era when healthcare leaders are often in a position to make decisions that affect care at the frontlines. Clinical leaders have extensive understanding of healthcare’s “core business” of patient care, and are therefore in a unique position to connect administration with the clinical workforce, and to garner support for safety and culture initiatives. In addition to safety education, CEOs can commit to developing effective physician, nursing, and other clinical leaders by providing and encouraging training in non-clinical skills, including professionalism, emotional intelligence, team building and communication, and basic business principles (Angood 2014).

	Foundational	Sustaining
<b>Strategies</b> <i>Overarching strategies for implementation at the CEO level</i>	<ul style="list-style-type: none"> <li>✓ CEO sets expectations and accountability for the design and delivery of the organization’s leadership development strategy</li> <li>✓ CEO ensures he/she and the leadership team receive necessary safety education, and provides the appropriate level of safety education throughout the rest of the organization</li> <li>✓ CEO identifies physicians, nurses, and other clinical leaders as champions for safety</li> </ul>	<ul style="list-style-type: none"> <li>✓ CEO serves as a mentor for other C-Suite executives</li> <li>✓ CEO establishes expectation that quality and safety performance and competence are required elements for evaluating current and potential leaders for promotion and succession planning</li> <li>✓ CEO assigns accountability for measurable outcomes of safety education as part of leadership development strategy</li> <li>✓ CEO ensures patient and workforce safety are key parts of the organization’s reward and recognition system</li> </ul>

## Leadership Development



## Prioritize Safety in Selection and Development of Leaders

The selection process for both current and emerging leaders should be predicated on their understanding of, dedication to, and alignment with the organization's vision for patient and workforce safety, communication skills, and modeling of expected safety behaviors. Safety can be a topic for individual professional development as well as organization-wide succession planning to ensure that the commitment to safety is sustainable throughout all levels and functional areas. Many organizations already have a process in place for identifying individuals with high potential to succeed as leaders, into which a safety and culture program can be integrated (Garman and Anderson 2014).

Finally, it is critically important to provide regular feedback to both current and developing leaders that is valuable to them, whether that is a 360-degree review model or another structured review (Garman and Anderson 2014). Feedback should clearly define, communicate, and embody required leadership competencies in safety culture, and safety development plans should be reviewed at regularly scheduled check-ins. CEOs are responsible for not only setting this direction, but also participating in these reviews from the perspective of gathering feedback about their own competence in safety culture and behaviors, and sharing input for members of their leadership team.

A well-developed leadership team that is dedicated to a culture of safety provides a catalyst for the evolution of the organization. The CEO, in collaboration with the Board, is responsible for establishing the direction and accountability for the design and delivery of an organization-wide leadership development strategy.



Leadership Development



## Prioritize Safety in Selection and Development of Leaders

Organizational Readiness Level	Foundational	Sustaining
<p><b>Tactics</b></p> <p><i>Examples of tactics that may be implemented to create change at each of these levels</i></p>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Define and develop organizational leadership competencies in safety culture and safety behaviors and ensure that all current and future leaders and the frontline workforce receive education in selected competencies</li> <li>✓ Define cultural roles and expectations for all leaders within the organization, including clinical leaders</li> <li>✓ Create systems to support leaders in culture work at all levels of the organization through training, coaching, and mentoring</li> <li>✓ Consider safety expertise and credentialing along with leadership potential when considering emerging leaders</li> <li>✓ Discuss whether leadership team reflects the community the organization serves and develop plan to address any gaps</li> <li>✓ Create systems that ensure regular reporting on leadership development measures</li> <li>✓ Develop and employ a talent review process that is candid and transparent</li> <li>✓ Conduct gap analysis of CEO and leadership for knowledge, skills, and attitudes around patient safety and culture</li> </ul>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Build an incentive program into leadership reviews that is focused on reporting performance on key culture of safety metrics</li> <li>✓ Provide continuing learning opportunities in safety and culture, with a focus on experiential learning</li> <li>✓ Tie measures and performance on safety and culture to leadership development priorities, talent management reviews, and succession planning</li> <li>✓ Provide opportunities and expectations for leaders to learn outside of the organization, both with similar organizations and outside industries</li> <li>✓ Build a guiding coalition of champions, including clinicians and frontline workforce members, that provides candid and honest feedback to the CEO</li> <li>✓ Incorporate leadership development into organizational people strategy</li> <li>✓ Define talent as an organizational resource and allow for interdepartmental training and mobility</li> <li>✓ Ensure leaders are trained to teach and coach their employees</li> <li>✓ Recommend that each senior executive participate in communication and apology to patients and families who have experienced harm</li> </ul>



**Leadership Development**



**Prioritize Safety in Selection and Development of Leaders**

Organizational Readiness Level	Foundational	Sustaining
<p><b>Tactics</b></p> <p><i>Examples of tactics that may be implemented to create change at each of these levels</i></p>	<p><b>To engage your organization (cont):</b></p> <ul style="list-style-type: none"> <li>✓ Ensure all executives can clearly articulate how a culture of safety applies in their department, and that all leaders can do the same</li> <li>✓ Develop systems that encourage deference to expertise rather than hierarchy or title in issues of safety</li> </ul>	<p><b>To engage clinical leadership:</b></p> <ul style="list-style-type: none"> <li>✓ In leadership development programs, incorporate opportunities for clinical leader advancement</li> </ul> <p><b>To engage patients and families:</b></p> <ul style="list-style-type: none"> <li>✓ Ensure leaders have competencies in how to partner effectively with patients at all levels of care</li> <li>✓ Include patient and family representatives in leadership recruitment and hiring process</li> </ul>
<p><b>Assessing Execution</b></p> <p><i>List of questions that should be asked to further assess and measure progress</i></p>	<p><b>YES / NO</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <input type="checkbox"/> Do all leaders receive training in patient safety science and safety culture?</li> <li><input type="checkbox"/> <input type="checkbox"/> Is at least one member of the executive leadership team a Certified Professional in Patient Safety or a safety expert?</li> <li><input type="checkbox"/> <input type="checkbox"/> Are leadership development plans reviewed annually? Do they include measures of key safety culture competencies?</li> <li><input type="checkbox"/> <input type="checkbox"/> Do leadership development programs include cultivation of a robust skill set in communication, engagement, listening, performance improvement, and emotional intelligence, as well as business acumen?</li> </ul>	





## Lead and Reward a Just Culture

**GOAL: BUILD A CULTURE IN WHICH ALL LEADERS AND THE WORKFORCE UNDERSTAND BASIC PRINCIPLES OF PATIENT SAFETY SCIENCE, AND RECOGNIZE ONE SET OF DEFINED AND ENFORCED BEHAVIORAL STANDARDS FOR ALL INDIVIDUALS IN THE ORGANIZATION.**

Healthcare organizations that are successful in improving safety and eliminating harm have leaders who understand and commit to the principles of just culture. A just culture “focuses on identifying and addressing systems issues that lead individuals to engage in unsafe behaviors, while maintaining individual accountability by establishing zero tolerance for reckless behavior. Just organizations focus on identifying and correcting system imperfections, and pinpoint these defects as the most common cause of adverse events. Just culture distinguishes between human error (e.g., slips), at-risk behavior (e.g., taking shortcuts), and reckless behavior (e.g., ignoring required safety steps), in contrast to an overarching ‘no-blame’ approach” (PSNet Safety Primer 2016).

	Foundational	Sustaining
<p><b>Strategies</b></p> <p><i>Overarching strategies for implementation at the CEO level</i></p>	<ul style="list-style-type: none"> <li>✓ CEO encourages commitment to just culture framework as an essential business philosophy</li> <li>✓ CEO communicates and models the use of just culture principles in all decisions and actions as part of daily responsibilities and interactions, including root cause analysis</li> <li>✓ CEO educates Board and leadership team on principles of just culture and role models these principles</li> </ul>	<ul style="list-style-type: none"> <li>✓ CEO employs just culture principles throughout organization and communicates that rules apply to all, regardless of rank, role and discipline</li> <li>✓ CEO sets expectations for accountability for anyone interacting with the healthcare organization to commit to utilizing just culture principles in every day practice and decisions</li> <li>✓ CEO ensures just culture principles are implemented in all interactions</li> </ul>

A just culture is not a blame-free environment; clinicians and the workforce are still held accountable for following protocols and procedures. The vast majority of errors are not a result of individual failures, but are the result of systems that are inherently flawed and create environments of risk. A just culture acknowledges that punishing people for mistakes discourages reporting, fails to correct problems in the system, and sets up the likelihood of recurrence. Just culture also emphasizes the importance of the affected workforce after events occur, and focuses on support and peer-to-peer counseling for affected clinicians and the workforce.

When clearly defined, articulated, and implemented by leadership, a just culture approach encourages the reporting of errors, lapses, near-misses, and adverse events. It is through reporting and event analysis that the organization learns what went wrong, or could have gone wrong, and how to prevent it from happening again.

## Just Culture



## Lead and Reward a Just Culture

The hard work of establishing a just culture, however, goes well beyond agreeing to the concept itself. It involves incorporation of expertise in human factors engineering and systems design, full support and resources from the CEO and all leadership, and full engagement of departments such as Human Resources and Organizational Development. It also requires robust reporting systems with mechanisms in place to provide timely feedback to the workforce about not only what went wrong, but why it went wrong. This feedback also includes strong action plans to prevent future occurrence. Developing a just culture policy is just the first step, and organization-wide, systemic implementation is key.

While training of leaders and the patient safety workforce on just culture is vital, everyone at all levels of the organization must consistently integrate just culture principles as an organizational norm. The CEO's role in ensuring that just culture principles are understood and implemented across the organization is fundamental to success. If one individual within the organization is punished for a system flaw, just culture efforts can be severely undermined. Leaders must be transparent with the Board, physicians, the workforce, and the public about the organization's approach, so that when something does go wrong, the response is expected, practiced, and applied uniformly throughout the organization.

### Just Culture Principles

Human behaviors within a just culture can be described as follows:

- **HUMAN ERROR** = An inadvertent slip or lapse. Human error is expected, so systems should be designed to help people do the right thing and avoid doing the wrong thing.  
**Response:** Support the person who made the error. Investigate how the system can be altered to prevent the error from happening again.
- **AT-RISK BEHAVIOR** = Consciously choosing an action without realizing the level of risk of an unintended outcome.  
**Response:** Counsel the person as to why the behavior is risky; investigate the reasons they chose this behavior, and enact system improvements if necessary.
- **RECKLESS BEHAVIOR (NEGLIGENCE)** = Choosing an action with knowledge and conscious disregard of the risk of harm.  
**Response:** Disciplinary action.

(PSNet Safety Primer 2016)



## Lead and Reward a Just Culture

A just culture that focuses on identification and resolution of systems issues supports clinicians and the workforce when these systems break down. CEOs ensure that the principles of a just culture are implemented organization-wide and that they inform every action and decision.



