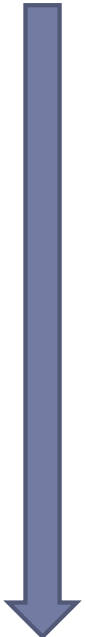



# Ritz-Carlton Case

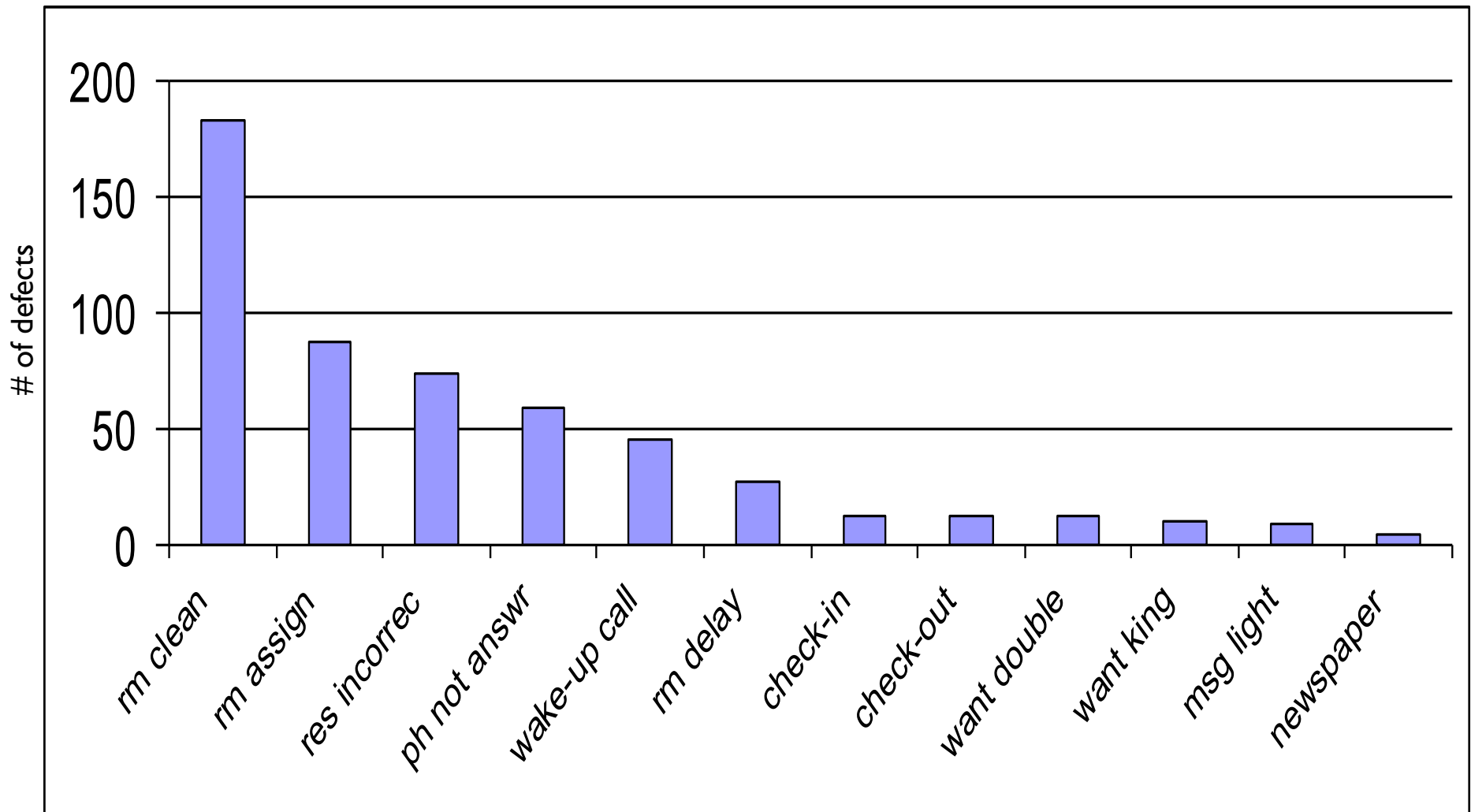
Applying SPC in Services

# A Reasonable Approach

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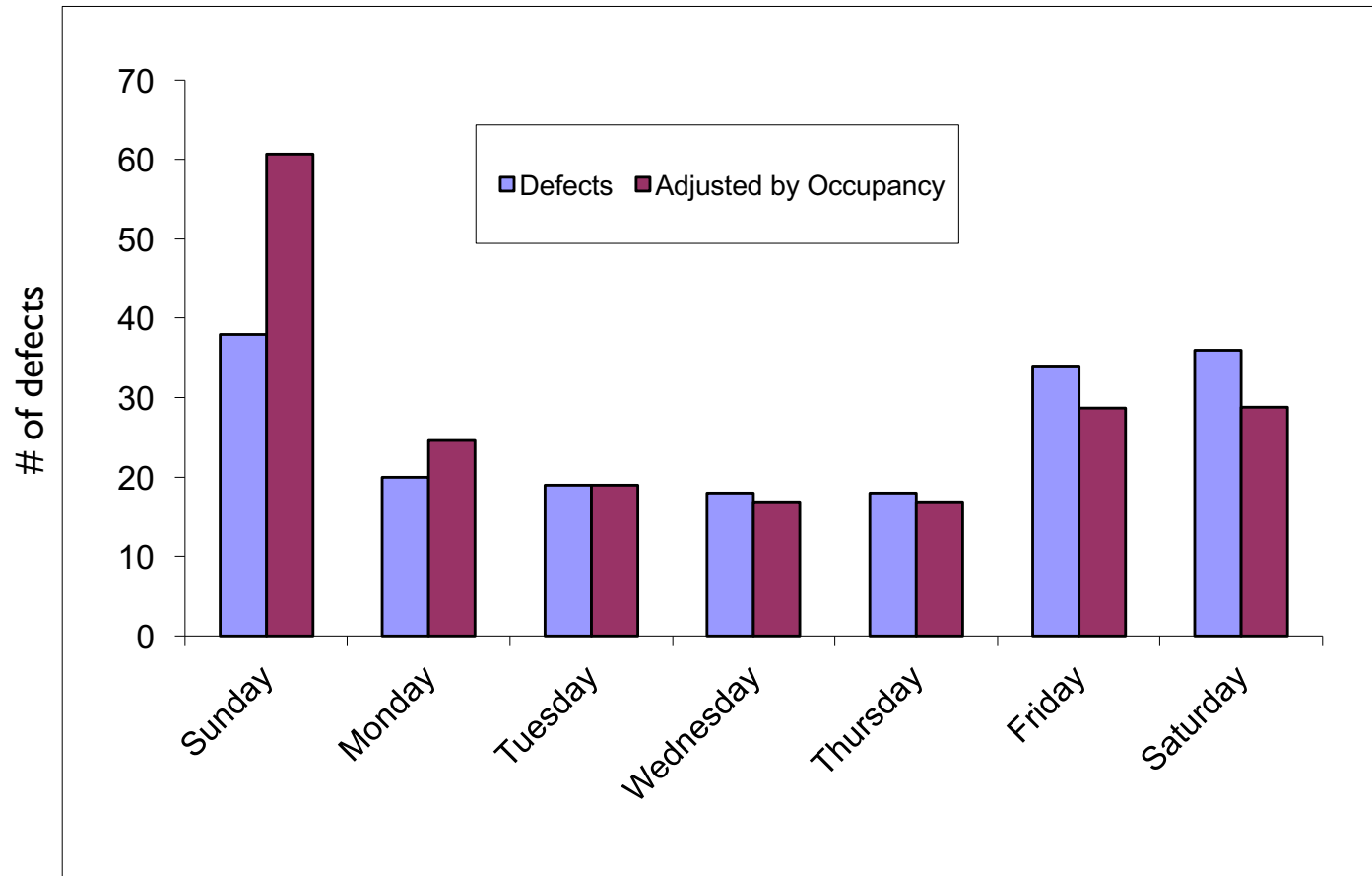
- 
1. Identify problem areas.
  2. See if in control or not: construct p-chart for selected areas.
  3. If out of control, identify possible causes.  
If in control, redesign system to reduce common causes variability and improve process capability.
- 

