

PI 201, Part 2: The Processes, the Tools, the Solutions

Who we are



Adam Isaacs, BSN, RN, HACP-CMS

Quality Process Improvement Specialist

- Nurse since 2014
- Worked in quality since 2021
- Experience in PCU, Pediatrics, ED



Billie Delauder, DNP, MSN, RN, CPHQ, HACP-CMS

Quality Process Improvement Specialist

- Nurse since 1987
- 17 years in quality as a PI Supervisor & Clinical Core Measure Abstraction Specialist
- Experience in Med-Surg, ED, and Quality
- 36 years at Pikeville Medical Center (1987-2023)



Casey Franklin, BSN, RN, WCC, CPHQ, HACP-CMS

Director of Quality and Health Professions

- Nurse since 2007
- Experience in Clinical Management, LTC, Home Health/ Hospice, Med/Surg, ER, & Quality
- 11 years at TJ Samson Community Hospital (2012-2023)

Housekeeping:

Part 2 of 2 Part 1 was on Sept. 10 Recording Link Here [KHA Quality Webinar: Process Improvement \(PI\) 201 – Part 1: The Processes are the Solutions! – KHA Quality](#)

Type Questions into chat

Recording will be available on KHA Quality Website

Problem-Process-Tool Map

Problem/ Task	Process	Tool
Safety Event	RCAA	Gemba Process Map 5 Whys Brainstorming Fishbone
PIP (Take good to better, or bridge gaps.)	PDCA/ PDSA or other Rapid Cycle Improvement	A3 Gemba Voice of Customer Affinity Diagram Tree Diagram FMEA
Access safety of new process	Proactive RCAA or PDCA/ PDSA	A3 Tree Diagram Affinity Diagram FMEA Flowchart/ Process Map
Error-proof complex process	PDCA/ PDSA	A3 Affinity Diagram Checklist FMEA Flowchart/ Process Map Tree Diagram
Re-sequence a process for efficiency	Lean, Flowchart/ Process Map	6S Spaghetti Diagram Checklist Flowchart/ Process Map Tree Diagram
Prioritizing improvement activities	Lean	A3 Pareto

Course Content:

In Part 1, we addressed:

- The RCAA
- Rapid Cycle Improvement
- PDSA/PDCA
- FMEA
- Key Lean Concepts

Today in Part 2, we will cover:

- The Gemba
- The Fishbone
- Bar Charts
- Control Charts
- Pareto Charts
- Scatter Diagrams
- A3

The Gemba walk

Definition: “Gemba” means “the real place” in Japanese or the place where the work is done.

Gemba to understand the current process

- Communicate team members know what you're doing and why
- Plan varied times and questions to ask
- Observe and take notes
- Keep informed

The Gemba

Purpose/ Indication

- To see things for the way they are
- Develops teams critical thinking
- Get person's perspective who does the work.
- When things just don't make sense
- People will show you the wrong way.

The Gemba

Steps

- Define process to be explored.
- Establish all potential times and locations to be observed
- Establish monitoring criteria- what questions should be asked?
- Document observations
- Cross-compare observations to identify best practice deviations, placing special emphasis on trends or deviations that can result in significant harm
- Prepare summary of findings for sharing

Gemba

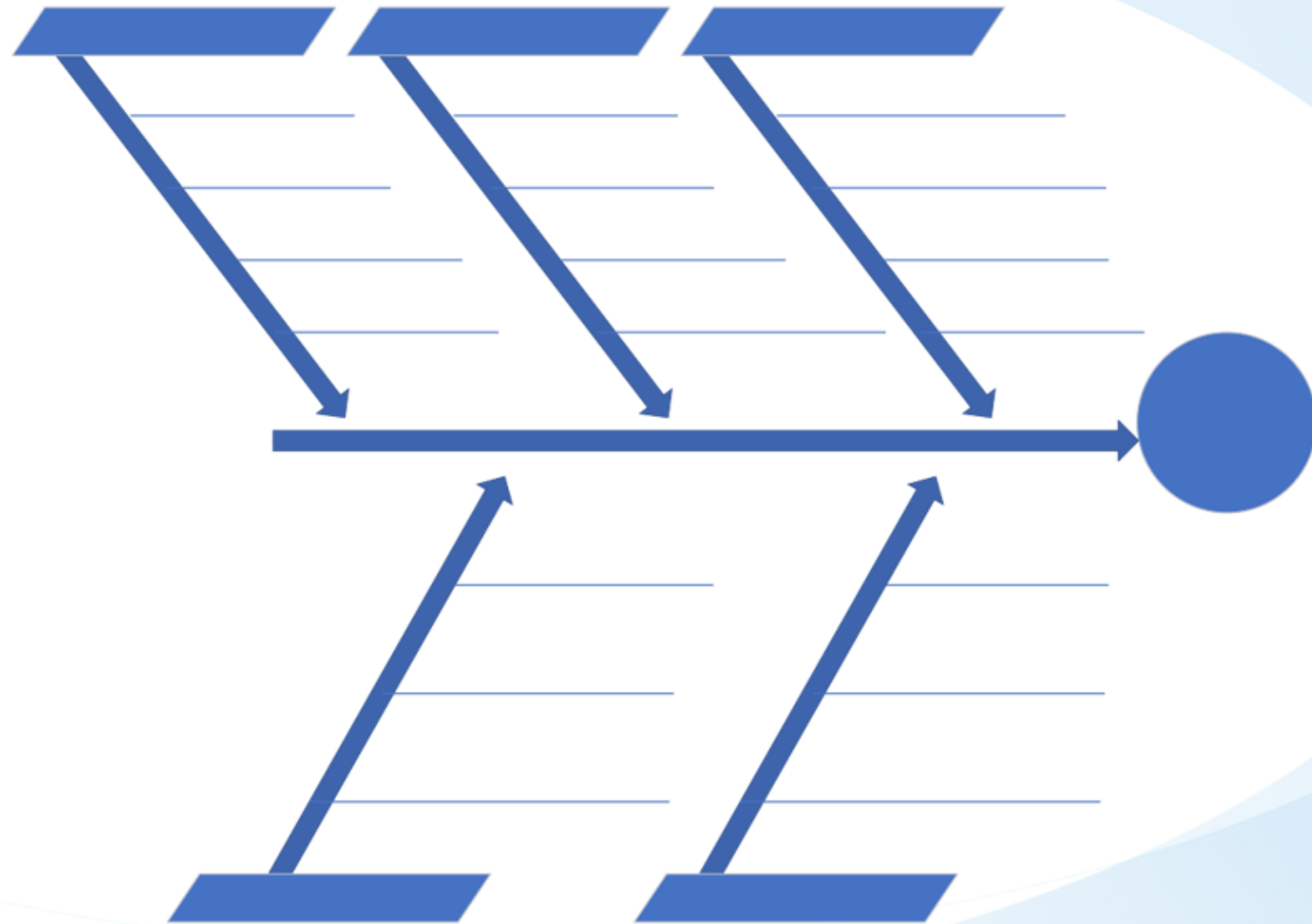
Roadblocks:

- Time consuming
- Bias in data
- No standard criteria
- Culture of immediate perfection

Solutions:

- ❖ Worth it in long run
- ❖ Vary observers
- ❖ Compare to self
- ❖ Keep realistic goals

The Fishbone Diagram



The Fishbone Diagram

Purpose/ Indication

- Assists in finding root cause(s).
- Allows team focus.
- Sort ideas into useful categories.
- Breakdown of complex problems into smaller actionable causes.
- Identifying each potential root cause

The Fishbone Diagram

Steps

1. Define the problem
2. Assemble a team
3. Identify major categories (bones)
4. Brainstorm potential causes
5. Document causes on the diagram
6. Analyze and prioritize causes
7. Identify solutions
8. Implement improvements
9. Monitor and measure

The Fishbone Diagram

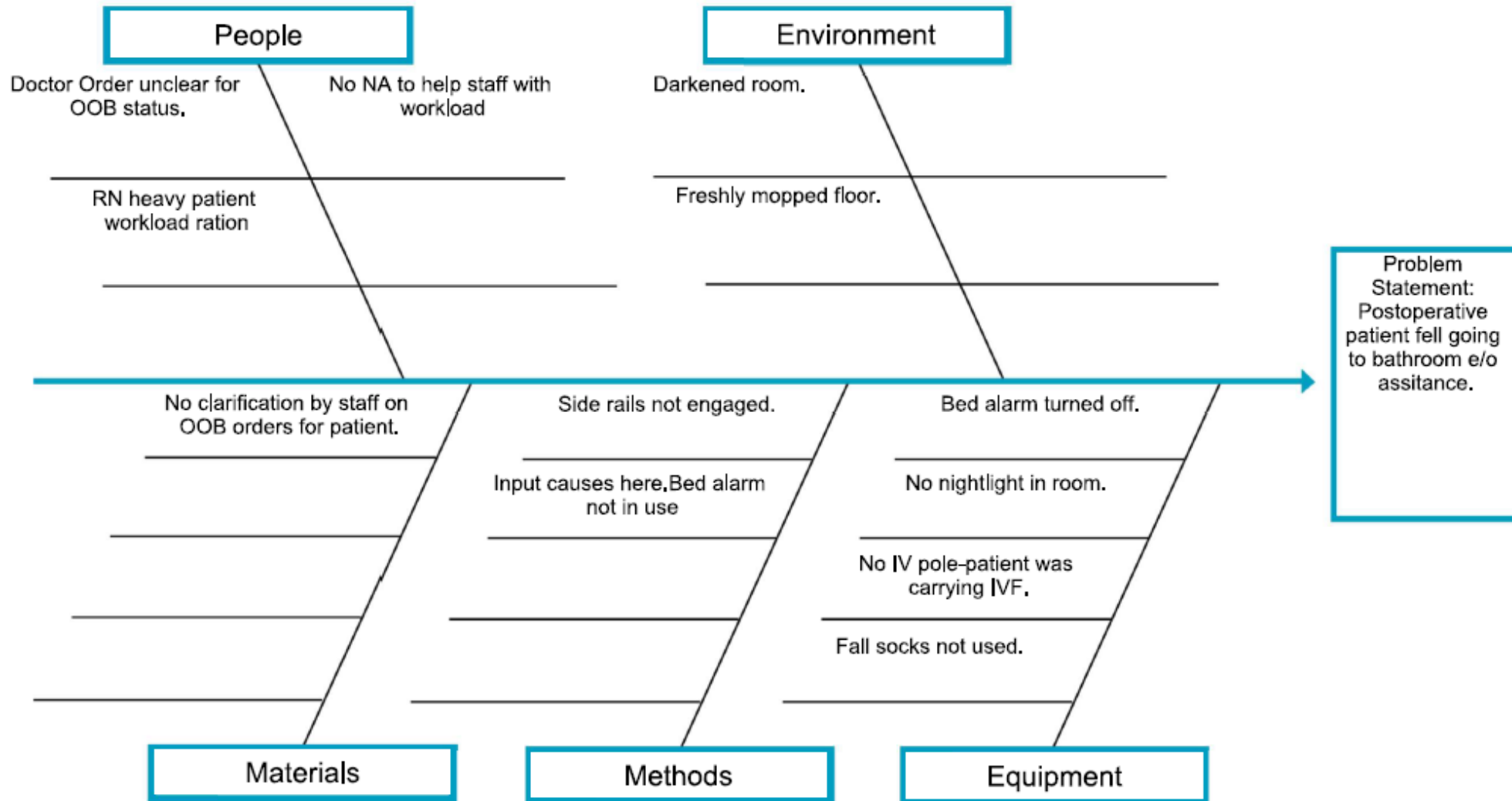
Roadblocks:

