

# Better Quality Through Better Measurement OCC

## Faculty/Staff

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# Questions

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What questions do you have about the program that you are hoping to have answered today? Please put them in the chat and we will try to get through as many as we can on today's call!





# Improving Care Improving Lives with You

[ihi.org](http://ihi.org)



## IHI Mission

To improve health  
and health care  
worldwide

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## IHI Vision

Everyone has  
the best care and  
health possible



# Working alongside you to improve health and health care worldwide!



# What IHI Believes

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That health and health care can and **must be better**.

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There can be no quality without **equity**.

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Improvement science and methods drive **results**.

Courage

Love

IHI's Values

Equity

Trust

# Better Quality Through Better Measurement



# Learning Objectives

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1. Describe the concepts and methods of measurement for improvement
2. Apply the steps/tools in the quality measurement journey to a system you are improving
3. Design a family of measures
4. Construct effective data collection plans that incorporate stratification and sampling methods
5. Design run and control charts to analyze data for improvement
6. Distinguish common and special cause variation in data





# Continuing Education

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In support of improving patient care, the Institute for Healthcare Improvement is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the health care team.



JOINTLY ACCREDITED PROVIDER™  
INTERPROFESSIONAL CONTINUING EDUCATION



# Continuing Education

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This program offers 14 hours of CEs for:

- Physician (ACCME)
- Nursing (ANCC)
- Pharmacy (APCE)
- Certified Professionals in Patient Safety (CPPS)
- Certified Professionals in Healthcare Quality (CPHQ) (*Application in process*)



# Who Attends?

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This online course is open to professionals familiar with quality improvement methods interested into taking a deeper look into measurement

- Quality Leaders and Managers
- Chief Quality Officers
- Patient Safety Officers/Executives
- Data Analytics Staff



# Measurement OCC Faculty

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**Jesse McCall**  
Program Director  
Lead Faculty



**Robert Lloyd**  
Lead Faculty



**Rebecca Steinfield**  
Support Faculty



# Measurement is Central to Improvement

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- The purpose of measurement in QI work is for learning not judgment!
- All measures have limitations, but that does not negate their value for learning
- You need a set of 3-8 measures reported daily, weekly or monthly
- Measures should be linked to the team's Aim.
- Measures should be used to guide improvement and test changes.
- Measures should be integrated into the team's daily routine and make use of existing databases when possible



# Chat Question...

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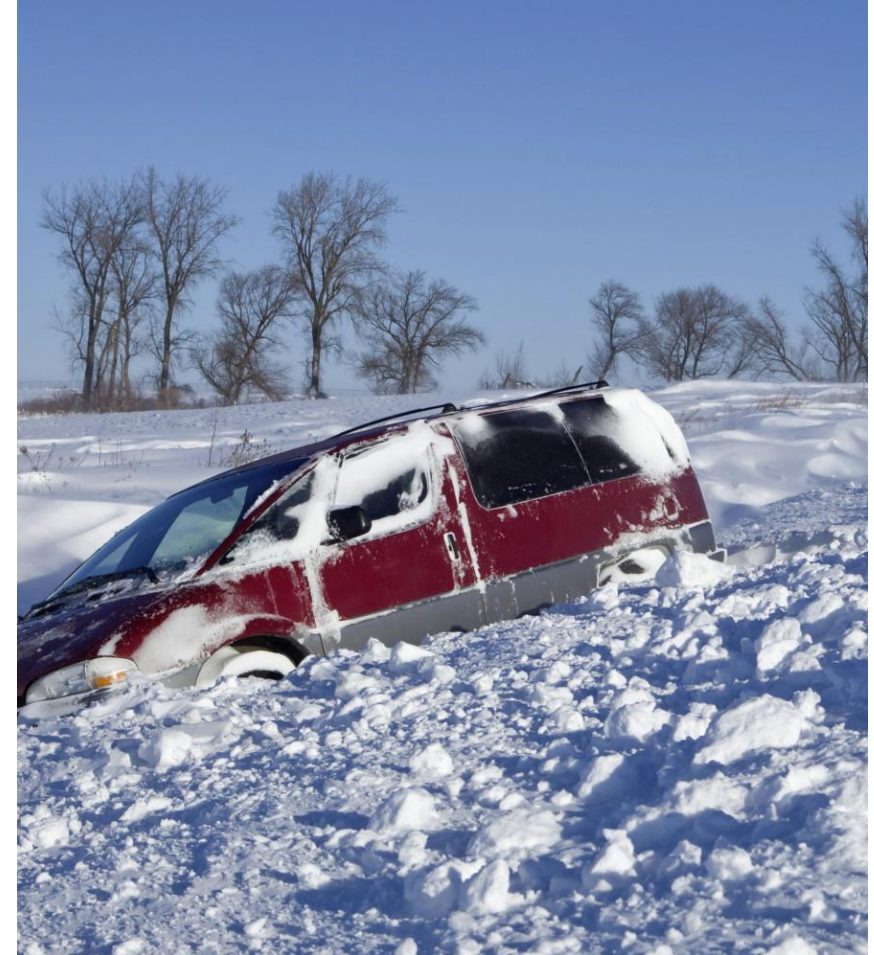
What is your biggest challenge around measurement?



