JOHNS HOPKINS MEDICINE

JOHNS HOPKINS BAYVIEW MEDICAL CENTER

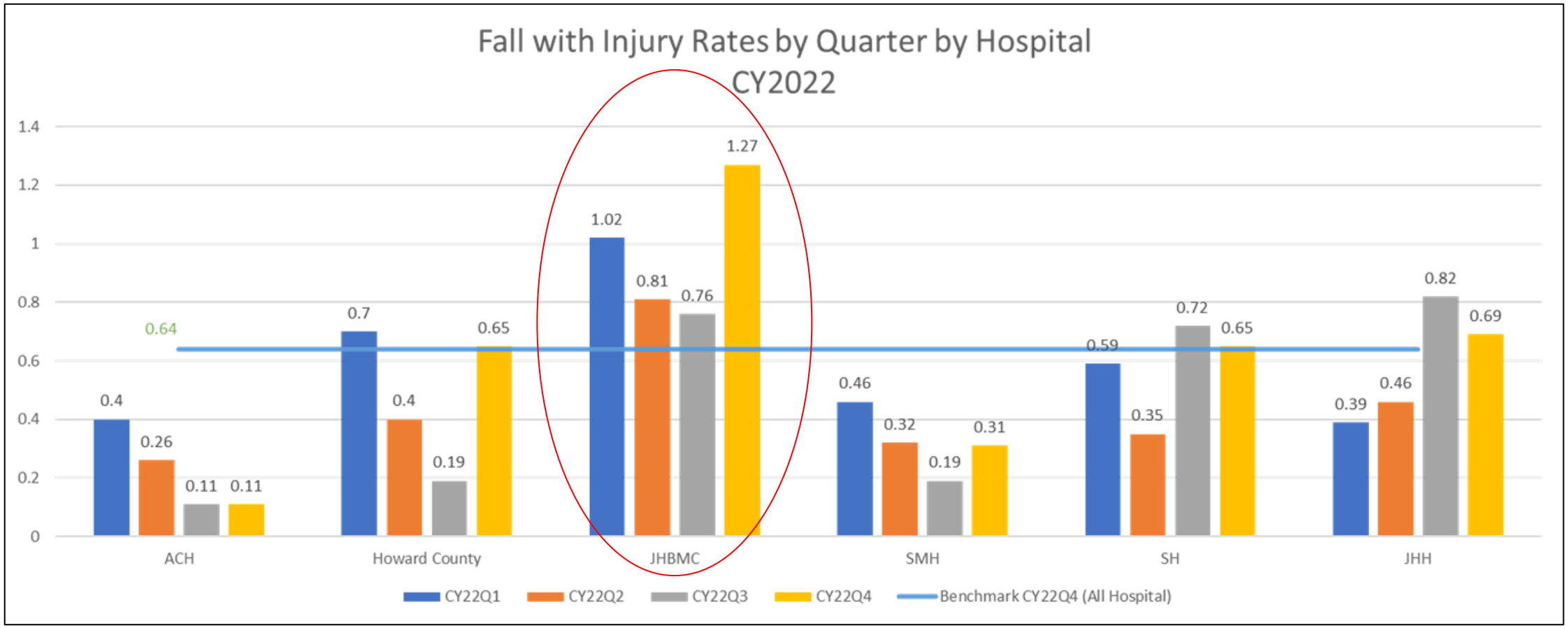
Data-Driven Quality Improvement: Reducing Falls at JHBMC

Kelly Krout – DNP, MSN, RN

Director, Quality Management

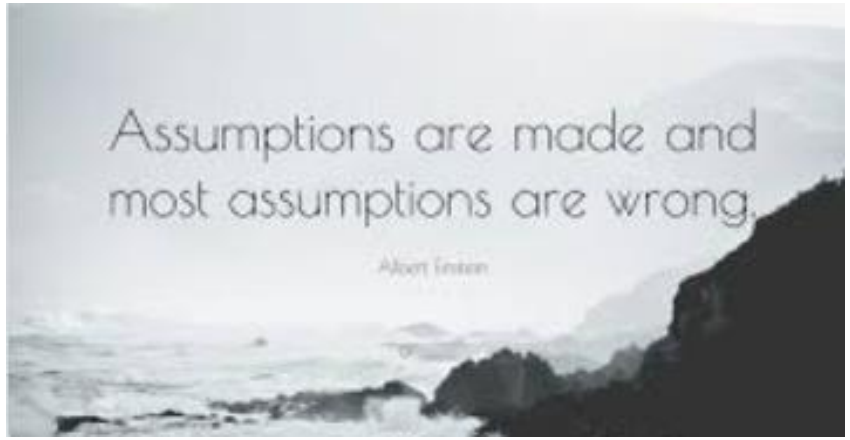
Falls with Injury Rates by JHHS Hospital

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

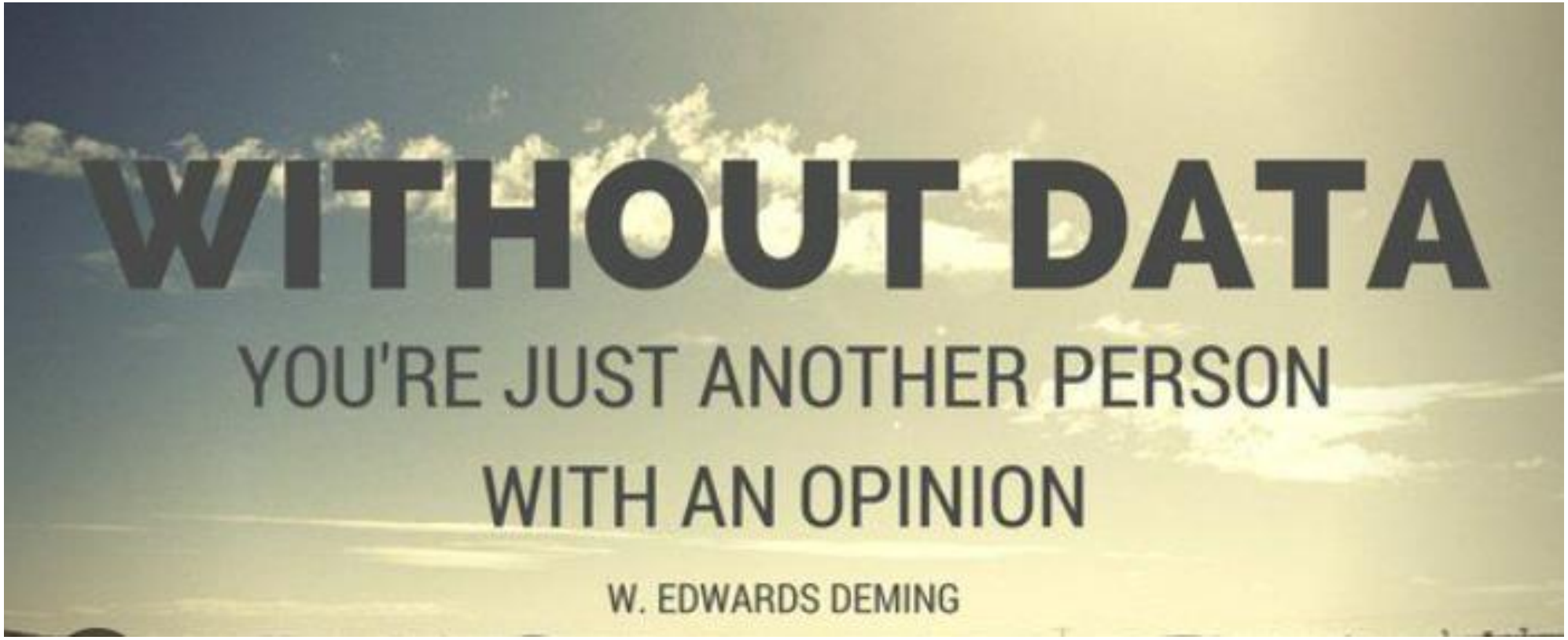


We Tend to make Assumptions…..

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER



Assumptions are the things we don't know we're making.


WITHOUT DATA
YOU'RE JUST ANOTHER PERSON
WITH AN OPINION
W. EDWARDS DEMING

Data versus Intuition

"Data is a tool for enhancing intuition."

Falls SBAR

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

SITUATION

- JHBMC is continuing to experience high fall with injury rates despite prevention efforts.

- Falls lead to:
  - Increased LOS
  - Increased costs
  - Complications
  - Poor outcomes
  - Death

BACKGROUND

- JHBMC had the highest fall rates within the JHHS for CY22.
- JHBMC is NOT meeting the goal for fall rates within NDNQI.
- The fall with injury rate was above the national mean for the last 8 quarters of the CY.