- Limited Scope
- Subjectivity
- Redundancy
- Reliability

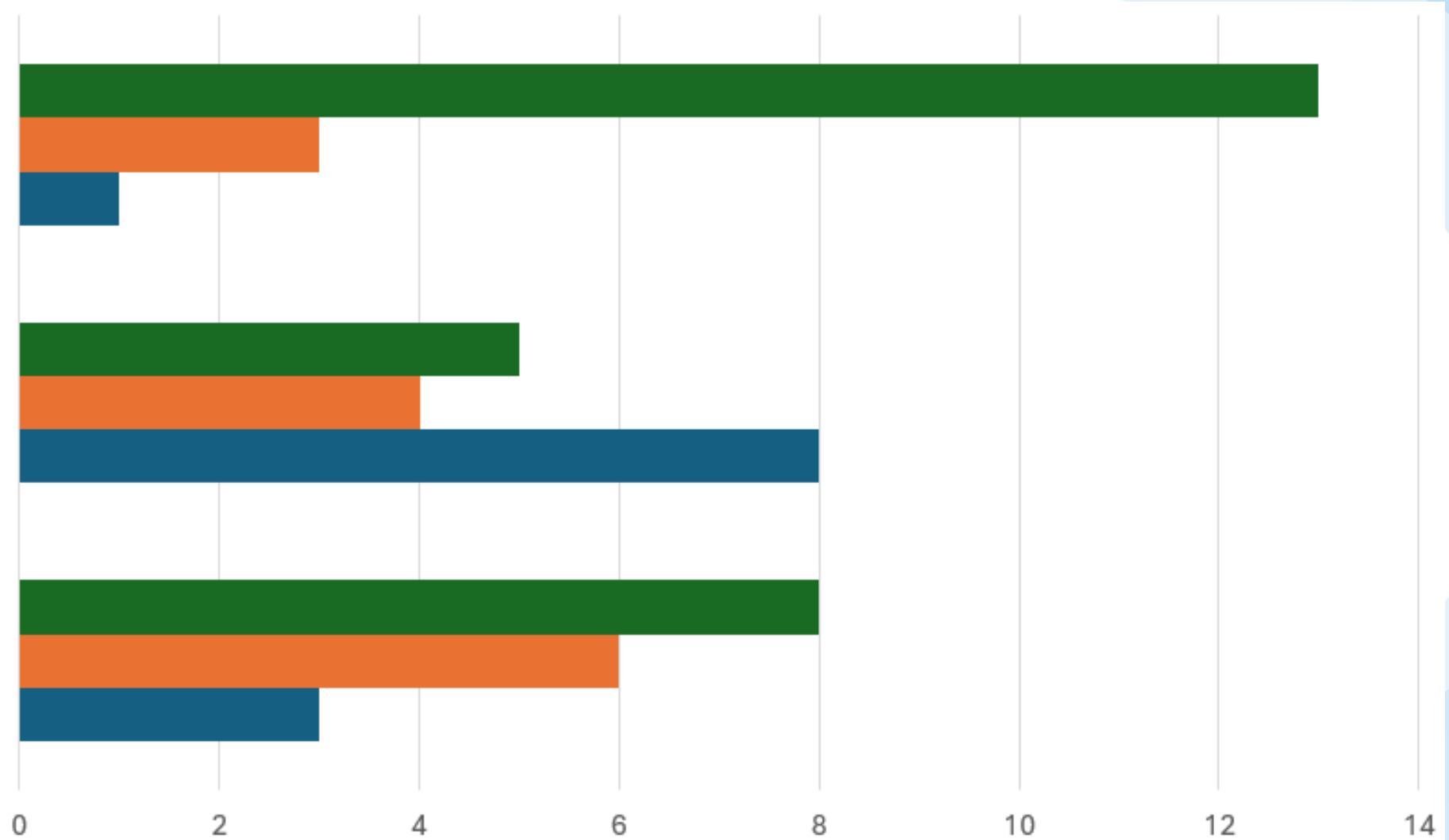
Solutions:

- ❖ Scope Expansion
- ❖ Objective Analysis
- ❖ Use in Conjunction with Other PI Tools
- ❖ Group Similar Causes

Example of Fishbone



Bar Charts



Bar Charts

Purpose/ Indication

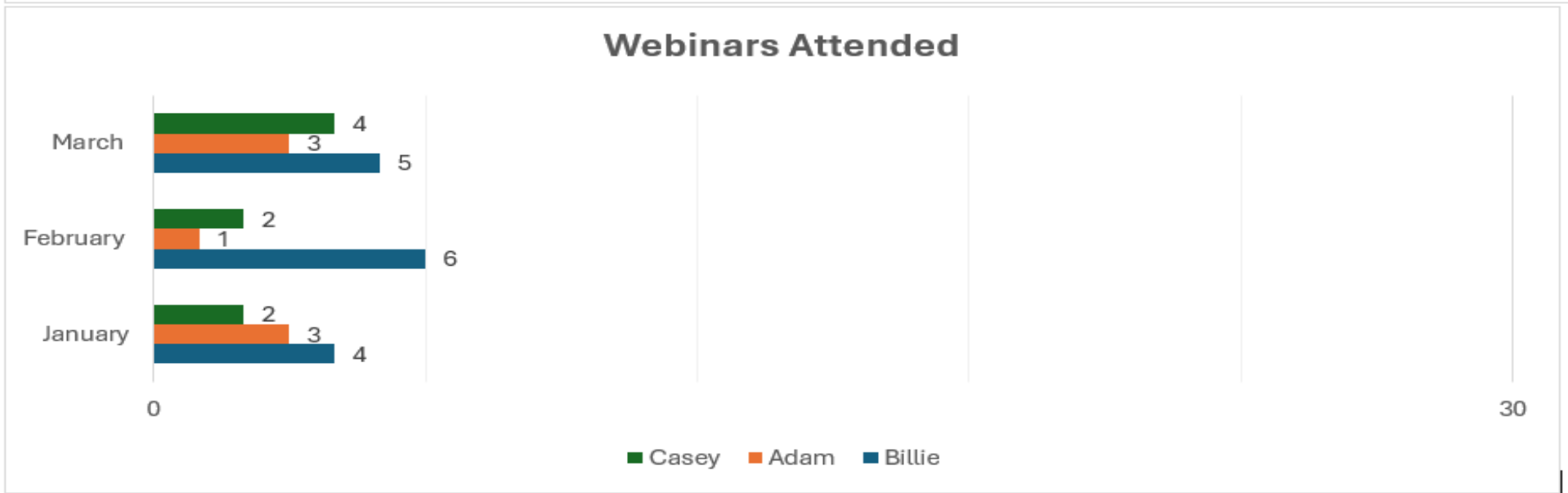
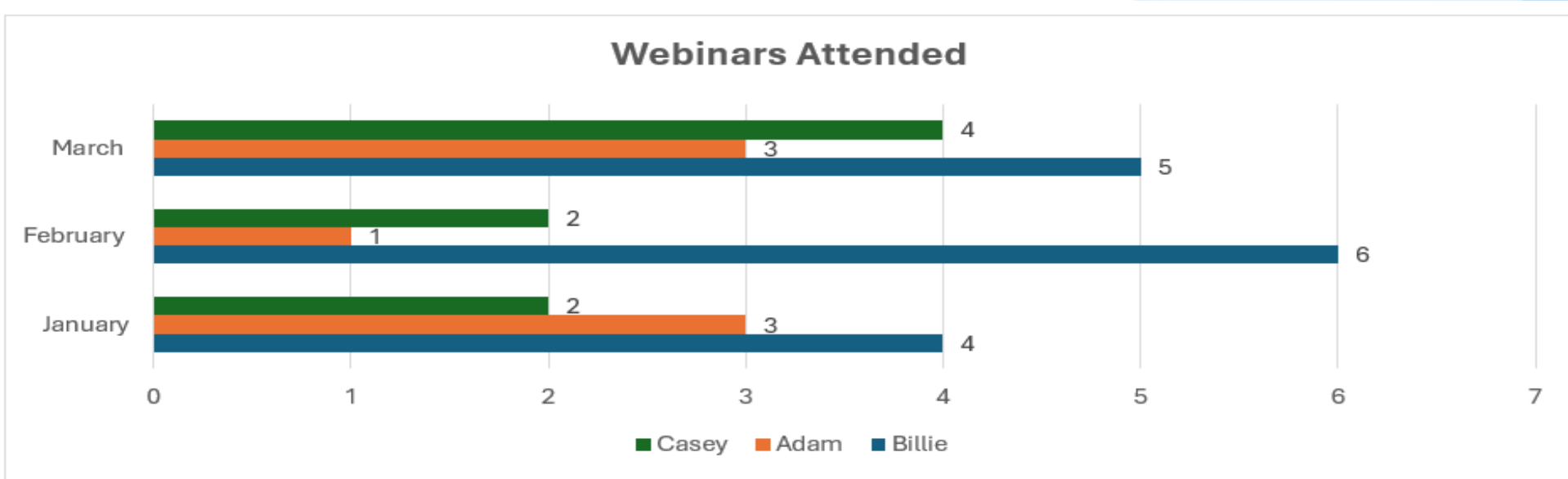
- Makes graphics self-explanatory
- Easy to interpret
- Special Bar charts (The Histogram)
- Compares values across different categories

