



# Continuous Data Displays for QI Measurement for Improvement

Maria Chazapis

PQIP Collaborative Event 16/09/19

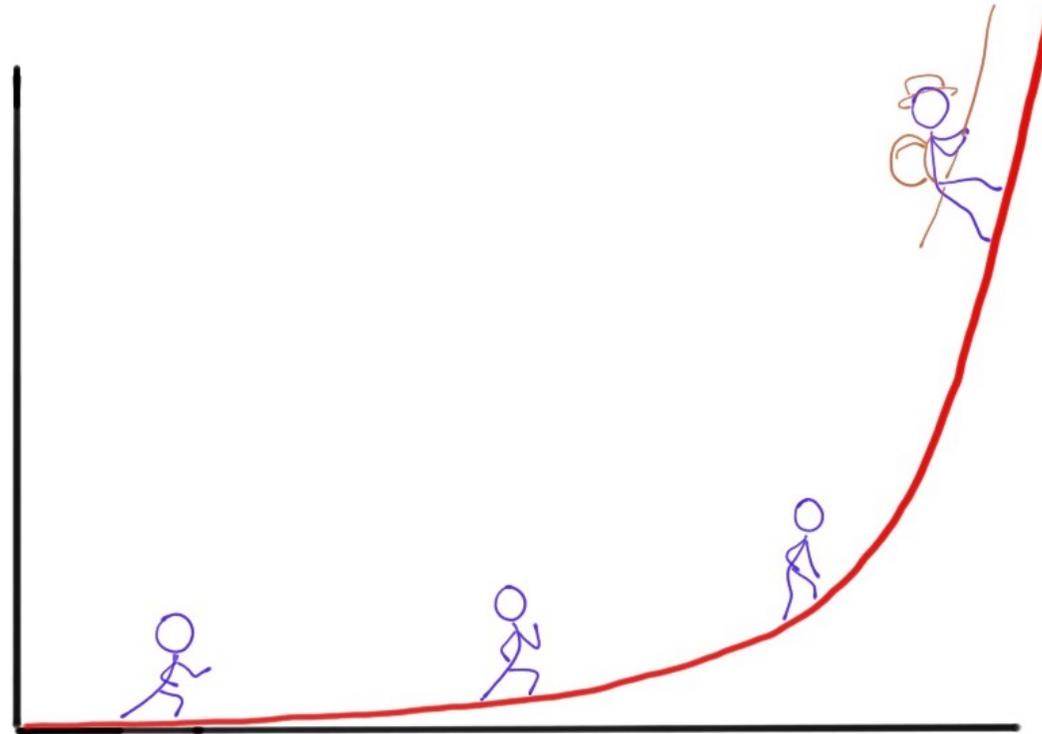
“In God we trust, All others bring data”  
Deming



“You can’t fatten a cow by weighing it” - Anon



‘90% of world’s data generated over last two years’ – Petter Bae Brandtzaeg, SINTEF ICT



# Types of Measurement

## Research



## Judgement



## Improvement

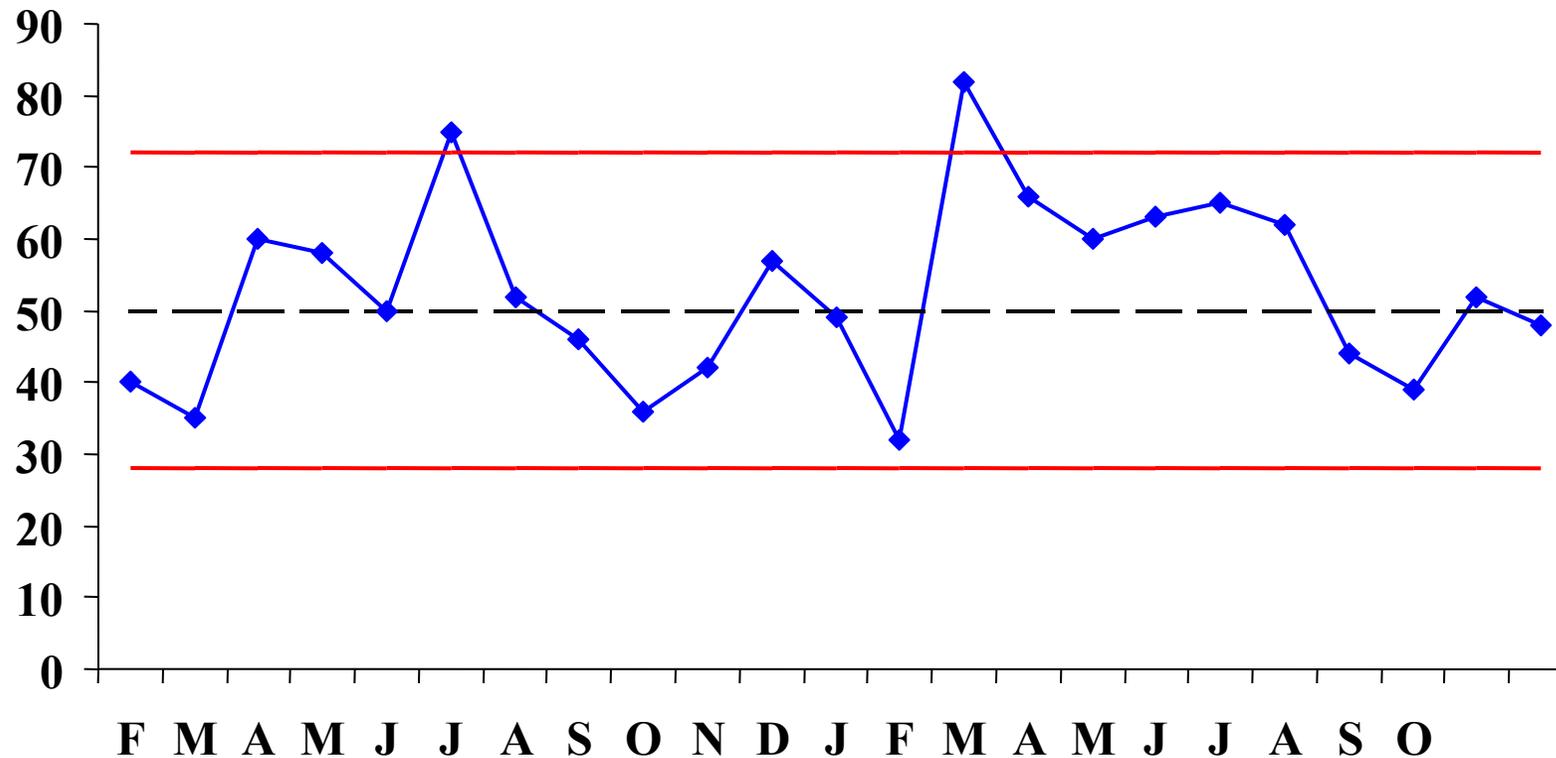


# Choosing Measures

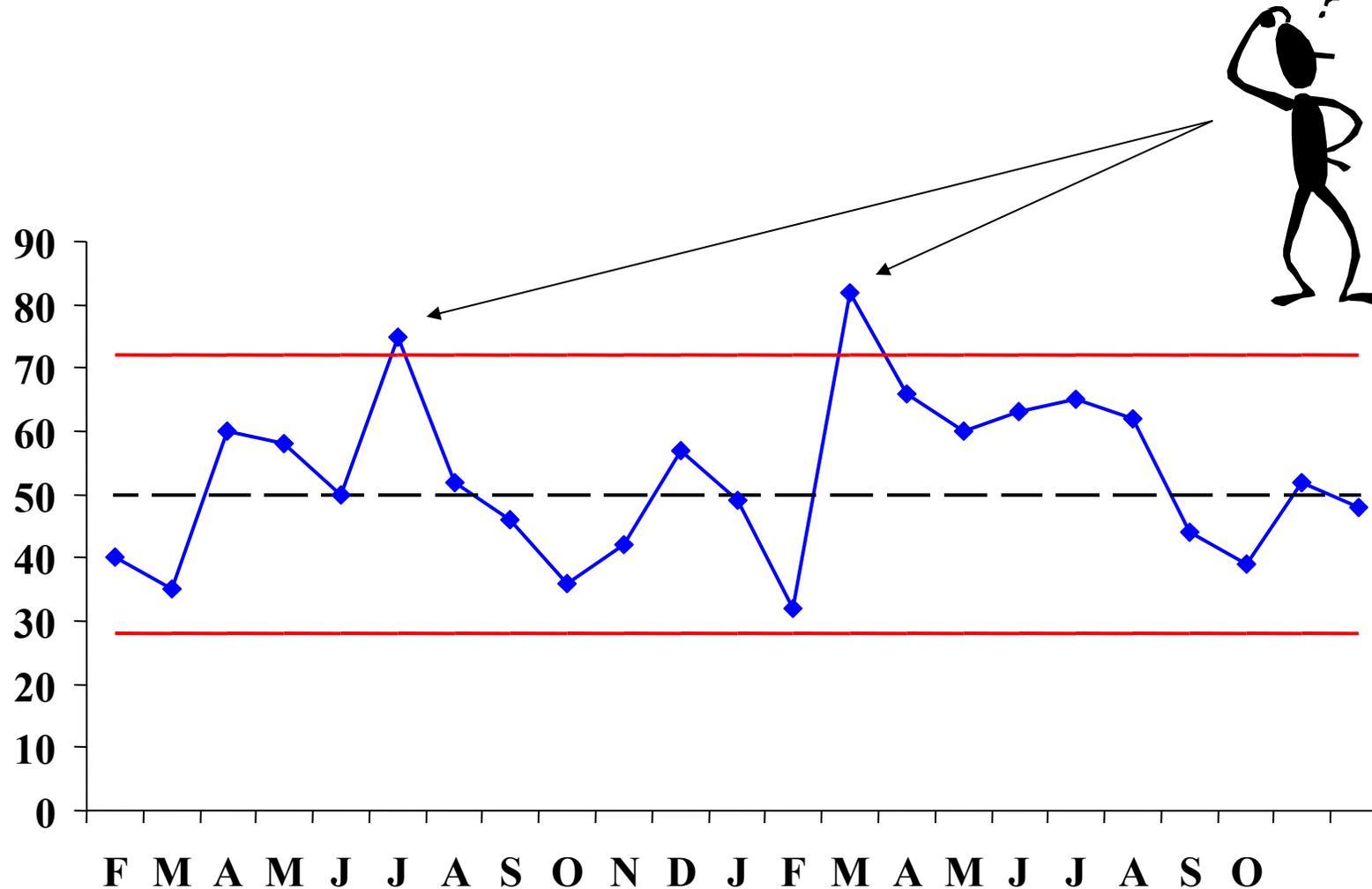
Gather the team:

- What will be measured
- Data collection and sampling
- Feasible
- Integrate measures into daily routine
- Plot data over time