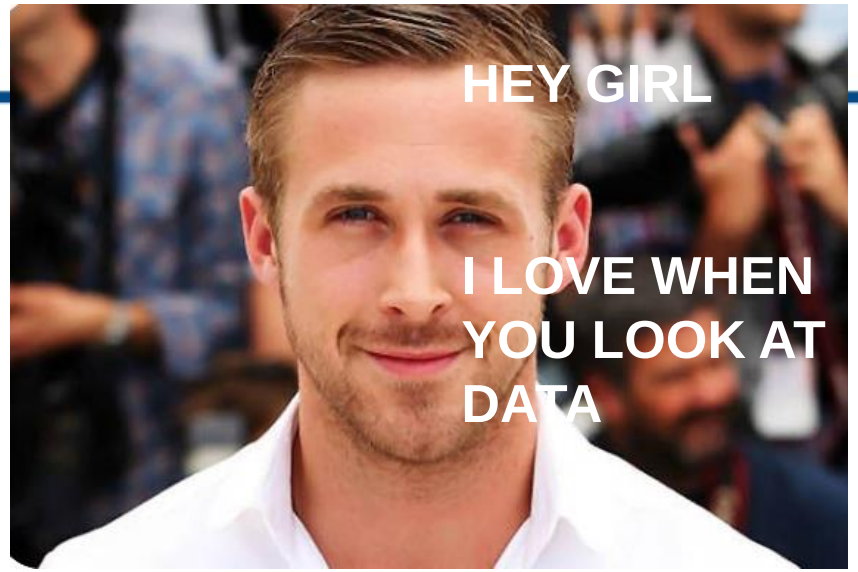
ASSESSMENT

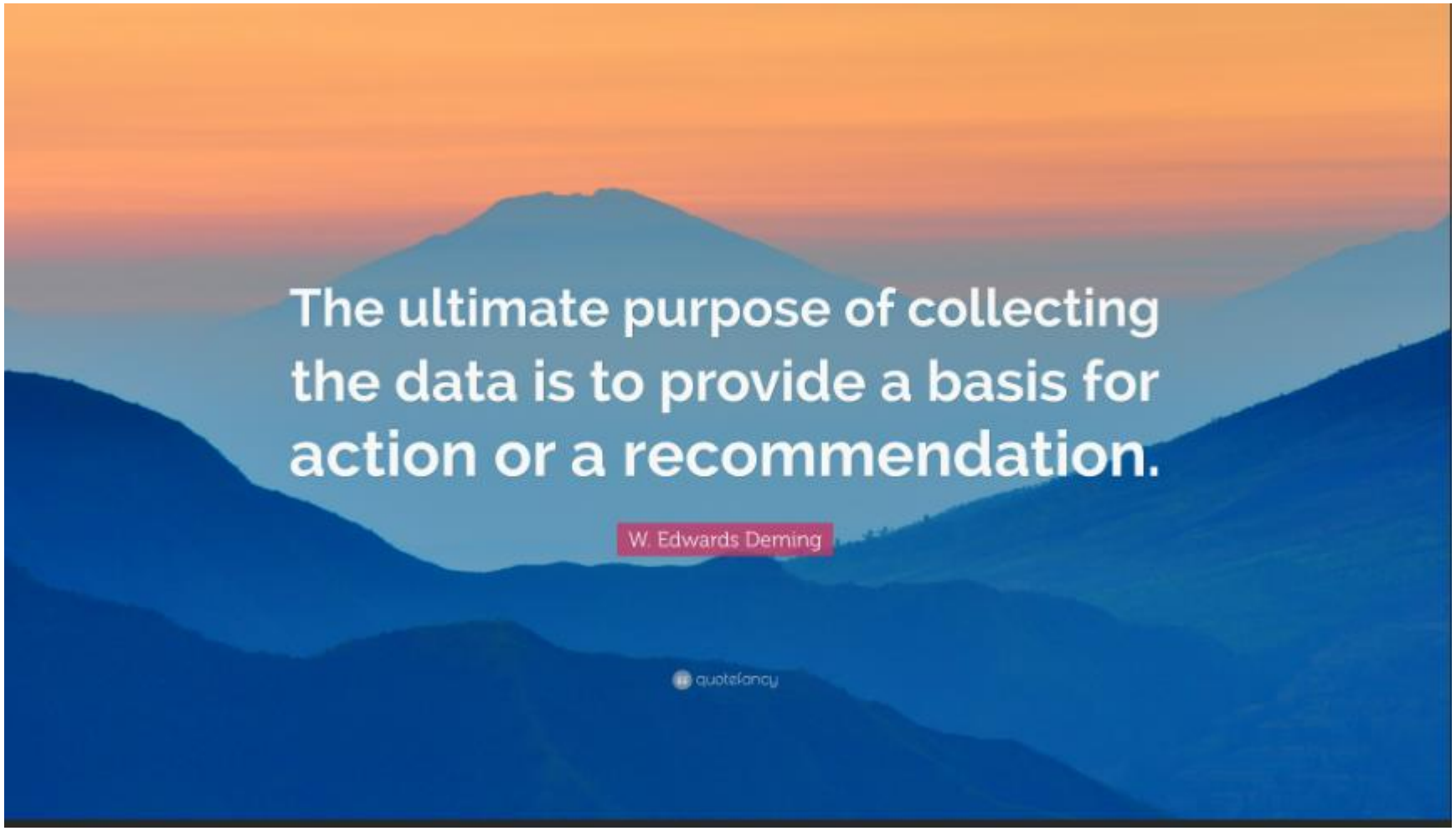
- Assumptions about WHY.
- Various documentation methods (paper vs. electronic).
- Lack of direction and participation in the JHBMC Falls Committee.
- Variation in unit fall-prevention practices.
- **Lack of *(meaningful)* DATA:**
  - **Availability**
  - **Usefulness**
  - **Transparency**
  - **Standardization**
  - **Accessibility**
  - **Understanding**

RECOMMENDATIONS

- Consistent, electronic documentation.
- Implement mandatory use of the Post-fall debrief tool → Data Analysis
- Restructure of JHBMC Falls Committee.
- Utilize Tableau dashboards for staff access to real-time data.
- Share unit best practices.
- Standardize huddle board display.
- Assistance with unit QI/PI work.

“It’s All About the Data”

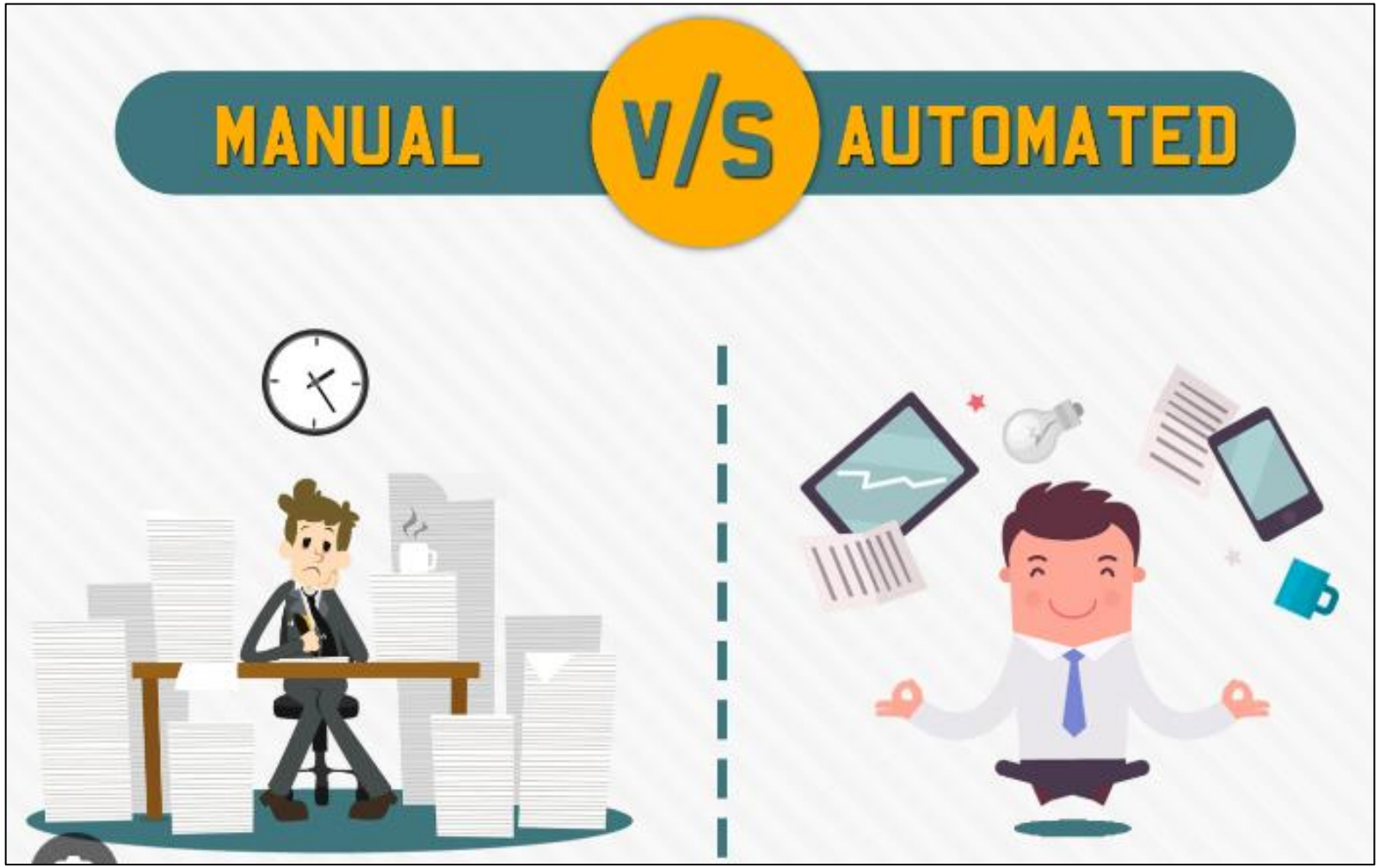



The ultimate purpose of collecting the data is to provide a basis for action or a recommendation.
W. Edwards Deming
quotefancy

Falls Data Process Prior to CY2021

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

- Falls owned by Nursing Education
- Falls documented in HEROs (previously PSN)
- All data was manually abstracted from PSN/HERO and the medical record (1.0 FTE) on a paper spreadsheet
- Falls data was entered manually into NDNQI
- All data analysis was done manually
- Lack of data access and transparency
- Absence of validation
- Post-fall debriefing tool was on paper and voluntary
- Lack of reporting structure


MANUAL
V/S
AUTOMATED

Falls Data Process CY2021 - CY2022

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

- Implementation of mandatory fall documentation in EPIC
- Falls data pulled electronically into NDNQI from EPIC and validated by Quality Management
- Falls dashboard in Tableau, which can be accessed by staff
- Post-fall debriefing tool remained on paper and was voluntary

The focus on data begins….

- *"Data is like garbage. You better know what you are going to do with it before you collect it."*

  – Mark Twain

Steps in Data-Driven Decision Making

1. Define your mission or goals in ways that are measurable

2. Single source of truth for your data

3. Harness the data and make it useable

Data-driven Decision Making

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

Define your mission or goals in ways that are measurable:

- Must be able to quantify based on inputs, outputs and outcomes
- What are we targeting?

Data-driven Decision Making

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

Single source of truth for your data:

- *Do not get stuck here arguing forever!*
- Data collection
- Data storage
- Data distribution
- Removing silos: *Data must be accessible to end users*

Data-driven Decision Making

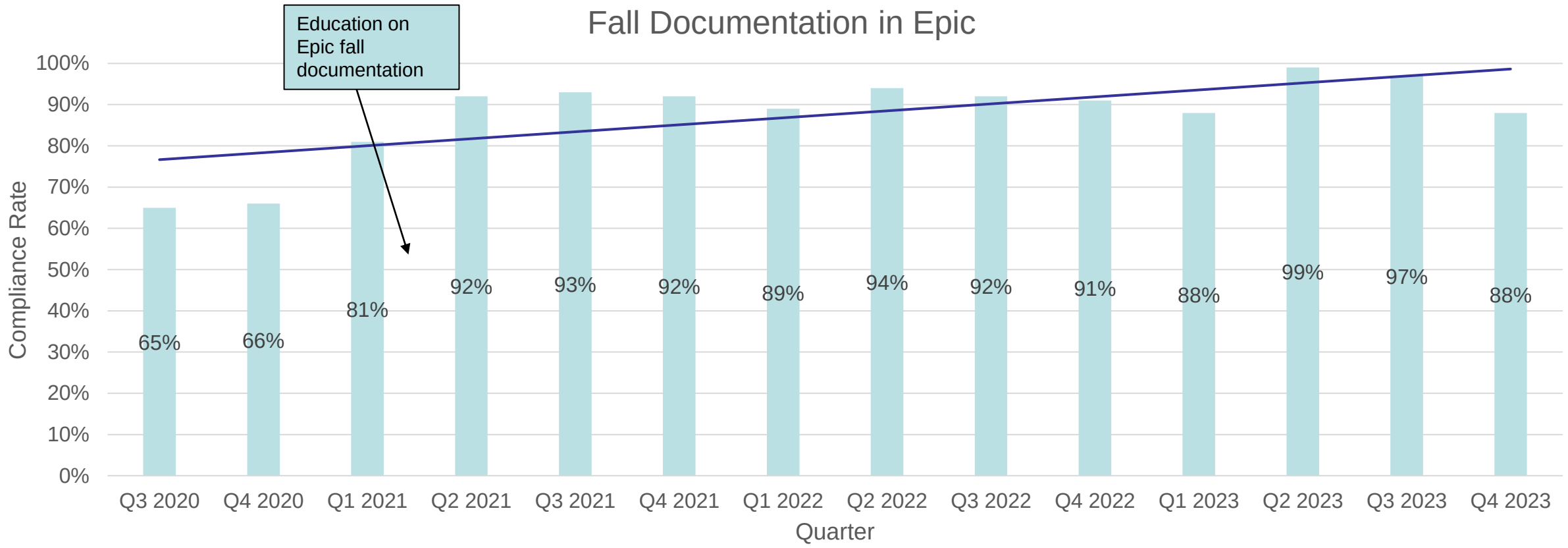
JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