Bar Charts

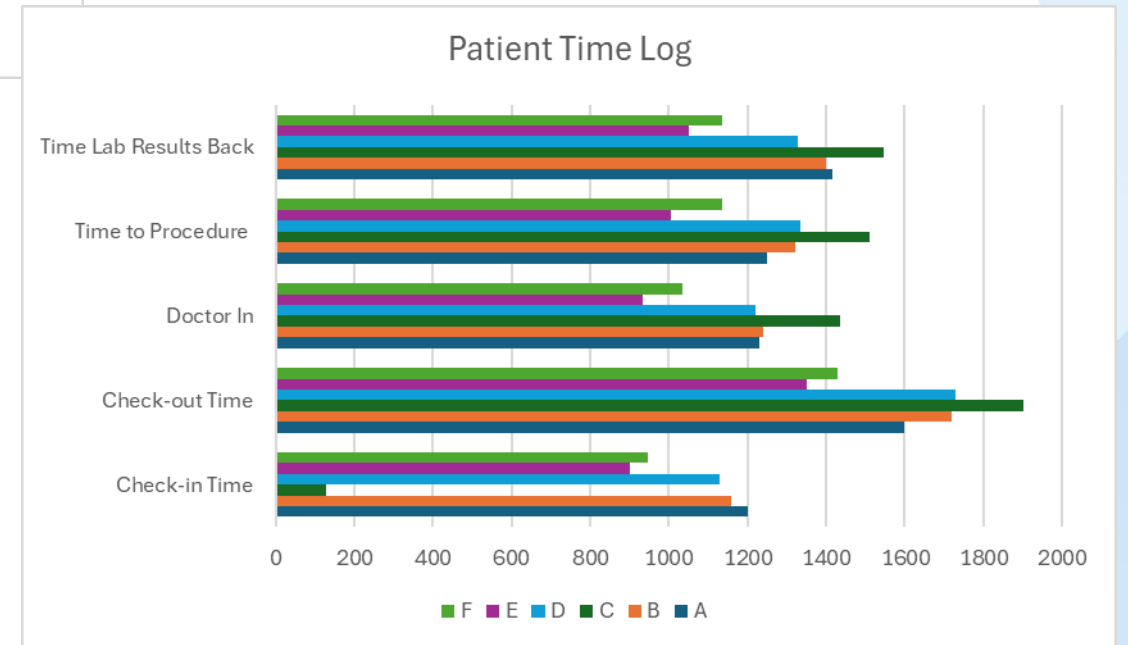
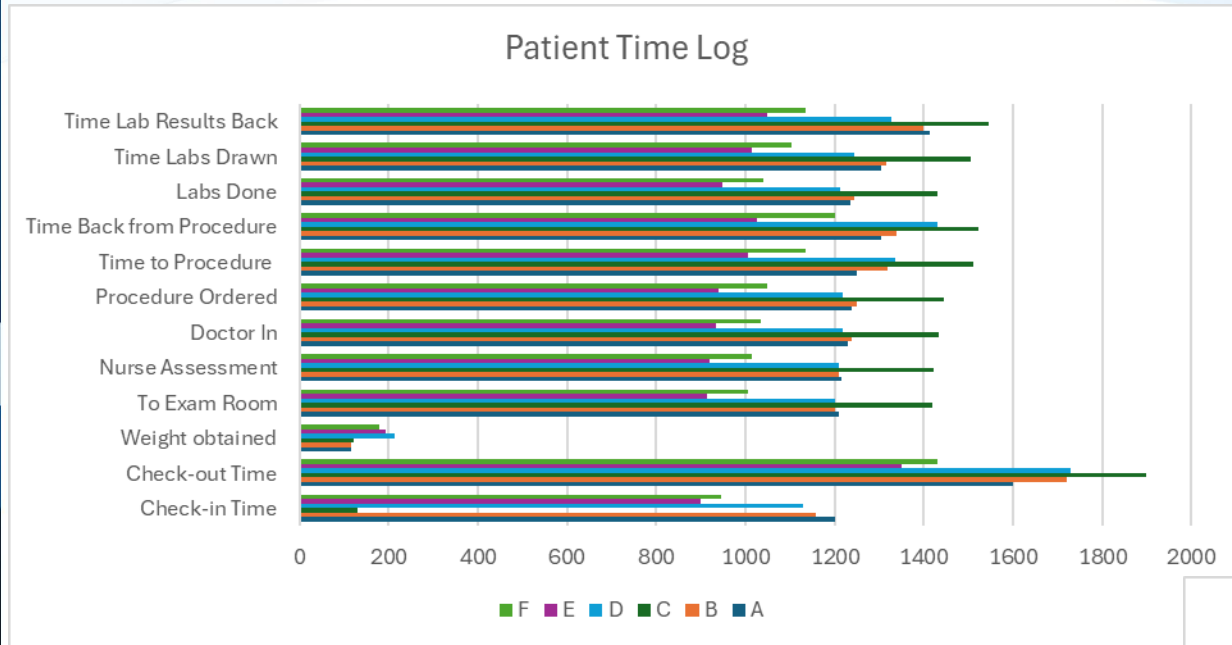
Steps :

- Collect and Organize Data
- Choose Your Chart Type
- Create a Chart Layout
- Plot Data Points
- Label Bars
- Add a Title
- Format
- Analyze and Interpret