# Common Cause vs Special Cause Variation



# Common Cause vs Special Cause Variation



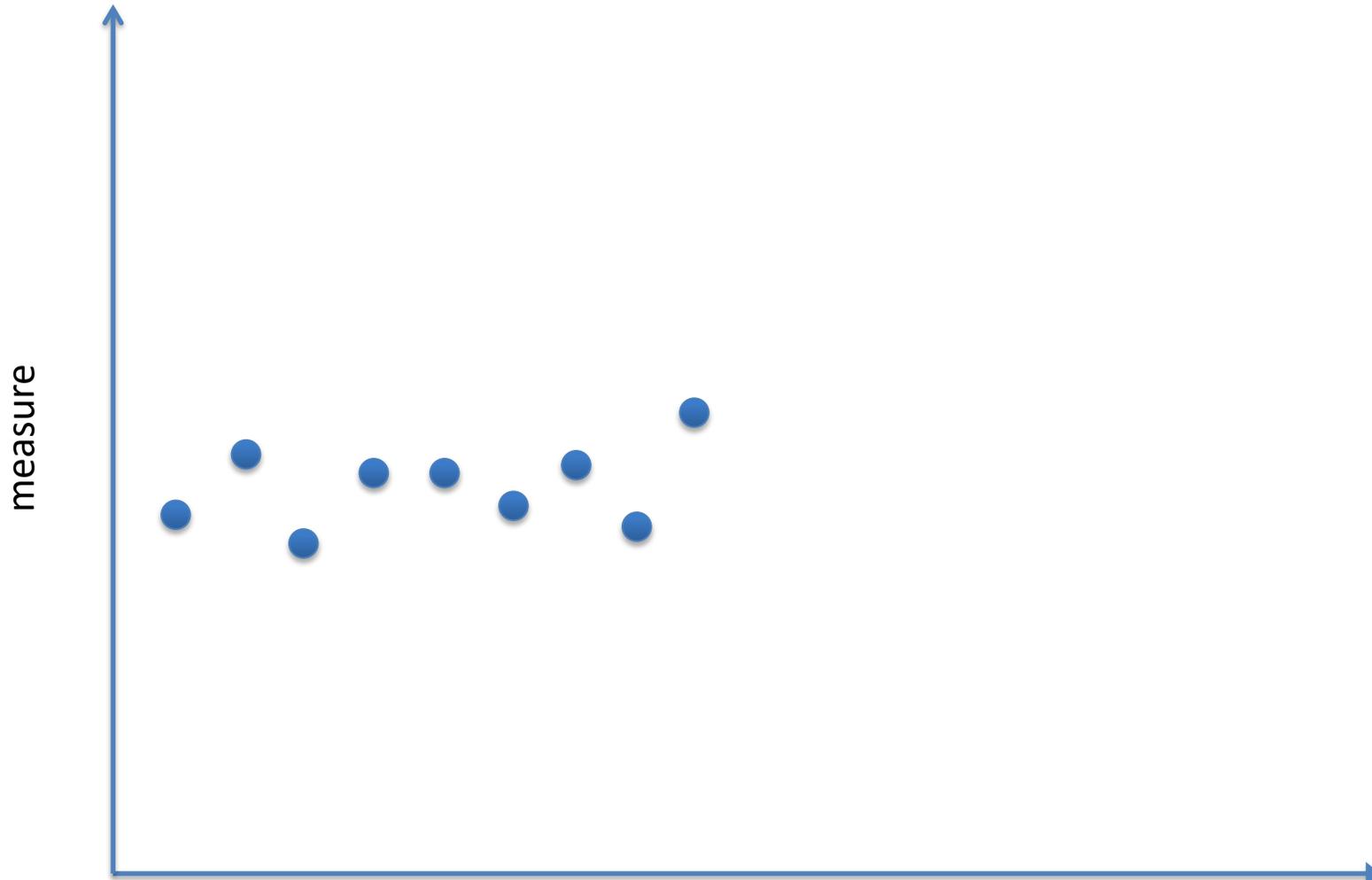
# The 4 rules of Run Chart Analysis

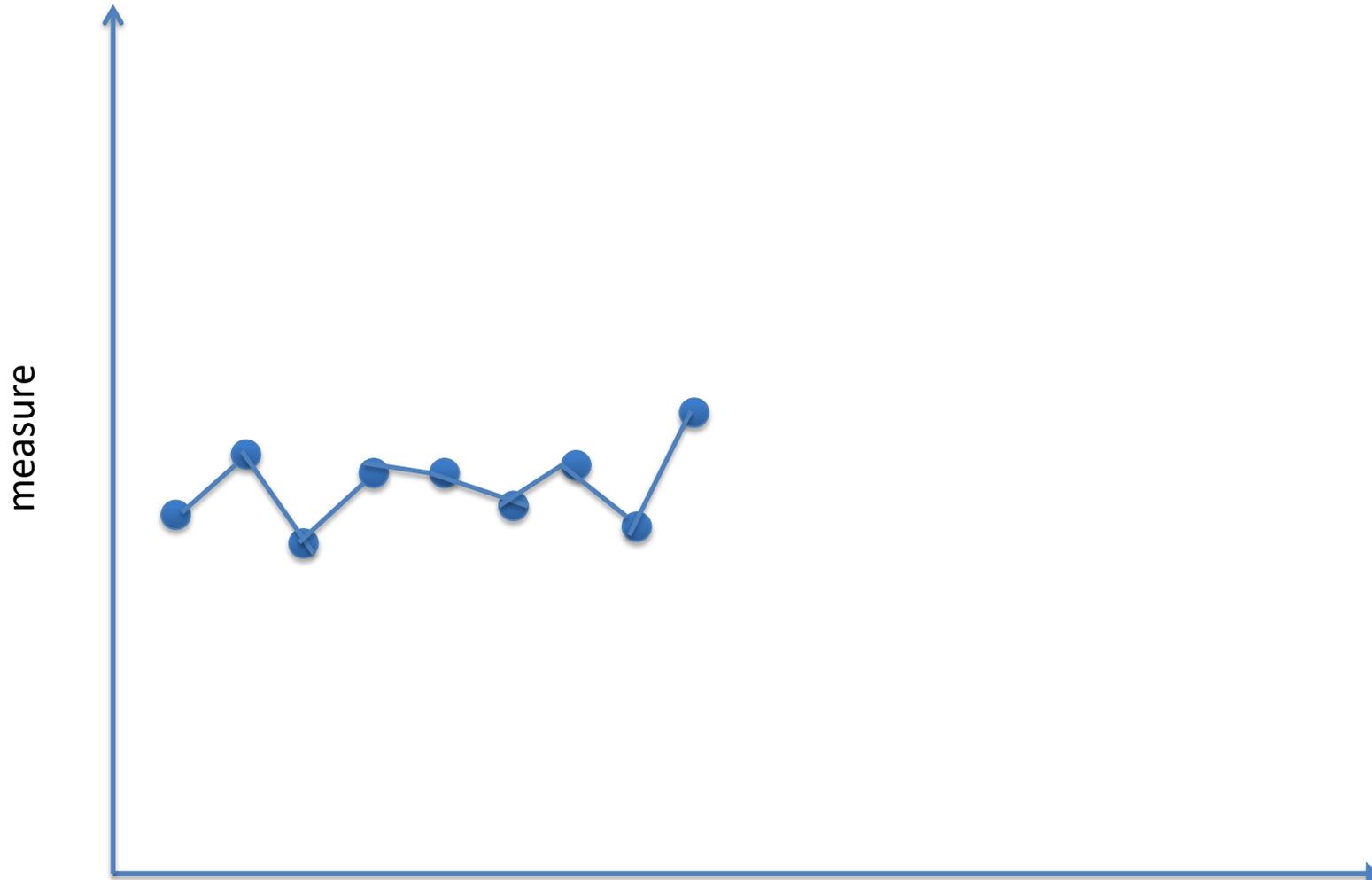


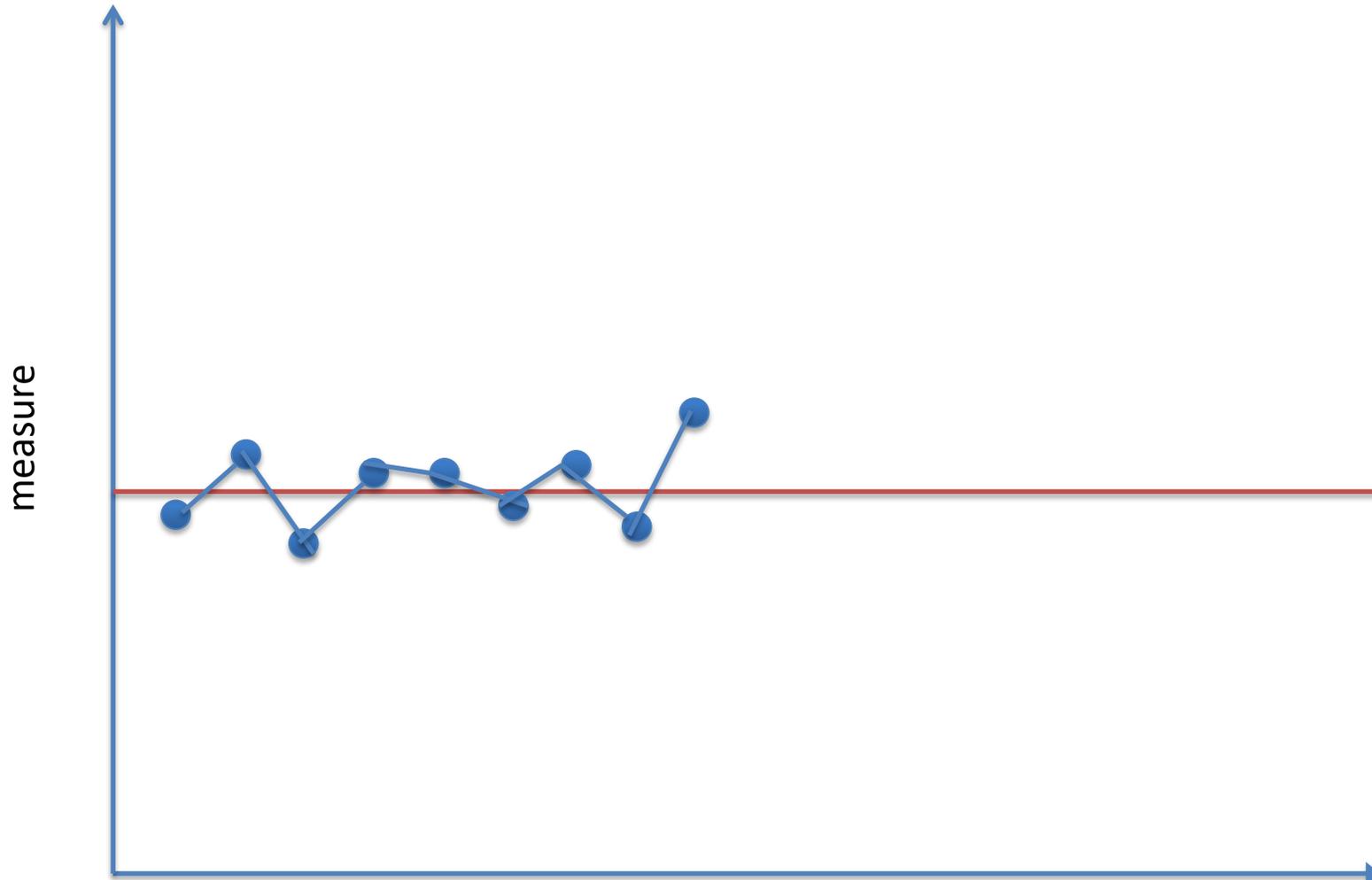