Organizational Readiness Level	Foundational	Sustaining
<p><b>Tactics</b></p> <p><i>Examples of tactics that may be implemented to create change at each of these levels</i></p>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Educate Board, leadership, and workforce about just culture through integrated training programs</li> <li>✓ Develop and implement a decision-making process and application of just culture that is behavior-based, rather than harm-based</li> <li>✓ Ensure organization-wide leadership commitment to frameworks of just culture and accountability that are aligned across all departments</li> <li>✓ Create an interdisciplinary just culture champion team to review organizational policies, provide training, and ensure policies are being followed at all levels</li> <li>✓ Identify metrics to track performance on just culture implementation</li> </ul>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Educate organization to be responsive to and transparent about actions related to professional discipline</li> <li>✓ Implement a peer support program</li> <li>✓ Hold workforce accountable for implementing just culture principles in daily practice and decision-making</li> <li>✓ Include actual and mock scenarios on meeting agendas that demonstrate application of just culture principles</li> <li>✓ Involve the media as a way to explain errors, decisions, and data to the public</li> <li>✓ Treat and respond to gaps in culture and expected safety behaviors as adverse events</li> <li>✓ Expect that leaders utilize just culture tools in all situations, even those not significant or punishable, to ingrain principles and use into organizational norms</li> </ul>



## Lead and Reward a Just Culture

Organizational Readiness Level	Foundational	Sustaining
<p><b>Tactics</b></p> <p><i>Examples of tactics that may be implemented to create change at each of these levels</i></p>	<p><b>To engage your organization (cont):</b></p> <ul style="list-style-type: none"> <li>✓ Align systems and standards for just culture across all organizational departments, including Human Resources</li> <li>✓ Ensure employees are well-trained in just culture algorithm and tools and utilize them in daily activities and decisions</li> <li>✓ Publicly reward positive examples of just culture</li> </ul>	<p><b>To engage clinical leadership:</b></p> <ul style="list-style-type: none"> <li>✓ Include clinical leaders in the development of just culture policies</li> <li>✓ Provide training for physicians, nurses, and other clinical leaders in just culture to build understanding and enthusiasm</li> </ul> <p><b>To engage patients and families:</b></p> <ul style="list-style-type: none"> <li>✓ Ensure that patients and family members who serve on Board and committees are educated on just culture principles</li> <li>✓ Include patients and families in mediation committees/tribunals to assist in resolving conflicts between departments</li> </ul>
<p><b>Assessing Execution</b></p> <p><i>List of questions that should be asked to further assess and measure progress</i></p>	<p><b>YES / NO</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <input type="checkbox"/> Do Board, leadership, and workforce development programs include training on just culture?</li> <li><input type="checkbox"/> <input type="checkbox"/> Is there one set of defined behavioral standards for all individuals within the organization, including leadership, physicians, and the workforce?</li> <li><input type="checkbox"/> <input type="checkbox"/> Is compliance with the established just culture framework part of regularly reviewed performance reviews, including career development plans, for leaders and the workforce?</li> <li><input type="checkbox"/> <input type="checkbox"/> Does the organization use, evaluate, and define action plans related to measures of just culture on employee surveys?</li> <li><input type="checkbox"/> <input type="checkbox"/> Is there an existing measure that is regularly evaluated for assessing frontline knowledge of just culture algorithm?</li> </ul>	

**Behavior Expectations**



# Establish Organizational Behavior Expectations

**GOAL: CREATE ONE SET OF BEHAVIOR EXPECTATIONS THAT APPLY TO EVERY INDIVIDUAL IN THE ORGANIZATION AND ENCOMPASS THE MISSION, VISION, AND VALUES OF THE ORGANIZATION.**

Much of the work involved in creating a culture of safety in healthcare is intrinsically linked to the everyday behaviors that characterize an organization (PSNet Patient Safety Primer: Safety Culture 2016). In fact, culture is often defined as “the way we do things around here.” CEOs set the tone and have the power and responsibility to establish behaviors, set expectations, and promote accountability for these behavioral norms for everyone, including both employed and non-employed individuals. It is essential for Board members, the CEO, and leaders at every level to model the behaviors they aim to cultivate throughout the organization.

	Foundational	Sustaining
<p><b>Strategies</b></p> <p><i>Overarching strategies for implementation at the CEO level</i></p>	<ul style="list-style-type: none"> <li>✓ CEO creates, communicates, and models an organizational climate of personal and professional accountability for behavior</li> <li>✓ CEO establishes systems to recognize and reward desirable behaviors</li> <li>✓ CEO activates organization to develop, implement, and evaluate programs that address and improve personal, professional, and organizational behavior and accountability</li> <li>✓ CEO engages Board by sharing metrics and dashboards related to organizational behavior</li> <li>✓ CEO engages and holds all leaders and workforce accountable for defined behaviors</li> </ul>	<ul style="list-style-type: none"> <li>✓ CEO prioritizes resources for professional accountability framework and programs to ensure and sustain behavioral excellence</li> <li>✓ CEO ensures that succession planning and talent management programs prepare future leaders with competencies in organizational behavior and accountability</li> <li>✓ CEO works with licensing bodies and medical executive committees, where applicable, to ensure behavioral expectations and accountability practices are consistent</li> <li>✓ CEO and leaders at all levels of the organization encourage questions, increasing the likelihood that the right question will be asked at a critical time</li> </ul>

## Behavior Expectations



## Establish Organizational Behavior Expectations

Chief among the behaviors that contribute to an environment of physical and psychological safety are transparency, effective teamwork, active communication, just culture, respect, and direct and timely feedback. Each of these can be learned, and the workforce should be educated about what is expected and why. For example, educating health professionals in effective communication with patients and families, whether disclosing an error, seeking informed consent, or practicing shared decision making, is a key part of cultivating teamwork, communication, and respect.

One of the first responsibilities of a CEO is to understand the current accepted behaviors within the organization. One way to achieve this understanding is through use of validated surveys of patient safety culture, which can help identify areas of strength as well as areas for improvement at organizational, departmental, and unit levels. Surveys can also reveal the strength or weaknesses of organizational culture and “subcultures,” and provide leaders a better sense of where they may need to focus attention. In this manner, leaders are able to better connect with the frontline workforce on a regular basis, whether through leadership rounding, safety huddles, briefings/debriefings, or other tactics, so they can hear about challenges firsthand. A Board, leadership, physician and other clinical professional, and workforce “credo” or compact also helps to communicate behavioral expectations. Such a compact can frame discussions and maintain accountability when someone violates the standard behavioral code (Webb et al. 2016).

It is also important to have a mechanism for escalating concerns when behavioral codes are violated and for dealing with disruptive and unsafe behaviors. Everyone within the organization should understand what that procedure is, and that it will be applied consistently across the organization, regardless of rank, department, revenue, or other considerations. It is essential to remember that the process of changing behavioral norms across an organization or system can be a long and challenging one. That is why it is equally important to ensure that there is also a system to reward individuals who are identified as modeling desired behavior. True progress can be accomplished with the dedication of a highly engaged, unwavering, and courageous CEO.

## Importance of Physical and Psychological Safety of the Workforce

An environment that protects the physical and psychological safety of the workforce is fundamental to a culture of safety. Yet many healthcare workers suffer from harm, including bullying, burnout, and physical injury and assault, during the course of providing care. Under these conditions, it is difficult for care providers to find joy and purpose in their work, and patient safety is jeopardized. The prioritization of safety behaviors including respect, transparency, and teamwork is at the foundation of safety for the workforce, and therefore for patients. The workforce needs to know that their safety is an enduring, non-negotiable priority for the CEO and Board. This commitment is demonstrated when action plans are developed and implemented to ensure the workforce feels valued, safe from harm, and part of the solution for change (NPSF LLI 2013).

## Behavior Expectations



## Establish Organizational Behavior Expectations

Organizational safety behavior expectations are the daily demonstration of a true culture of safety. CEOs work with leaders and the workforce to develop these expectations and to personally demonstrate expected behaviors, while holding the leadership team accountable for doing the same.



Organizational Readiness Level	Foundational	Sustaining
<p><b>Tactics</b></p> <p><i>Examples of tactics that may be implemented to create change at each of these levels</i></p>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Complete culture of safety surveys every 12-18 months and review with Board, leadership team, and workforce; set targets for improvement and take deliberate action to achieve them</li> <li>✓ Stratify and track culture and safety metrics by sociodemographic variables that are important to the organization’s community and develop plans to address any gaps</li> <li>✓ Develop required processes for teamwork, communication, and handoffs among the workforce and with patients, using tools like SBAR, read back, “stop the line,” briefings, and de-briefings</li> <li>✓ Require, participate in, and give context for existing safety processes, including safety huddles and operational briefings, and use these opportunities as forums to build better teamwork and safety culture</li> </ul>	<p><b>To engage your organization:</b></p> <ul style="list-style-type: none"> <li>✓ Require annual signatures on compacts for Board members, leaders, and the workforce that clearly define expected professional accountability behaviors</li> <li>✓ Educate and explain to your organization and the public what you will be transparent about, and what limits may exist on transparency</li> <li>✓ Design and implement a crisis communications policy and plan for both internal and external audiences</li> <li>✓ Align and integrate organizational safety and respectful behaviors with all departments across the organization</li> <li>✓ Provide feedback to employees when they report a safety issue, closing the loop and demonstrating how frontline callouts improve safety</li> <li>✓ Recognize and reward individuals and teams for demonstrating positive safety behaviors and reporting</li> </ul>



## Behavior Expectations



# Establish Organizational Behavior Expectations

Organizational Readiness Level	Foundational	Sustaining
<p><b>Tactics</b></p> <p><i>Examples of tactics that may be implemented to create change at each of these levels</i></p>	<p><b>To engage your organization (cont):</b></p> <ul style="list-style-type: none"> <li>✓ Define organizational safety behavior expectations and respectful behaviors, as well as the organizational response to disrespectful behavior and conflict</li> <li>✓ Proactively promote and encourage teamwork by implementing a formal team training program</li> <li>✓ Break down hierarchical policies and systems for reporting, and encourage reporting without fear of punishment or retribution</li> <li>✓ Break down power gradients by communicating and rewarding a policy that requires all staff to speak up for safety concerns</li> <li>✓ Develop and abide by leadership behaviors, including appreciative or humble inquiry</li> <li>✓ Celebrate and recognize individuals and teams who excel at key safety behaviors</li> <li>✓ Work with key stakeholders to clearly communicate and enforce the same behavioral standards for both employed and non-employed practitioners and staff</li> </ul>	<p><b>To engage your organization (cont):</b></p> <ul style="list-style-type: none"> <li>✓ Ensure the existence of measurement tools and/or report cards for individual performance</li> <li>✓ CEO requires and accepts notification of any serious safety events within 24 hours, without exception</li> <li>✓ SBAR for all serious safety events is shared with full administrative and clinical leadership teams and with the Board</li> <li>✓ Leadership distributes awards for teams and organizations based on culture of safety metrics</li> </ul> <p><b>To engage clinical leaders:</b></p> <ul style="list-style-type: none"> <li>✓ Recognize and reward physicians, nurses, and other clinical leaders who actively participate in teamwork and communication initiatives</li> <li>✓ Create (and require signatures on) physician and leadership compacts that clearly define behavioral expectations</li> <li>✓ Commit to and train the workforce on communication and resolution programs</li> </ul> <p><b>To engage patients and families:</b></p> <ul style="list-style-type: none"> <li>✓ Include patients in the development of required processes for communication with patients, using tools like AskMe3® and shared decision making</li> <li>✓ Encourage and enable patients and families to report safety concerns, and follow up with families who have reported</li> <li>✓ Ensure that safety behavior expectations are centered around the patient, and involve patients in setting these expectations</li> <li>✓ Create, supply, and use understandable tools for patient involvement and shared decision making</li> <li>✓ Invite patients to utilize versions of communication and reporting tools (e.g., SBAR) and to participate in team processes</li> <li>✓ Have a designated team available to provide support to patients, families, and the workforce when an error has occurred</li> </ul>

**Behavior Expectations**



# Establish Organizational Behavior Expectations

Organizational Readiness Level	Foundational	Sustaining
<p><b>Assessing Execution</b></p> <p><i>List of questions that should be asked to further assess and measure progress</i></p>	<p><b>YES / NO</b></p> <p><input type="checkbox"/> <input type="checkbox"/> Does the organization have a clearly defined reporting system and measure utilization of this system (including follow-up and feedback processes)?</p> <p><input type="checkbox"/> <input type="checkbox"/> Are organizational behavior expectations, such as use of huddles and briefings, with follow-up plans and identified owners of action items, implemented and reviewed regularly?</p> <p><input type="checkbox"/> <input type="checkbox"/> Are professional accountability standards (e.g., a process to address disruptive behaviors) in place, used, and regularly evaluated?</p> <p><input type="checkbox"/> <input type="checkbox"/> Are specific tools to encourage teamwork and clear communication in place, used, and regularly evaluated?</p> <p><input type="checkbox"/> <input type="checkbox"/> Are communication and resolution/reconciliation programs in place, utilized, and regularly evaluated?</p>	

## Appendix

### Key Terms Related to Patient Safety and a Culture of Safety

*Based on AHRQ PSNet Glossary [nd], Runciman et al. 2009, and others as noted.*

**Adverse Event:** Any injury caused by medical care. An undesirable clinical outcome that has resulted from some aspect of diagnosis or therapy, not an underlying disease process. Preventable adverse events are the subset that are caused by error.

**Clinician:** A health professional qualified in the clinical practice of medicine, such as a physician, nurse, pharmacist, or psychologist who is directly involved in patient care, as distinguished from one specializing in laboratory or research techniques or in theory.

**Error:** An act of commission (doing something wrong) or omission (failing to do the right thing) that leads to an undesirable outcome or significant potential for such an outcome.

**Harm:** An impairment of structure or function of the body and/or any deleterious effect arising therefrom, including disease, injury, suffering, disability, and death. Harm may be physical, social, or psychological, and either temporary or permanent.

**Inclusion:** Positively striving to meet the needs of different people and taking deliberate action to create environments where everyone feels respected and able to achieve their full potential (National Institute for Health Research 2012).