# Pareto Chart of Defects



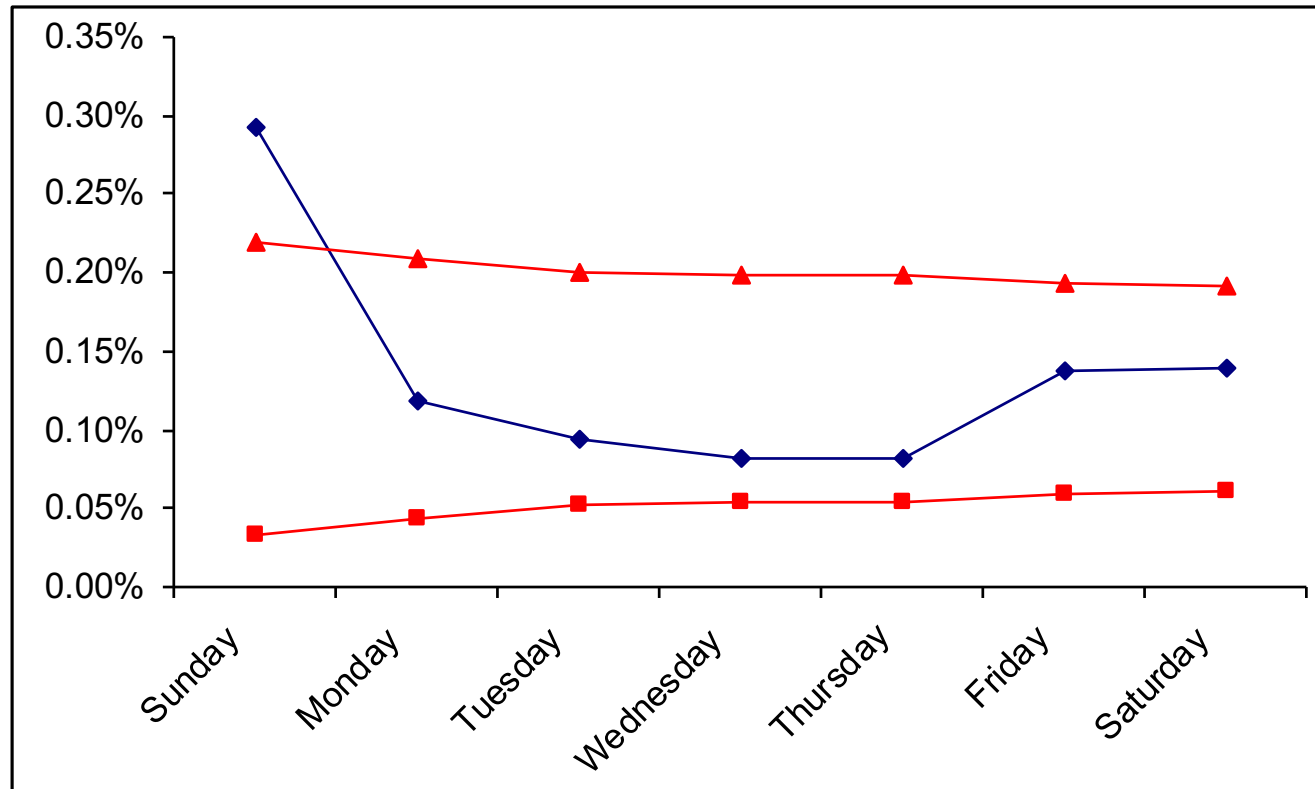
540 total defects

# Room Cleaning: Group Data by Days of the Week