# Measurement ditches

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- Overambitious plans
- Unclear operational definitions
- Measure is not sensitive enough to capture improvement
- Unclear/insufficient sampling plans
- Measures not linked to improvements
- Plans did not factor in analysis and collection roles
- Data collection plans hard to implement
- Trouble with analysis
  - Skill level
  - Missing data

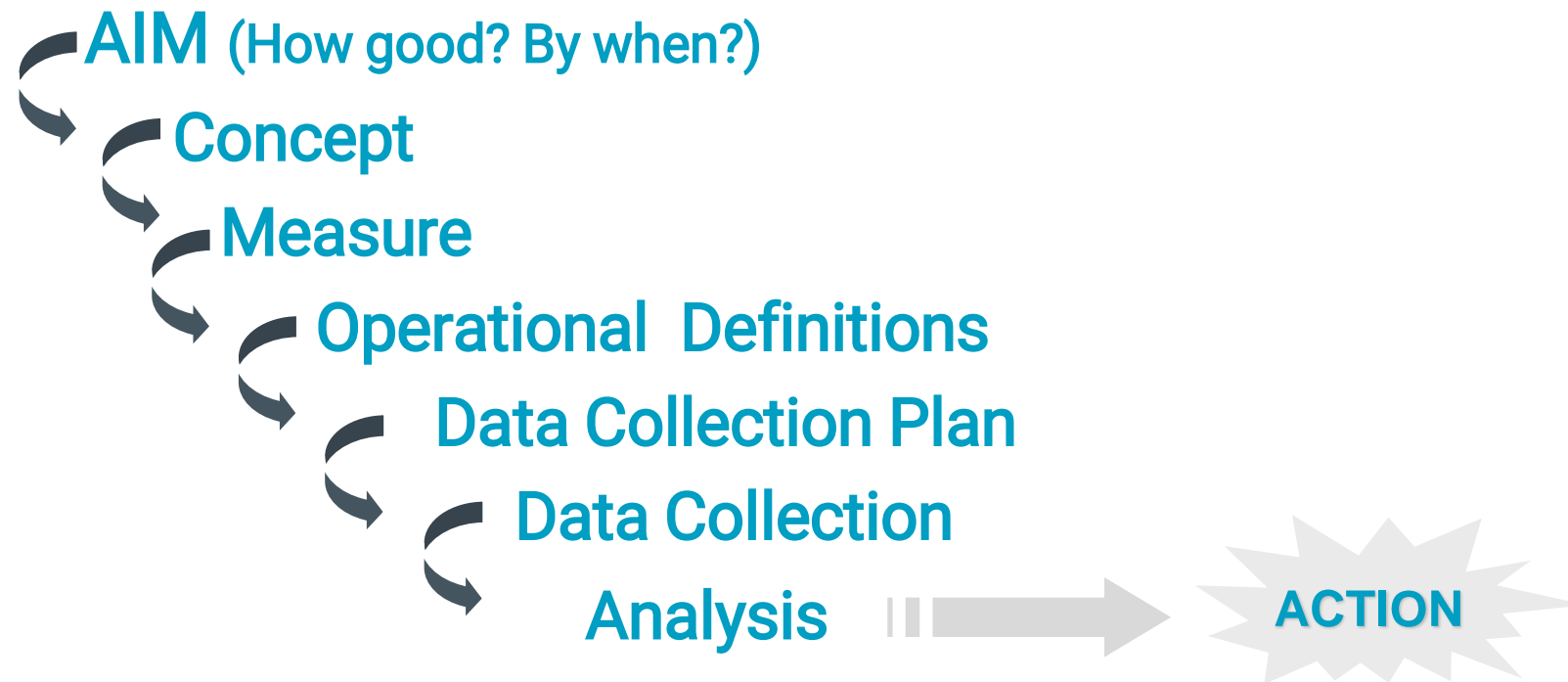


*A mixed-methods study of challenges experienced by clinical teams in measuring improvement.* Woodcock, Liberati & Dixon Woods, BMJ Qual Saf August 2019



# Milestones in the Quality Measurement Journey (QMJ)

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### Organizing Your Measures Worksheet<sup>©</sup>

Topic for Improvement: \_\_\_\_\_

Concept	Potential Measure(s)	Outcome	Process	Balancing



### Operational Definition Worksheet

Measure Name: \_\_\_\_\_  
 (Remember this should be specific and quantifiable, e.g., the time it takes to..., the number of..., the percent of... or the rate of...)