Harness the data and make it meaningful:

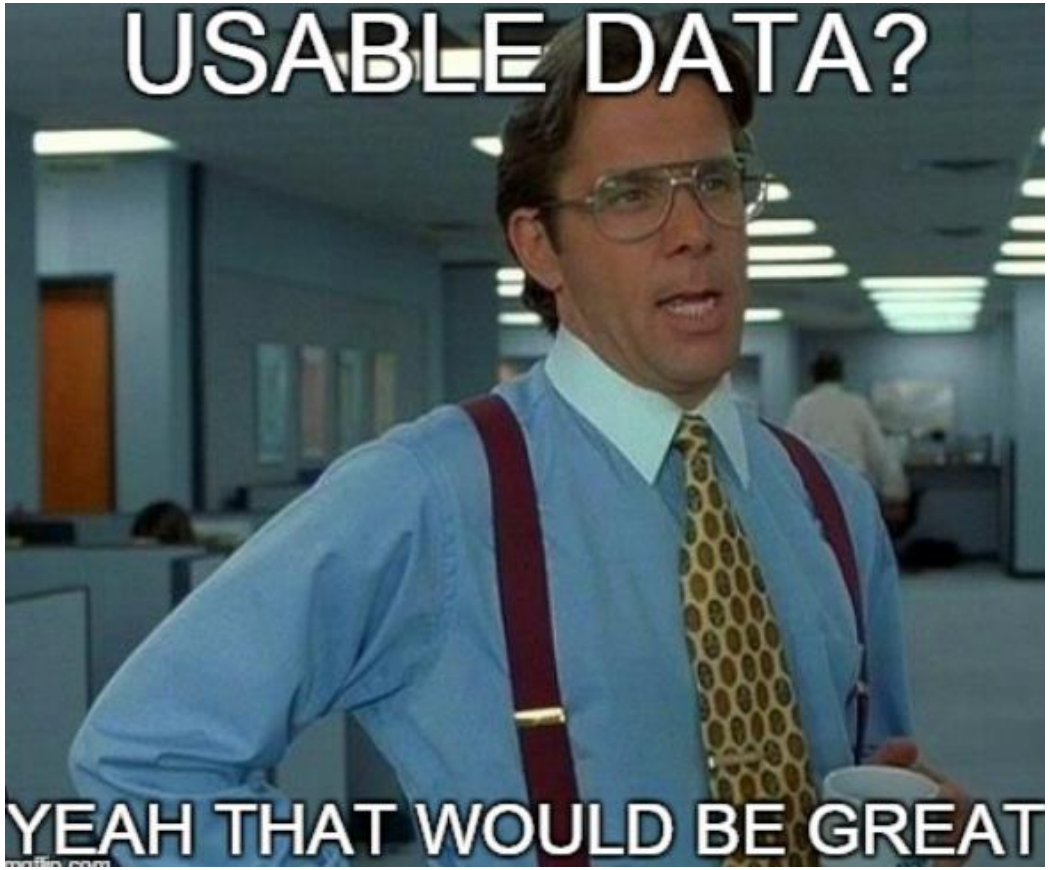
- Ask the right questions
  - What are we doing now?
  - What is working?
  - What is not working?
  - If we did things differently, how would that affect our outcomes?

Share the data and allow for continuous feedback.

Falls Documentation in EPIC



Is the Data Correct?

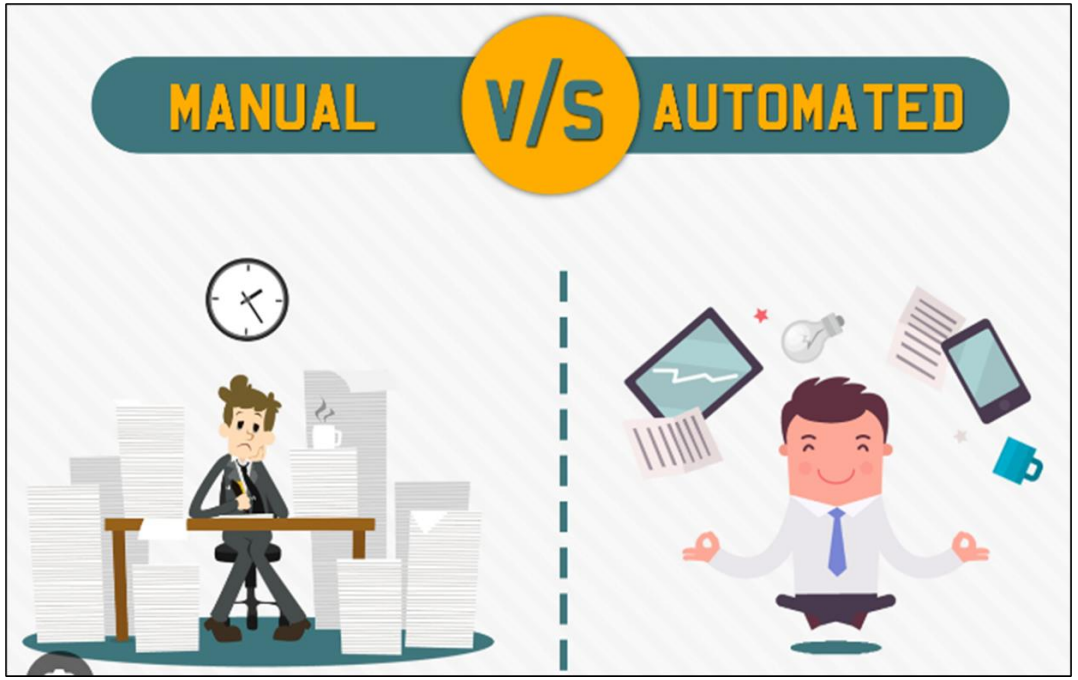


“No Data is Clean, But Most is Useful”

- Removing:
  - Errors
  - Duplicates
  - Outliers
- Checking for accuracy
- Validation

Data Validation

- EPIC = single data source
- Ensuring what was in EPIC matched Tableau data
- Were any falls in HERO and not EPIC?



What Did we Have and What was Missing?

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

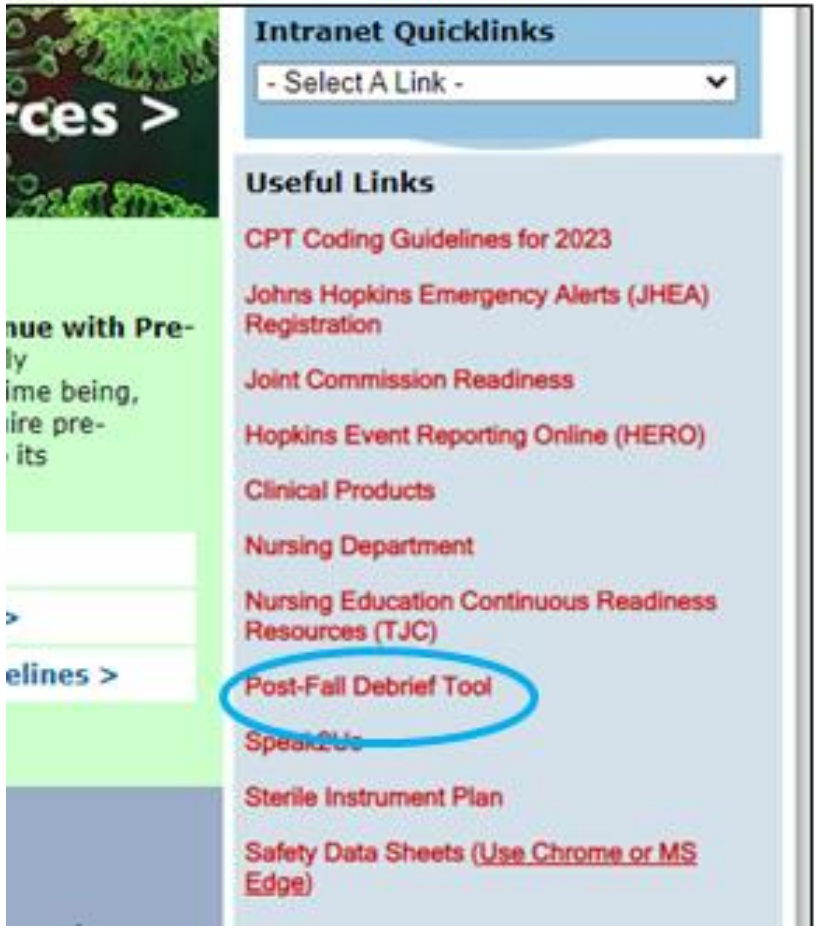
- **What data did we have?**
  - Number of falls
  - Number of falls with injury
  - Location (unit)
  - Type of injury

- **What was missing?**
  - Fall prevention measures
  - Medical equipment/devices
  - Contributing factors:
    - Environmental issues
    - Communication issues
    - Hand-off issues
    - Staffing factors

Current Fall Initiatives

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

- JHBMC Falls Committee
- Toilet seat alarms
- Bed/Chair alarms
- Tele-sitters
- Yellow socks/fall risk bracelets
- Floor mats
- Best practices shared at Falls Committee
- Remain with patient in bathroom
- Post-fall debrief tool link moved up due to staff request