**Just Culture:** A culture that recognizes that individual practitioners should not be held accountable for system failings over which they have no control. A just culture also recognizes that many individual or “active” errors represent predictable interactions between human operators and the systems in which they work. However, in contrast to a culture that touts “no blame” as its governing principle, a just culture does not tolerate blameworthy behavior such as conscious disregard of clear risks to patients or gross misconduct (e.g., falsifying a record, performing professional duties while intoxicated).

**Patient Safety:** Patient safety refers to freedom from accidental or preventable injuries produced by medical care. Thus, practices or interventions that improve patient safety are those that reduce the occurrence of preventable adverse events.

**Psychological Safety:** Individuals’ perceptions about the consequences of interpersonal risks in their work environment. These perceptions include taken-for-granted beliefs about acceptable interactions with co-workers, superiors, and subordinates, and how others will respond when one puts oneself on the line, such as by asking a question, seeking feedback, reporting a mistake, or proposing a new idea (Edmondson 2011).

**Respect:** The treatment of others with deference in daily interactions, weighing their values, views, opinions and preferences (Sergen’s Medical Dictionary 2012).

**Safety Culture/Culture of Safety:** The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the characteristics of the organization’s health and safety management. Organizations with a positive safety culture are characterized by communications based on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures (Health and Safety Commission 1993).

**Total Systems Safety:** Safety that is systematic and uniformly applied (across the total process) (Pronovost et al. 2013). A systems approach can help with the design and integration of people, processes, policies, and organizations to promote better health at lower cost.

**Trust:** The collective expectations by the public and other clinicians that health care providers will demonstrate knowledge, skill, and competence, and will act in the best interest of both patients and colleagues with beneficence, fairness, and integrity (Calnan 2008).

**Workforce:** Health professionals and all other workers employed in health service or other settings, including but not limited to clinicians, administrators, medical records personnel, and laboratory assistants.

**Workforce Safety:** Healthcare workforce safety refers to freedom from both physical and psychological harm for all those who work with patients as well as those who oversee or provide non-clinical support for those who work with patients.

**Zero Harm/Free from Harm:** The total absence of physical and psychological injury to patients and the workforce.

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## Self-Assessment Tool

### Culture of Safety Organizational Self-Assessment

**Please Note:** The questions in this self-assessment represent a selection of elements from the report, “Leading a Culture of Safety: A Blueprint for Success.” This brief assessment may not accurately represent the full environment or state of each organization. It is recommended that teams review all strategies, tactics, and information in the full document for additional clarity and guidance.

#### Instructions:

- 1 **Select** a diverse team to lead the safety culture review and improvement process. It is recommended that this team include key C-Suite executives, clinical leadership, patient safety leadership, and a patient and family representative.
- 2 **Share** the guide, *Leading a Culture of Safety: A Blueprint for Success* with your team. Review the full document as a team or independently.
- 3 **Ask** each team member to complete this self-assessment independently. Conduct a series of meetings to:
  - A) Review self-assessment responses and scoring for each category as a team, and finalize your organizational score.
  - B) Develop action plans, metrics/dashboard, for assessment, and follow-up plans for low scoring domains (Refer back to *Leading a Culture of Safety: A Blueprint for Success* for assistance)  
*Note: if your team records low scores in Establish a Compelling Vision for Safety or Value Trust, Respect, and Inclusion, it is recommended that you begin with action plans for improvement in these domains.*
  - C) Review improvement metrics, revisit action plans, and make adjustments as necessary. You should include additional team members and/or consultants where applicable.

## Notes on Scoring:

Each statement should be scored on a scale of 1-5 based on the following:

- 1 – **Never** true for my organization
- 2 – **Rarely** true for my organization
- 3 – **Sometimes** true for my organization
- 4 – **Almost always** true for my organization
- 5 – **Always** true for my organization

If you are **unsure** of the response, please check the box titled unsure. When adding responses for a total score, this box should be recorded as a **0**. For any item where a member of the leadership team is unsure of the response, it is recommended that he or she spend time speaking with frontline staff and other appropriate individuals in the organization to determine the best answer.

## Reviewing Responses:

The **total score** is the sum of the response for each of the three questions. The total score will correlate with one of the three ranges in the boxes below, 0 – 4, 5 – 9, or 10 – 15. Confirm that the **organizational state** box accurately describes the current state of your organization. If it does not, you may need to reevaluate your responses, or speak with additional individuals to better understand the current state of your organization.

Use the **recommended next steps** box in the column that correlates with your total score as a quick reference when developing action plans for improvement. For additional information and recommendations, refer to *Leading a Culture of Safety: A Blueprint for Success*.



## Scoring:

- |  |  |
|--|--|
| 1 – Never true for my organization     | 4 – Almost always true for my organization |
| 2 – Rarely true for my organization    | 5 – Always true for my organization        |
| 3 – Sometimes true for my organization | 0 – Unsure of the response                 |

## Establish a compelling vision for safety

MEASURABLE ELEMENTS	SCORE						OBSERVATIONS
	1	2	3	4	5	Unsure 0	
<i>Key questions to ask about your organization's capabilities and processes.</i>							<i>Please provide a brief description of why you chose this score, considering all parts of each question.</i>
1. My organization's safety vision statement and aspirational end state are clear and consistently communicated.							
2. My organization completes and reviews culture of safety surveys every 12 – 18 months with evidence of improvement.							
3. My organization's CEO and leadership team effectively build enthusiasm for and understanding of my organization's safety vision statement.							

Total Score = \_\_\_\_\_

	Score: 0 – 4	Score: 5 – 9	Score: 10 – 15
<b>Organizational State</b> <i>Brief description of current state of the organization</i>	Organization's vision statement does not reflect an end state of zero harm and is not regularly communicated to the workforce. Leaders and staff may have a difficult time understanding or communicating how their daily work contributes to advancement of the vision statement.	Organization has a defined vision with a clear, aspirational end state. Leaders communicate this vision consistently to the workforce, and understand how their work fits into the organizational vision statement. All members of the workforce are able to effectively communicate the vision statement.	Leaders and the workforce effectively communication the organization's vision to patients, families, and the public. The workforce is motivated by the vision statement and can clearly tie their daily work to the advancement of this vision. Metrics to benchmark progress toward vision are in place and regularly evaluated.
<b>Recommended Next Steps</b> <i>Recommended next steps for improvement and implementation are based on domain and included in Leading a Culture of Safety: A Blueprint for Success</i>	<i>Begin with review of Foundational tactics</i> Develop a vision statement with a clear end goal; Educate leaders and the workforce on the meaning of safety culture and zero harm; Host information sessions to build understanding and enthusiasm for the vision	<i>Review Foundational and Sustaining tactics</i> Encourage leader visibility on front lines and communication about how daily work advances vision; Hold leaders accountable for regularly and consistently communicating vision to all units and departments	<i>Review Foundational and Sustaining tactics</i> Share vision and action plans for change transparently with patients, families, and the public; Benchmark progress towards zero harm and share goals and strategies with similar organizations; Develop and support programs that recognize growth and adherence to vision

## Scoring:

- 1 – **Never** true for my organization
- 2 – **Rarely** true for my organization
- 3 – **Sometimes** true for my organization
- 4 – **Almost always** true for my organization
- 5 – **Always** true for my organization
- 0 – **Unsure** of the response

## Value trust, respect, and inclusion

MEASURABLE ELEMENTS	SCORE						OBSERVATIONS
	1	2	3	4	5	Unsure 0	
<i>Key questions to ask about your organization's capabilities and processes.</i>							<i>Please provide a brief description of why you chose this score, considering all parts of each question.</i>
1. My organization uses and regularly evaluates formal respect programs that provide education and support to patients and the workforce.							
2. My organization implements workforce safety programs to reduce physical and psychological harm to the workforce.							
3. My organization transparently shares information and metrics around harm events and action plans for improvement across our organization.							

Total Score = \_\_\_\_\_

	Score: 0 – 4	Score: 5 – 9	Score: 10 – 15
<b>Organizational State</b> <i>Brief description of current state of the organization</i>	CEO and organizational leaders understand the criticality of trust, inclusion, and respect, but may not model these values in all situations. The workforce fears punishment from reporting and disclosing errors to patients. Hierarchies based on rank and role exist throughout the organization.	Formal respect and teamwork programs are in place across the organization, and all staff participate in regular trainings. The workforce reports errors and close calls anonymously and without fear of retribution. Leaders across the organization embody behaviors that focus on trust, respect, and inclusion in all interactions.	Open and honest reporting is standard across the organization and includes defined feedback cycles. Both patients and the workforce are empowered to speak up about safety concerns. Robust communication and support programs are in place for patients, families, and the workforce.
<b>Recommended Next Steps</b> <i>Recommended next steps for improvement and implementation are based on domain and included in Leading a Culture of Safety: A Blueprint for Success</i>	<i>Begin with review of Foundational tactics</i> Develop organization-wide respect for people programs; Train all leaders, staff, and clinicians on respect program; Develop, implement, and train on anonymous reporting systems; Establish a patient and family advisory council	<i>Review Foundational and Sustaining tactics</i> Educate leaders and workforce on inclusion, diversity, and communication with both patients and co-workers; Develop and implement disclosure and apology program; Include metrics for trust, respect, and inclusion as part of annual review process for all leaders	<i>Review Foundational and Sustaining tactics</i> Publicly share information about harm events and plans to prevent recurrence; Enable and encourage patients and families to speak up for safety through available tools and education programs; Provide cultural competency training for leaders and workforce; Regularly evaluate metrics on disparities in patient care

## Scoring:

- |   |   |
|---|---|
| <b>1</b> – Never true for my organization     | <b>4</b> – Almost always true for my organization |
| <b>2</b> – Rarely true for my organization    | <b>5</b> – Always true for my organization        |
| <b>3</b> – Sometimes true for my organization | <b>0</b> – Unsure of the response                 |

## Select, develop and engage your Board

MEASURABLE ELEMENTS	SCORE						OBSERVATIONS
	1	2	3	4	5	Unsure 0	
<i>Key questions to ask about your organization's capabilities and processes.</i>							<i>Please provide a brief description of why you chose this score, considering all parts of each question.</i>
<b>1.</b> At all Board meetings in my organization, the amount of time spent reviewing and discussing a transparent dashboard on safety and culture is equal to or greater than time spent reviewing financial performance.							
<b>2.</b> My organization's Board members are required to complete regular self-assessments and education related to safety culture and quality principles.							
<b>3.</b> Performance assessments and incentives for my organization's leadership are inclusive of safety culture metrics and performance.							

Total Score = \_\_\_\_\_

	Score: 0 – 4	Score: 5 – 9	Score: 10 – 15
<b>Organizational State</b> <i>Brief description of current state of the organization</i>	Organization's Board members have strong financial backgrounds, but lack quality and safety expertise. Safety metrics are presented briefly at each Board meeting, and few questions are asked. The majority of the meeting focuses on financial review.	Organization has a quality and safety committee that reviews all serious harm events, but these are rarely presented to the full Board. Time spent on safety during Board meetings includes a story of harm told by the safety/quality manager, and some questions are asked about the event. Board meetings prioritize financial review over safety review.	Organization's Board and committees include experts in safety, clinicians, and a patient and family representative. Patients are invited to meetings to present their experiences directly to the Board. Safety is a top priority and Board members understand how safety impacts the bottom line and feel empowered to ask questions.
<b>Recommended Next Steps</b> <i>Recommended next steps for improvement and implementation are based on domain and included in Leading a Culture of Safety: A Blueprint for Success</i>	<i>Begin with review of Foundational tactics</i> Provide educational opportunities in safety science and culture for all Board members; Include a safety expert on the Board; Develop a patient and workforce safety dashboard for regular review; Establish a quality and safety committee	<i>Review Foundational and Sustaining tactics</i> Consider including a patient/family representative on Board and all committees; Provide opportunities for all Board members to participate on guided leadership rounds; Share all serious safety events and action plans with the full Board	<i>Review Foundational and Sustaining tactics</i> Link CEO compensation and bonuses to performance on safety and culture metrics; Provide opportunities for Board members to learn from other organizations and industries; Bring frontline teams to Board meetings to tell their stories and be recognized for exemplary performance

## Scoring:

- |   |   |
|---|---|
| <b>1</b> – Never true for my organization     | <b>4</b> – Almost always true for my organization |
| <b>2</b> – Rarely true for my organization    | <b>5</b> – Always true for my organization        |
| <b>3</b> – Sometimes true for my organization | <b>0</b> – Unsure of the response                 |

## Prioritize safety in the selection and development of leaders

MEASURABLE ELEMENTS	SCORE						OBSERVATIONS
	1	2	3	4	5	Unsure 0	
<i>Key questions to ask about your organization's capabilities and processes.</i>							<i>Please provide a brief description of why you chose this score, considering all parts of each question.</i>
<b>1.</b> All leaders in my organization receive education and review opportunities in safety science and safety culture.							
<b>2.</b> My organization has defined roles, safety competencies, and development programs for leaders at all levels.							
<b>3.</b> My organization allows leaders opportunities for learning across departments and from outside organizations and industries.							