Bar Chart- Roadblocks & Solutions

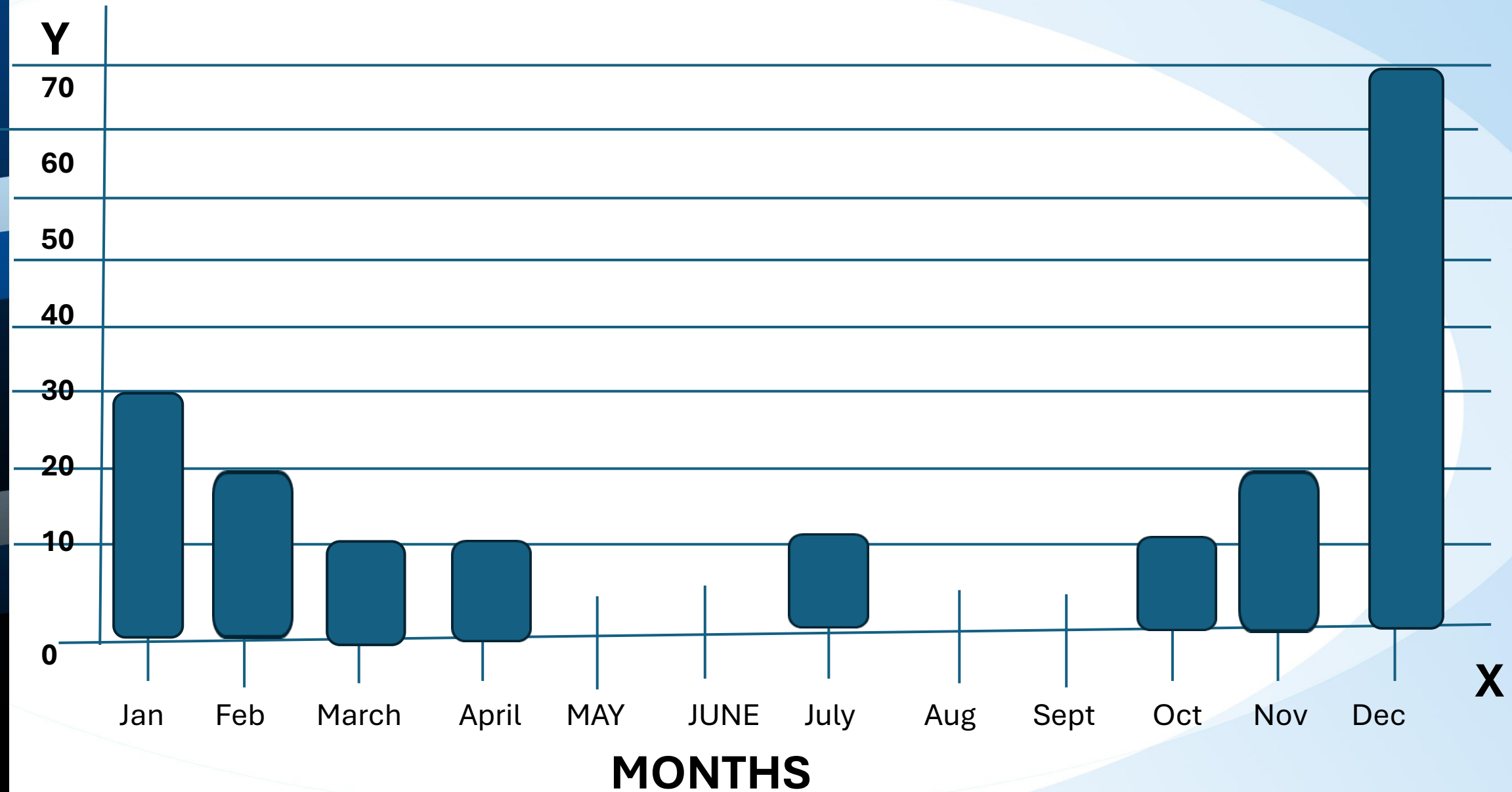


Bar Chart-Roadblocks & Solutions



The Steps in a Column Bar Chart

Flu Shot Data

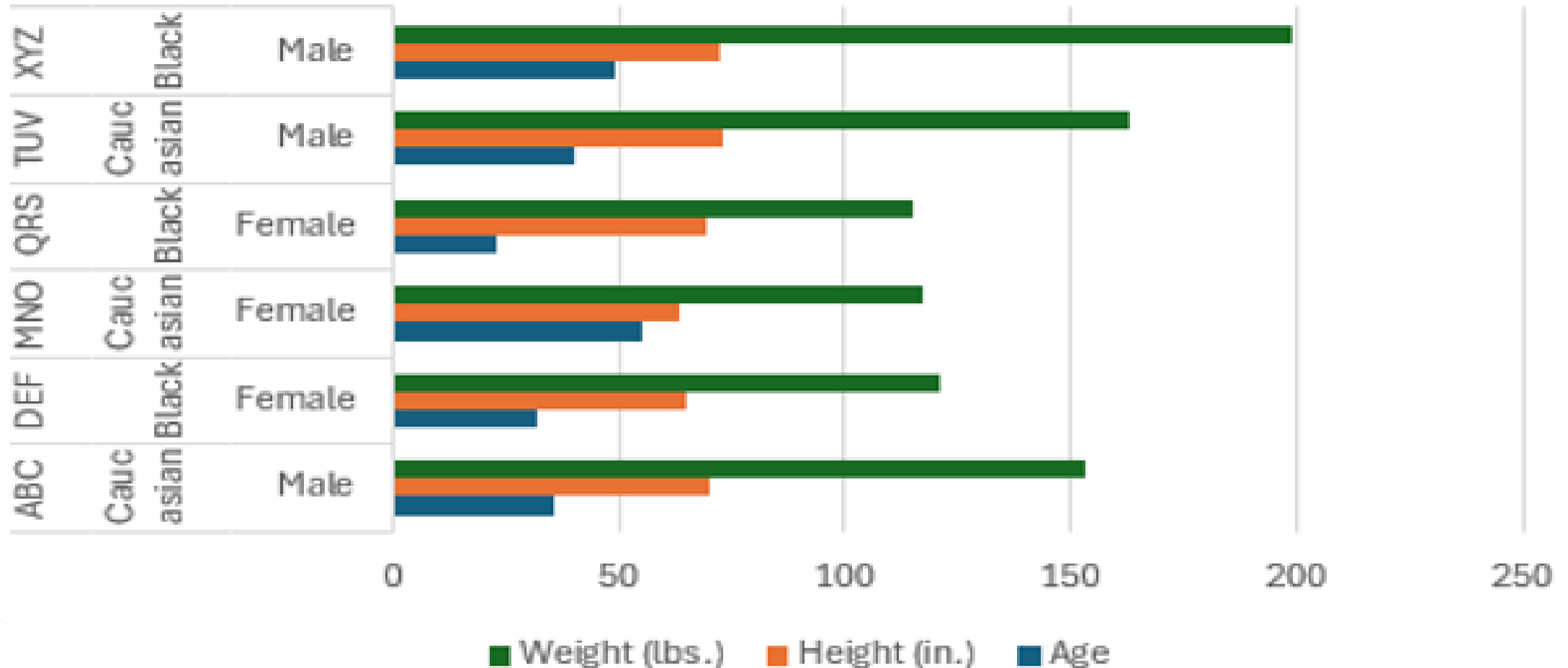


The Steps in a Bar Chart with a Computer

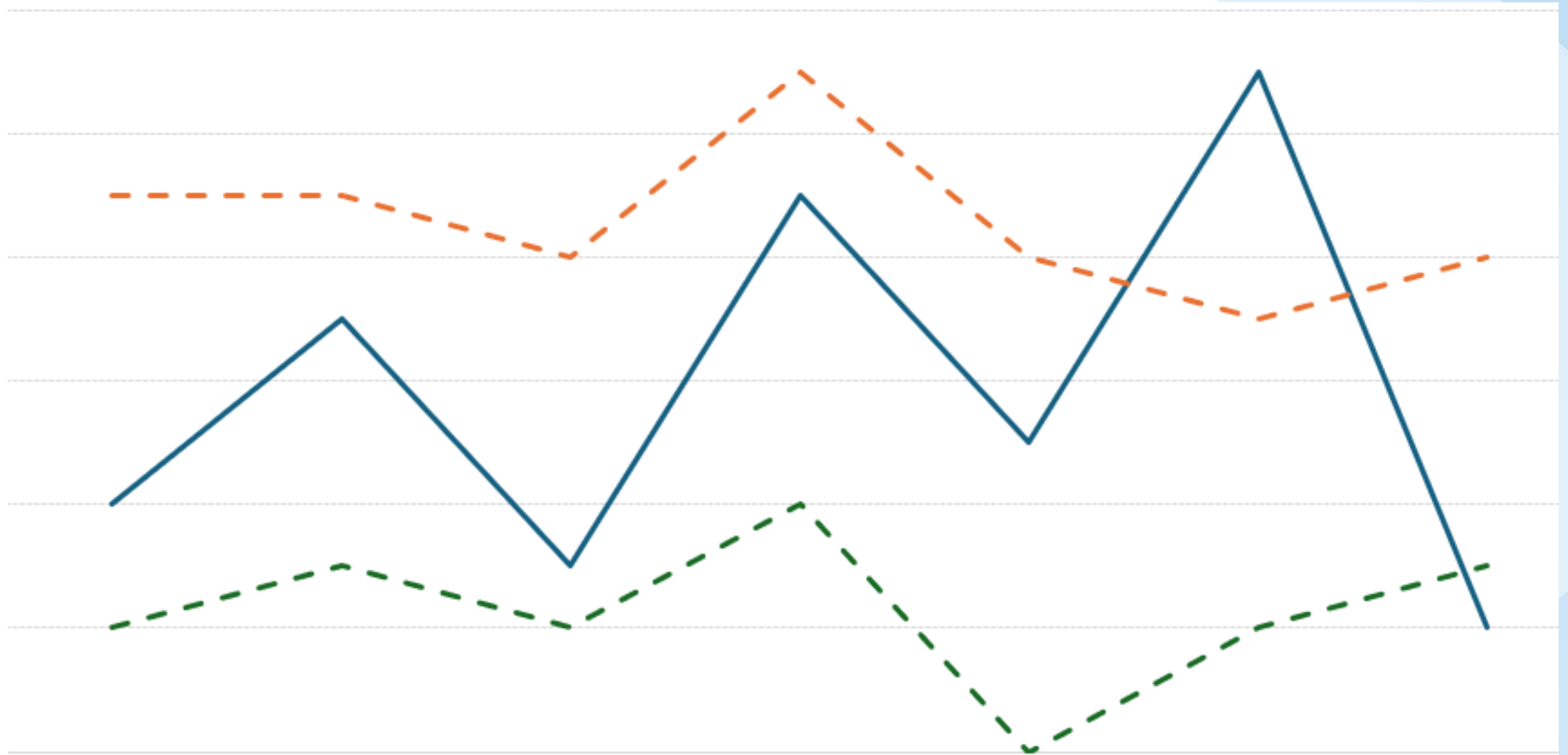
Patient	Race	Gender	Age	Height (in.)	Weight (lbs.)
ABC	Caucasian	Male	36	70	153
DEF	Black	Female	32	65	121
MNO	Caucasian	Female	55	63	117
QRS	Black	Female	23	69	115
TUV	Caucasian	Male	40	73	163
XYZ	Black	Male	49	72	199

The Steps in a Bar Chart with a Computer

Patient Profile Overview



Control Charts

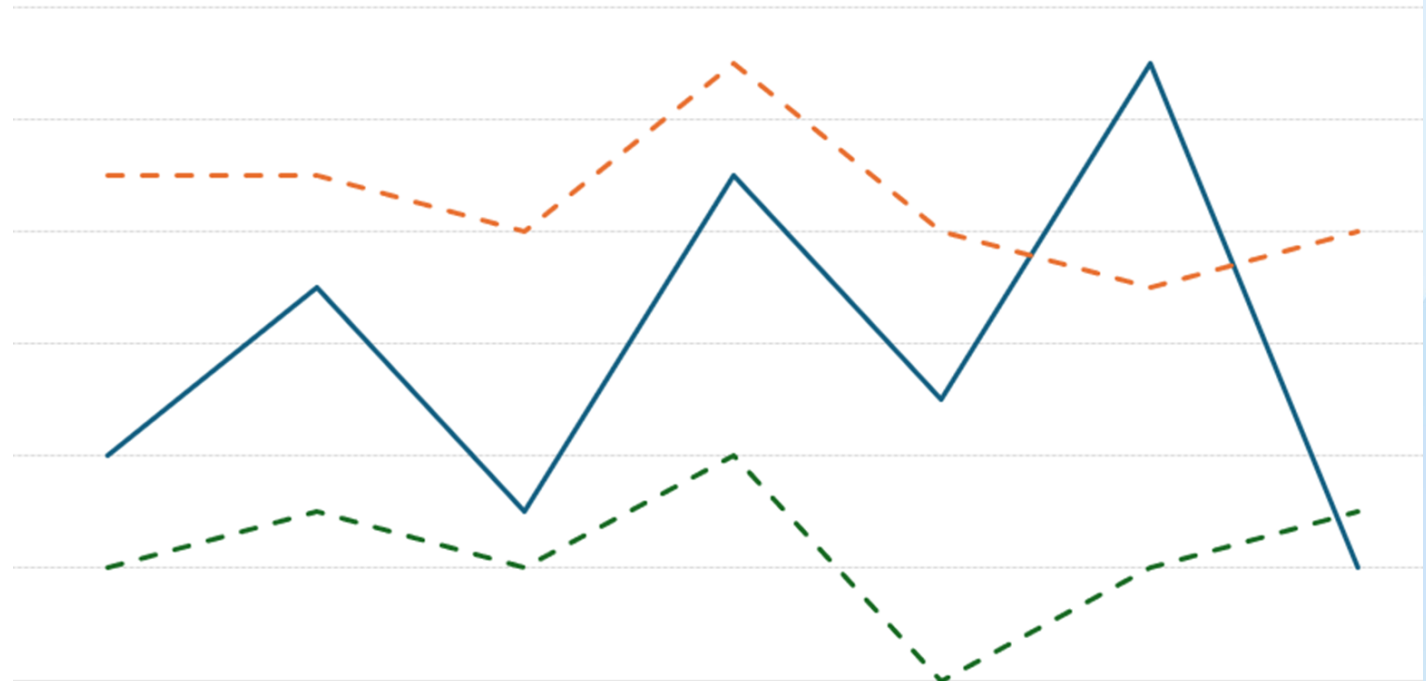


Control Charts

Purpose/ Indication

- Show predicted range based on past data
 - Average
 - Control limits (upper and lower)

- Helps see what is
 - expected
 - needs attention



Control Charts

Data needed and definitions:

Center line: average (mean)

Control lines: boundary of expected process variation they are ± 3 standard deviations

Common cause: predictable change over time that is within the expected upper and lower limits

Special cause: not part of the usual process and needs attention to maintain quality

Control Charts

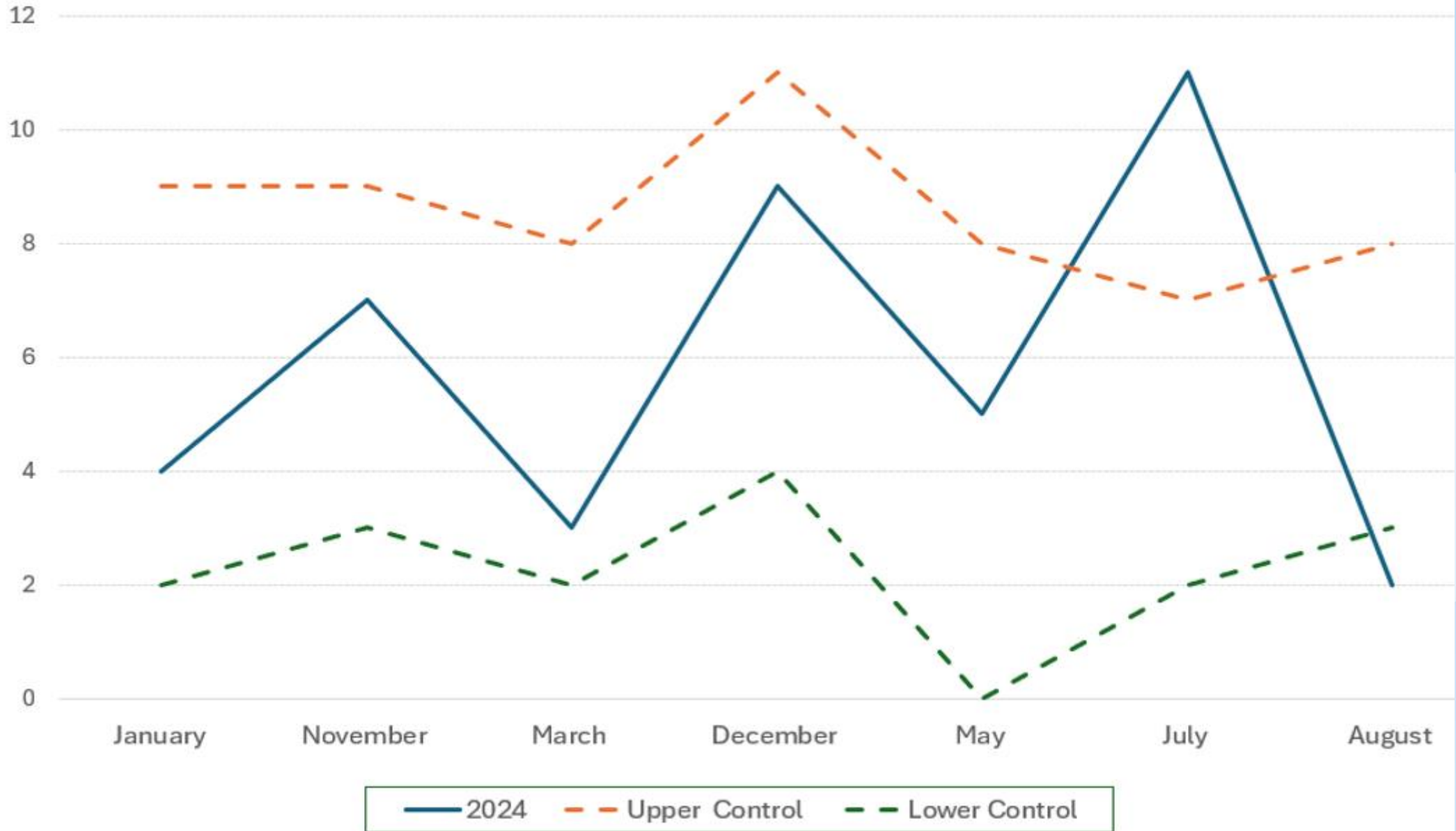
Roadblocks

- Not sure how to create one
- Don't have enough data
- Control limits move over time