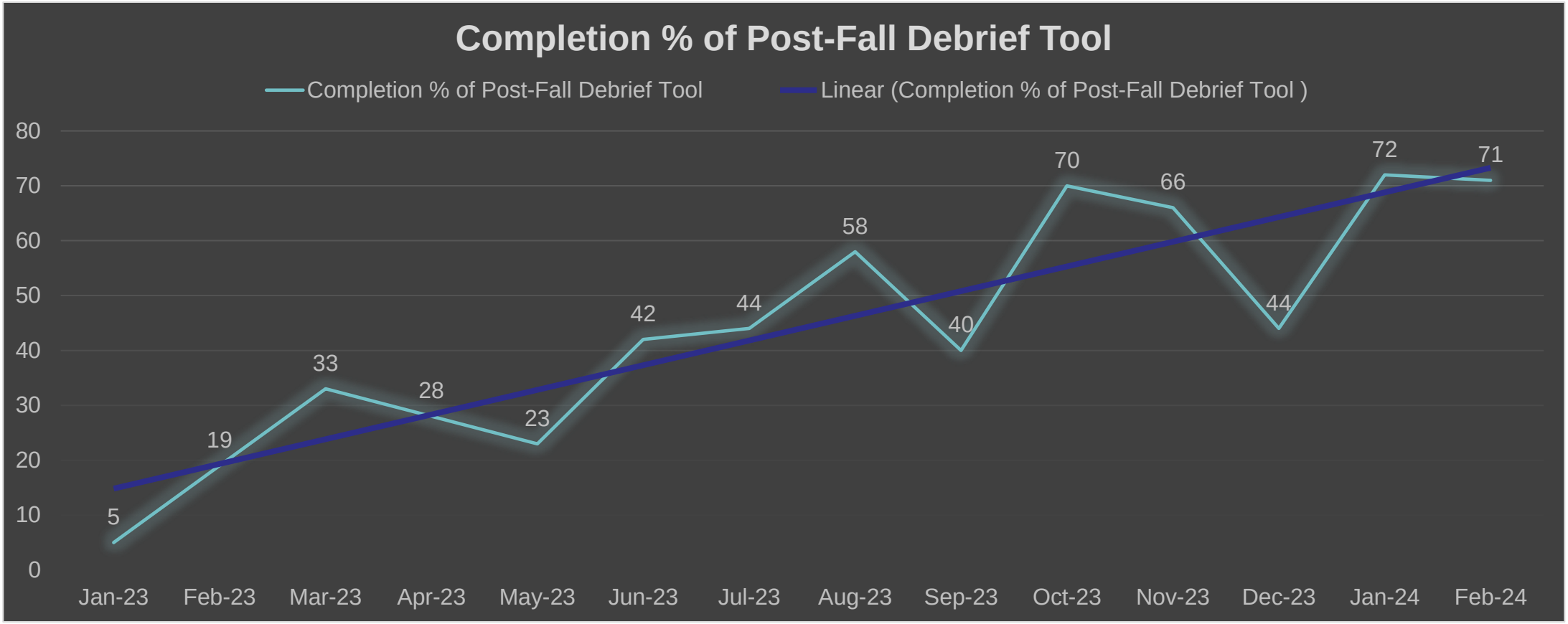
Next Steps…

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

- Rapid cycle improvement via partnership with Quality and Nursing
- Target initiatives to units with most falls with support from Quality/Safety
- **Mandatory** post-fall debrief tool - electronic
- Provide link to debrief tool within fall flowsheet
- Project Charter and A3
- Work done through JPCs, reporting to QPSC
- Staff training on Tableau
- Data Transparency

JHBMC Completion % by Month Post-Fall Debrief Tool *(Jan 23 – February 29, 2024)*

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER



Goal = 100% Completion

- “I spend time filling out the fall assessment and the post-fall debriefing tool.”

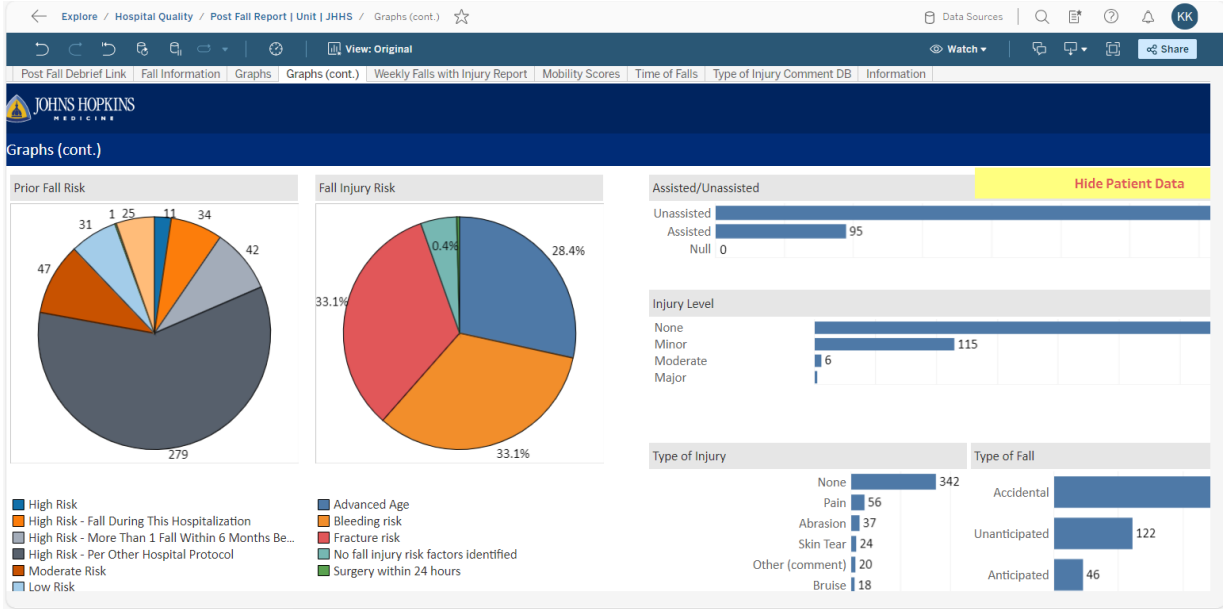
- **“Does anyone really look at this data?”**

YES,
YES
AND
YES

Data Transparency in Tableau

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

- Data must be accessible to end users (front-line clinical staff)
- Tableau vs. other data sources
- Multiple teaching sessions on accessing the data & running reports



Partnership Between the Department of Medicine and Quality

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

- Dedicated Quality RN for PI/QI
- Partnership to relaunch JHBMC Falls Committee
- Fall champions on each unit with an A3 and detailed work plan
- Data monitoring, transparency and understanding
- Monthly fall workgroup meetings
- Rounding
- Trends

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

FALL Initiative Department of Medicine FY24- A3

August 14, 2023

Define:

The number of patient falls at JHBMC within the department of medicine exceeds benchmark. Patient falls per 1,000 days exceed the NDNQI mean. Fall prevention will prevent harm, improve patient satisfaction/quality of life, improve capacity/throughput and reduce costs.

Key Metrics:

	FY23 Baseline		FY24 Q1		FY24 Q2		FY24 Q3		FY23 Q4	
	#Fall	Tool	Falls	Tool	Falls	Tool	Falls	Tool	Falls	Tool
Med A	52	1								
Med B	60	6								
CBMU	34	1								
NP3	19	2								
B4	22	1								
B1 Rehab	23	9								
B01 Rehab	37	7								
PCU	20	11								
MICU	2	1								
CICU	2	2								

Goals:

- FY24 Reduce Patient Falls in the department of medicine by 10% (Total of 304 Patient Falls in the department of medicine FY23)
- Standardized Huddle Board Reporting Fall Metric
- Fall Debrief Tool Documentation Compliance 92% (each unit, each month)

FY24 Patient FALL Reduction Strategies and Initiatives:

Goals/Initiatives	Quarter 1 FY23 July 1st – Sept 30th	Quarter 2 FY 23 Oct. 1st – Dec. 31st	Quarter 3 FY 23 Jan. 1st- Mar. 31st	Quarter 4 FY23 April 1st – June 30th
Huddle Board Fall Metric	✓ Huddle Board on all units ❑ Designated area on Huddle Board for Fall Metric ❑ Standardized Huddle on both Day and Night shift on all units	❑ Fall Metric is posted on all Huddle board- updated monthly ❑ Fall Metric is actively discussed at standardized unit huddle	❑ Assess, established and operationalized workflow for sustainability ❑ Feedback on Huddle Board Rounding shared monthly	❑ Assess, established and operationalized workflow for sustainability ❑ Feedback on Huddle Board Rounding shared monthly
Process Metric Report Card	❑ Information Metric Report Cards ❑ Tool Kit Metric Report Cards ❑ Workflow Process for Report Cards ❑ Designated area on Huddle Board for Fall Metric Report Card ❑ Education to Frontline staff during Annual Review	❑ Soft Roll out Implementation of Metric Report Card ❑ Agenda Item at Leadership Meeting for update/ unit progress (Unit report out)	❑ Assess, established and operationalized workflow for sustainability ❑ Begin determining trends from Metric Report Card results for action planning ❑ Agenda Item at Leadership Meeting for update/ unit progress (Unit report out)	❑ Report trends and data and action plans that have been implemented or will be implemented
Fall Debrief Tool Compliance	❑ Education to Frontline staff, expectation all Falls require Post Fall Debrief Tool online ❑ Develop workflow process for accessing online Fall Debrief Tool on online ❑ Determine process for monthly auditing Fall Debrief Tool	❑ Actively sharing Audit results of utilization of Post Fall Debrief Tool with goal of increasing use by 25% quarterly	❑ Actively sharing Audit results of utilization of Post Fall Debrief Tool with goal of increasing use by 25% quarterly	❑ Actively sharing Audit results of utilization of Post Fall Debrief Tool with goal of increasing use by 25% quarterly
Hospital Fall Committee	❑ Each unit must have an engaged and committed active unit-based champion ❑ Fall champion must attend 75% of scheduled meetings yearly	❑ Review attendance of Fall champion, Hospital Fall Committee ❑ Fall Champion- standing agenda item on staff meeting/sharing "Take-Away's"	❑ Review attendance of Fall champion, Hospital Fall Committee ❑ Fall Champion- standing agenda item on staff meeting/sharing "Take- Away's"	❑ Review attendance of Fall champion, Hospital Fall Committee ❑ Fall Champion- standing agenda item on staff meeting/ sharing "Take-Away's"