Total Score = \_\_\_\_\_

	Score: 0 – 4	Score: 5 – 9	Score: 10 – 15
<b>Organizational State</b> <i>Brief description of current state of the organization</i>	Organization's leaders are considered for development opportunities and promotion based on business and financial competencies. Leader development programs focus on executive leadership. All leaders have semi-regular reviews that focus on financial performance.	Organization's executive leaders are provided basic safety science and culture educational opportunities. Leadership development programs are in place at all levels and throughout the organization. Both current and emerging leaders have access to peer coaching and mentoring programs.	Leaders at all levels of the organization are required to complete safety culture training. Regular reviews for all leaders include safety and culture metrics. Leaders are provided opportunities to learn from outside organizations and industries and are able to transfer among departments and units based on interest and organizational needs.
<b>Recommended Next Steps</b> <i>Recommended next steps for improvement and implementation are based on domain and included in Leading a Culture of Safety: A Blueprint for Success</i>	<i>Begin with review of Foundational tactics</i> Define required leadership competencies in culture and safety; Conduct regular gap analyses for CEO and senior leader competencies in safety culture; Develop and implement an organization-wide leadership development program	<i>Review Foundational and Sustaining tactics</i> Provide continuing education opportunities in safety and culture for both new and emerging leaders; Develop systems that support leaders at all levels, including opportunities for cross-departmental training	<i>Review Foundational and Sustaining tactics</i> Provide leaders at all levels opportunities for learning outside the organization; Define talent as an organizational resource; Tie performance on safety culture to leadership development priorities and promotional opportunities

## Scoring:

- |   |   |
|---|---|
| <b>1</b> – Never true for my organization     | <b>4</b> – Almost always true for my organization |
| <b>2</b> – Rarely true for my organization    | <b>5</b> – Always true for my organization        |
| <b>3</b> – Sometimes true for my organization | <b>0</b> – Unsure of the response                 |

## Lead and reward a just culture

MEASURABLE ELEMENTS	SCORE						OBSERVATIONS
	1	2	3	4	5	Unsure 0	
<i>Key questions to ask about your organization's capabilities and processes.</i>							<i>Please provide a brief description of why you chose this score, considering all parts of each question.</i>
<b>1.</b> My organization uses a defined just culture policy during all review processes and decisions (e.g. not just harm event review).							
<b>2.</b> My organization regularly reviews metrics for just culture education and understanding and defines improvement opportunities.							
<b>3.</b> My organization has one set of defined and employed behavior standards and accountability guidelines in place for all individuals, regardless of department, rank, or role.							

Total Score = \_\_\_\_\_

	Score: 0 – 4	Score: 5 – 9	Score: 10 – 15
<b>Organizational State</b> <i>Brief description of current state of the organization</i>	Organization may have just culture policy but it is not robust or embedded in decisions and processes across the organization. Patient safety and risk management professionals are systematically trained in just culture principles.	Organization has a robust just culture policy that is well-communicated internally and utilized in processes and departments across the organization and/or system. All staff are trained on just culture principles and use of just culture algorithm.	Just culture algorithm is embedded in all reviews and decisions across all departments. The Board, leaders, and the workforce are held accountable for utilizing the just culture policy. Patients and the public are educated on just culture and transparency around events through their providers and use of the media.
<b>Recommended Next Steps</b> <i>Recommended next steps for improvement and implementation are based on domain and included in Leading a Culture of Safety: A Blueprint for Success</i>	<i>Begin with review of Foundational tactics</i> Develop a robust just culture policy; Educate the Board, leadership team, and workforce on just culture principles and the daily use of the just culture algorithm; Ensure utilization of just culture principles in all event reviews	<i>Review Foundational and Sustaining tactics</i> Work with the Board and organizational leaders to align just culture policies across all professions and departments; Develop and review metrics for just culture; Hold workforce accountable for the utilization of just culture algorithm	<i>Review Foundational and Sustaining tactics</i> Treat gaps in culture as adverse events requiring review with the just culture algorithm; Educate providers on transparent communication of errors; Work with the media to educate and inform the public about just culture and plans for improvement

## Scoring:

- 1 – **Never** true for my organization
- 2 – **Rarely** true for my organization
- 3 – **Sometimes** true for my organization
- 4 – **Almost always** true for my organization
- 5 – **Always** true for my organization
- 0 – **Unsure** of the response

## Establish organizational behavior expectations

MEASURABLE ELEMENTS	SCORE						OBSERVATIONS
	1	2	3	4	5	Unsure 0	
<i>Key questions to ask about your organization's capabilities and processes.</i>							<i>Please provide a brief description of why you chose this score, considering all parts of each question.</i>
1. My organization uses and regularly reviews a formal training program and defined processes for teamwork and communication.							
2. Professional accountability standards, including processes to address disruptive behavior and disrespect, are implemented uniformly across my organization.							
3. My organization has a program for recognition and celebration when individuals or teams excel at key safety behaviors and culture metrics.							

Total Score = \_\_\_\_\_

	Score: 0 – 4	Score: 5 – 9	Score: 10 – 15
<b>Organizational State</b> <i>Brief description of current state of the organization</i>	Behavior expectations vary across the organization, often based on department, unit, or role. Leaders and the workforce are not aware of defined standards of respectful behavior or consequences for disrespectful behavior. Best practices and standard processes also vary.	Behavior expectations are consistent across care providers, but organizational response to disruptive behavior may vary. Non-clinical departments, including finance and human resources, may not utilize common behavioral standards. Leaders are held accountable for modeling expected behaviors.	All members of the organization are held accountable for the same behavior expectations and have the same consequences for disrespectful behavior. Organization provides transparency of these expectations through patient/provider compacts. Leaders and the workforce are rewarded for exceptional teamwork and communication.
<b>Recommended Next Steps</b> <i>Recommended next steps for improvement and implementation are based on domain and included in Leading a Culture of Safety: A Blueprint for Success</i>	<i>Begin with review of Foundational tactics</i> Implement a formal team training program; Develop and communicate organization-wide behavioral expectations; Develop and implement standard processes for teamwork and communication	<i>Review Foundational and Sustaining tactics</i> Measure implementation and compliance of teamwork and communication programs; Develop compacts detailing behavior expectations for signature by leaders and the workforce; Ensure measurement tools and report cards for individual performance exist and are utilized	<i>Review Foundational and Sustaining tactics</i> Work with key stakeholders to ensure identical processes for employed and non-employed clinicians and staff; Develop required processes for communication and teamwork with patients and families; Develop standard tools for patient and family involvement in teamwork and communication processes



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# Healthcare Data Governance

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Healthcare Data Governance (DG) is not a new topic but is still challenging for many healthcare organizations to implement and achieve. With the increase in technology and specifically the electronic health record (EHR), the amount of data available has grown exponentially. Additionally, the focus on providing higher quality care in a more efficient way has increased awareness that data is a strategic asset that needs to be managed. An organization's data can consist of master data (e.g., shared data), reference data (e.g., classifications, standards, mappings), and metadata (e.g., data about other data).

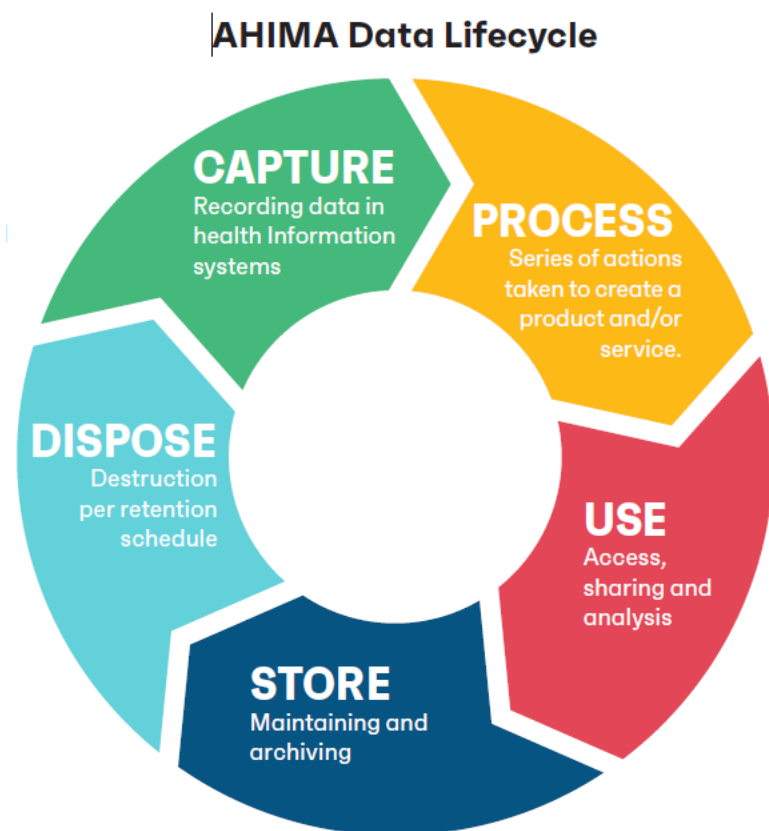
This Practice Brief outlines the healthcare data governance structure/framework, guiding principles, organization-wide applications, and best practices/recommendations surrounding healthcare data.

AHIMA's Definition of Data Governance:

The overall administration, through clearly defined procedures and plans, that assures the availability, integrity, security, and usability of the structured and unstructured data available to an organization. (AHIMA, 2020)

Healthcare data governance programs include the people, processes, and systems used to manage data throughout the data lifecycle as noted in Figure 1, allowing data to benefit the organization.

Figure 1 –AHIMA Data Lifecycle



The quality of healthcare data is vital. Ensuring data quality is often a goal of an organization’s healthcare data governance program. Data quality is determined based on a set of data characteristics as summarized below.

### DATA QUALITY CHARACTERISTICS

AHIMA defines Data Quality and Integrity as “the extent to which healthcare data are complete, accurate, consistent and timely throughout its lifecycle including collection, application (including aggregation), warehousing and analysis.



AHIMA characteristics of data quality are as follows:

1. Accuracy: The data should be free of errors, is correct.
2. Accessibility: Proper safeguards established to ensure data is available when needed.
3. Comprehensiveness: The data contains all required elements
4. Consistency: The data is reliable and the same across the entire patient encounter.
5. Currency: Data is current and up to date
6. Definition: All data elements are clearly defined.
7. Granularity: The data is at the appropriate level of detail.
8. Precision: The data is precise and collected in their exact form.
9. Relevancy: Data is relevant to the purpose it was collected
10. Timeliness: Documentation is entered promptly, is up-to-date and available within specified and required time frames (AHIMA 2020)

Many healthcare organizations have given some thought to data governance but perhaps are unsure where to start or how to achieve a robust data governance program. An obstacle to implementing organizational healthcare data governance may be a lack of understanding of data as an asset by key stakeholders which may lead to data silos and delays in the formation of an organizational wide program.

Healthcare data governance should be organization-wide and include interdisciplinary teams consisting of subject matter experts. A key purpose of healthcare data governance is to establish an organizational culture that ensures data is secure, reliable, and available to those who should have access to it. If the entire organization is engaged, a data governance culture is formed, leading to the organization's robust program.

A healthcare data governance culture may be achieved by starting data governance in small steps to demonstrate the value.

The first step in any healthcare data governance plan or program is to define data governance and scope. Organizations must establish the basic framework of collection, retention, use, accessibility and sharing of healthcare data. This framework may consist of policies, procedures, standards, ownership, decision rights, roles and responsibilities and accountability related to the data. Organizations should create a Data Governance Management Team (or similarly titled team) with the Chief Data Officer (or similar position



and title) working with the Chief Medical Information Officer to establish healthcare data governance plans or programs.

## GOVERNANCE STRUCTURE

Organizations need to establish an operational framework to determine the major DG components and their relationship to each other. High-level DG components may include structure, oversight, responsibilities, culture, regulation compliance, and infrastructure.

## CHARTER

The purpose of the charter is to establish the Data Governance program and scope. It describes at a high level what the program will have oversight for and describes the operational framework and decision-making accountabilities required to enforce and socialize new healthcare data policies and standards.