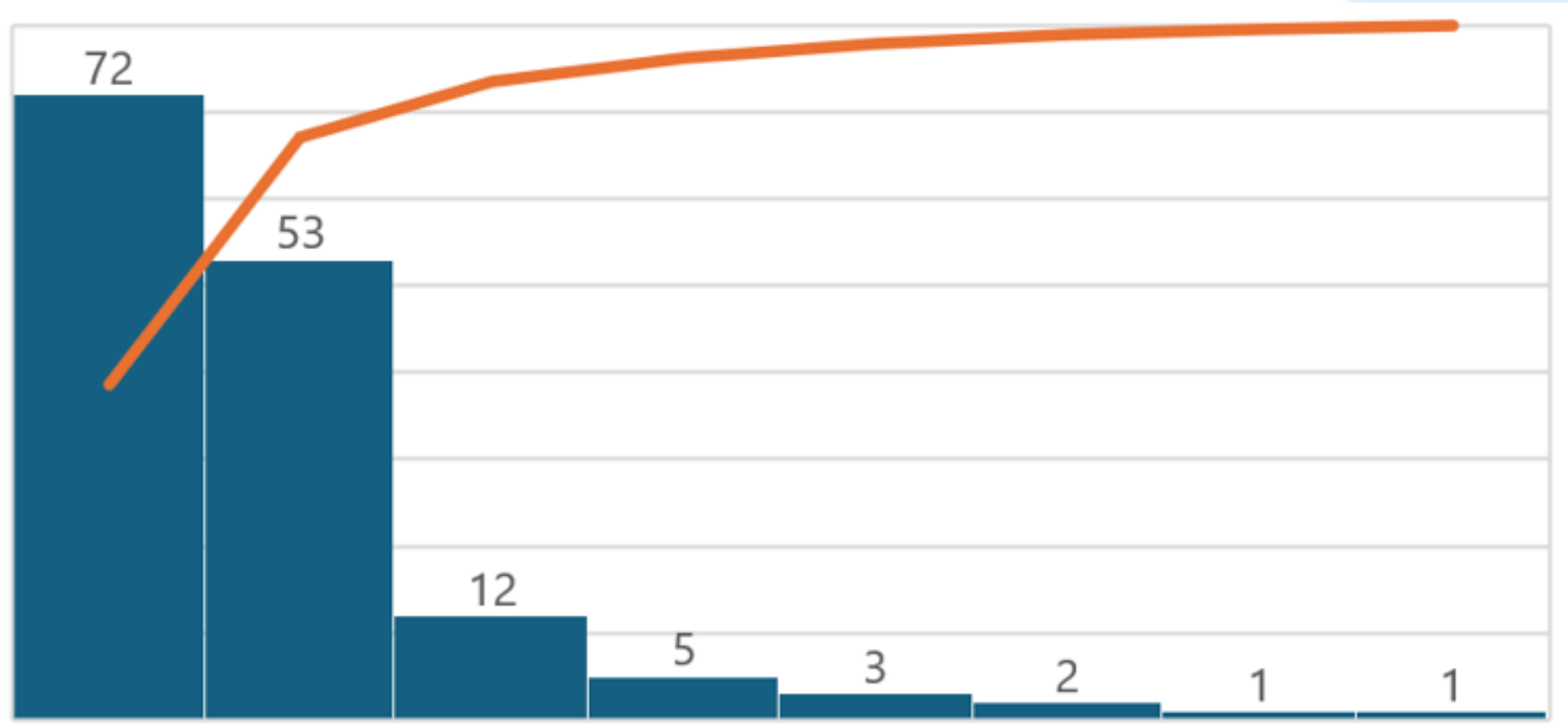
Solutions

- Use Excel - it will do the “heavy lifting”
- Look at existing data
- Data got better, and old data is what it is. Keep up the great work!