**Operational Definition**  
 Define the specific components of this measure. Specify the numerator and denominator if it is a percent or a rate. If it is an average, identify the calculation for deriving the average. Include any special equipment needed to capture the data. If it is a score (such as a patient satisfaction score) describe how the score is derived. When a measure reflects concepts such as accuracy, complete, timely, or an error, describe the criteria to be used to determine "accuracy."

### Data Collection Plan Worksheet

Project name & location: \_\_\_\_\_

Measure Name	Is Stratification appropriate? If Yes, list the levels of stratification	Will you use sampling? If Yes, describe the sampling method you will use	Frequency of data collection (e.g., hourly, daily weekly?)	Duration of data collection (i.e., how long do you plan to collect the data?)



### Measurement Dashboard Worksheet<sup>©</sup>

Name of team: \_\_\_\_\_ Date: \_\_\_\_\_

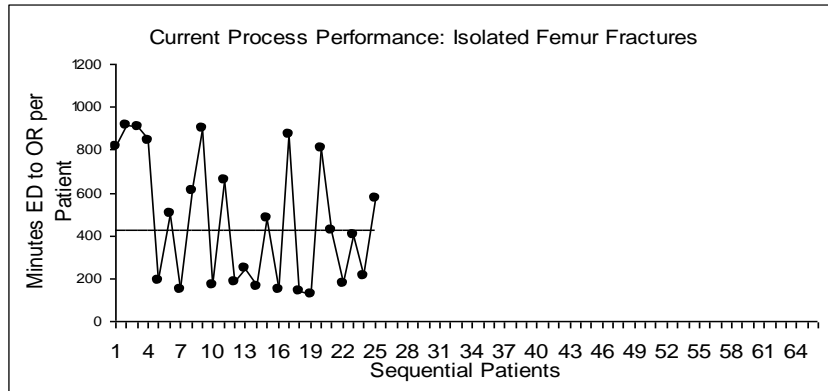
Measure Name <small>(Be sure to indicate if it is a count, percent, rate, days between, etc.)</small>	Operational Definition <small>(Define the measure in very specific terms. Provide the numerator and the denominator if a percentage or rate. Be as clear and unambiguous as possible)</small>	Data Collection Plan <small>(How will the data be collected? Who will do it? Frequency? Duration? What is to be excluded?)</small>