## SCOPE

The scope defines what the Data Governance program will include such as:

- Organizational structure
- Authorities
- Councils and roles

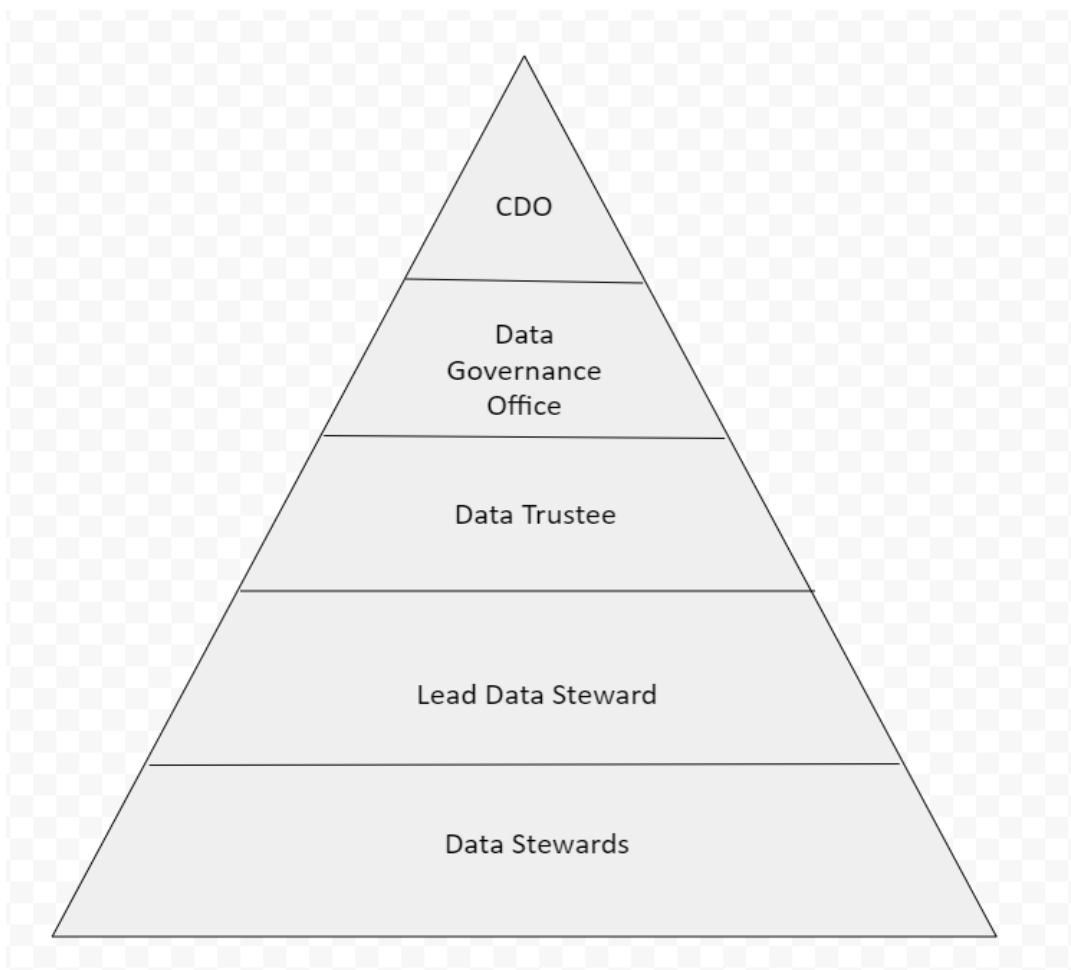
## PROGRAM GUIDING PRINCIPLES

Examples of healthcare Data Governance program guiding principles include the following:

- Data is a strategic asset that has value and risk.
- Data related decisions should be made at the lowest level possible.
- Not all data will be treated equally; data will be valued and governed/managed based on business impact, stakeholder needs and applicable policy/regulation (e.g., protected health Information (PHI)).
- Data definitions, standards, processes, and policies will be developed and maintained with an organization-wide approach.

- Data stewards define the business terms and definitions, approve data values, data relationships, business rules, data quality standards and monitor data quality and data asset value, while IT maintains the systems that capture and manage data through their lifecycle.
- Individuals who create or acquire data are accountable for the quality of that data and must record it in accordance with its definition.
- Data quality and integrity will be addressed by the individuals that create the data and who are closest to the data, understand its meaning and business implications to the specification of the data stewards, with support from the central Data Governance program.

Figure 2 Hierarchy of Data Governance roles



## KEY ROLES WITHIN THE OPERATIONAL FRAMEWORK

- Chief Data Officer (CDO)
- Chief Analytics Officer or other sponsor of the Data Governance Office or Steering Committee.
- Data Trustee
- Lead Data Steward
- Data Stewards

## DATA STEWARD ROLE AND RESPONSIBILITIES

Data Steward: The Data Steward has overall accountability for data and reporting by responsibly managing data assets, data lineage, and data access, supporting sound data analysis and rationalizing information strategy. This role requires focus on data strategy, execution, and support for projects, programs, application enhancements, and production. The Data Steward defines standards and best practices for data analysis, modeling, and queries; and works collaboratively with business owners in assisting them in the accurate, timely, and complete documentation and data collection. (AHIMA, 2017) Some specific examples of responsibilities are below.

- Coordinate with organizational units and business systems to review and give input within their data domain or subdomain to the following (all which are applicable):
  - Data quality and accuracy
  - Data profiling
  - Data queries
  - Data mapping
  - Business terms and synonyms
  - Business definitions
  - Business rules
  - Conceptual data models
  - List of allowable values
  - Process changes
  - Data standards

- Review data quality reports to ensure data is fit for the different business purposes across source systems and critical data assets.
- Act as advocates for the data and serve as the central voice representing their various stakeholder perspectives.
- Work with the Lead Data Steward in maintaining the Business Glossary in the Data Governance Platform.
- Map business terms from local systems captured within the data catalog.
- Support the dissemination and understanding of data in a data domain or subdomain both within specific jurisdiction and across the enterprise.
- Maintain an end-to-end knowledge of data and related business processes for a data domain or subdomain.
- Assign data classification, identify and document sensitive and confidential data for data elements within their data domain or subdomain.
- Provide input on data classification of data assets that contain elements from their data domain or subdomain.
- Evaluate and consult on the processes for making changes to the data model, business definitions, master data and reference data.
- Identify the value of data by liaising with stakeholders for critical business decisions
- Define data quality dimensions (timeliness, accuracy, consistency, conformity) in the source systems based on data usage.

## LEAD DATA STEWARDS ROLE AND RESPONSIBILITIES

The Lead Data Stewards are data domain or subdomain specific and have deep knowledge of how data is used within the organization from a business perspective. Specifics related to this role:

- Formally appointed by the Data Trustees or the Chief Data Science Officer (owner of Analytic Data Assets).
- The appointment is reviewed annually.
- Act as an agent of the Data Trustee or the Analytic Data Asset Owner.
- Lead and coordinate efforts for associated Data Stewards within the data domain, subdomain or for an analytic data asset.
- Represent the collective of associated Data Stewards for their data domain or subdomain.



- Escalate issues to Data Stewardship Council, as appropriate, for resolution.
- Ensure policy and standards are followed, with a focus on improvement of data quality and the protection of sensitive data.
- Evaluate existing processes, controls, data flows, documentation, procedures, data lineage, and governing routines to identify gaps and/or data issues for remediation.
- Maintain all necessary artifacts needed to manage their data domain, subdomain, or analytic data asset.

## DATA ANALYTICS ROLE AND RESPONSIBILITIES

The Data Analytics role oversees the creation and lifecycle management of analytic data assets. Some specific examples include the following:

- Manage and measure value creation attributed to analytic data assets.
- Ensure data use adheres to facility ethical standards and regulatory requirements (e.g., HIPAA, etc.).
- Grant access and authorization to analytic data assets.
- Adhere to definitions of data elements as defined by the Data Trustees/Lead Data Stewards for all data sourced to create analytic data assets.
- Define and manage business terms, definitions, value sets for all derived data elements and maintain them in the Business Glossary.
- Define and manage the technical metadata for all derived data elements and maintain it in the enterprise Data Catalog.
- Resolve any discrepancies with Data Trustees/Lead Data Stewards when derived data definitions are misaligned with source data elements.
- Provide training and guidance on interpretation and use of analytic data assets or visualizations/reports created from these assets.

## THE DATA TRUSTEES ROLE AND RESPONSIBILITIES

The Data Trustees (Owners) are senior leaders with deep knowledge and authority of the data domain or subdomain and are accountable for how data is defined and used within the facility from a business perspective. Specifics related to this role:

- Formally appointed by the Data Governance Steering Committee.
- The appointment is reviewed annually.



- Resolve conflicts escalated to the Data Trustee.
- Provide support, champion resources, and provide authority to act.
- Ensure adoption of Data Governance decisions at a national, ministry, and subsidiary levels.
- Author or contribute to key Data Governance policies.
- Identify and standardize the use and governance of data in support of the business strategy and compliance requirements.
- Approve business terms in the business glossaries and other data definitions.
- Ensure the accuracy of data as used across the organization.
- Work with other Data Trustees to resolve data issues and dissonance across business units.
- Provide input to the Steering Committee on software solutions, policies or regulatory requirements that impact their data domain.

## CHIEF DATA OFFICER ROLE AND RESPONSIBILITIES

The Chief Data Officer (CDO) provides vision and strategy for all data management activities, including healthcare data system lifecycles. The CDO takes the lead in global data management, governance, quality, and vendor relationships across the enterprise. Key responsibilities may include:

- Establish data policies and standards
- Lead data organization
- Master business intelligence
- Enforce organization information management concepts (AHIMA, 2017)

## POLICIES AND PROCEDURES/ STANDARD OPERATING PROCEDURES

Organizations may have one overall Data Governance policy or separate policies for each key area of Data Governance. Examples of key areas to address:

**DATA INTEGRITY POLICY:** The purpose of a healthcare data integrity policy is to ensure that organizational data have integrity so that management and employees may rely on that data for decision making purposes. Data integrity refers to the reliability, accuracy, and



validity of data which requires consistent definitions for each data element and an understanding of the business processes underlying the data.

**DATA ACCESS POLICY:** The purpose of a data access policy is to ensure that employees have appropriate access to organizational data. The value of data is increased through appropriate access. Security measures will protect data and ensure proper use of data when accessed.

**DATA PRIVACY AND USAGE POLICY:** The purpose of a data usage policy is to ensure that data are used as appropriate and according to any applicable laws. Employees may only access and use data as required for their job.

**DATA SHARING POLICY:** The purpose of a data sharing policy is to detail how internal and external data requests are inventoried, tracked, and managed and ensures data is being shared securely and efficiently. Examples would include registry data, Health Information Exchange (HIE), and research data.

**DATA RETENTION POLICY:** The purpose of a data retention policy is to specify how long data must be retained to meet regulatory and/or organizational needs, and what should be done to the data after retention requirements have been met. Organizations may choose to delete/destroy or archive data once retention requirements have been met.

## **DATA DICTIONARY**

Generally, the data dictionary is a descriptive list of the names, definitions, and attributes of data elements to be collected in an information system or database whose purpose is to standardize definitions and ensure consistent use. It supports consistent use of data, documents the source and update frequency. The data dictionary content may differ according to each organization. Basic elements are names and definitions, specific details of the data such as type, length, primary and foreign keys, and the source. The data dictionary ensures standardization and quality of the data.



### Data Dictionary Example:

Field Name	Table	Description	Data Type	Field Length	Key	Valid Values	Data Source	Data Created	Field Term Date	Update Frequency
Charge Master Item	CDM	Supply Code	Text	25	Primary	Alphanumeric	Finance Office	1/1/1999		Annual
Rev Code	CDM	Rev Area	Text	4	Foreign	Digits	Finance Office	1/1/2000		Annual
HCPCS Code	CDM	HCPCS/CPT	Text	5	Foreign	Alphanumeric	Coding/HIM	1/1/2000		Annual
Charge	CDM	Charge per unit	Currency	12		>\$0.00	Finance Office	1/1/2000		Annual

## BUSINESS GLOSSARY

A business glossary is a compendium of business terms and definitions, which have been approved by stakeholders and are maintained and governed. The language representing the data should be aligned with the language of the business.

Consistent terms and definitions, with corresponding metadata, are essential to managing patient demographic data across its lifecycle in the context of meaning. Agreement about term names and definitions is essential to ensure that all stakeholders who supply or consume the data understand it the same way without ambiguity. If common understanding of terms for shared data is lacking, business processes are negatively affected.