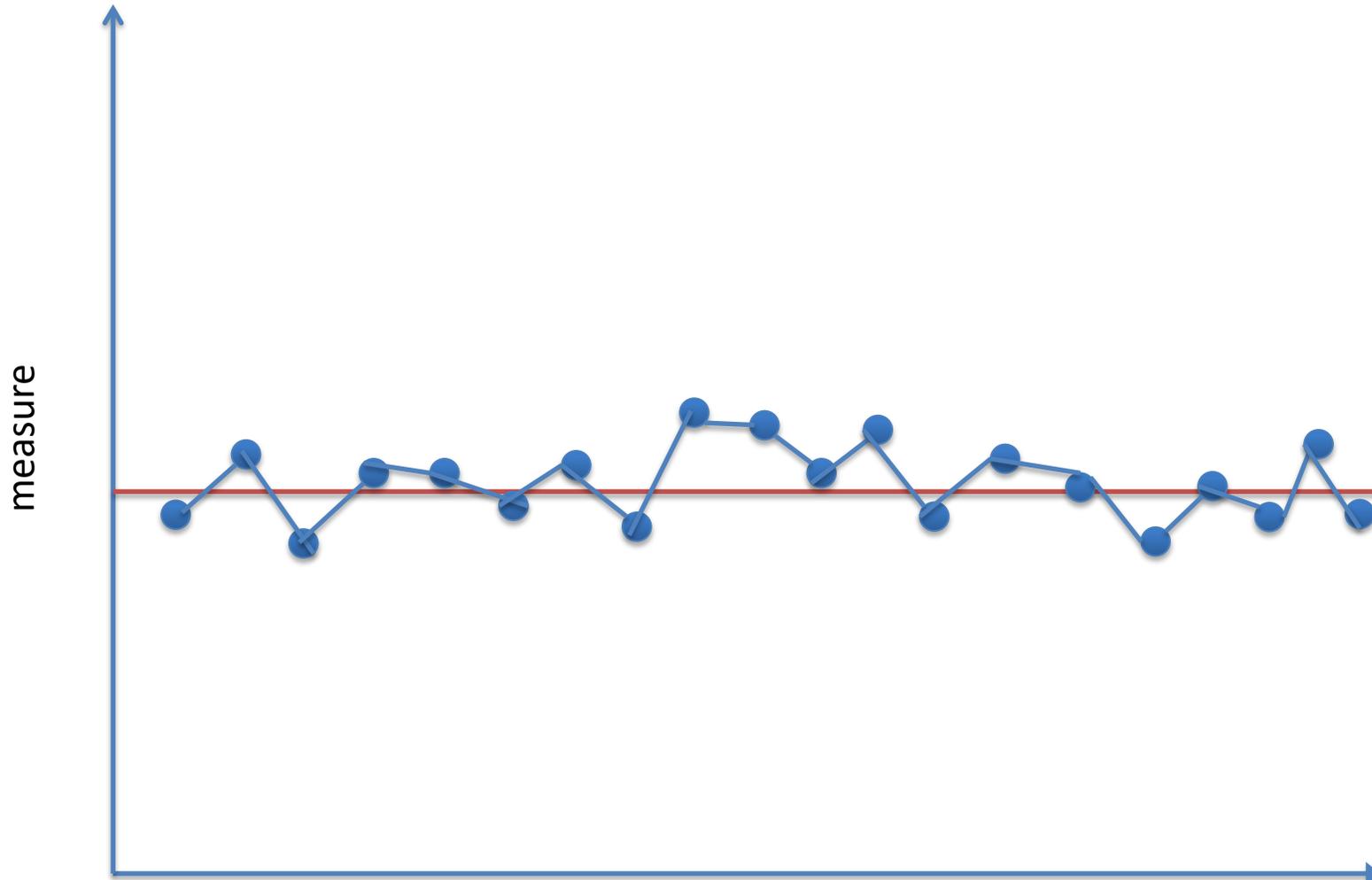
measure











# The 4 rules

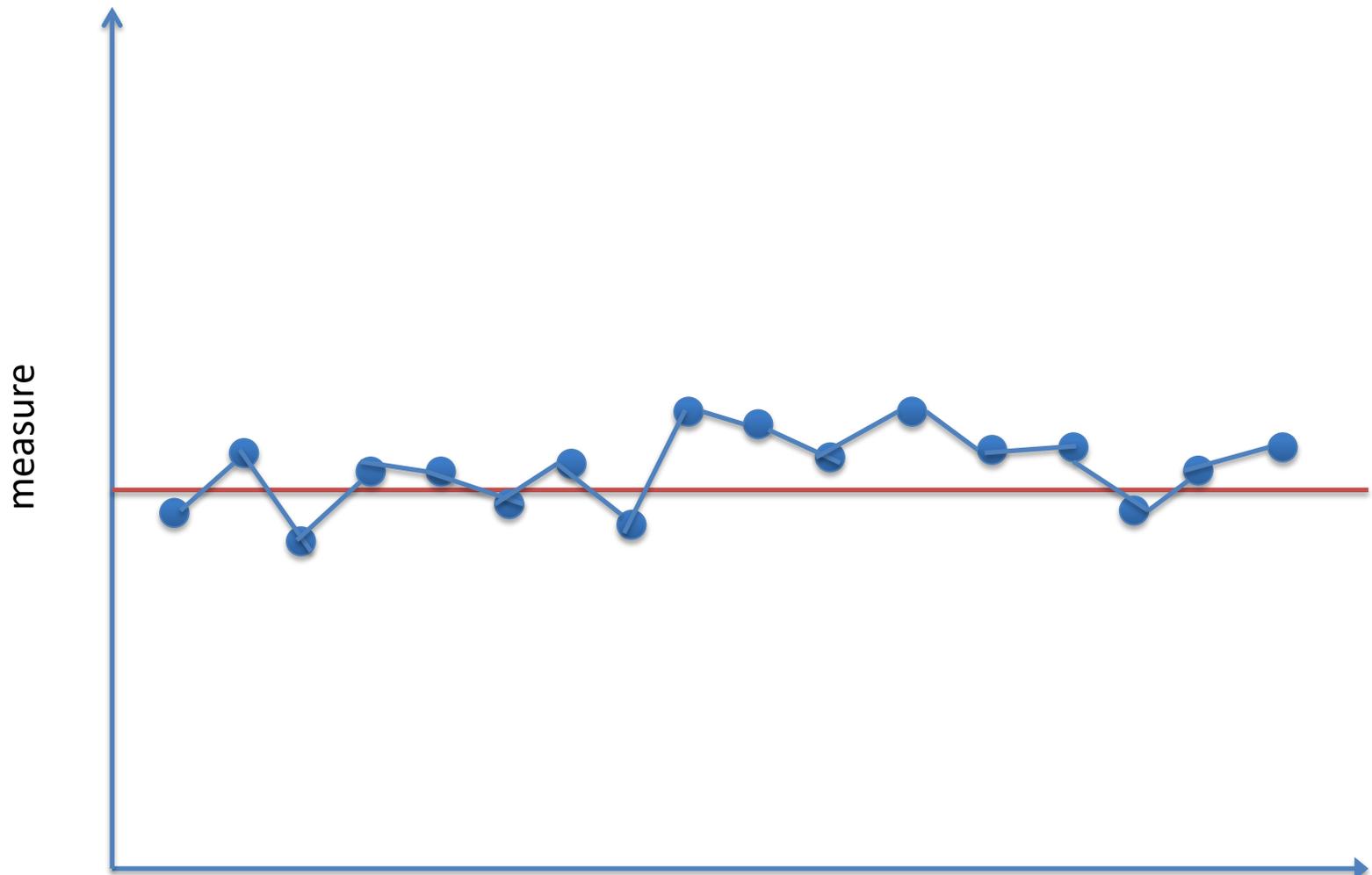
- S
- T
- A
- R

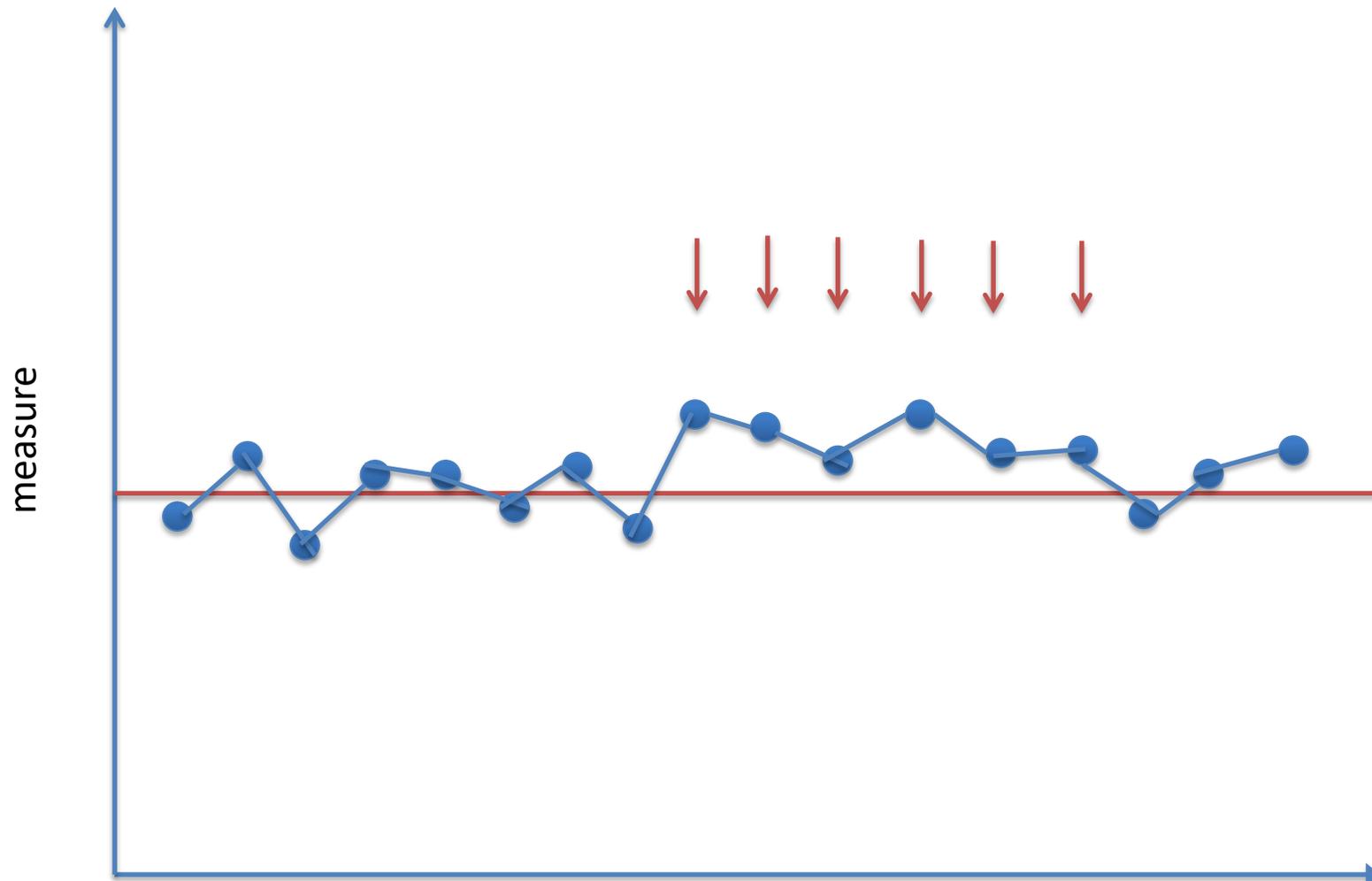
# The 4 rules

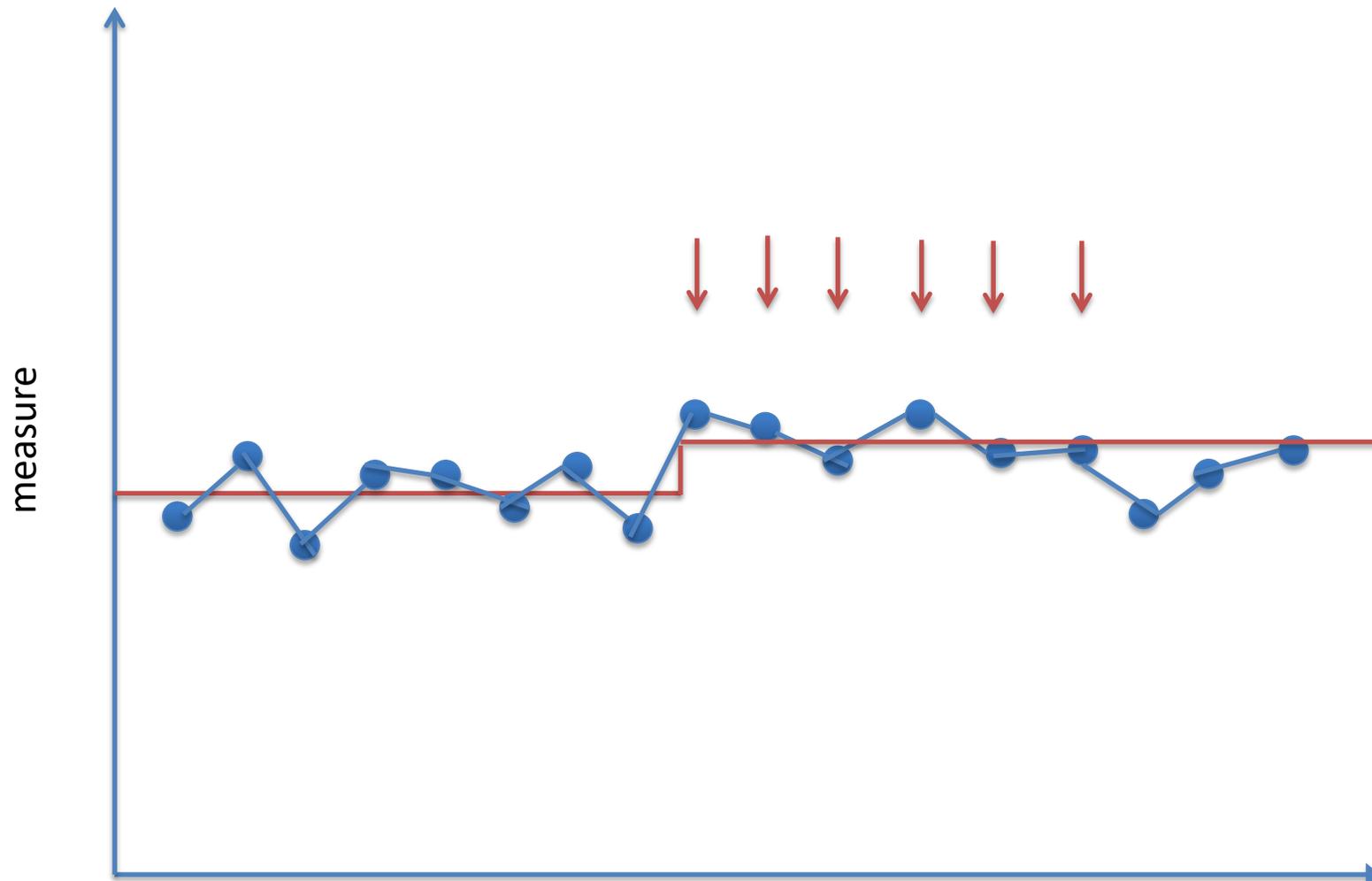
- Shift
- Trend