**Building a Measurement System that Works!**

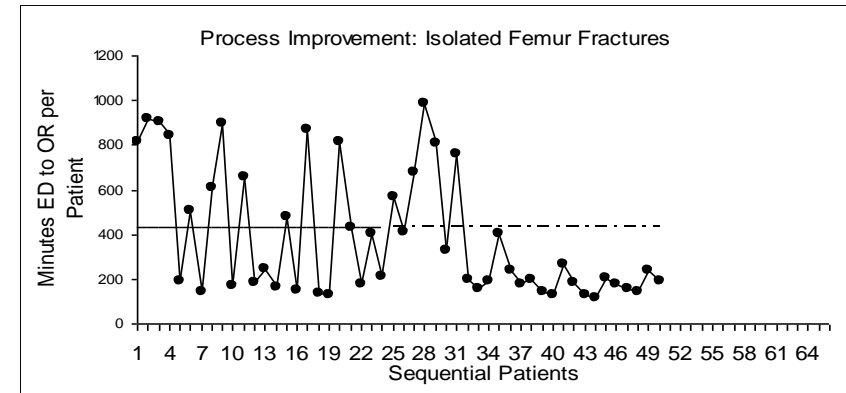


# Three uses of time series charts

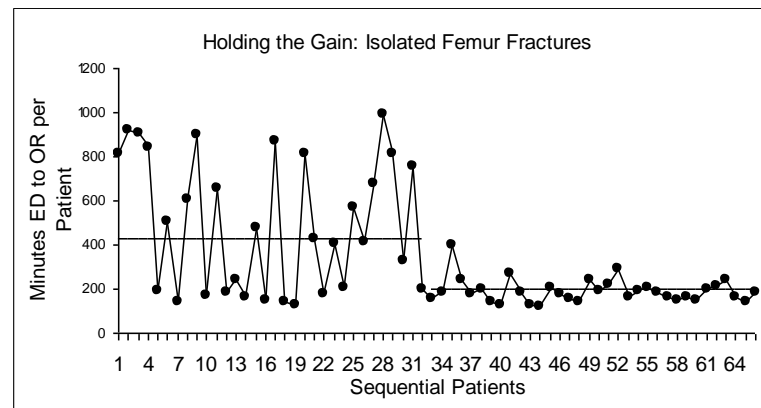
## 1. Make process performance visible



## 2. Determine if a change is an improvement



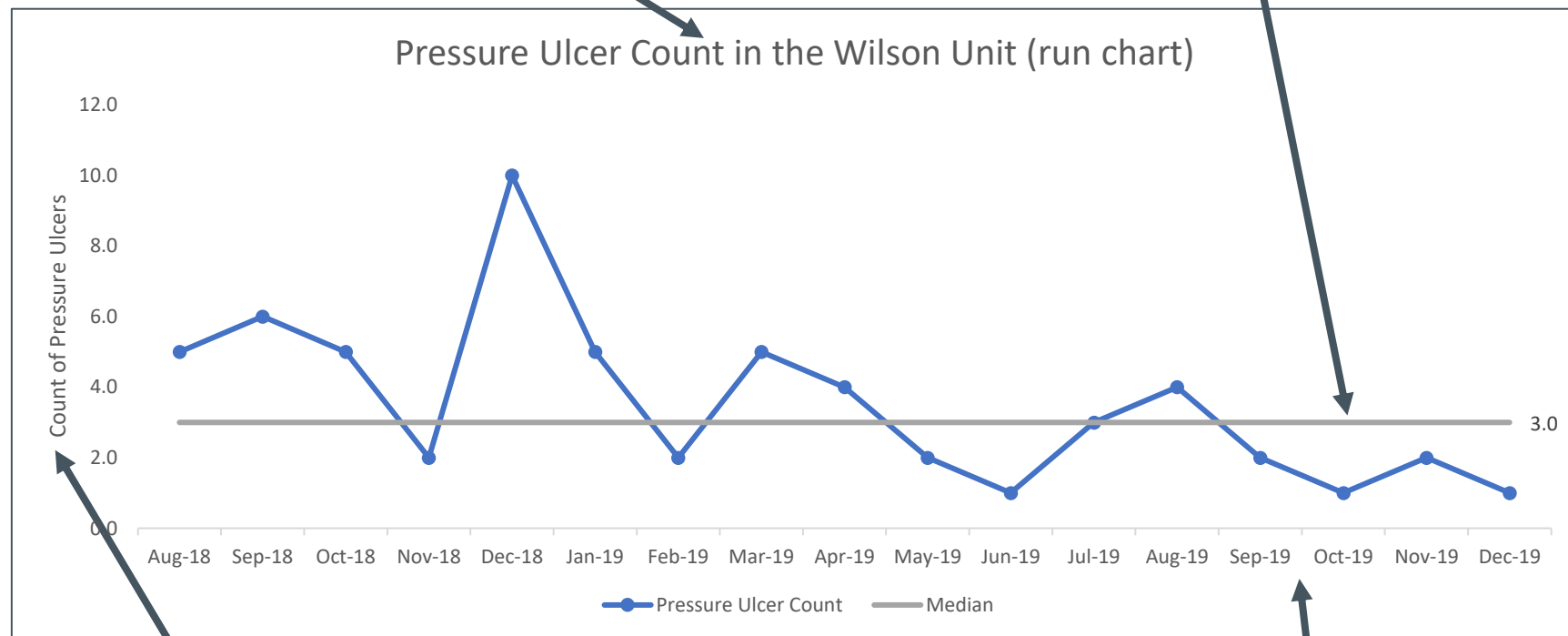
## 3. Determine if we are holding the gains



# A Run Chart!

One measure at a time, could be a percent, count, time, length, weight, etc.

The centerline (CL) on a Run Chart is the median (half of the data points are above/below the median)