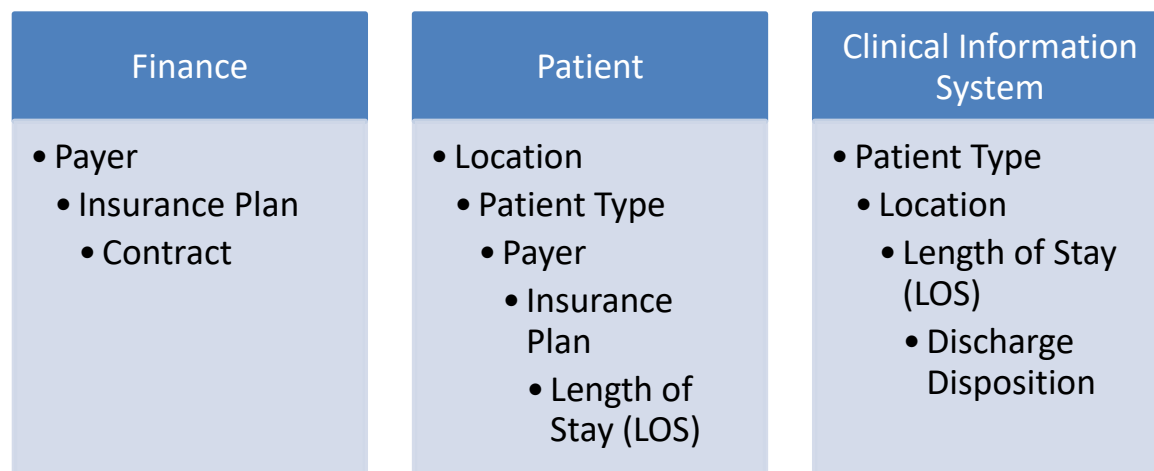
The business glossary represents agreement among key stakeholders on the language and associated meaning pertaining to patient data needed to support quality care, efficient payments, and patient safety. If business terminology is not uniquely named and defined, confusion and inefficiencies may cause issues. (The Office of the National Coordinator for Health Information Technology, n.d.)

Definitions of terms within a healthcare organization may differ by department or division. If these terms are addressed in the Business Glossary with the naming conventions and itemized by department, this will help alleviate disparities. For example: LOC may be used in

the clinical record as loss of consciousness. LOC in the surgical department may be used to identify the length of case as noted in the table below.

Application/Department/Domain	Abbreviation	Definition
Clinical Information System	LOC	Loss of Consciousness
Surgical Information System	LOC	Length of Case

All data elements within the domains of an enterprise should be included in the business glossary. Elements may overlap domains for example:



## Best Practices/Recommendations

Following are some best practices and lessons learned from organizations that have implemented Healthcare Data Governance.

- **Establish program priorities.** Establishing program priorities helps focus Data Governance efforts to achieve results. One way to do this is to prioritize critical data elements for the organization. For example, patient demographics such as date of birth or race/ethnicity may be important as they are used in numerous ways. Key measures such as case mix or length of stay can be important to address as they are often used by multiple departments for reporting. It is important to consider where these critical data elements are used and how defined as well as the entire data lifecycle (e.g., data creation, collection, use, and destruction).
- **Ensure accountability.** It is important to have a Data Governance structure that helps to drive accountability. The best way to do this is to have clearly defined roles and responsibilities (e.g., sponsors, data stewards, domain owners, technical leads, etc.) -- outlining who is responsible for what and when. Having a governance structure in place allows the organization to address questions or issues as they arise as well as work toward the required goals.
- **Demonstrate the value by defining key metrics.** Results of the Data Governance work need to be measured and clearly demonstrate a value proposition. There should be key metrics tied to program goals. For example, key metrics may be tied to data quality (e.g., data accuracy, data completeness), risk or cost reduction (e.g., reduction in rework), or process improvement (e.g., data issues corrected). There can also be value in tracking data literacy across the organization (e.g., knowledge of data management principles; adherence to data management standards, policies, and procedures; published data definitions; attendance at trainings, etc.).



- **Support collaboration.** Those in Data Governance roles should have opportunities to collaborate, discuss challenges, and share best practices. Utilizing a Data Governance platform and applications can help support this effort.

Remember, establishing healthcare Data Governance is an iterative, learning process. The program will adapt and evolve over time as progress is made.





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## REVIEW ARTICLE

## AI IN MEDICINE

Jeffrey M. Drazen, M.D., *Editor*, Isaac S. Kohane, M.D., Ph.D., *Guest Editor*,  
and Tze-Yun Leong, Ph.D., *Guest Editor*

# Artificial Intelligence in U.S. Health Care Delivery

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THE ADOPTION OF ARTIFICIAL INTELLIGENCE (AI) AND ITS IMPACT ON business sectors happen in phases. The use of AI is advanced in many areas, including reinventing how a financial institution provides investment advice and products to its customers, offering “recommendation engines” that suggest the next retail product to buy for a consumer who has just bought one item, and developing driverless cars. In health care delivery, however, AI remains in the early stages.

AI adoption in health care delivery lags behind the use of AI in other business sectors for multiple reasons. Early AI took root in business sectors in which large amounts of structured, quantitative data were available and the computer algorithms, which are the heart of AI, could be trained on discrete outcomes — for example, a customer looked at a product and bought it or did not buy it. Qualitative information, such as clinical notes and patients’ reports, are generally harder to interpret, and multifactorial outcomes associated with clinical decision making make algorithm training more difficult. Another challenge is embedding AI output into the already complex clinical workflow. Furthermore, in our experience, the environment in which some health care organizations operate often leads these organizations to focus on near-term financial results at the cost of investment in longer-term, innovative forms of technology such as AI. Health care organizations that prioritize innovation link investment decisions to “total mission value,” which includes both financial and nonfinancial factors such as quality improvement, patient safety, patient experience, clinician satisfaction, and increased access to care.

We think that the need for AI to help improve health care delivery should no longer be questioned, for many reasons. Take the case of the exponential increase in the collective body of medical knowledge required to treat a patient. In 1980, this knowledge doubled every 7 years; in 2010, the doubling period was fewer than 75 days.<sup>1</sup> Today, what medical students learn in their first 3 years would be only 6 percent of known medical information at the time of their graduation. Their knowledge could still be relevant but might not always be complete, and some of what they were taught will be outdated. AI has the potential to supplement a clinical team’s knowledge in order to ensure that patients everywhere receive the best care possible. Bringing that potential to reality has not been easy, but there are some successes.

There are signs of increased adoption. Economies of expertise — or the development of more robust AI algorithms from more data — have become a key accelerant for a new subindustry, referred to as health care services and technology (e.g., software and platforms, data analytics, and payment services), which has the

potential in the next few years to be as large monetarily as the entire payer subindustry is today.<sup>2</sup> The coronavirus disease 2019 (Covid-19) pandemic has also been a catalyst, prompting organizations to accelerate plans to digitalize and deploy AI. At the management and board levels of organizations, the recent public awareness of generative AI has increased conversations regarding AI. In addition, the adoption of AI can have second-order effects, such as alleviating part of the ongoing shortage of physicians and nurses.

In this article, we discuss the emerging use of AI in health care delivery, which is defined as direct and supportive functions related to the provision of health care. By way of full disclosure, we are both employed by a company that provides consulting services for public and private organizations in this area. We also examine the use of AI in the domains of reimbursement, clinical operations, and quality and safety. Finally, we discuss the challenges that health care organizations are facing in deploying AI.

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#### EMERGING HIGH-VALUE USES OF AI

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AI is broadly defined as a machine or computing platform that is capable of making intelligent decisions. Two types of AI have generally been pursued in health care delivery: machine learning, which involves computational techniques that learn from examples instead of operating from predefined rules, and natural language processing, which is the ability of a computer to transform human language and unstructured text into machine-readable structured data that reliably reflect the intent of the language.<sup>3,4</sup>

In health care delivery, the role of AI in improving clinical judgment has garnered the most attention, with a particular focus on prognosis, diagnosis, treatment, clinician workflow, and expansion of clinical expertise. Specialties such as radiology, pathology, dermatology, and cardiology are already using AI in the process of image analysis.<sup>1,5-7</sup> In radiologic screening, for example, up to 30% of radiology practices that responded to a survey indicated that they had adopted AI by 2020, and another 20% of radiology practices indicated that they planned to begin using AI in the near future.<sup>8</sup>

The potential of AI, however, extends much further. We have found that uses of AI are emerging in nine domains of health care delivery (Fig. 1).

However, most uses of AI in health care delivery have not been subject to randomized, controlled trials. Therefore, the usual level of evidence required for medical decision making may be lacking. We indicate where there is ample evidence and where it is absent. We still aim to provide a perspective based on our conversations with dozens of health care leaders, but we understand that this is not a substitute for a randomized, controlled trial.

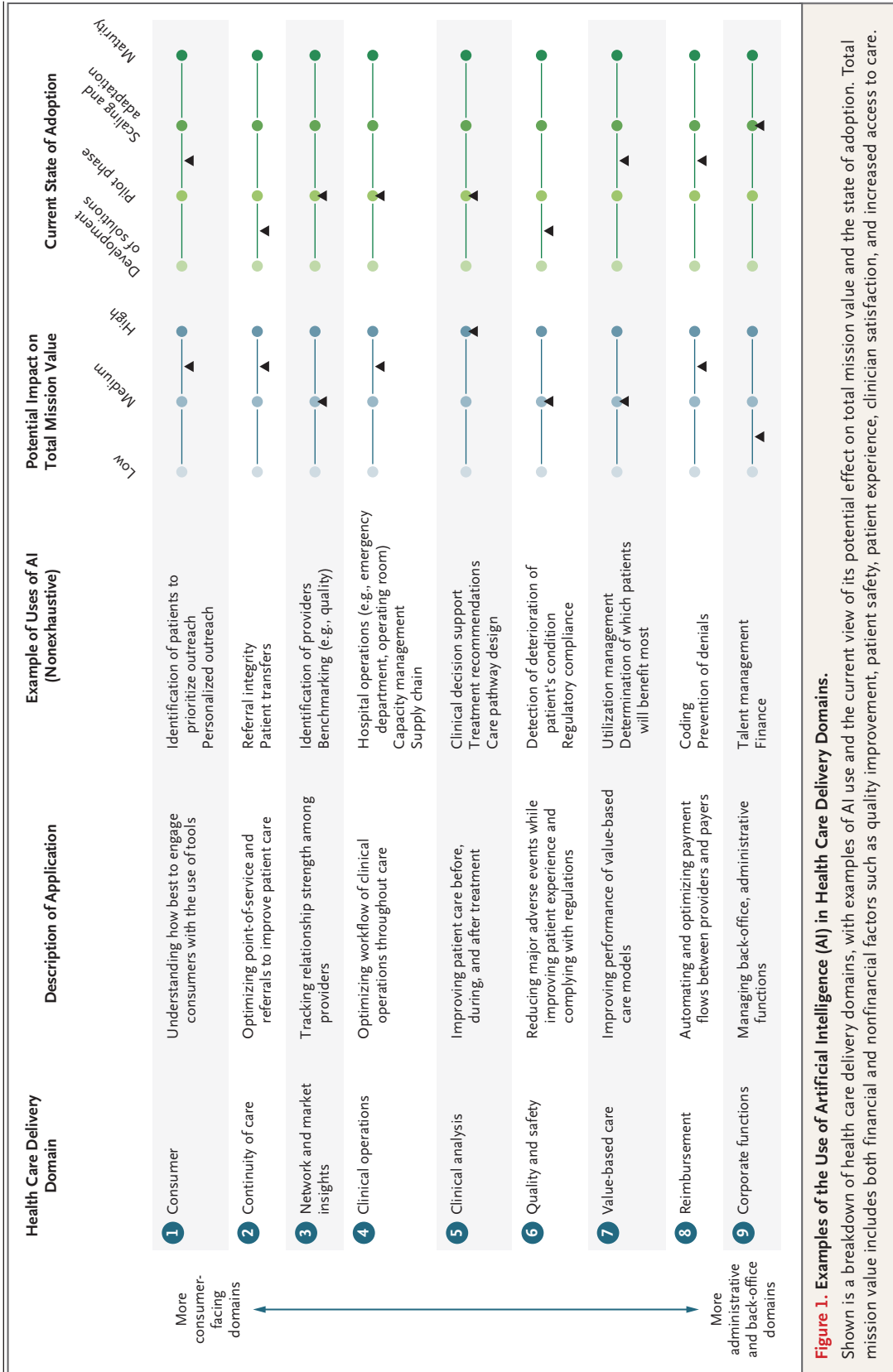
Our discussions with U.S. health care leaders suggest that AI adoption in the nine health care domains has been met with varying degrees of success. Newer forms of technology, such as blockchain and generative AI, have not played a major role. Some health care leaders argue that unlocking the potential of AI will require the use of these types of technology, but our experience suggests otherwise. Overall, most organizations are still in the pilot phase of AI adoption and are attempting to validate the benefits. Here, we focus on uses of AI in three domains of health care delivery: reimbursement, clinical operations, and quality and safety.