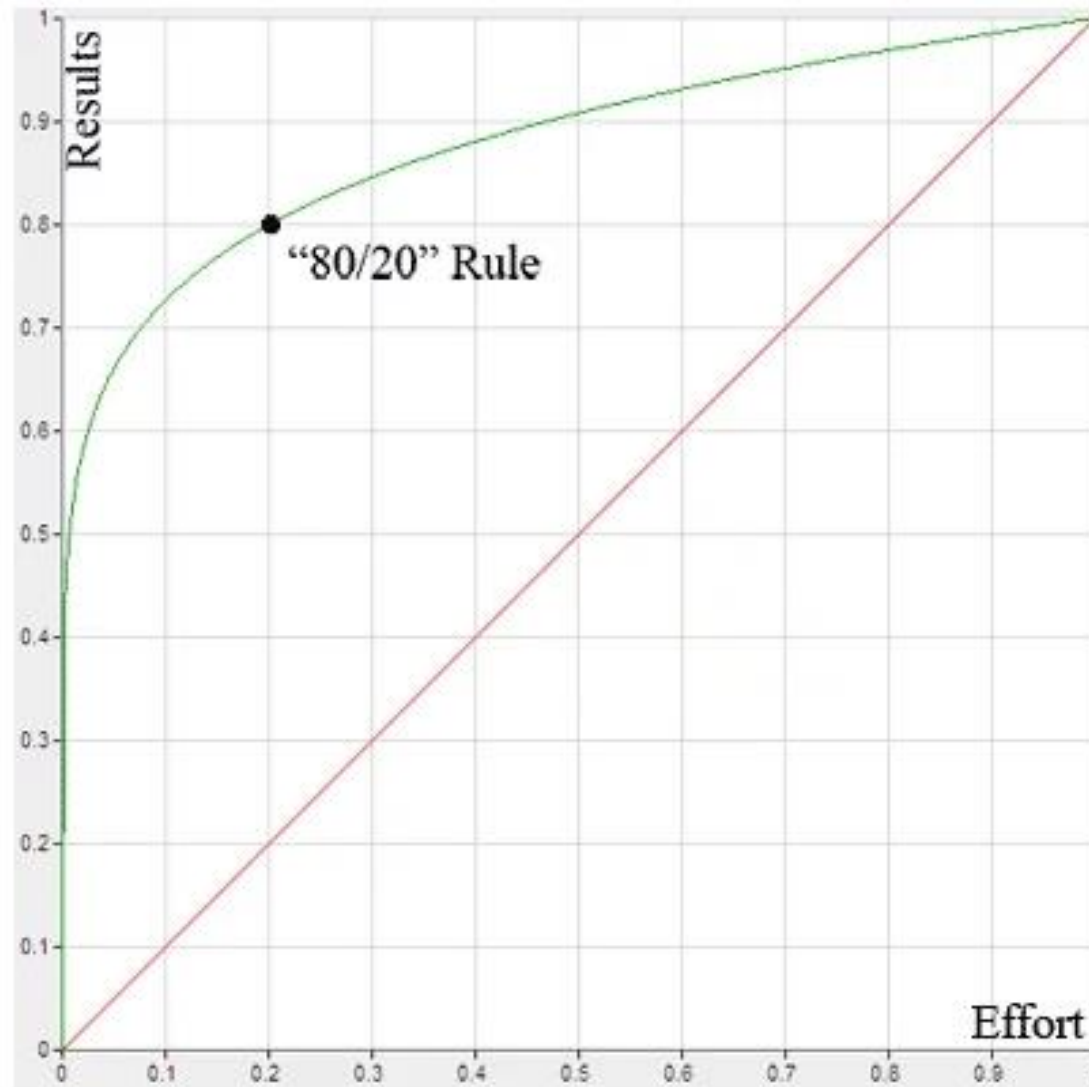
Control Charts



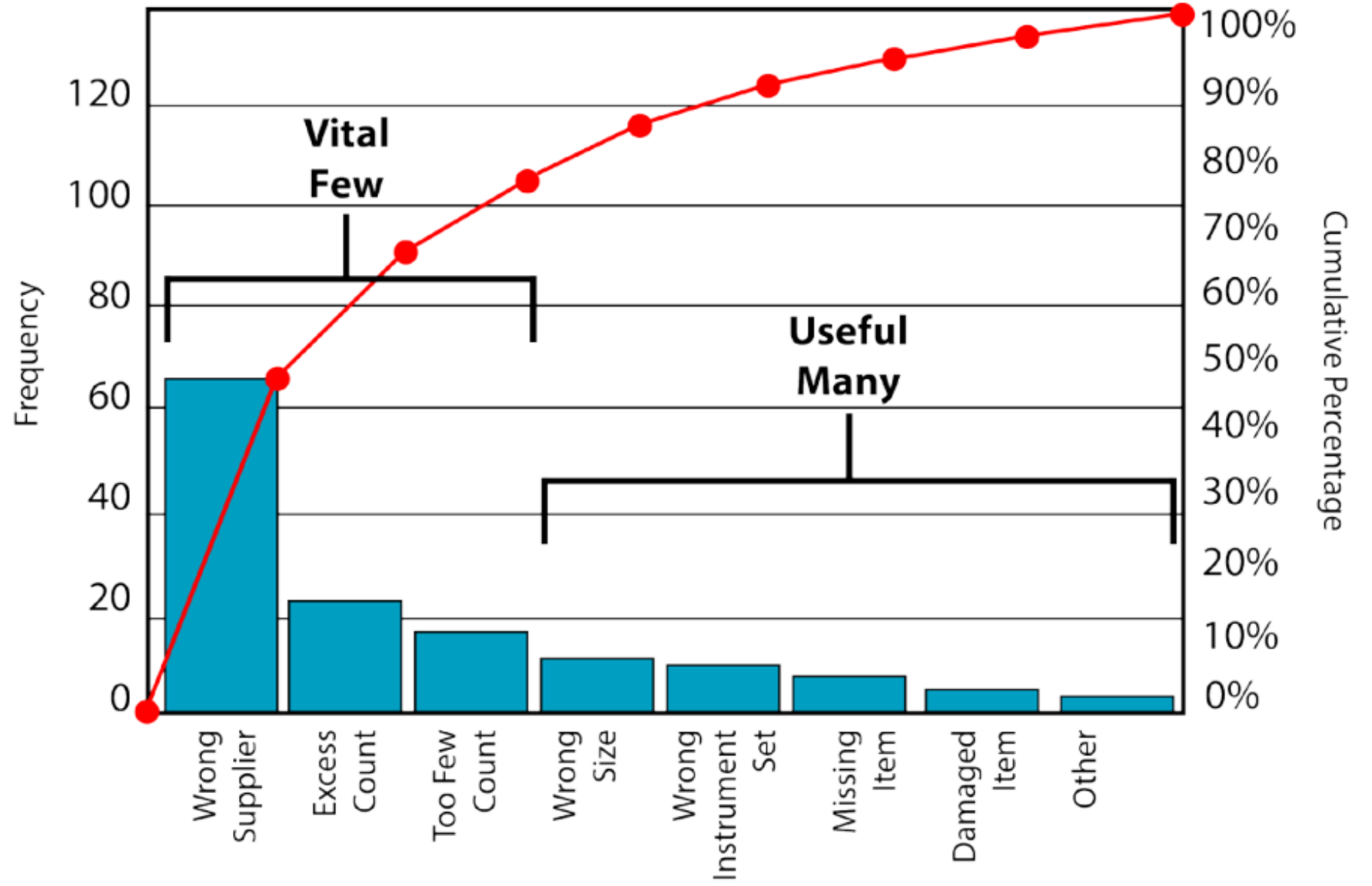
Pareto Charts



Pareto Charts



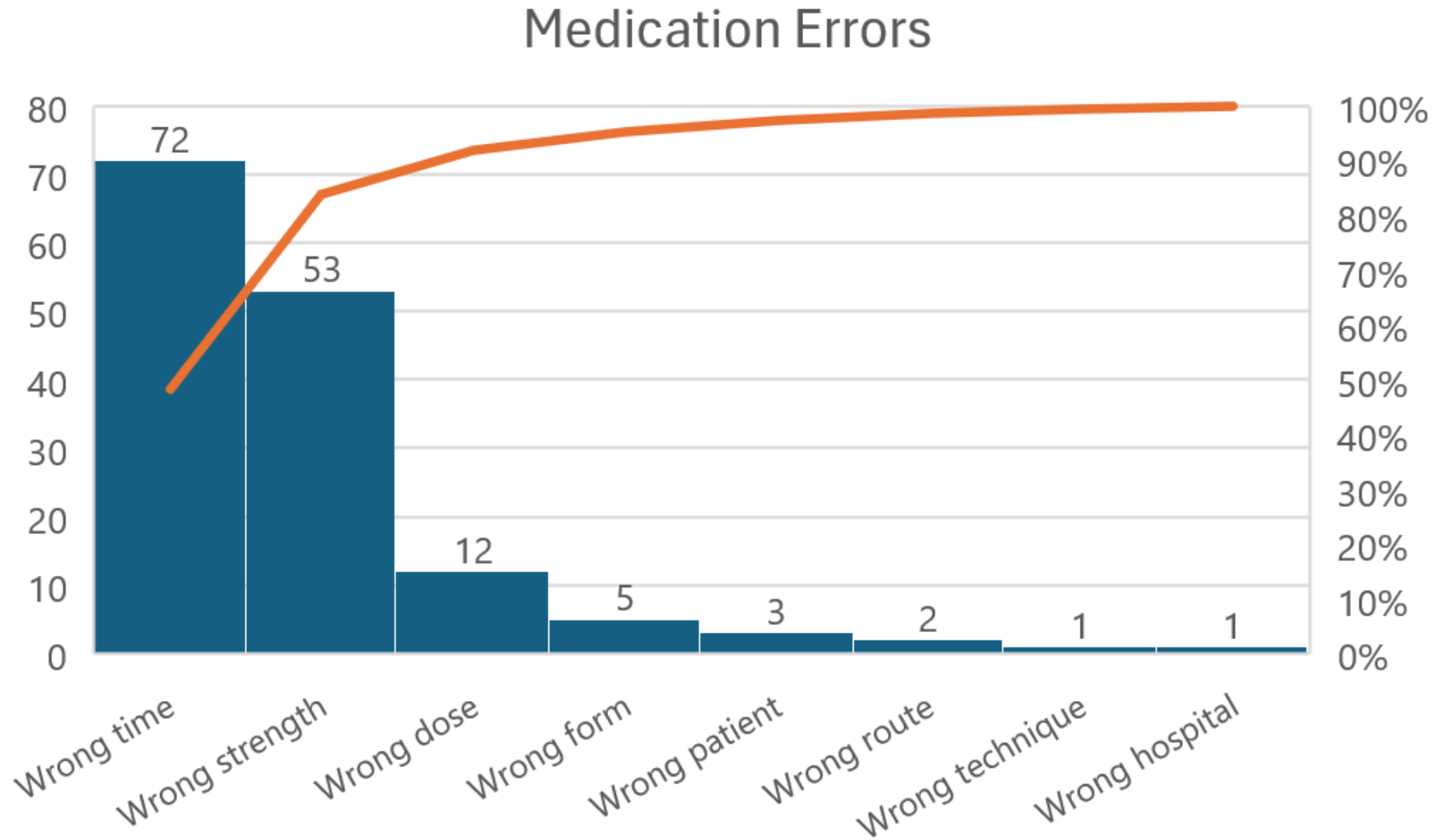
Pareto Chart: Types of Errors Discovered During Surgical Set-up



Pareto Charts

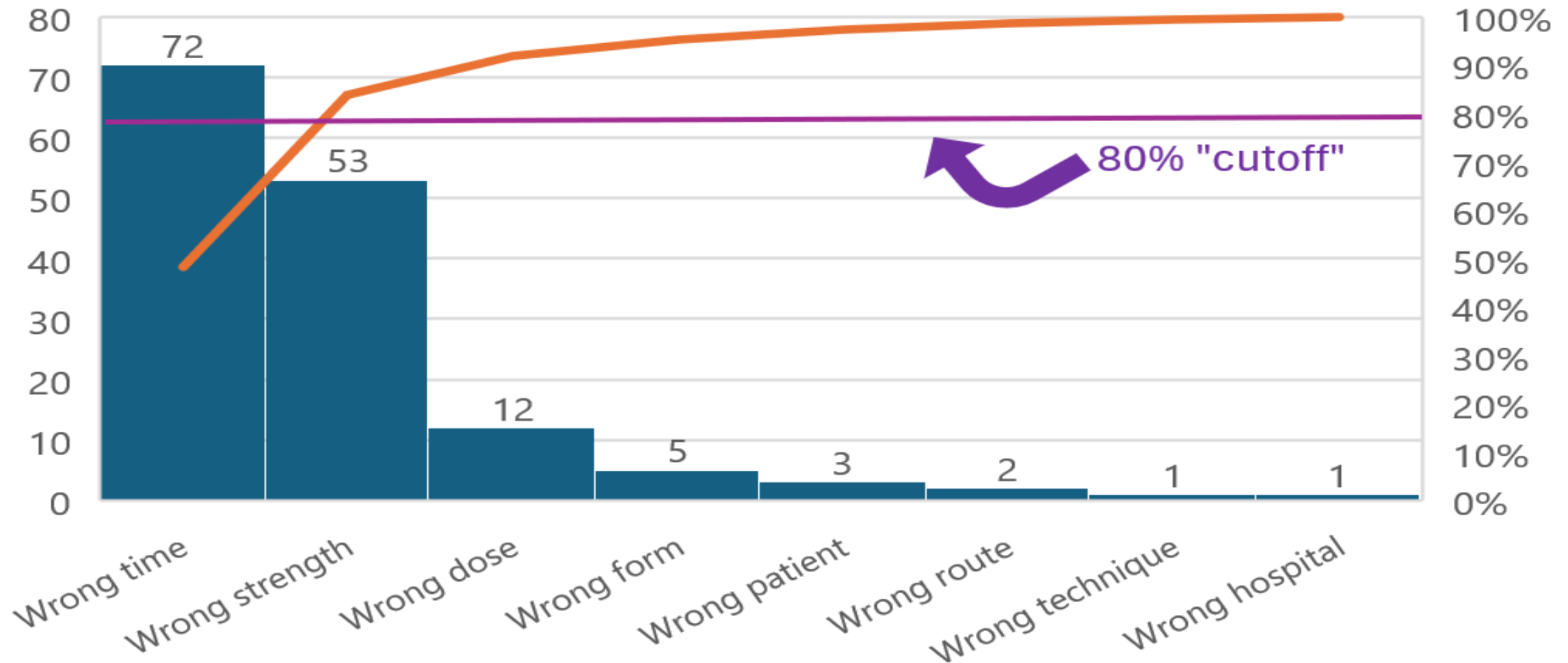
Error	Frequency
Wrong time	72
Wrong strength	53
Wrong dose	12
Wrong form	5
Wrong patient	3
Wrong route	2
Wrong technique	1
Wrong hospital	1