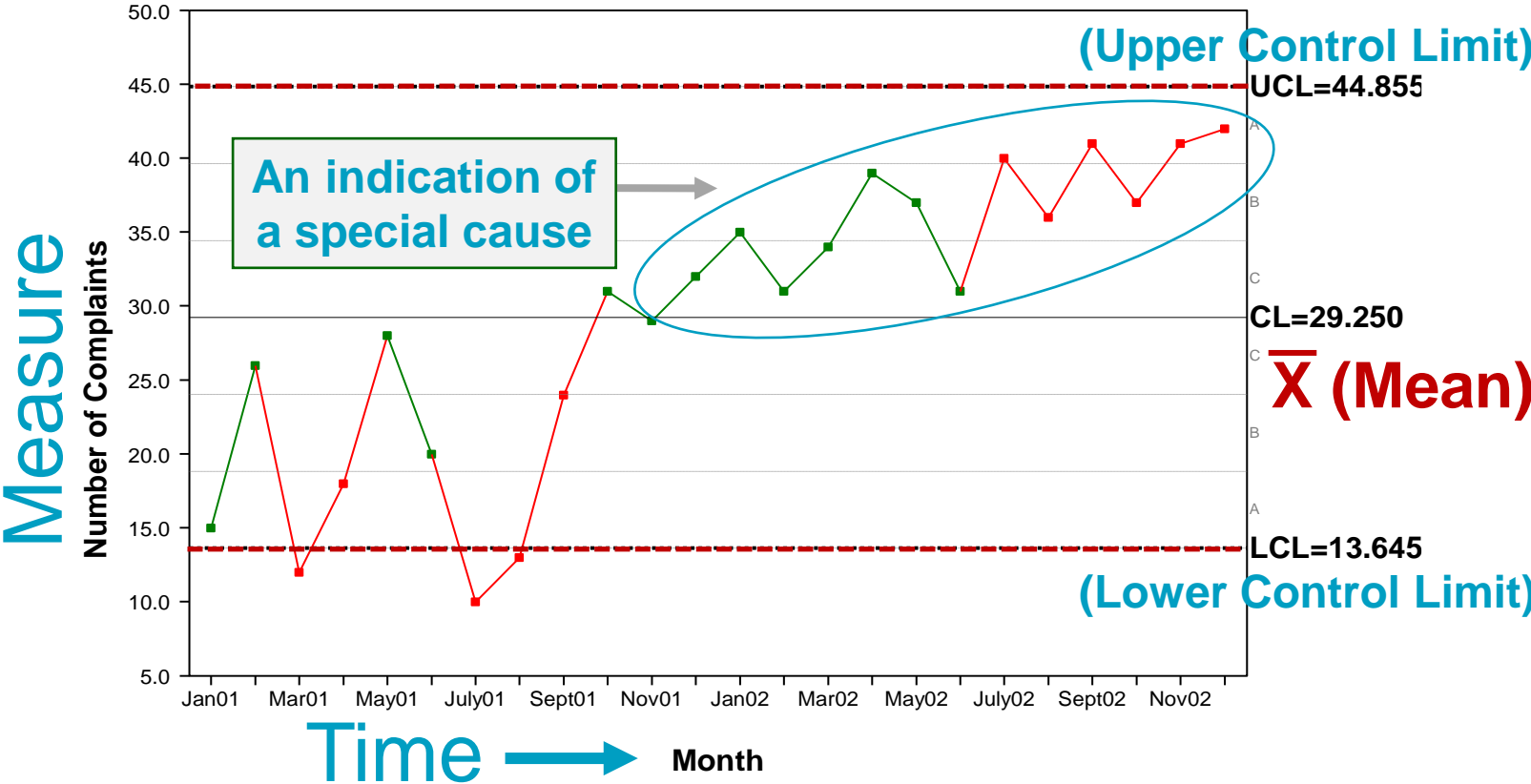


The Y Axis is the unit of measure

The measure is plotted over time displayed on the X Axis



# A Control/SPC/Shewhart Chart!



# Why are Control Charts preferred over Run Charts?

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## Because Control Charts...

1. Are more sensitive than run charts
  - A run chart cannot detect special causes that are due to point-to-point variation (median versus the mean)
  - Tests for detecting special causes can be used with control charts
2. Have the added feature of control limits, which allow us to determine if the process is stable (common cause variation) or not stable (special cause variation).
3. Can be used to define process capability.
4. Allow us to more accurately predict process behavior and future performance.



# Course Topics

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Lesson 1 – Why are you measuring? Introduction to the Quality Measurement Journey

Lesson 2 – Aims, Moving from concepts to measures, Operational Definitions

Lesson 3 – Understanding variation

Lesson 4 – Run charts

Lesson 5 – Control charts

Lesson 6 – Linking measurement to improvement



# Technical Requirements

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Participants should be proficient with Excel.

We will be using Excel to create run charts



Participants may wish to purchase SPC software

We will cover how to select the correct control charts and how to analyze them, but will not be using a specific software to instruct the creation of them.



# Six Self-Paced Lessons

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- ❖ Lessons are released every two weeks for you to review when it fits your schedule





# Virtual Calls

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- ❖ Virtual sessions are hosted on Zoom and will run for 1 hour.
- ❖ We expect you attend all sessions.
- ❖ However, for the occasional conflict, all sessions are recorded.





We hope you can  
join us on our  
journey!



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