- Astronomical
- Runs (too few or too many)

# The 4 rules

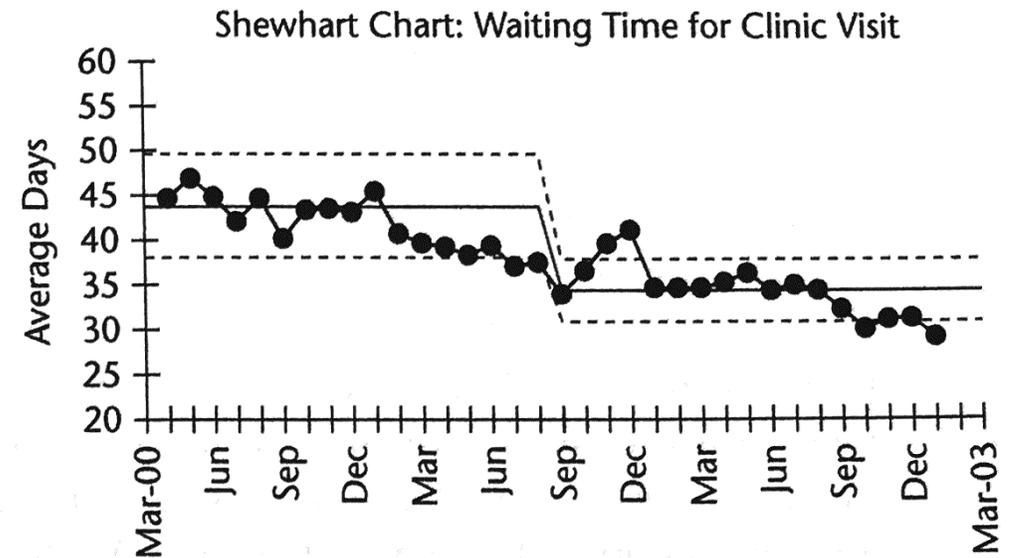
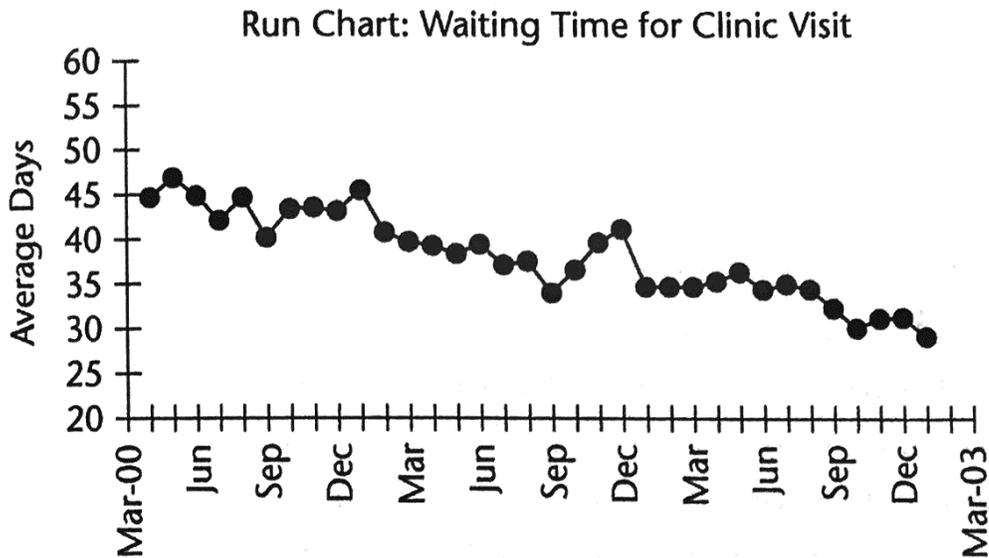
- Shift
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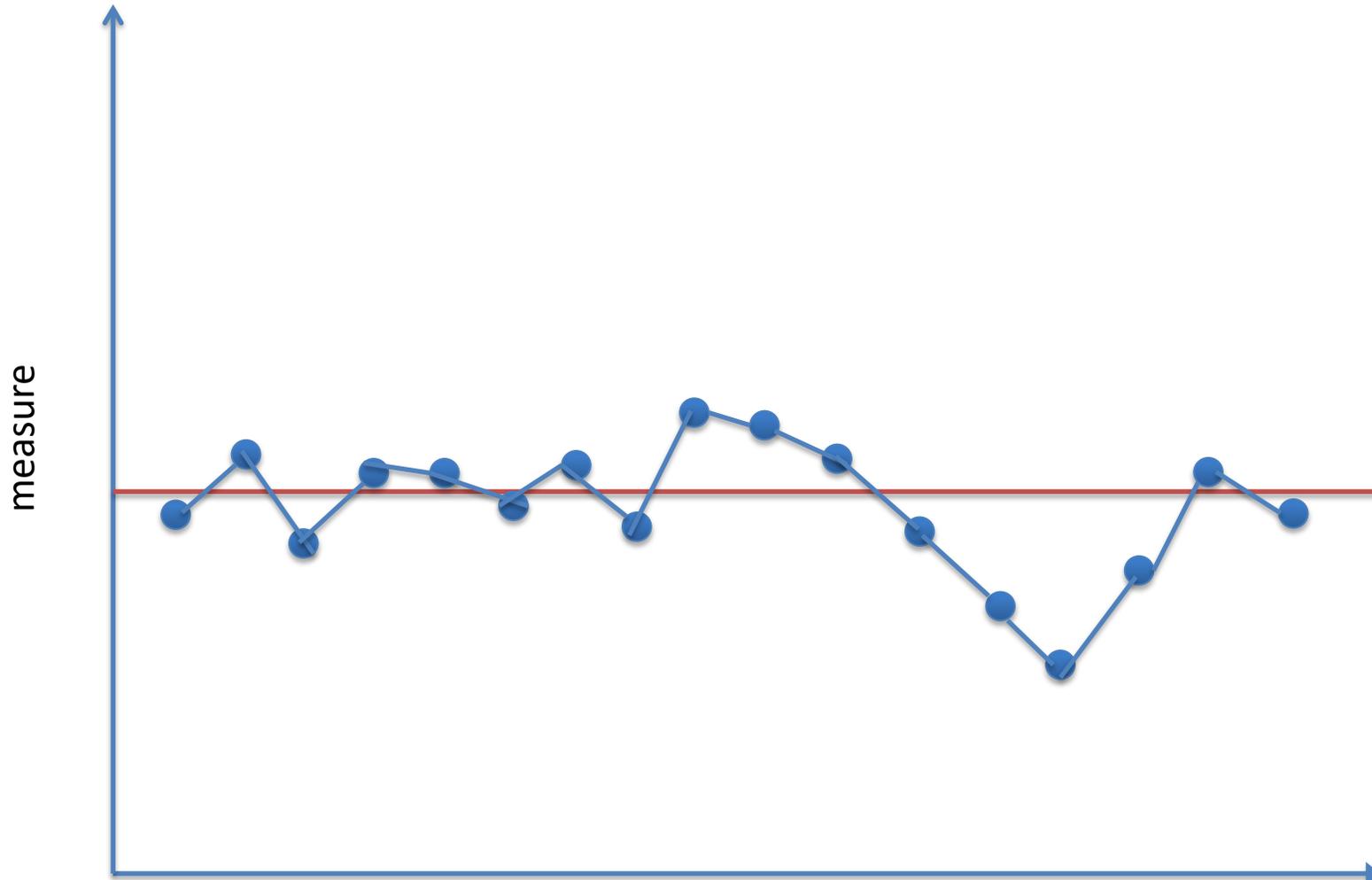