Pareto Charts

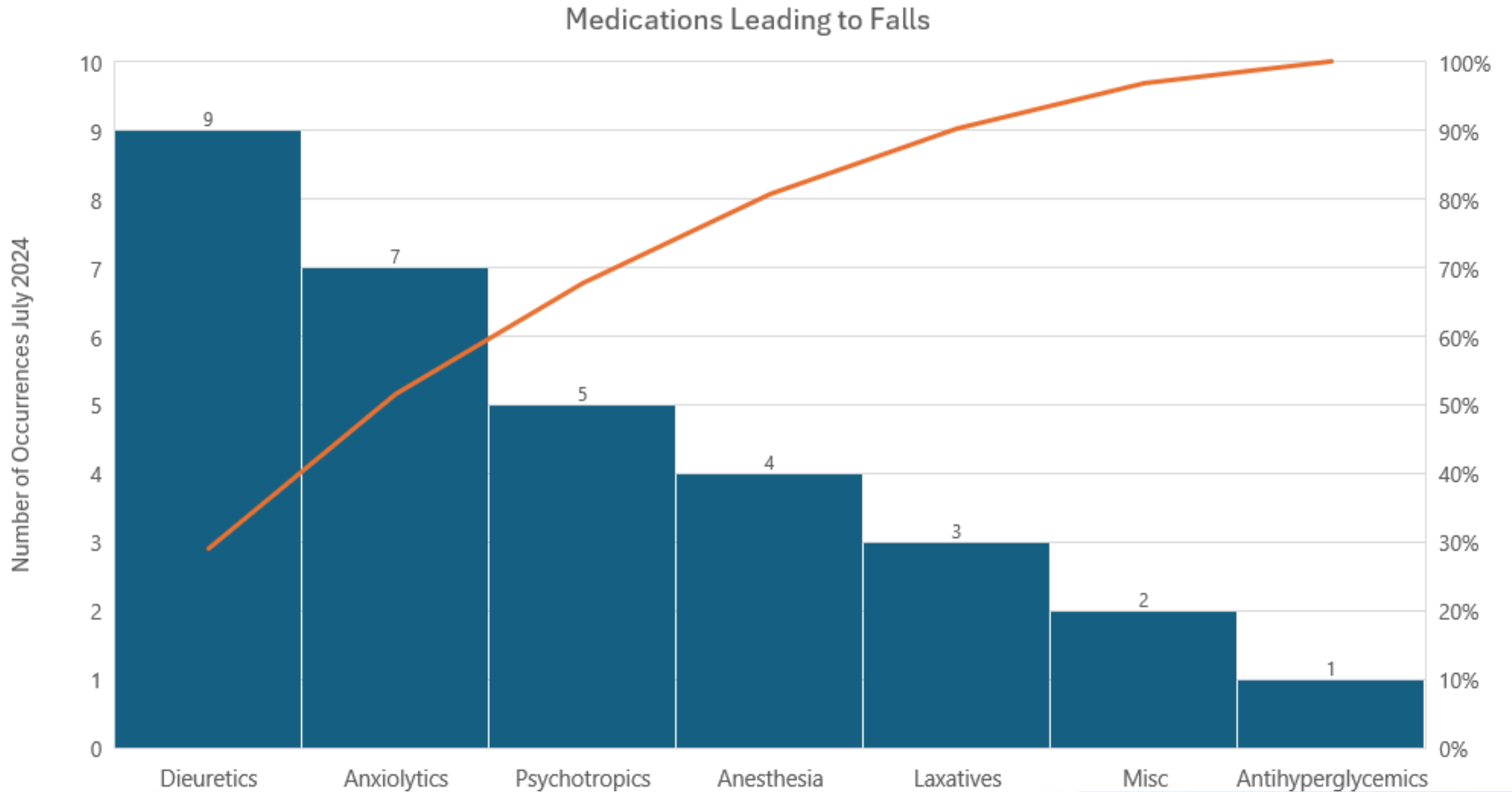


Pareto Charts

Medication Errors



Pareto Charts



Pareto Charts

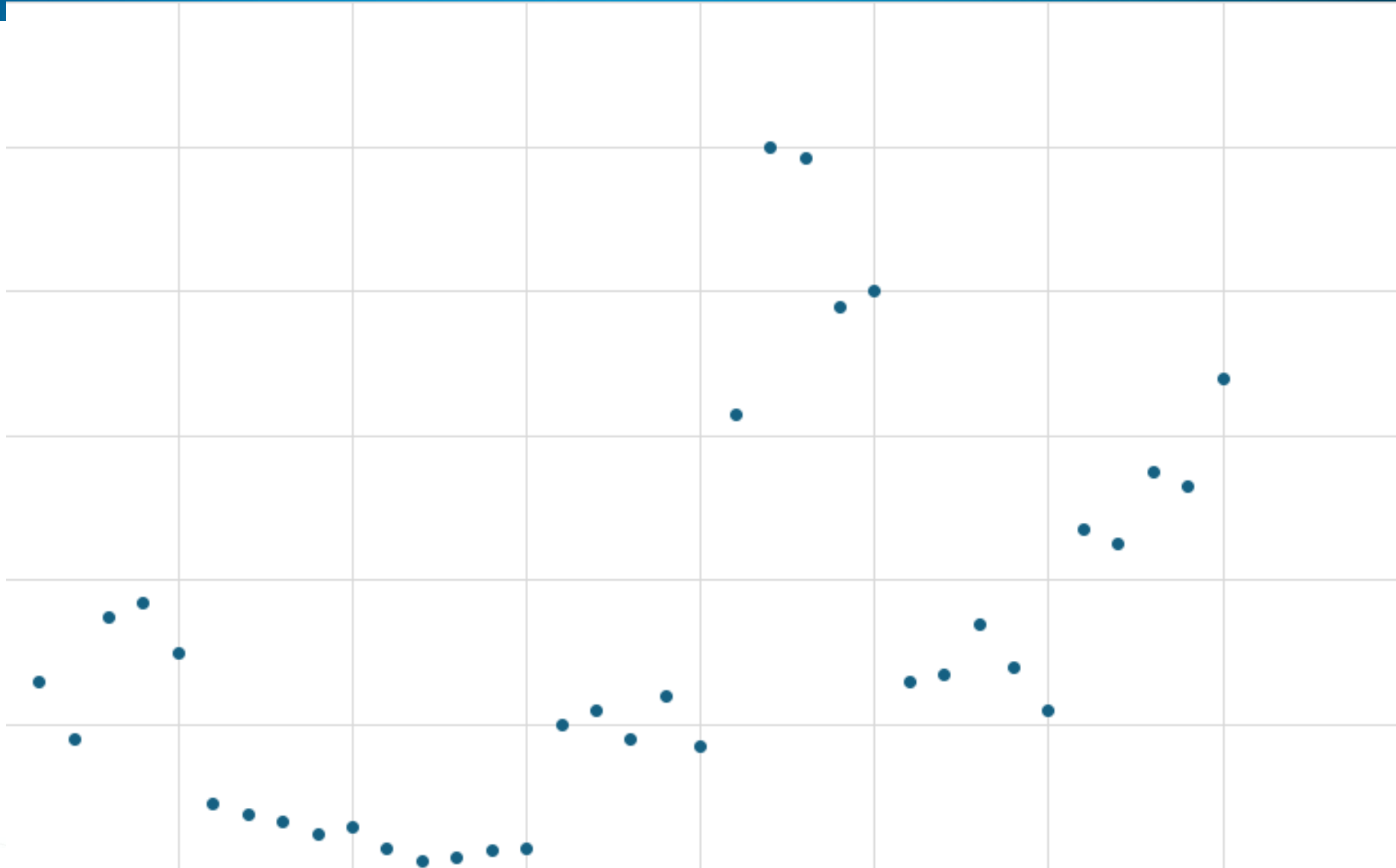
Roadblocks:

It only knows what you tell it.

Can diminish the perception of the importance of the other causative factors

Requires “recycling” as resolutions are established—may result in shifting priorities for steps 2, 3, 4.....

Scatter Diagrams



Scatter Diagram

Sole purpose = Determine if there is a relationship between two variables.

Let's get out of healthcare for a sec:

Vehicle traffic

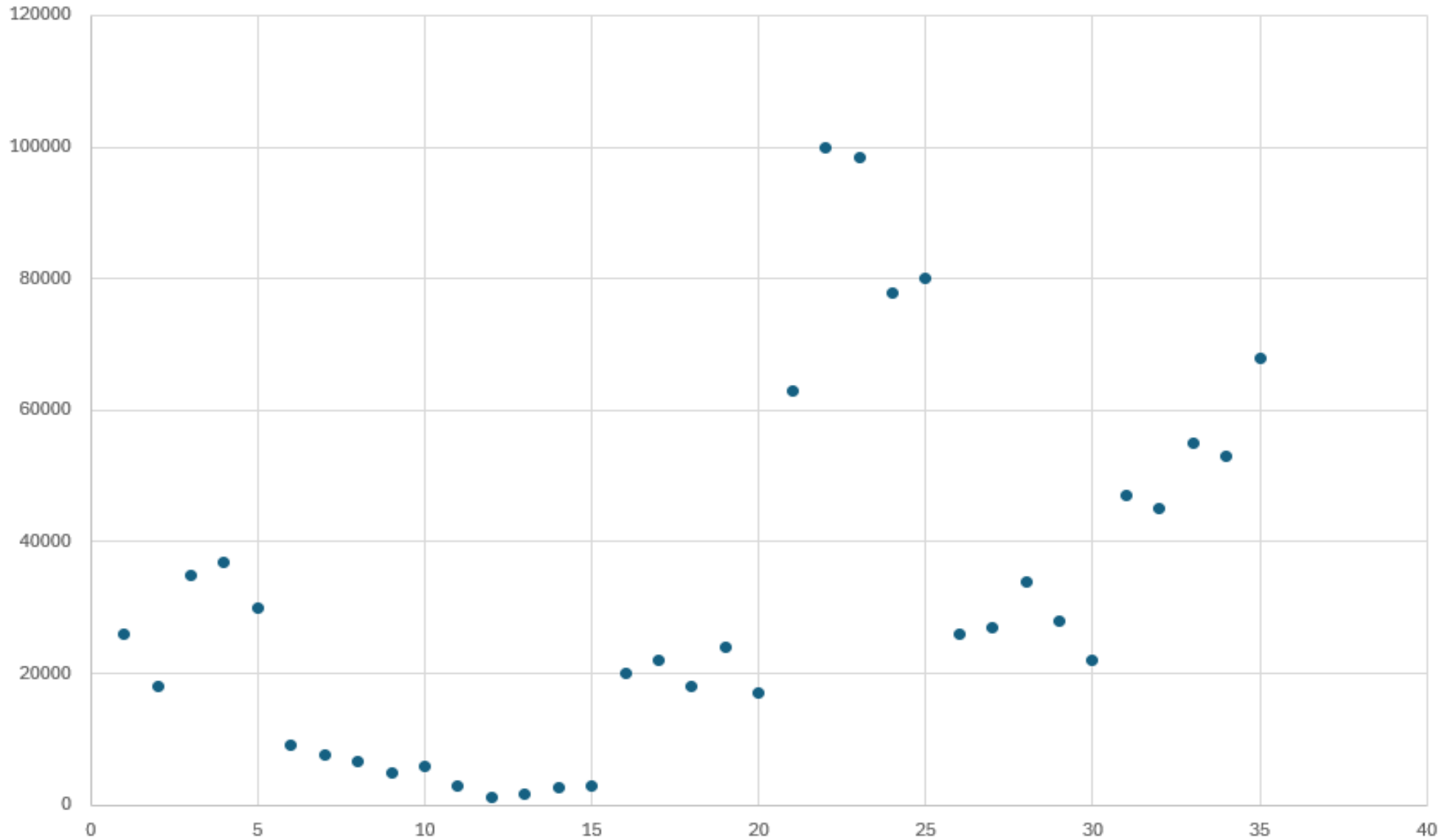
Age of Driver : Accidents

Speed : Road Wear

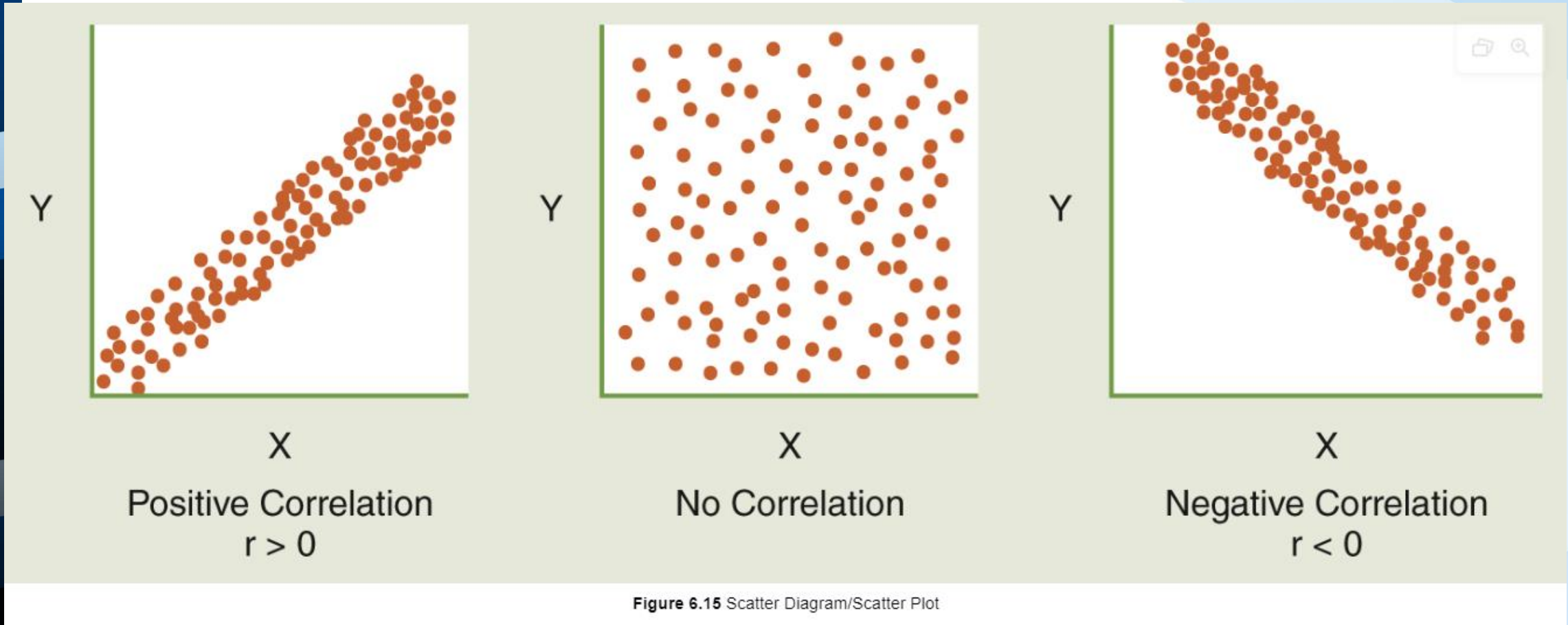
Gender : Compliance with Rules of Road

Scatter Diagrams

Does Cost of Health Care Consistently Increase with Advancing Age?

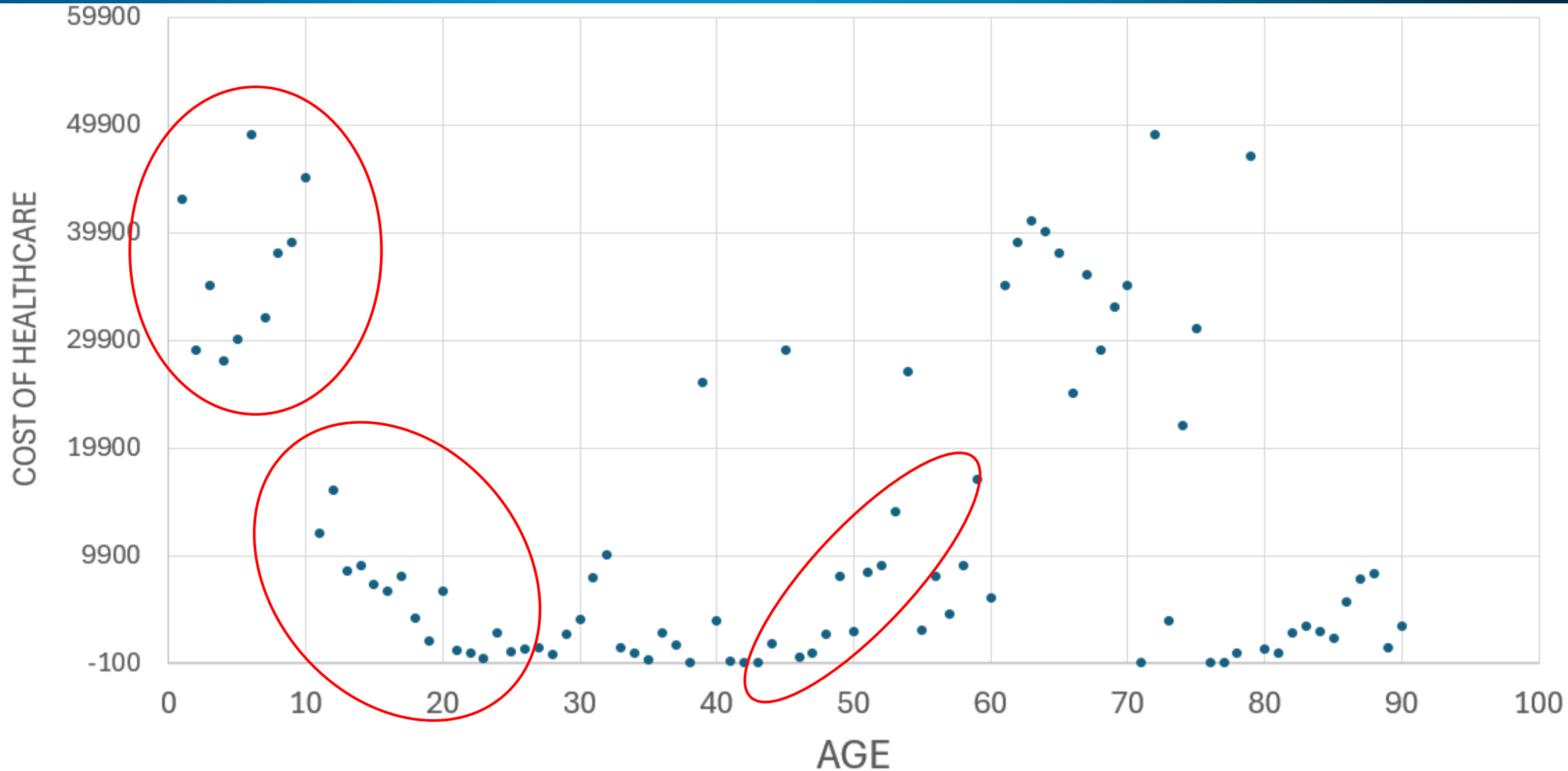


Scatter Diagram



Beaudin, National Association for Healthcare Quality (NAHQ), Luc R. Pelletier, Christy L. HQ Solutions: Resource for the Healthcare Quality Professional. Available from: VitalSource Bookshelf, (5th Edition). Jones & Bartlett Learning, 2022.

Scatter Diagram



Scatter Diagrams : Potential Downfalls

Misunderstanding of what a slope means

Requires an adequate number of data points to be able to visualize a trend.

Relationships may be interpreted to mean that one variable cannot be changed unless the other is. Mitigating factors may require a little more out-of-the-box thinking.

A3- One tool, Many Versions

Essentially, a template for organizing thoughts, tasks, assignments, tools, and improvement processes across a spectrum.

One sheet of paper (A3 = 13 x 19")

Seven primary questions

A million different ways to display them

The questions

- 1. The Background: What are you talking about, and why?**
- 2. Current Conditions: Where do things stand now?**
- 3. Goal: What specific outcome is desired?**
- 4. Analysis: Why does the problem exist?**
- 5. Recommendations: What do you propose/ why?**
- 6. Plan: How will you implement?**
7. (Maintenance) -- Followup: How will you ensure ongoing success?

A3

Focus:

Strategy A3

Dept:

Performance, gaps, and targets

--

Reflection on last year's activities and results

--

Rationale for this year's activities

--

This year's action plan (milestone chart)

--

Followup / Unresolved issues

--

Signatures:

Author:
Version and date:

Source: [GTD_A3_profability](#)
([lean.org](#))

A3

A3 PROBLEM SOLVING

1 CLARIFY THE PROBLEM

5 RECOMMENDED COUNTER MEASURES

2 BREAK DOWN THE PROBLEM

6 EXECUTE COUNTER MEASURES

7 MONITOR RESULTS



3 TARGET

ACTION	OWNER	STATUS	TARGET	ACTUAL

4 ROOT CAUSE

8 STANDARDIZE AND SHARE

WHY

WHY

WHY

WHY

WHY

WHY

ACTION	OWNER	STATUS	DOCUMENT	TRAINED

A3-Problem-Solving-Board.jpg
(3000×3000) (visualworkplaceinc.com)

2 BREAK DOWN THE PROBLEM



4 ROOT CAUSE

WHY

WHY

WHY

WHY

WHY

Next Steps

What are you working on? Which process could be applied?

KHA Quality Team :

1. Virtual Support/ Education
2. Site Visits
3. One-on-One Troubleshooting
4. Networking
5. Resources

Next Steps

Check out part 1 if you missed it! Linked here [KHA Quality Webinar: Process Improvement \(PI\) 201 – Part 1: The Processes are the Solutions! – KHA Quality](#)

Register for our EOC Conference [Here!](#)



ENVIRONMENT OF CARE CONFERENCE: The Bridge Between All Disciplines

October 21, 2024 | 8:00 a.m. - 4:00 p.m. ET

Holiday Inn Louisville East | 1325 S. Hurstbourne Parkway | Louisville, KY 40224

Overview - Enjoy a full day of interactive learning and engage with subject matter experts regarding the key topics hospital safety, emergency management, quality, clinical, and environment of care leaders must face every day.

Presentations will include cutting-edge information on how to achieve continual environment of care (EOC) and life safety survey readiness, ways to employ practical approaches to executing efficient and effective tabletop drills, and tips for using innovative methods of engaging non-clinical care teams in infection prevention and environmental safety to maximize the impact of working with a full team of people who are dedicated to patient care!

References/Resources:

- <https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/Downloads/FishboneRevised.pdf>
- [Histogram | Institute for Healthcare Improvement \(ihi.org\)](https://www.ihi.org)
- [Displaying the Data in a Health Care Quality Report | Agency for Healthcare Research and Quality \(ahrq.gov\)](https://www.ahrq.gov)
- [Guide: Control Charts - Learn Lean Sigma](#)
- IHI. (n.d.). Quality Improvement Essentials Toolkit. Institute for Healthcare Improvement.
<https://www.ihi.org/resources/tools/quality-improvement-essentials-toolkit#downloads>

Questions



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