#### REIMBURSEMENT

Reimbursement — an area of checks and balances between payers and providers — is key to the financial health of a health care organization. Uses of AI in this domain are both common and among the most advanced uses, with a higher-than-average total mission value (Fig. 1). In what has been termed “the coding wars,” AI not only has become an important tool for stakeholders to monitor one another but also has been simplifying and reducing difficulty in the patient’s experience with medical payments.

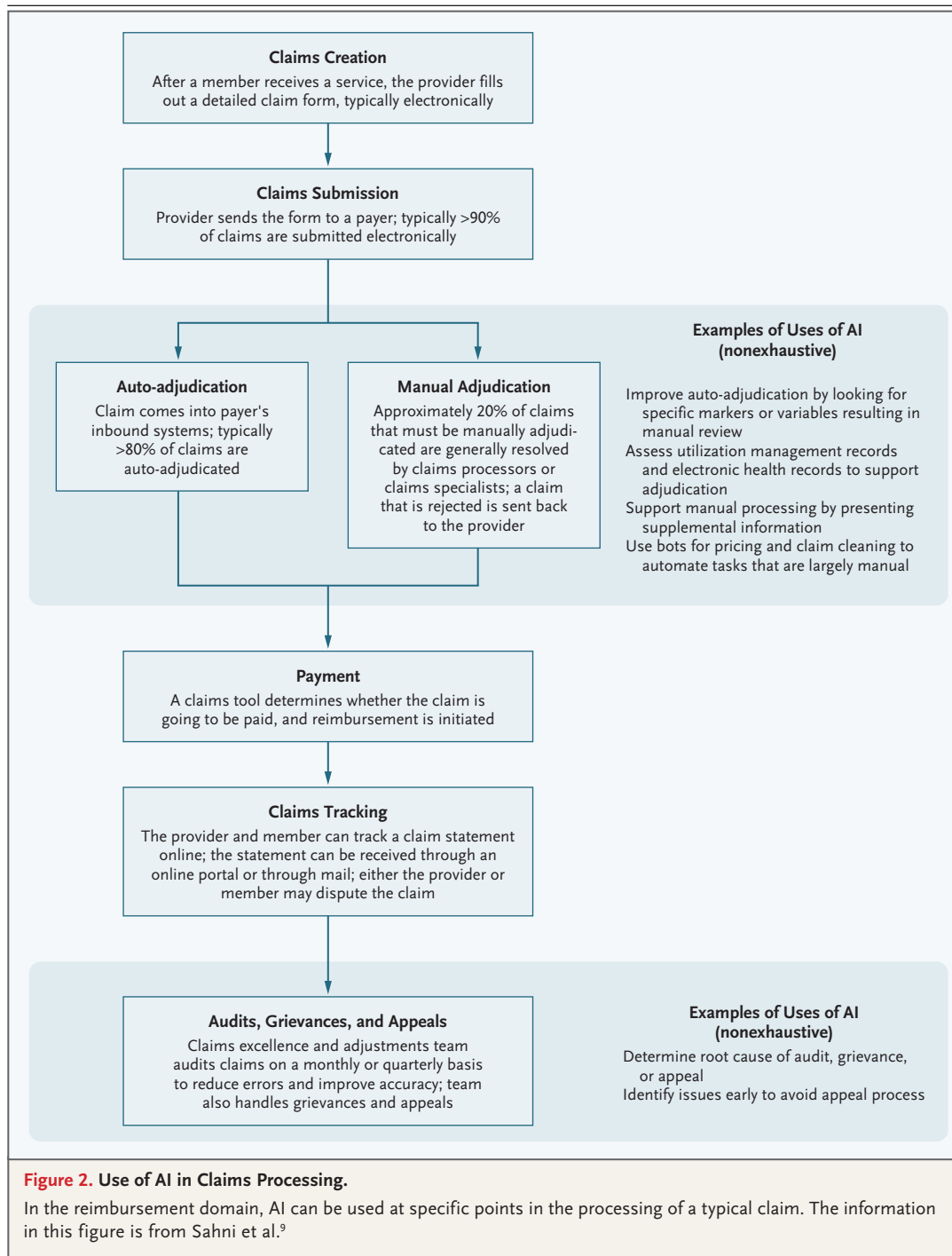
Providers refer to the processing of claims that payers should reimburse (Fig. 2) as revenue-cycle management. This is one of the provider’s tasks that is often performed by persons who review a health care professional’s billing and provide guidance regarding the completion of the bill in a manner that aligns with the services provided so that the amount actually paid to the organization will be appropriate. With the use of this system, more than 10% of claims are denied or delayed because of eligibility issues and missing data, but up to 85% of those denied claims could have been avoided.<sup>10</sup>

One large health system recognized that AI — specifically predictive analytics — could gen-



**Figure 1. Examples of the Use of Artificial Intelligence (AI) in Health Care Delivery Domains.**

Shown is a breakdown of health care delivery domains, with examples of AI use and the current view of its potential effect on total mission value and the state of adoption. Total mission value includes both financial and nonfinancial factors such as quality improvement, patient safety, patient experience, clinician satisfaction, and increased access to care.



erate cost savings and improve not only cash collection and yield but also the patient's experience. The effort began with a large data set (12 months of claims data representing millions of payer interactions), with a focus on more than 100 claims attributes. The system ran the data through a re-

gression model to find those that correlated most closely with a denied billing claim. With this new predictive model, unsubmitted claims were then pruned, increasing the number of claims identified as likely to be denied by 33%, as compared with a retrospective baseline. In addition, the

model identified the most likely root causes of claims denial, such as National Drug Code denial or a specific payer's policy. That health system now has a pilot program that uses the top 10 root causes to flag claims and address them before submission. Over time, the goal is to further develop the model to generate claims-specific root causes of denial and prevent billings from moving forward if they harbor these flaws. This could further improve the denied-claims record of the health system and potentially reduce the administrative spending needed for claims processing and reprocessing, all while improving the patient's experience by reducing the number of frustrating denials.

On the payer side, a large managed-care organization used AI to move from a traditional, labor-intensive model to an AI-based model, with the goal of eliminating upstream errors in a way that could reduce the need for manual claim adjudication. Thus, the organization trained a model that identified and weighted the factors that led to the need for manual intervention, such as specific procedure codes. The model continuously generated output that was based on relative manual effort. With the use of AI by the managed-care organization, the percentage of complex claims that were processed without denial increased from less than 80% to more than 90%. This reduced associated administrative spending by 30% and improved patient experience and clinician satisfaction.

AI is also being used in prior authorization, a process that involves substantial manual labor, with only 21% of prior authorizations automated.<sup>9</sup> The process can be costly because it requires doctors and registered nurses to review requests for authorization. From the payer's perspective, the objective is to ensure that patients are receiving clinically appropriate treatment. Therefore, prior authorization is meant to be a check on what the provider has ordered.

In an attempt to reduce friction in the system, one payer created an integrated, clean database with a sample that included member eligibility and benefits information, historical medical and pharmacy claims, and historical prior authorization requests with clinical decisions, appeals, and outcomes. These data were then fed into a triage engine that categorized requests into four levels of complexity on the basis of such factors as the level of detail shared, the plan member's clinical

history, and the knowledge gained from processing similar requests. AI has already begun to reduce the number of steps in the process, as compared with traditional manual workflows, and the majority of low- and medium-complexity prior authorization requests are automatically approved. This has led to reduced turnaround times, more consistent clinical outcomes, and better overall experiences for patients and clinicians. With this foundation in place, the payer's long-term vision is to apply AI to further accelerate decision making.

#### CLINICAL OPERATIONS

Clinical operations is another health care delivery domain with expanding AI use. Although AI adoption is not as advanced in clinical operations as it is in reimbursement, the total-mission-value potential is similar, and AI has been an area of intense research in clinical operations (Fig. 1). Consider the operating room, one of the most critical assets for clinical care in a health system. The demand for operating rooms is traditionally high, so a missed surgical slot could result in a substantial increase in wait time, not to mention loss of revenue. Scheduling delays owing to surgeries that run longer than anticipated could also have a nonfinancial effect, such as a worse experience for patients and their families as they wait for an operation to end or for a procedure to begin. In health systems in the United States, more effective use of operating-room capacity can increase access to care, which is especially important today because of surgical backlogs and clinician shortages.

In our experience, operating-room optimization can occur in three steps: improving operating-room management, predicting operating-room use, and using operating-room analytics in real time (Fig. 3). Each step has the potential to provide an incremental benefit, but the final two steps are still in development, and their potential benefit is difficult to quantify.

The first step uses descriptive analytics, such as a histogram showing the distribution of operating-room times over the previous 30 days, to identify variations in scheduling. Health systems have used this approach successfully for many years.<sup>11,12</sup> This step has not traditionally involved AI use, nor has it been needed.

In the second step, AI starts to play a central role by predicting operating-room use. Preopera-



	Improving Operating-Room Management	Predicting Operating-Room Use	Using Operating-Room Analytics in Real Time
<b>Level of AI Use</b>	Limited		Predominant
<b>Analytics Approach</b>	Descriptive	Predictive	Prescriptive
<b>Description of Analytics</b>	Analyses of historical operating-room performance to identify and address variation	Predictions regarding preoperative cancellations, in-surgery risk, and postoperative complications	Models that translate predictions into systematic action, including real-time scheduling and reporting
<b>Examples (Nonexhaustive)</b>	<p>Measured key operating-room statistics such as start time, surgical incision time, room turnover time, and patient turnover time (University Hospital, 1994)</p> <p>Measured key operating-room statistics such as start time, turnover, and unavailability (Medical University of South Carolina, 1998)</p>	<p>Predicted operations with high risk of cancellation (West China Hospital, 2018)</p> <p>Predicted risk of death during cardiac surgery (unidentified academic institution, 2020)</p> <p>Predicted duration of elective surgery (Gold Coast Hospital, 2017)</p> <p>Predicted postoperative major complications and death (University of Florida Health, 2019)</p>	<p>Simulated improvement in utilization by 19% and reduction of overtime by 10% (Mayo Clinic, 2015)</p> <p>Simulated reduction in post-anesthesia care unit holds without decreasing operating-room utilization (Lucile Packard Children's Hospital Stanford, 2018)</p>

**Figure 3. Use of AI in the Operating Room.**  
 In the clinical operations domain, AI has been adopted for use in the operating room. Sources of information are Mazzei et al.,<sup>11</sup> Overdyk et al.,<sup>12</sup> Luo et al.,<sup>13</sup> Killic et al.,<sup>14</sup> Shahabikargar et al.,<sup>15</sup> Bihorac et al.,<sup>16</sup> Ozen et al.,<sup>17</sup> and Fairley et al.<sup>18</sup>

tive prediction analytics are focused on reducing cancellations and estimating mortality.<sup>13,14</sup> During surgery, predictions generally focus on the duration of the procedure and potential complications while it is being performed.<sup>15,19</sup> Finally, predictions about likely postoperative outcomes aim to identify major complications.<sup>16</sup>

The third step, using operating-room analytics in real time, can turn prediction into action. For example, AI would be used to build prediction of the duration of a procedure into precise scheduling, allow for the coordination of multiple operating rooms being used simultaneously, and integrate predictions such as likely surgery cancellations into operating-room optimization.<sup>20</sup> Organizations such as the Mayo Clinic and Lucile Packard Children's Hospital at Stanford have estimated that utilization would potentially be improved by 15 to 20% if AI were implemented.<sup>17,18</sup> However, this step remains largely in the pilot phase, and whether the improvements will be realized is not known.

Another use of AI in clinical operations is tackling clinician burnout.<sup>21</sup> Physicians now spend

more than 50% of their time updating electronic health records (EHRs), and this use of time is a documented contributor to burnout.<sup>22,23</sup> Multiple providers are piloting natural language processing to reduce this burden. If these efforts are successful, natural language processing could turn unstructured data such as clinicians' notes into the structured data needed for the EHR as well as for other uses, such as documenting quality metrics or filling in appropriate Current Procedural Terminology codes. This application of AI would give clinicians more time to spend with patients and on tasks that require human judgment.

#### QUALITY AND SAFETY

Quality and safety constitute a domain in which a substantial portion of value comes from non-financial factors. The current level of adoption of AI in this domain is limited (Fig. 1), as is the evidence on the broad effect of AI on quality and safety, but two uses of AI, focused on patient safety and patient experience, show potential.