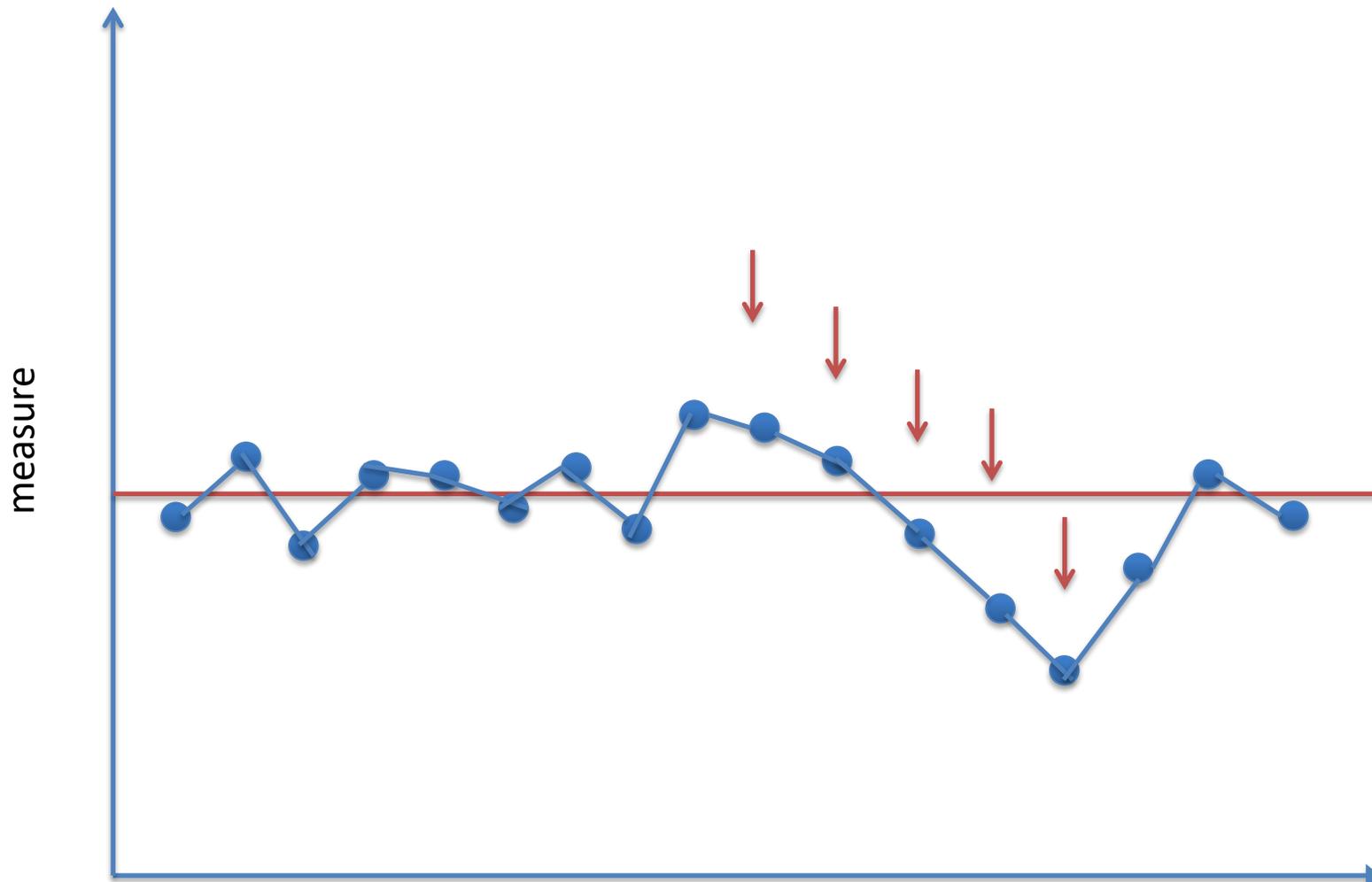
# Recalculating Limits



# The 4 rules

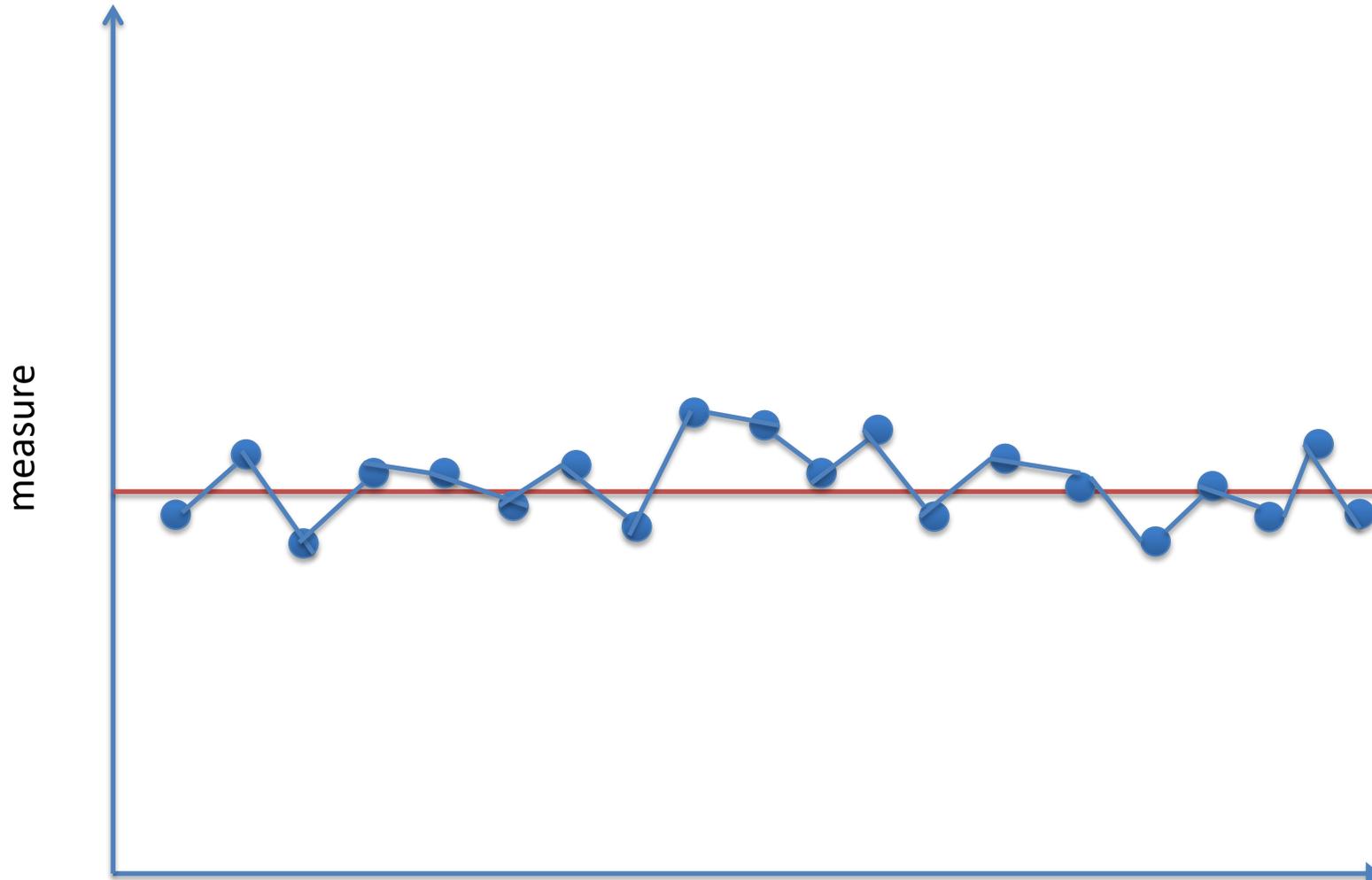
- Shift
- Trend
- Astronomical
- Runs (too few or too many)