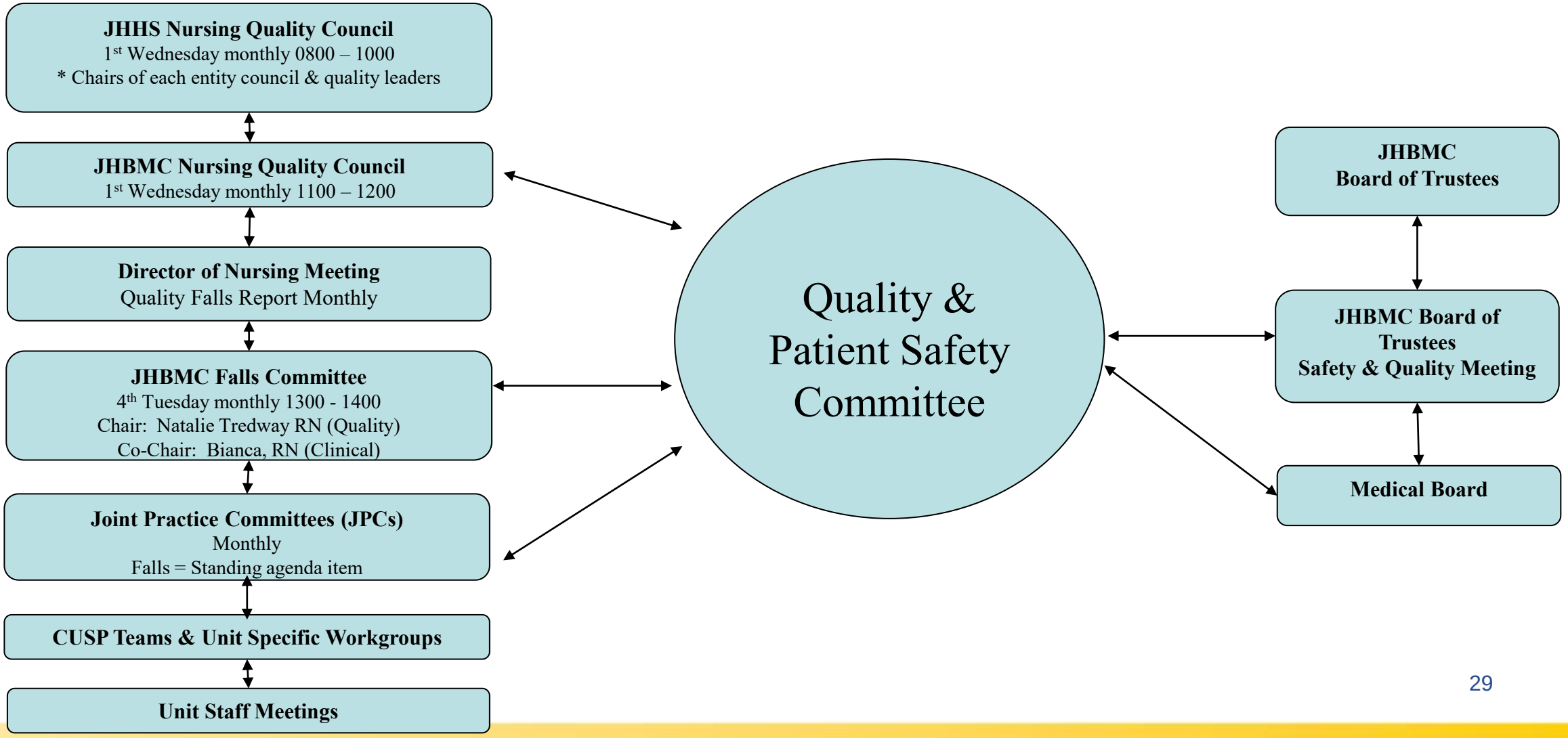
JHBMC Falls Committee FY24

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

FY24 JHBMC Fall Committee Initiatives:		
Goals/Initiatives	**Quarter 3 FY 24** **Jan. 1st- Mar. 31st**	**Quarter 4 FY24** **April 1st – June 30th**
Huddle Board Fall Metric -Base Line Data, Unit Survey Rounding	❑ Fall Metric is posted on all unit Huddle boards, updated monthly ❑ Fall Metric is actively discussed at unit huddle each shift	❑ Assess, established and operationalized workflow for sustainability
Hospital Fall Committee Champions -Track Unit Champion Attendance	❑ Each unit must have an engaged and committed active unit-based champion ❑ Fall champion must attend 75% of scheduled meetings yearly	❑ Review attendance of Fall champion, Hospital Fall Committee ❑ Fall Champion- standing agenda item on staff meeting/sharing "Take-Away's" ❑ Increase unit champion engagement, develop strategies to reduce unit-based falls with identified best practices
Fall Debrief Tool Compliance -Monitor Fall Debrief Tool Compliance	❑ Monitor hospital Fall Debrief Tool documentation compliance (by unit), report during monthly meeting ❑ **Fall Unit Champion:** Develop workflow process for accessing online Fall Debrief Tool on online and share with unit leadership monthly	❑ Create Action Plan template for low documentation compliance trend, send to unit leadership (3 Months) ❑ Review any Action Plan submitted monthly during meeting

JHBMC Falls PI/QI
Governance and Reporting Structure

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER



JHHS System Performance
Fall - *Trends*

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

Fall Trends	Fall Location		Activity Prior to Fall			% of Unassisted Falls
	In-Room	Bathroom	Ambulating	Toileting	Lying in Bed	% Unassisted
Howard Co.	44%	15%	22%	17%	15%	75%
JHBMC	48%	17%	12%	20%	20%	90%
Sibley	41%	17%	20%	25%	17%	93%
Suburban	48%	15%	14%	17%	21%	81%
JHH	41%	18%	21%	18%	11%	78%

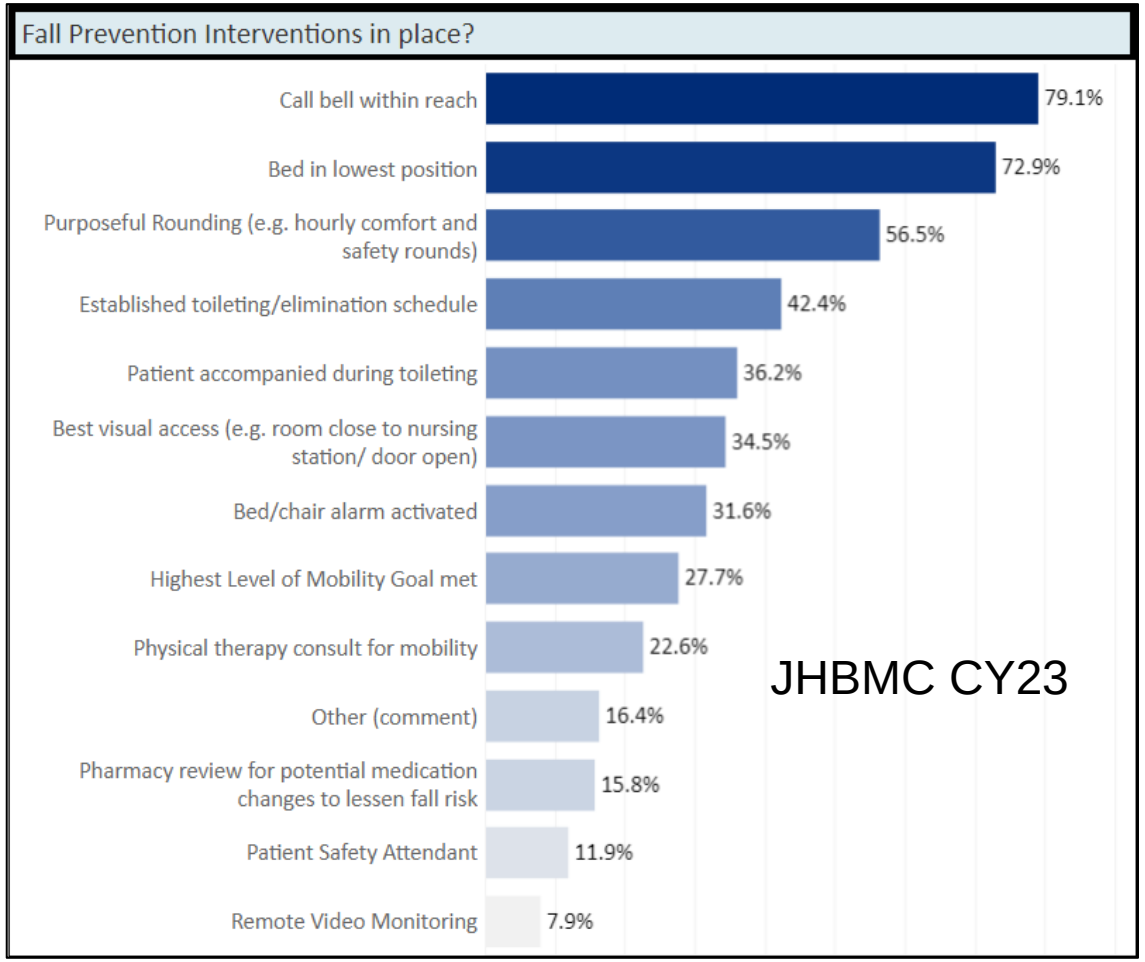
JHHS System Performance Falls – *Contributing Factors*

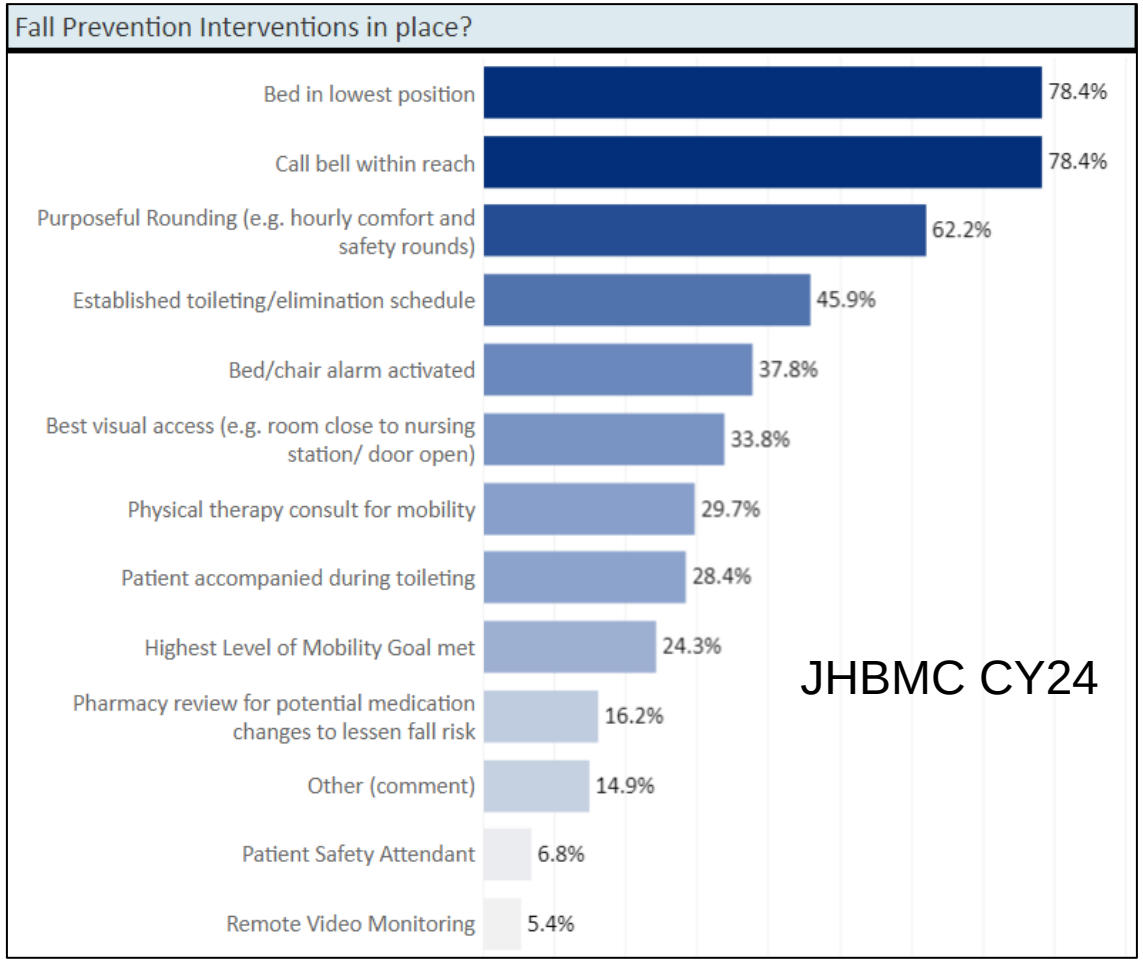
JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

Contributing Factors from Debrief	Gait, Balance, Strength or Vision Limitations	Impulsivity	Lack of understanding of physical and cognitive limitations	Behavior
Howard Co.	46%	27%	10%	15%
JHBMC	67%	37%	36%	24%
Sibley	57%	14%	14%	14%
Suburban	58%	42%	52%	39%
JHH	54%	38%	41%	38%