In the first use of AI, the objective with re-

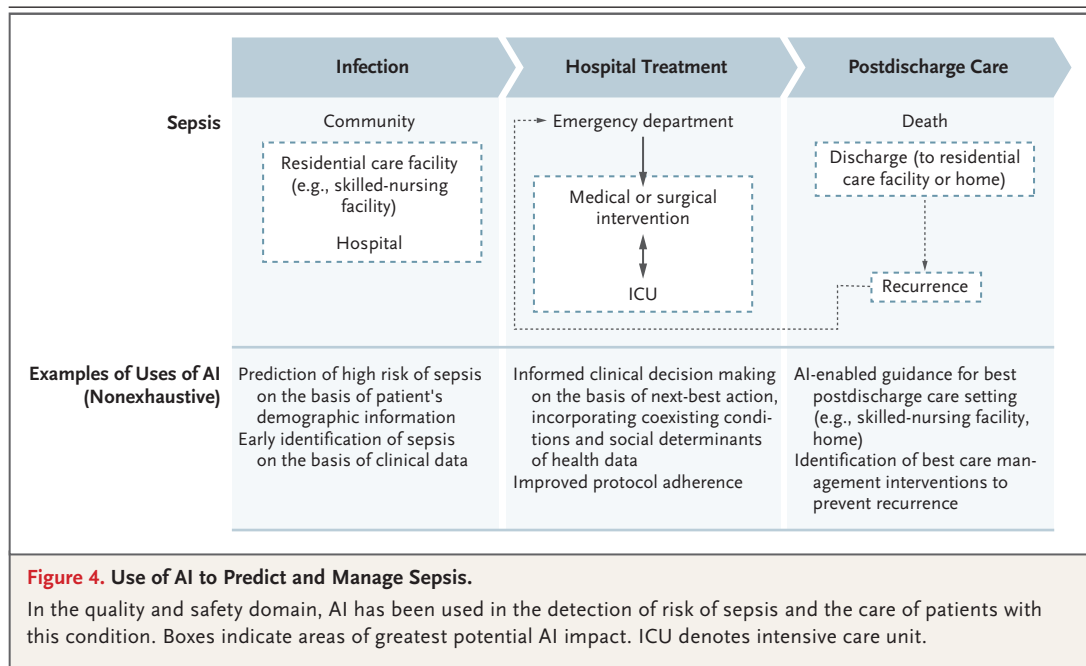


gard to patient safety is to reduce major adverse events — specifically, in cases in which current evidence-based methods are less useful in preventing and addressing complications and in which integration of complex, unstructured data with measurable metrics could help in making predictions. Adverse drug events, decompensation, and diagnostic errors have been identified as problems with the greatest potential for improvement with AI.<sup>7</sup> Tackling these problems requires the generation of actionable information. This process uses data from types of sensing technology, including vital-sign monitoring, wearables such as insoles in shoes, pressure sensors, and computer vision, to embed clinical alarms and reports in the workflow.<sup>4</sup>

For example, sepsis has become an area of focus in recent AI efforts, given the high mortality associated with this condition and the importance of early action (Fig. 4). One AI algorithm used EHR data in combination with blood pressure and heart rate measures to predict whether a given patient in the intensive care unit (ICU) might have sepsis.<sup>24</sup> A health system has used AI to monitor data such as vital signs and nursing reports. The AI output then links with clinical workflows to quickly alert hospital staff if a patient could be in trouble and appropriate clinical steps need to be taken to reduce risk. Over a period of 5 years beginning in 2014, this monitor-

ing had reportedly saved approximately 8000 lives across the network of the health system.<sup>25</sup> Another approach used a broader predictive algorithm for clinical deterioration in the ICU; this algorithm reduced mortality in 21 hospitals.<sup>26</sup> In addition, a recent study showed that when a provider confirms an alert, mortality is further reduced.<sup>27</sup>

The second use of AI — to improve patient experience — can involve Consumer Assessment of Healthcare Providers and Systems (CAHPS), a program of the Agency for Healthcare Research and Quality that measures how patients experienced or perceived key aspects of their care, not how satisfied they were with their care. CAHPS scores are also tied to “star ratings” (a five-star scale, with one star representing poor performance and five stars representing excellent performance) for Medicare Advantage plans. One regional payer sought to identify its most dissatisfied members and to understand why they were dissatisfied. The payer used measures traditionally inferred from a variety of encounter, survey, and operational data, as well as assembled member-level data such as claims, enrollment information, call-center contacts, appeals and grievances, monthly member-survey data, and care management data. After identifying proxy variables for dissatisfaction, the payer ran regressions to determine variable significance and relationships.



AI algorithms were then built to assess the likelihood of disenrollment and the sentiment score for all members. Members were clustered into similar segments and further assessed to understand important dissatisfaction variables in each cluster. This information was then used to prioritize and inform outreach, which improved members' experiences through better identification and resolution of their issues. Overall, the use of AI led to improved allocation of outbound call resources while addressing member challenges. CAHPS scores also improved, contributing to a four-star rating by the Centers for Medicare and Medicaid Services.

#### SLOW ADOPTION OF AI IN HEALTH CARE DELIVERY

The examples noted above from three domains show that the use of AI in health care delivery is developing and that in some situations, the technology has proved to be effective. Yet health care remains among the business sectors that have been slow to adopt AI.<sup>28</sup> Why is this so?

To answer this question, it is important to understand technology adoption. Generally, it follows an S curve: starting with the development of solutions, then piloting, followed by scaling and adaptation, and finally reaching maturity. In several business sectors, such as banking, AI is already reaching the maturity part of the S curve. In contrast, most of the domains in health care delivery are still developing solutions (quality and safety) or piloting them (clinical operations).

Adoption of AI in health care delivery is lagging behind for several reasons. First, given the many different sources and types of health care data needed, they are known to be more heterogeneous and variable than data in other business sectors (e.g., data to make a movie recommendation in Netflix).<sup>29</sup> This creates challenges in applying AI. Another major reason is the fee-for-service model of payment as compared with a value-based payment model. The latter payment structure would fund measures that improve care or make it safer, which is where the benefit of AI in health care delivery could be of substantial importance. Under a fee-for-service model, these incentives are substantially less prominent or absent altogether. Other documented reasons for the slow adoption of AI in health care delivery are lack of patient confidence, including concerns

about privacy and trust in the output; regulatory issues such as Food and Drug Administration approval and reimbursement; methodologic concerns such as validation and communication of the uncertainty of a given AI-based recommendation or decision; and reporting difficulties such as explanations of assumptions and dissemination.<sup>3,6,30-32</sup> These factors will have to be addressed before long-term adoption of AI and full realization of the opportunity that it provides.

Issues within health care organizations may also account for the slow adoption of AI. These challenges must be addressed if AI deployment (a type of digital transformation) is to be successful.<sup>33</sup> We have found that this effort involves six categories encompassing strategic vision, key enabling factors, and implementation, each with specific health care delivery challenges to overcome, as shown in Figure 5.

For example, starting with a strategic vision, one of the greatest challenges is properly defining the costs and benefits of deploying AI. Historically, the decision to invest in AI has been based on financial return. This calculation should be expanded to include nonfinancial factors as well. Otherwise, AI adoption could continue to lag in certain domains in which a large portion of its effect is nonfinancial, such as quality and safety.

Organizations may underestimate the importance of data management, one of the most critical factors enabling successful AI adoption. Data management includes preparing data for use in the information technology system, addressing information gaps, setting up information so that biases are prevented, and ensuring enough availability to achieve scale. Addressing this challenge is not "one and done" but instead requires approaches for continuous testing and validation across multiple providers, geographic locations, and disease use cases.

Finally, implementation is critical for AI adoption within an organization. This category takes the most time and effort, and it is often short-changed by organizations. One challenge is change management. For example, there may be agreement to move to prescriptive scheduling in the operating room, but the implications of this decision are quite different for a hospital administrator, the chief of surgery, individual surgeons, and the operating-room team. Thus, successful AI adoption is likely to require intentional actions that both help to effect behavioral change and

	Categories of Successful AI Deployment	Goal	Challenges
Strategic Vision	1 Mission-led road map	Ensure a clear view of where the value is going to be and a road map to get there	<p><b>Part of the Solution:</b> Ongoing belief that AI is a “silver bullet” rather than part of a broader solution</p> <p><b>Transformative Potential:</b> Focusing only on the “incremental” opportunity rather than reimagining for the “transformative” potential</p> <p><b>Total Mission Value:</b> Focusing only on financial factors rather than accounting for nonfinancial factors such as quality improvement, patient safety, patient experience, clinician satisfaction, and increased access to care</p> <p><b>Focus:</b> Pursuing many domains rather than 1 or 2 “priority” domains with multiple uses of AI</p> <p><b>Timing to Impact:</b> Misconception that AI is a “quick win” rather than a process that is implemented over multiple years</p>
	2 Talent	Ensure that the correct skills and capabilities are available to execute and innovate	<p><b>Skills:</b> Missing skill sets in workforce to implement and manage AI</p> <p><b>Talent Road Map:</b> Lack of long-term plan for workforce hiring, upskilling, and reskilling as AI use expands</p> <p><b>Education:</b> Underinvestment in making workforce AI-literate</p>
Key Enabling Factors	3 Agile delivery	Increase the speed at which teams are able to deliver work	<p><b>Culture:</b> Negative attitude toward AI or lack of consensus</p> <p><b>Funding:</b> Limited ongoing funding to deploy AI</p>
	4 Technology and tooling	Allow the organization to move quickly, with flexibility and resiliency	<p><b>Technology Infrastructure:</b> Inability to integrate AI into legacy systems, secure AI, or provide necessary computing power</p> <p><b>Data Preparation:</b> Underinvestment in tools to properly prepare data</p>
	5 Data management	Use data intelligence to derive a competitive advantage	<p><b>Completeness:</b> Inability to address data gaps with the use of internal or external sources</p> <p><b>Unbiased Data:</b> Lack of awareness of inherent biases in data, such as data that are limited to one health system site</p> <p><b>Availability:</b> Missing scale in the number of data points to train AI</p> <p><b>Data Governance:</b> Governance to manage data is not formalized</p>
Implementation	6 Change in operating model of the organization	Develop business processes, employee skills, and structures to realize total mission value	<p><b>Change Management:</b> Lack of recognition that translating strategic vision requires different behavior changes for everyone in the workforce, as well as coaching</p> <p><b>Workflow Integration:</b> Failure to integrate AI into clinical workflow to minimize the behavior change needed</p> <p><b>Cross-functional Teams:</b> Not creating fully cross-functional teams, such as clinicians, technologists, and operations professionals</p> <p><b>Transparency:</b> Inability to overcome “black box” nature of AI, such as quantification of assumptions</p> <p><b>Interpretable Output:</b> Not providing easy-to-understand output with relevant information to enhance decision making</p> <p><b>Operational Governance:</b> Not creating a formal governance structure to oversee all aspects of implementation and ongoing management</p>

**Figure 5. Examples of Challenges to AI Adoption in Health Care Delivery Organizations.**

A breakdown of categories of successful AI deployment and common challenges that organizations experience are shown. Sources of information are Rajkomar et al.,<sup>3</sup> Bates et al.,<sup>6</sup> Shaw et al.,<sup>30</sup> Singh et al.,<sup>31</sup> He et al.,<sup>32</sup> and Carey et al.<sup>33</sup>

address the details holistically, such as creating AI output visualizations that make interpretation easy for clinicians.

Another implementation challenge is workflow integration. The use of AI in clinical operations is more successful when it is treated as a routine

part of the clinical workflow.<sup>6,27</sup> In essence, AI output is more effective when viewed as a member of the team rather than as a substitute for clinical judgment.

Although the challenges to successful AI deployment within an organization are real, they

can be overcome. Efforts that can help include introducing demonstration projects that test many AI applications focused in a few domains, establishing a balance between building in-house capabilities and partnering with AI technology vendors to access economies of expertise, quantifying the total mission value, and aligning incentives to increase adoption. Investment will be required to achieve these ends. Across business sectors, the higher performers in AI adoption spend 30 to 60% more on AI than the lower performers. In addition, unlike the lower performers, the higher performers expect to continue to increase their AI adoption budgets as implementation takes place.<sup>34</sup>

## CONCLUSIONS

AI adoption in health care delivery has lagged behind adoption in other business sectors, but the past few years have shown the potential and promise of AI, which has already begun to shape the operations of payers and providers in some areas. If the promise of AI is realized, the quality of and access to health care delivery will be improved. The promise remains, but realizing it in practice has not been easy.

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