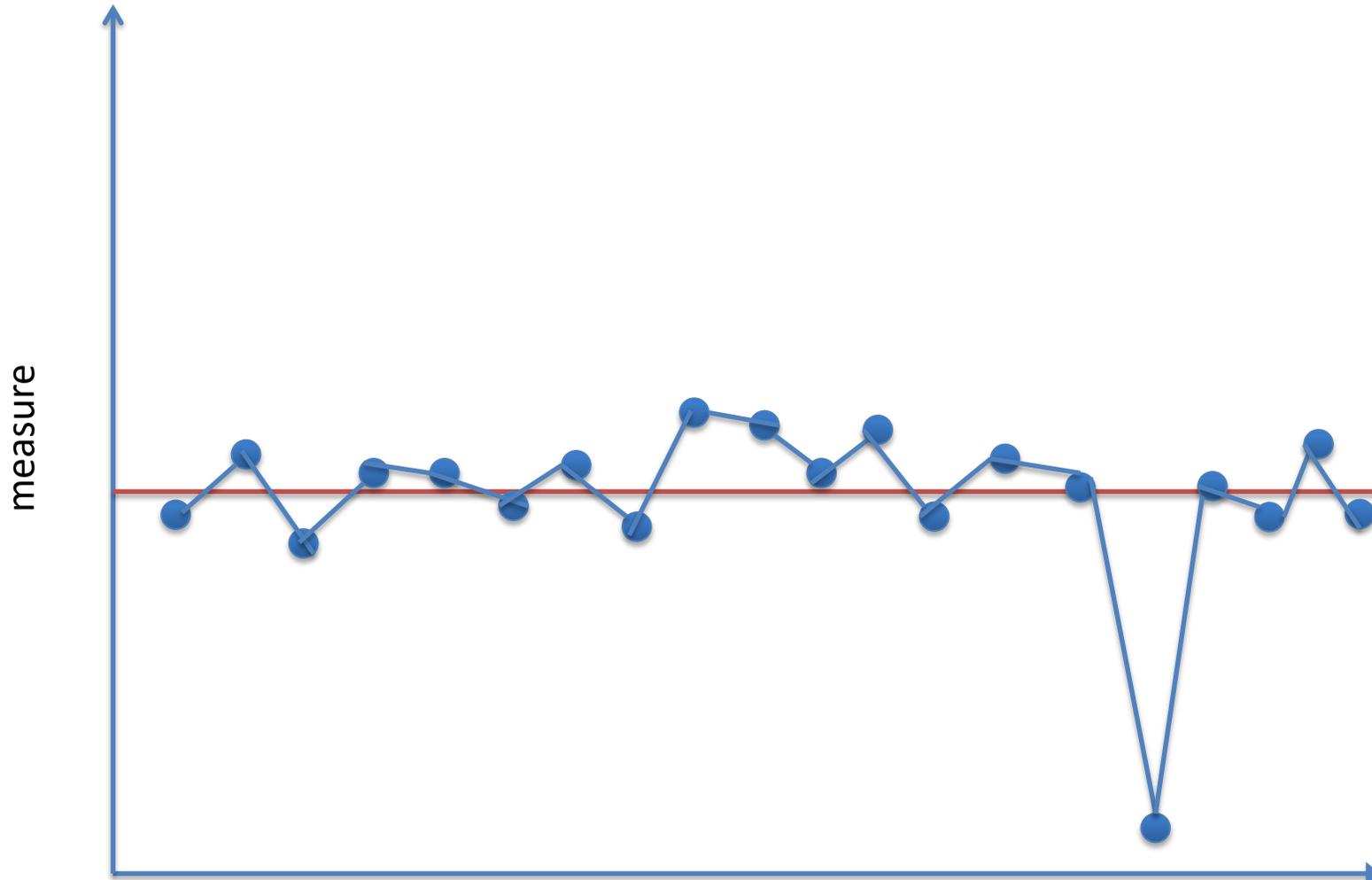




# 4 rules

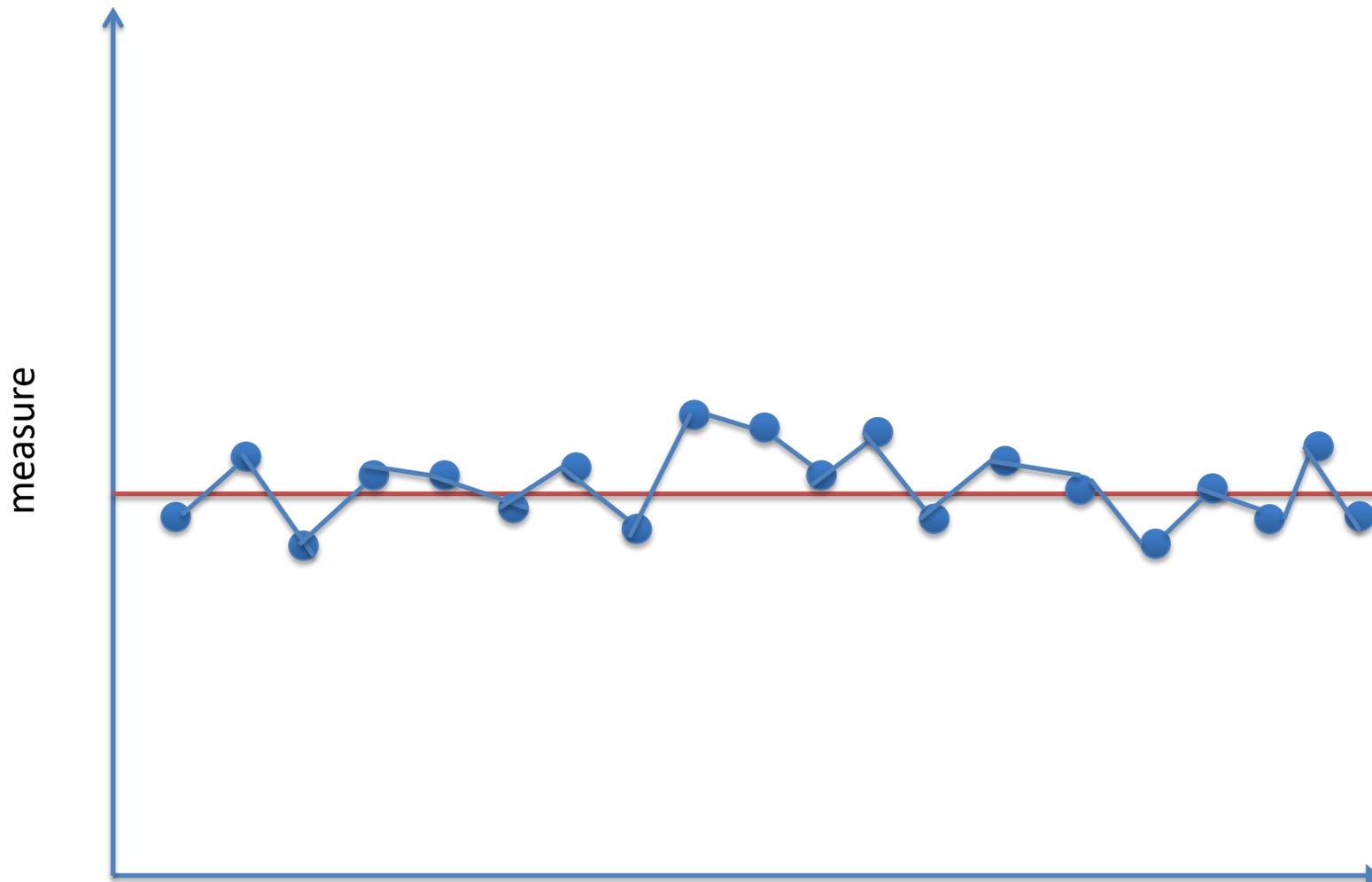
- Shift
- Trend
- **Astronomical**
- Runs (too few or too many)

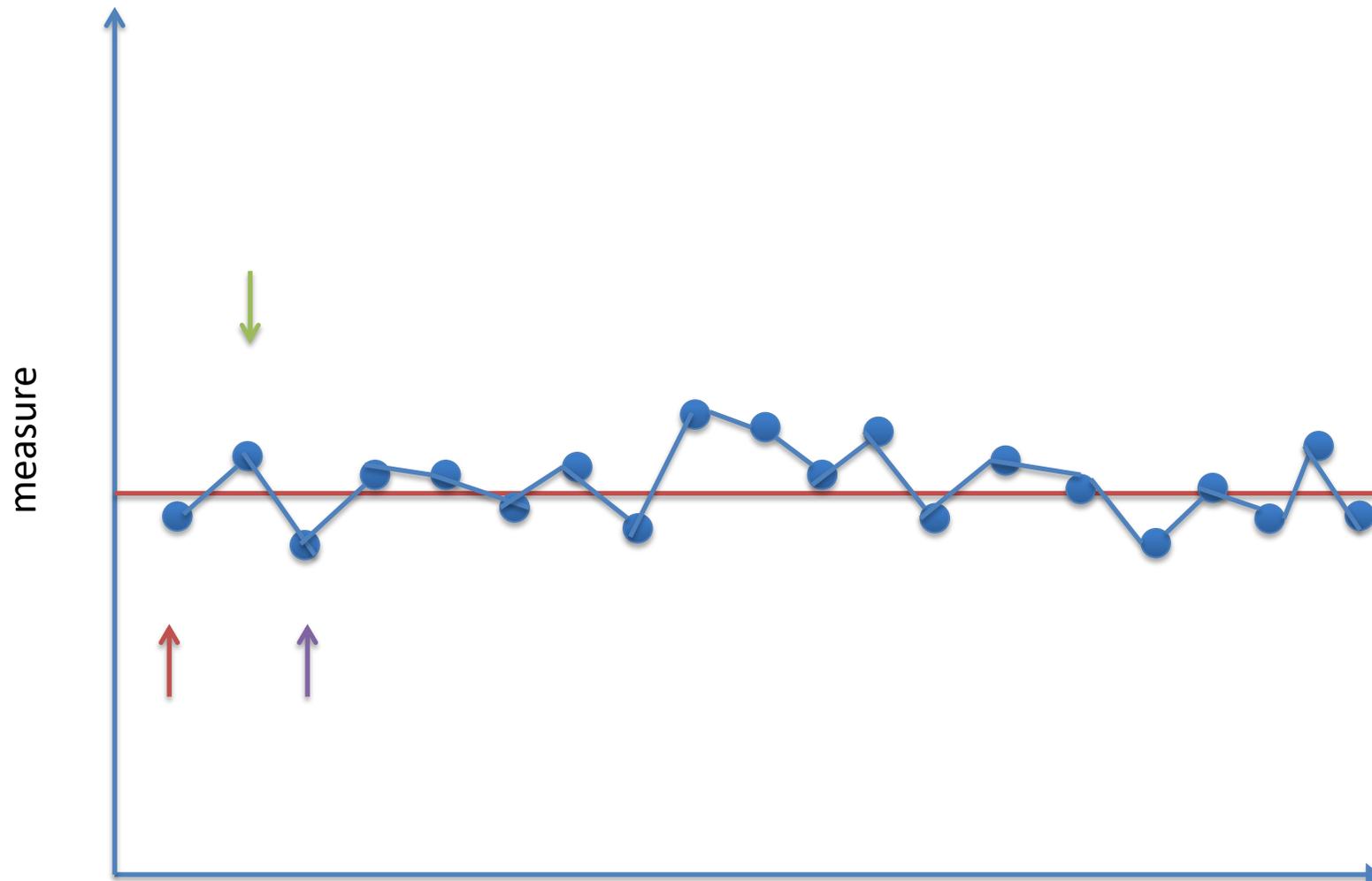


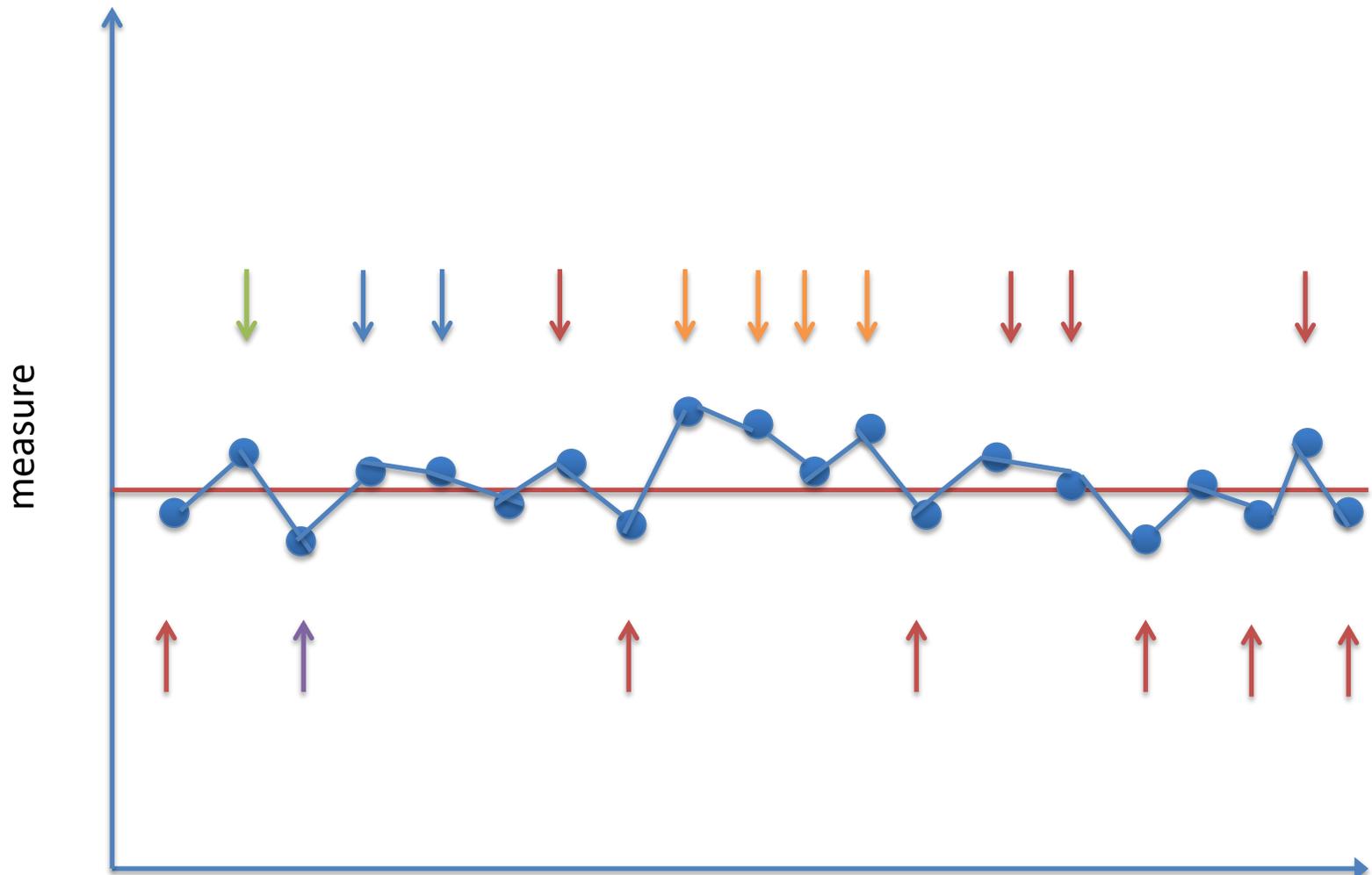


# 4 rules

- Shift
- Trend
- Astronomical
- **Runs** (too few or too many)