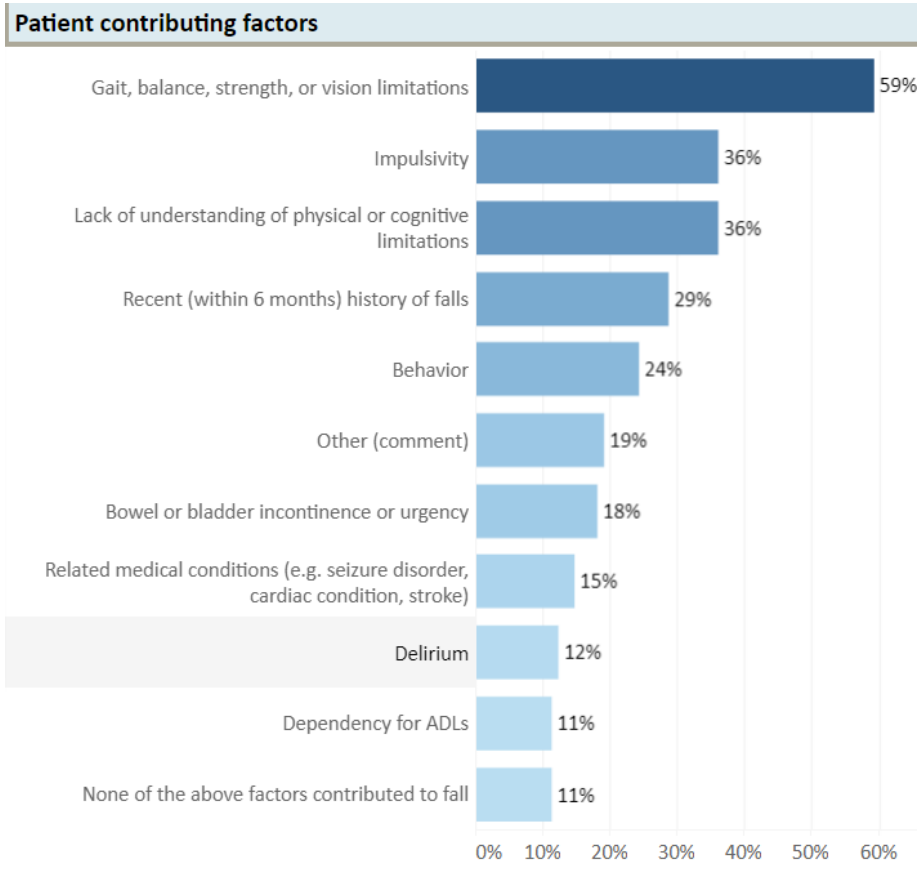
Fall Prevention Interventions in place

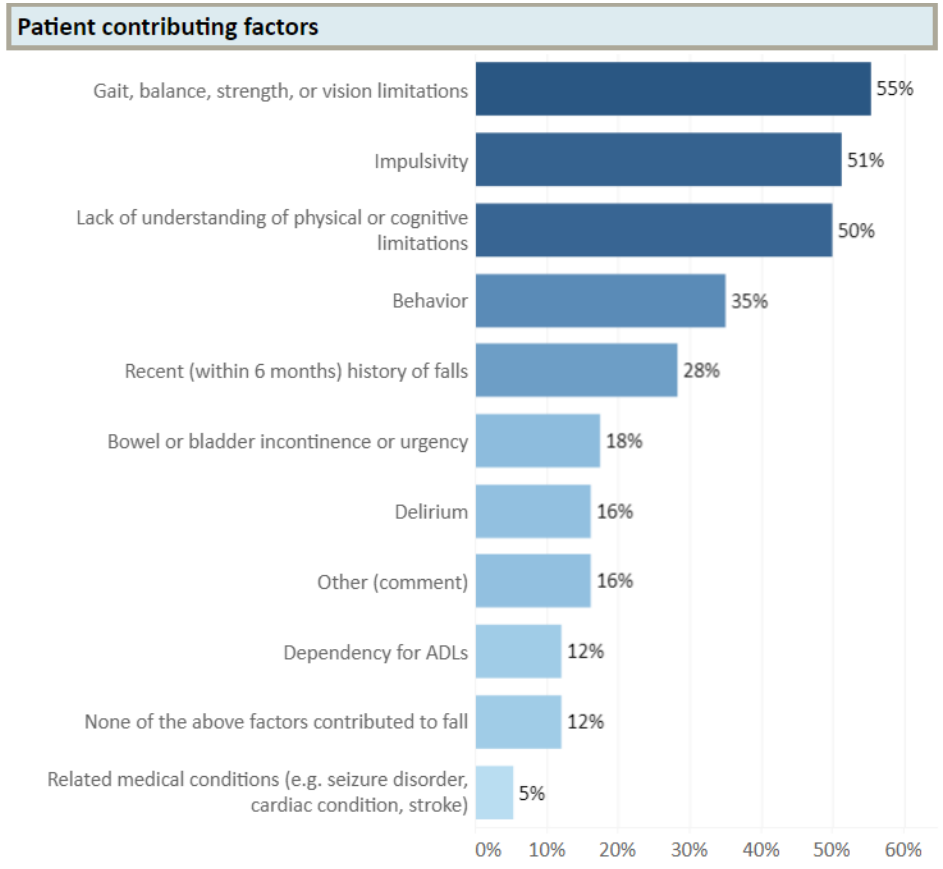
JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER



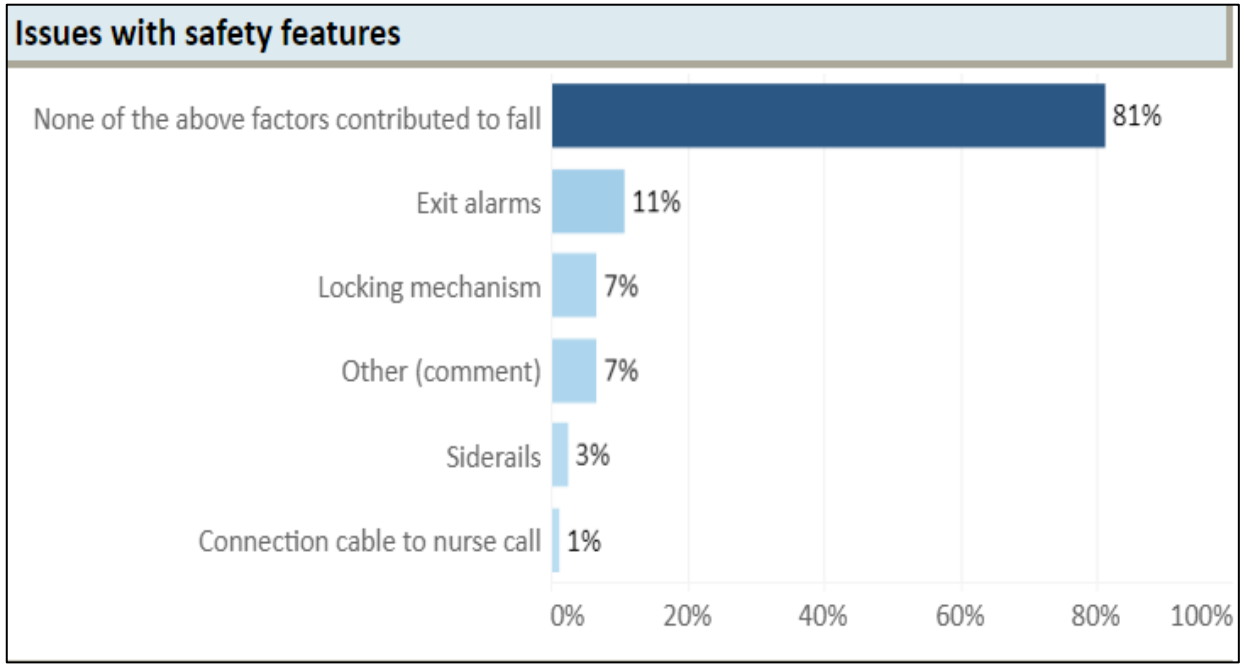


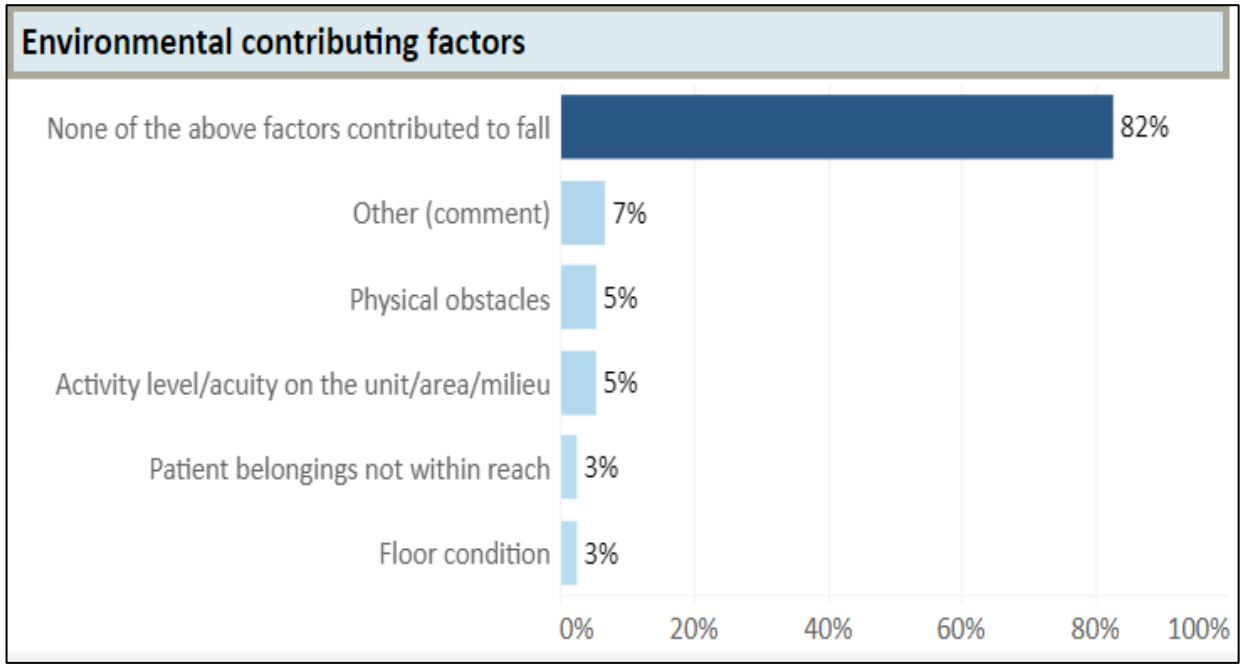
Contributing Factors



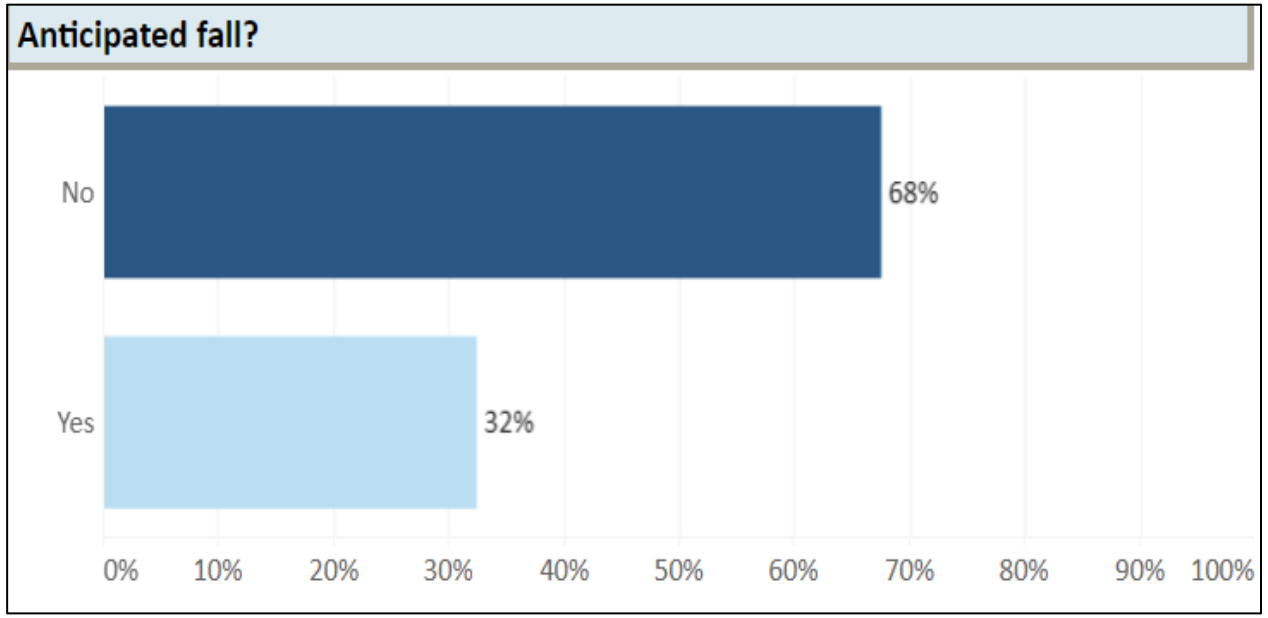


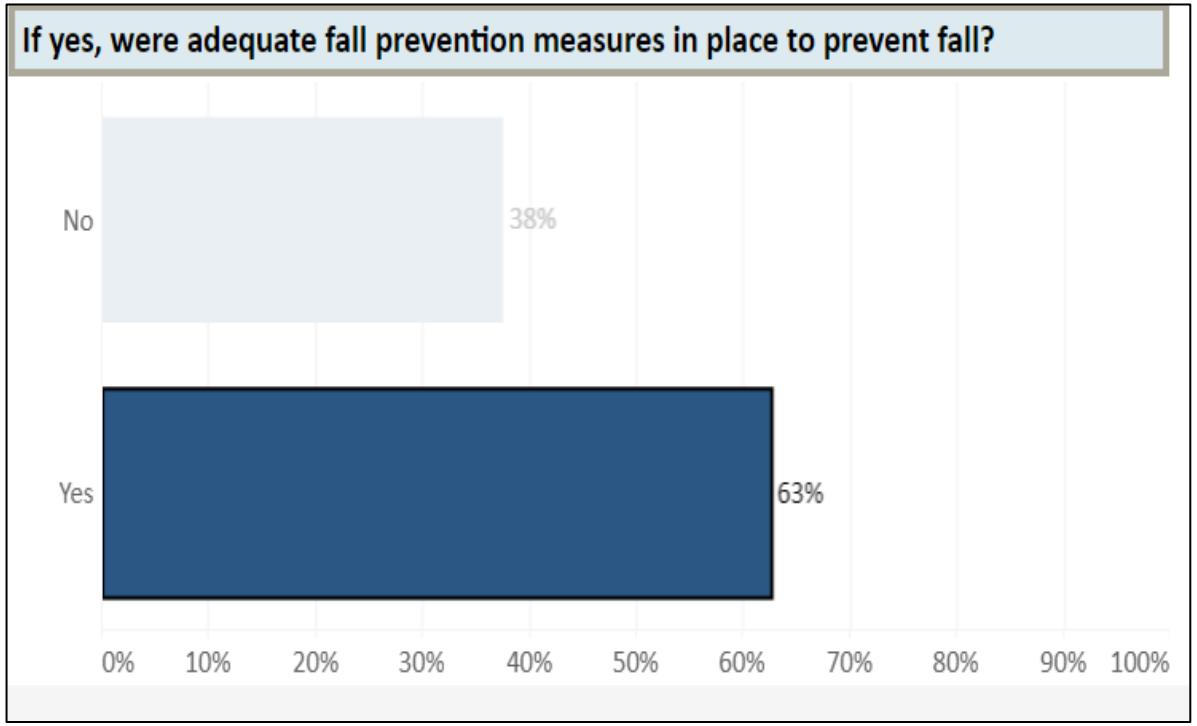
Contributing Factors CY24
Safety and Environment





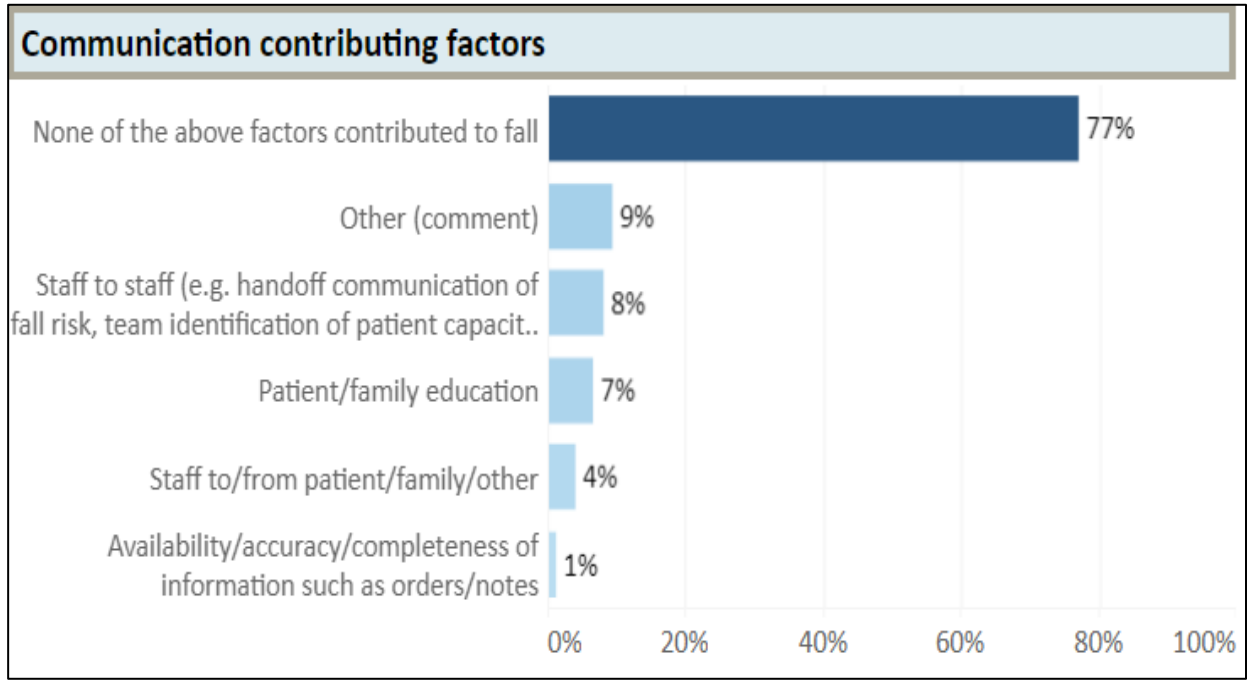
Contributing Factors
Anticipated / Prevention Measures?

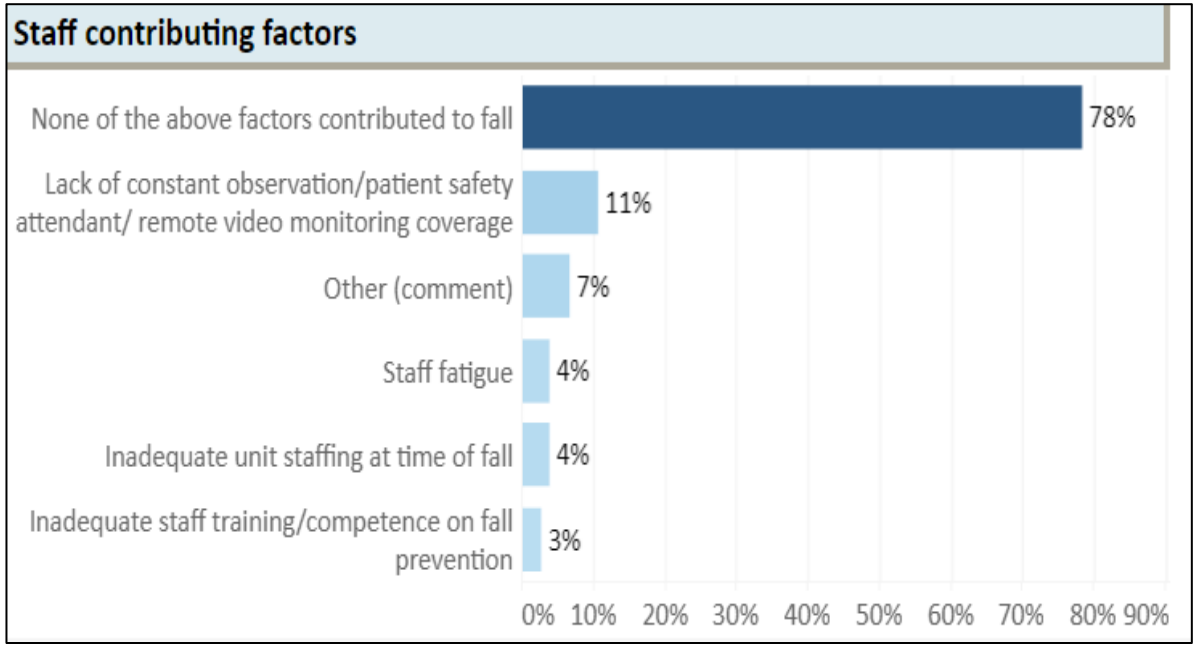




Contributing Factors CY24 Communication and Staffing

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER





How can we prevent this from happening again?