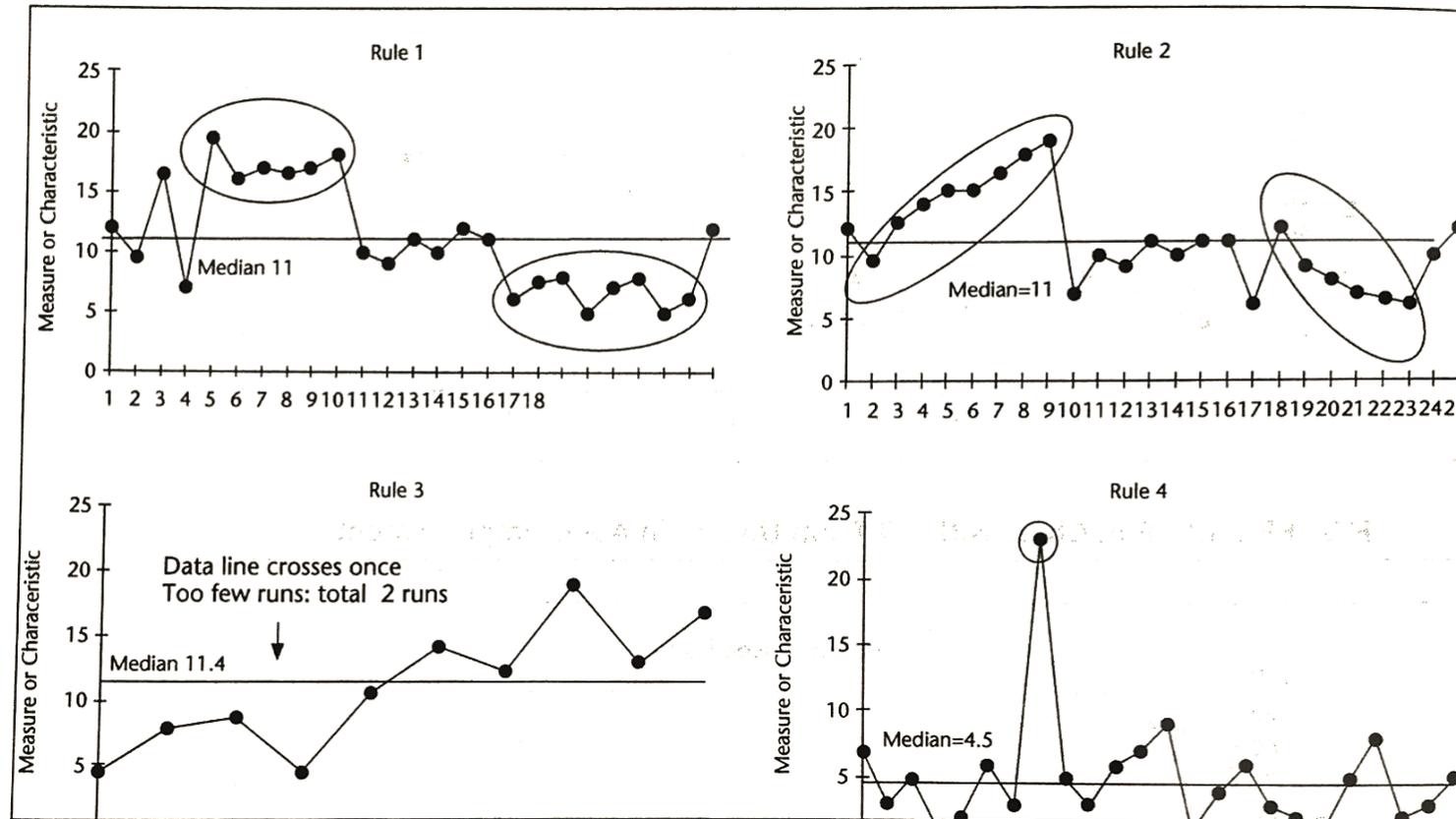






# The 4 Rules

FIGURE 3.13 Four Rules for Identifying Nonrandom Signals of Change



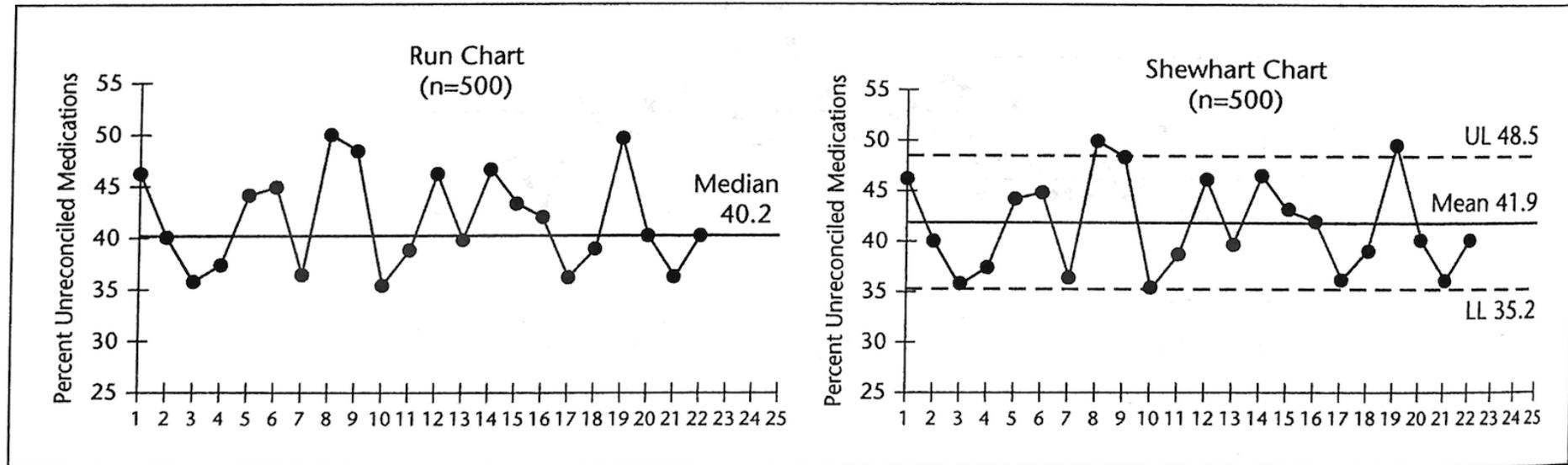
# Choosing Measures

Gather the team:

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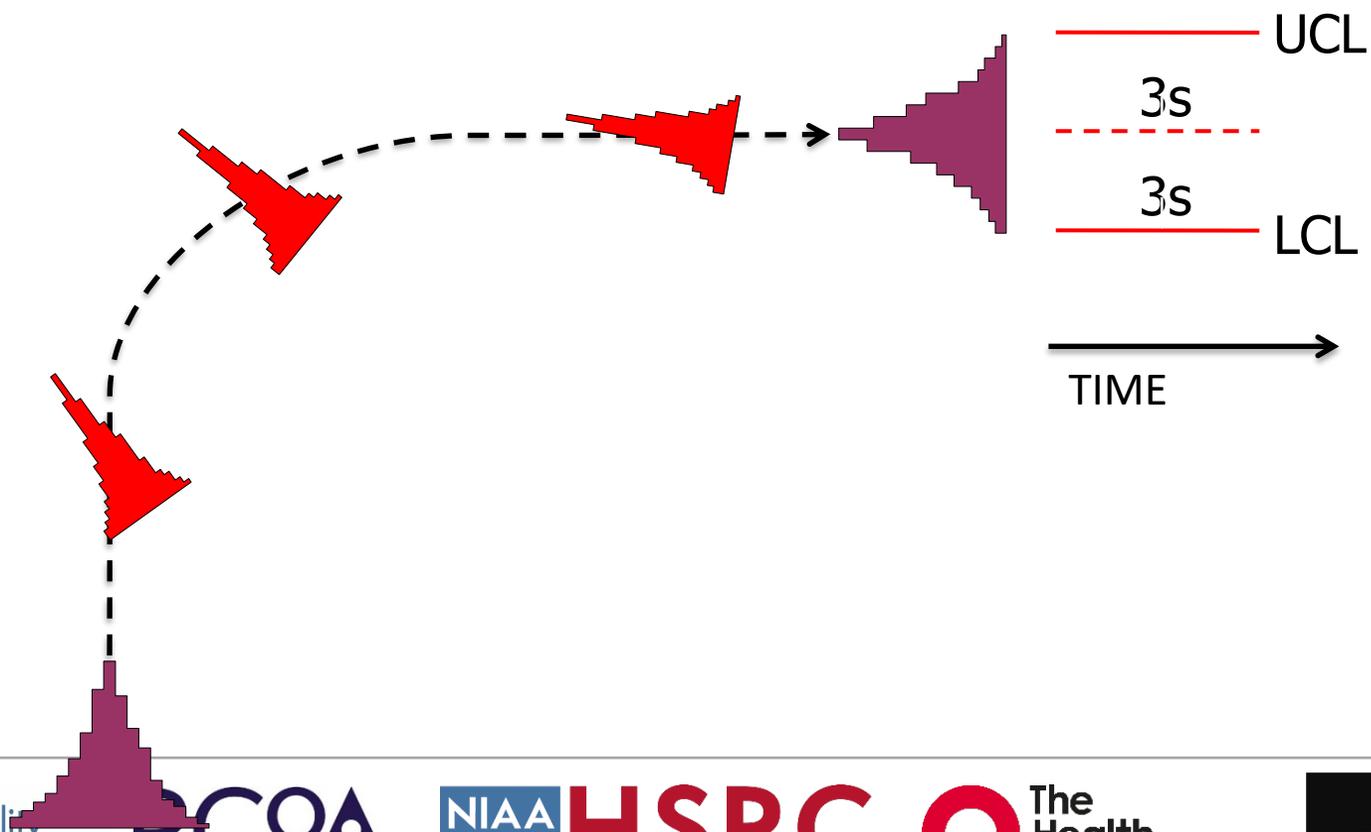
# Run Chart vs Shewhart Chart