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

"Use more staff to assist with transfers"

"Provide a live sitter instead of a camera"

"Make sure the chair and bed alarms are on"

"Move pt. closer to RN station"

"We did everything we could"

"Do not discontinue sitter prematurely"

"Provide adequate staffing"

"Rounding"

"Chair alarms on all chairs"

"Educate patient to not get up without assistance"

"Continue fall risk education to patient, family and staff"

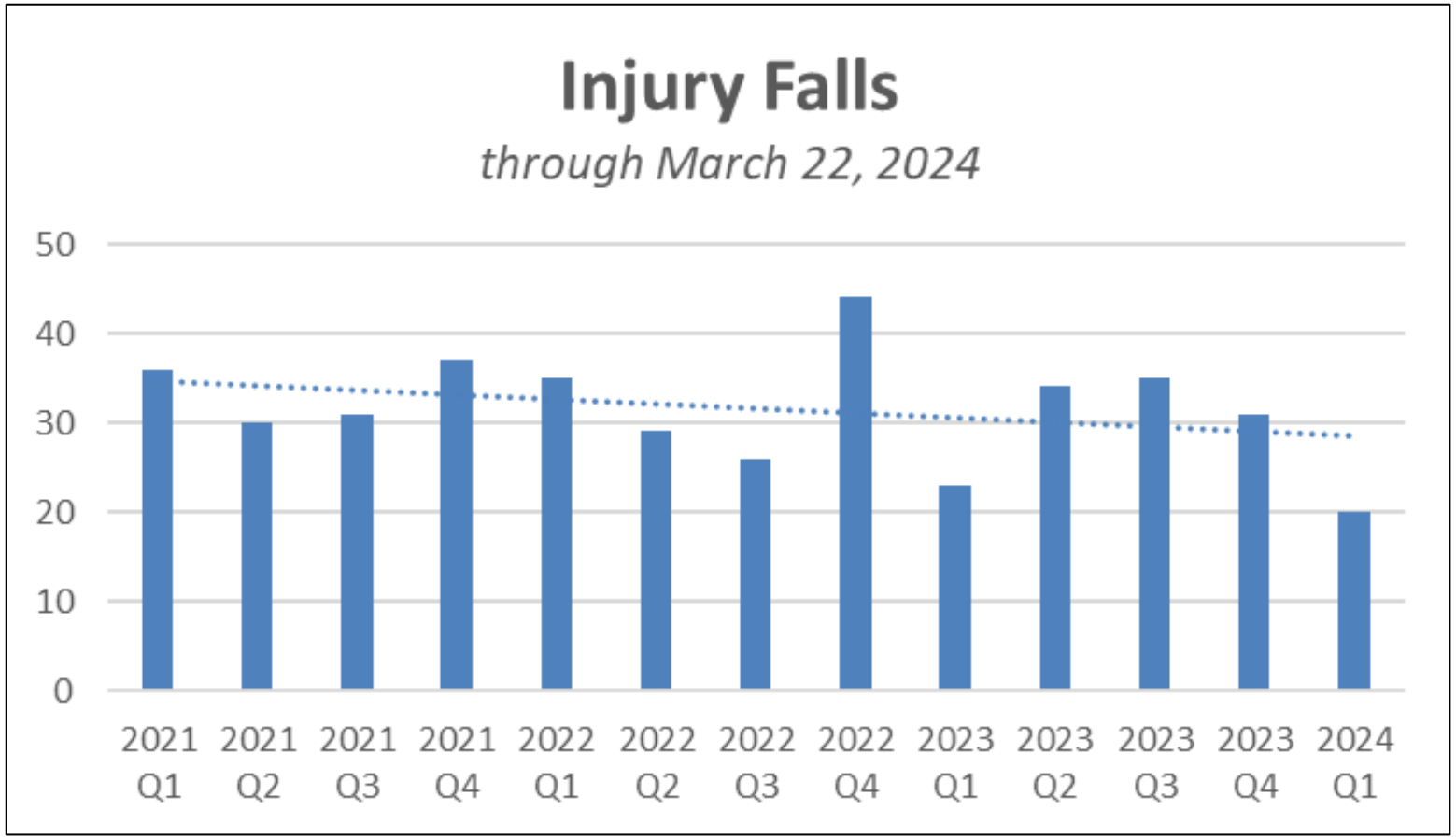
"Education patient to call for assistance and not get up alone"

End-User Feedback

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

- We continue to validate & correct the data based on YOUR feedback
- If something seems incorrect, speak up!
- Recent Examples:
  - *Burton, falls in therapy gym were being attributed to the patient's home unit*
  - *Post-fall debriefing percentage was incorrect*

JHBMC Falls with Injury



JOHNS HOPKINS NURSING
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

Nurse Sensitive Indicators (NSIs)

Inpatient Unit Name	Falls w/ Injury									HAPI 2+									CAUTI									CLABSI								
	2022Q1	2022Q2	2022Q3	2022Q4	2023Q1	2023Q2	2023Q3	2023Q4	Magnet®	2022Q1	2022Q2	2022Q3	2022Q4	2023Q1	2023Q2	2023Q3	2023Q4	Magnet®	2022Q1	2022Q2	2022Q3	2022Q4	2023Q1	2023Q2	2023Q3	2023Q4	Magnet®	2022Q1	2022Q2	2022Q3	2022Q4	2023Q1	2023Q2	2023Q3	2023Q4	Magnet®
CICU									50%									13%									63%								50%
MICU									100%									75%									88%								88%
SICU									88%									63%									63%								63%
NSCCU									88%									38%									38%								75%
BICU									75%									63%									75%								50%
Step Down (PCU)									63%									13%									38%								50%
MED A									0%									13%									63%								88%
MED B									13%									13%									75%								63%
CBMU									38%									75%									63%								63%
NP3									13%									75%									88%								88%
Burton 4									50%																		100%								100%
6 Surg									63%									100%									100%								88%
A4w (wenz)									75%									100%									100%								100%
Audlt Med-Surg Combined (NSU)									0%									63%									50%								100%
Burn Wound Unit (BWU)									75%									63%									88%								75%
PEDs Med-Surg Combined									100%																										
NICU Level III Combined									100%									100%																	100%
A2W (mother baby)									88%																										
A4E Psych									25%																										100%
AMU/CDU									63%									100%																	
Burton 01 (Rehab Unit)									50%									100%									100%								100%
Burton 1 (Ventilator unit)									13%									75%																	67%
	Aggregate Results								54.5%	Aggregate Results								72.2%	Aggregate Results								81.3%	Aggregate Results								84.2%

Johns Hopkins Bayview Medical Center
Strategy A3: Falls Reduction Work Plan FY 23-24

Executive Sponsors: Lisa Filbert & Sharon Smyth
A3 Project Leaders: Natalie Tredway, Kelly Krout, Ashly Ninan, Christina Kontogeorgos
Updated: 03/22/2024

Define:

Every year, approximately $50 billion is spent on medical costs related to non-fatal injuries from falls, with the average cost of a patient fall within the hospital setting being $63,000.

To improve the quality, safety and affordability of health care for both our patients and staff, JHBMC is focused on reducing patient falls, especially those falls that result in injuries. As JHBMC works towards achieving Magnet status, falls with injury is the one nursing quality indicator where we fall short of the benchmark and are not meeting the standard mean established by NDNQI.

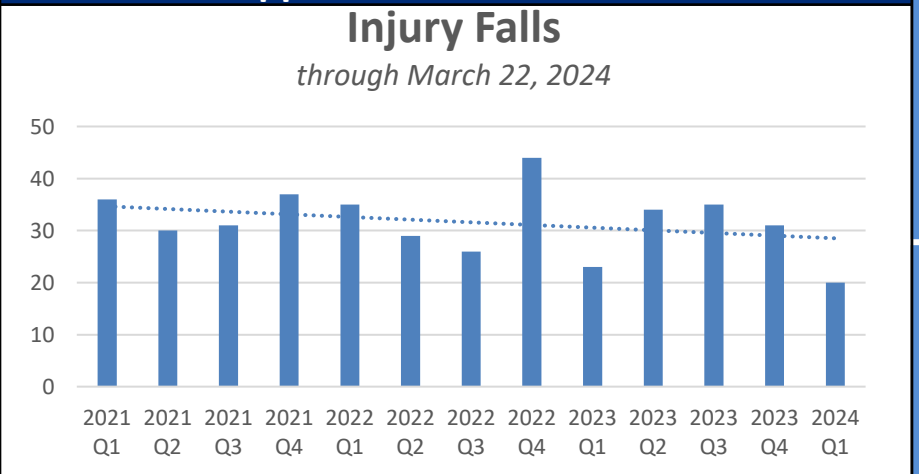
Goal Statement:

- To decrease the number of falls with injury at JHBMC below the national NQNQI mean by the end of FY24.
- To decrease the number of falls with injury at JHBMC per month.

Core Team Members:

- Exec. Sponsor – Lisa Filbert & Sharon Smyth
- Quality – Kelly Krout, Natalie Tredway, Ashly Ninan
- Pt. Safety - Angela Helder
- DON – Elain Clayton and Chrissy Kontogeorgos
- JHBMC Falls Steering Committee
- Medicine & Surgery Leadership
- AI – Erica Reinhardt

Metrics and Opportunities:



FY23-24 Action Plan

Goals/Initiatives	**Quarter 4 FY 23** Apr. 1st – Jun. 30th	**Quarter 1 FY 24** July 1st – Sept 30th	Quarter 2 FY 24 Oct. 1st – Dec. 31st	Quarter 3 FY 24 Jan. 1st- Mar. 31st	Quarter 4 FY 24 April 1st- June 30th
Mandatory documentation of all falls using the post-fall debrief tool within EPIC	✓ Present debrief documentation requirements to PPC, QPSC and Falls Committee ✓ Partner with NPIE to disseminate information	✓ Monitor Tableau for fall debrief use compliance ✓ Provide feedback to PCMs/APCMs on documentation compliance ✓ Partner with NPIE to continue education	✓ Continue to monitor for compliance with use of fall debrief ✓ Target fall debrief Interventions per unit, as needed	❑ Continue to monitor for compliance with use of fall debrief ❑ Target fall debrief Interventions per unit, as needed	❑ Continue to monitor for compliance with use of fall debrief ❑ Target fall debrief Interventions per unit, as needed
Restructure of Falls Steering Committee	✓ Draft A3, committee & project charter ✓ Establish membership and champions ✓ Review evidenced-based practice literature & bundles	✓ Develop action plan / implementation strategies ✓ Develop attendance and responsibility structure for champions	✓ Develop committee reporting structure	❑ Implement unit based fall reduction project reports ❑ Implement sharing of best practices	❑ Develop process for review of all Major and Moderate falls
Ensure transparency of falls data throughout JHBMC	✓ Review data for trends / hotspots ✓ Determine data source of truth for falls (NDNQI) ✓ Identify reporting structure ✓ Establish FY24 goals	❑ Ensure reporting timeline at QPSC ❑ Establish schedule for updates to Executive Council and True North	✓ Identify standard fall graphs for all huddle boards	❑ Implement standardized huddle board falls data	❑ Evaluation of FY24 goals ❑ Establish FY25 goals
Develop workgroups for high needs units	✓ Identify units with high opportunity for improvement	✓ Collaborate with DOM to develop fall reduction workgroup	✓ Develop fall reduction projects for each DOM unit	❑ Implementation of DOM unit projects	❑ DOM fall reduction workgroup integrate with Falls Committee

JHBMC Falls PI/QI Main Initiatives Progress

JOHNS HOPKINS MEDICINE
JOHNS HOPKINS BAYVIEW MEDICAL CENTER

Milestone / Task Overview	
Fall Documentation within EPIC	Complete
Committee Charter: Reviewed and Approved	Complete
Recruit nursing partner for Co-Chair	Complete
Post-Fall Debriefing Tool	In-Progress
Implementation of mandatory documentation	100%
Achieve hospital-wide completion percentage goal of 92%	75%
Data Transparency	In-Progress
Standing agenda items: Staff Meetings, JPCs, QPSC, RN Quality Council	100%
Unit Best Practice Presentations at Falls Committee	100%
Dept. of Medicine Focus	Complete
Medicine Unit Meetings with RN & Quality (Develop A3s)	100%
Falls Data Added to Medicine & Surgery Monthly Quality Meetings	Not Started – will start in Jan

Complete	
In-progress	
Delayed	
Not started	

Key Takeaways When Dealing with Data

1. Trust the process
2. Empower data-driven decisions
3. Automate data monitoring
4. Facilitate data understanding
5. Build a culture around data quality *(it takes a village)*
6. Collaborate and share