FIGURE 4.7 Depicting Variation Using a Run Chart Versus a Shewhart Chart



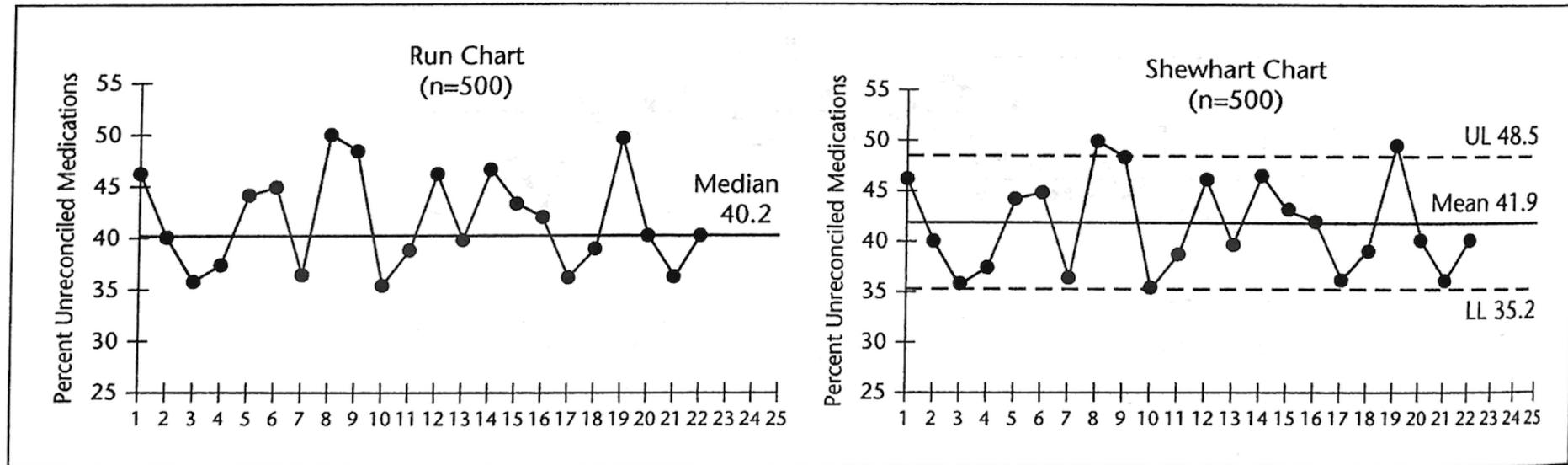
# Measurement for Improvement

- SPC chart – Statistical Process Control or Shewhart chart



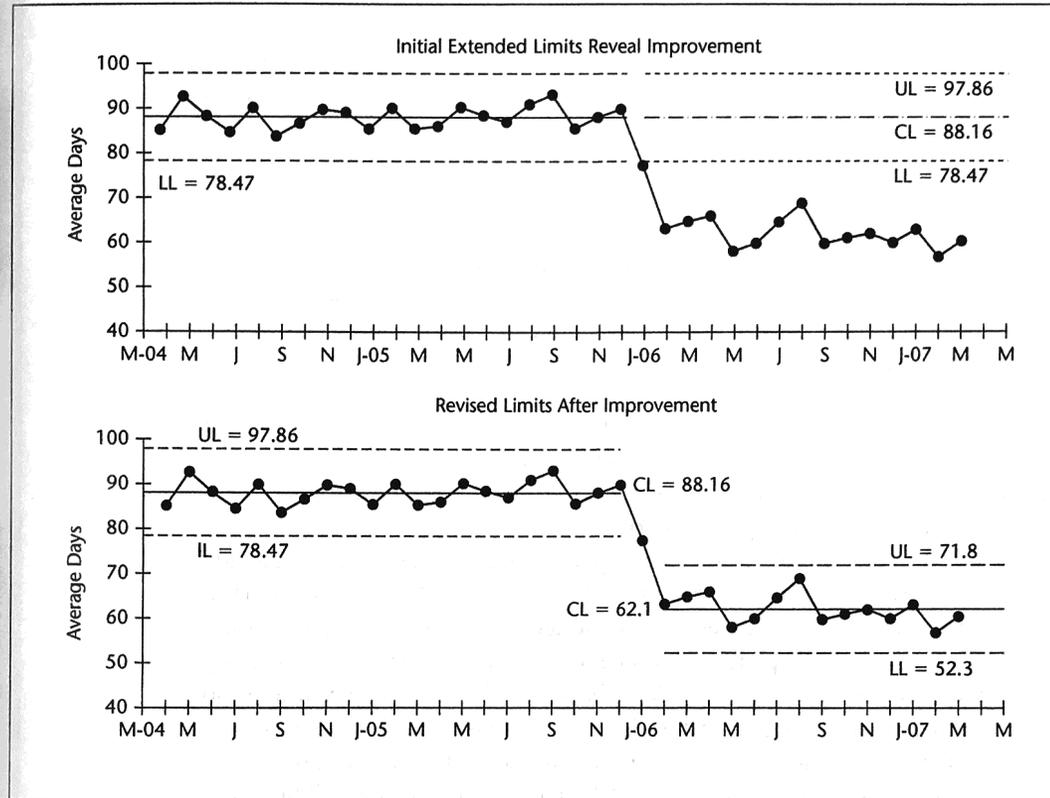
# Run Chart vs Shewhart Chart

FIGURE 4.7 Depicting Variation Using a Run Chart Versus a Shewhart Chart



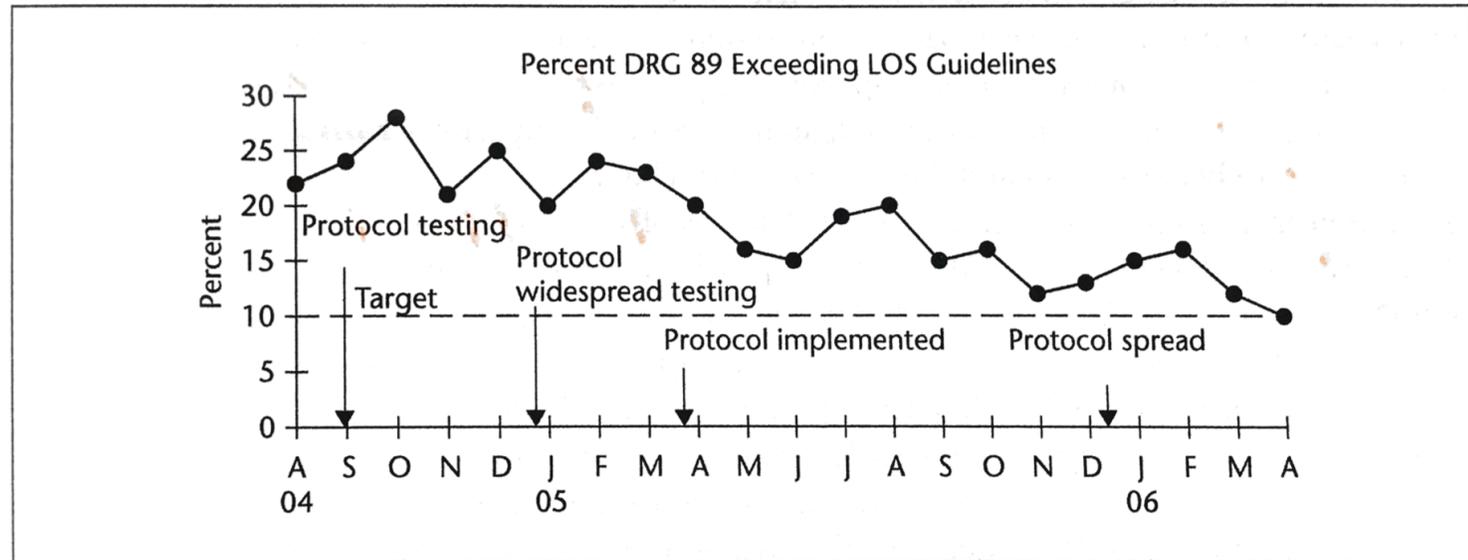
# Recalculating Limits

FIGURE 4.16 Recalculating Limits After Special Cause Improvement



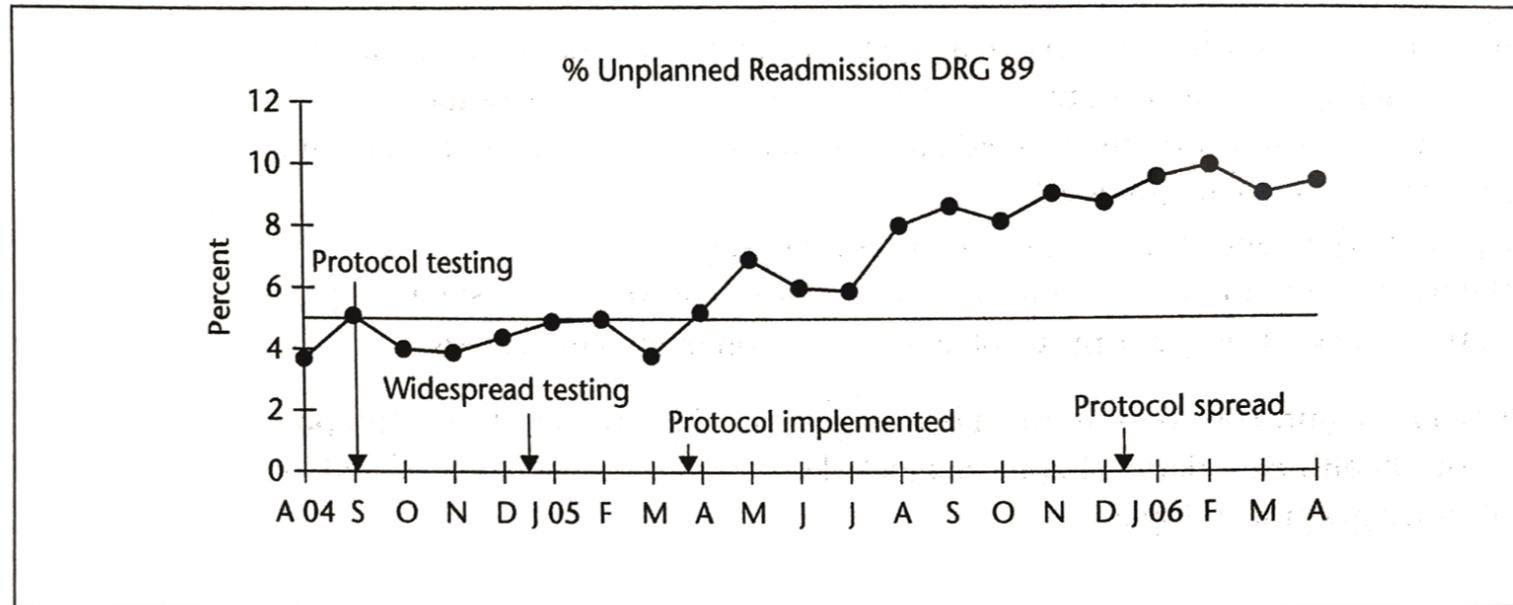
# Balancing Measures

FIGURE 2.24 Percentage DRG Exceeding LOS Guidelines Indicating Improvement



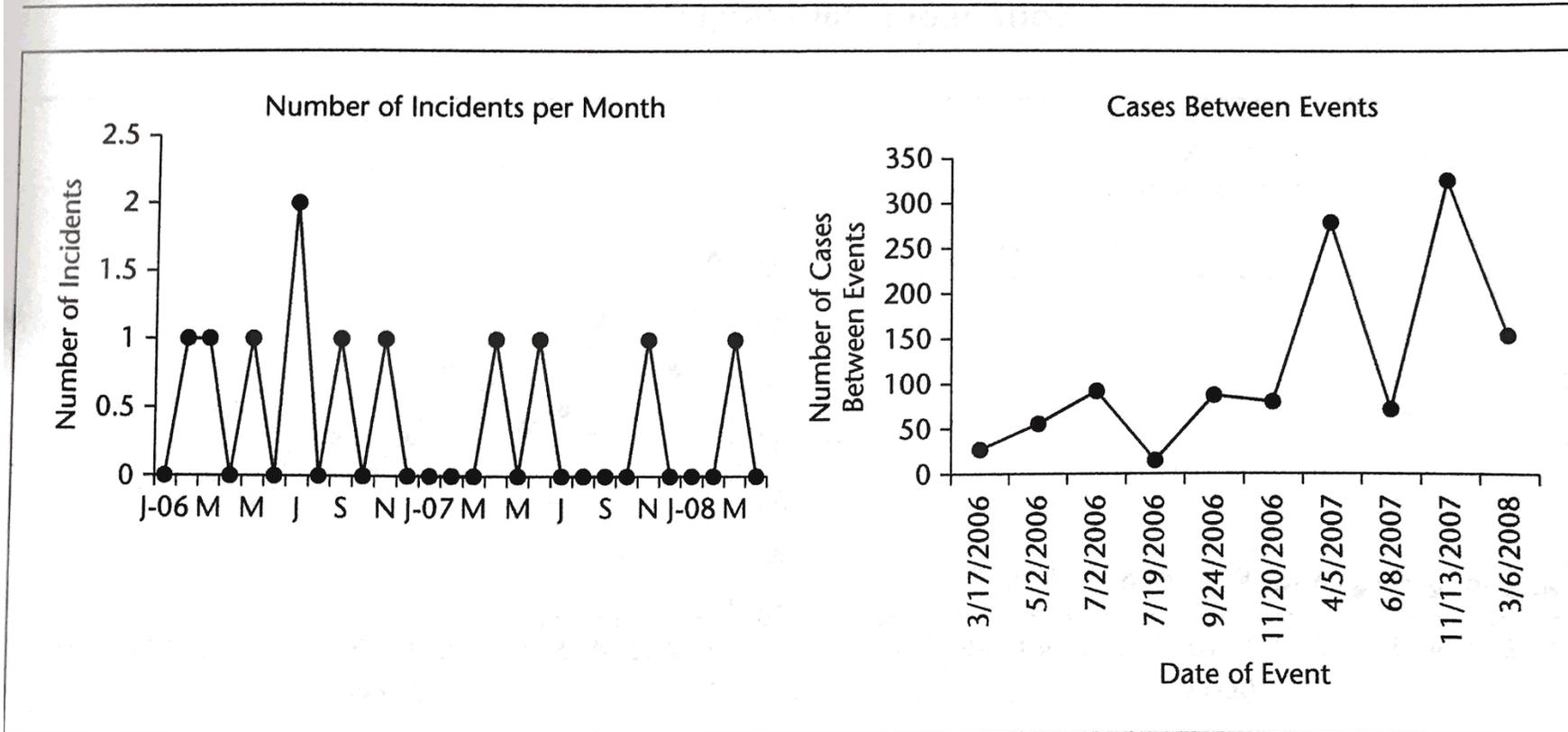
# Balancing Measures

FIGURE 2.25 Percentage Unplanned Readmissions Worsening



# Rare Events

FIGURE 2.22 Monthly Incident Data and Transformed Data



# Measurement for Improvement

- Thank you