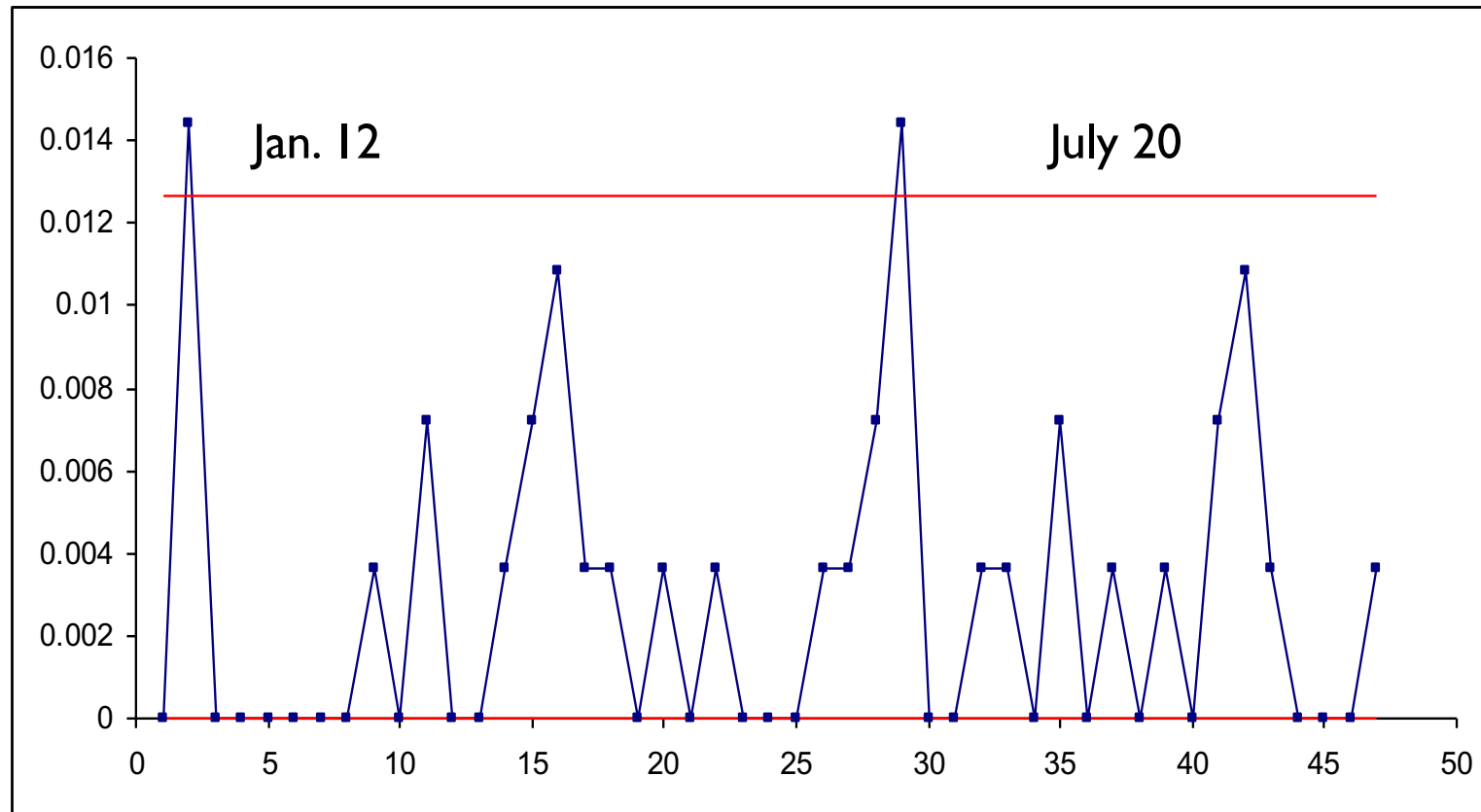
Note: Adjusted by occupancy based on estimated occupancy by day of the week.

# Room Cleaning P-Chart, grouped by day of the week



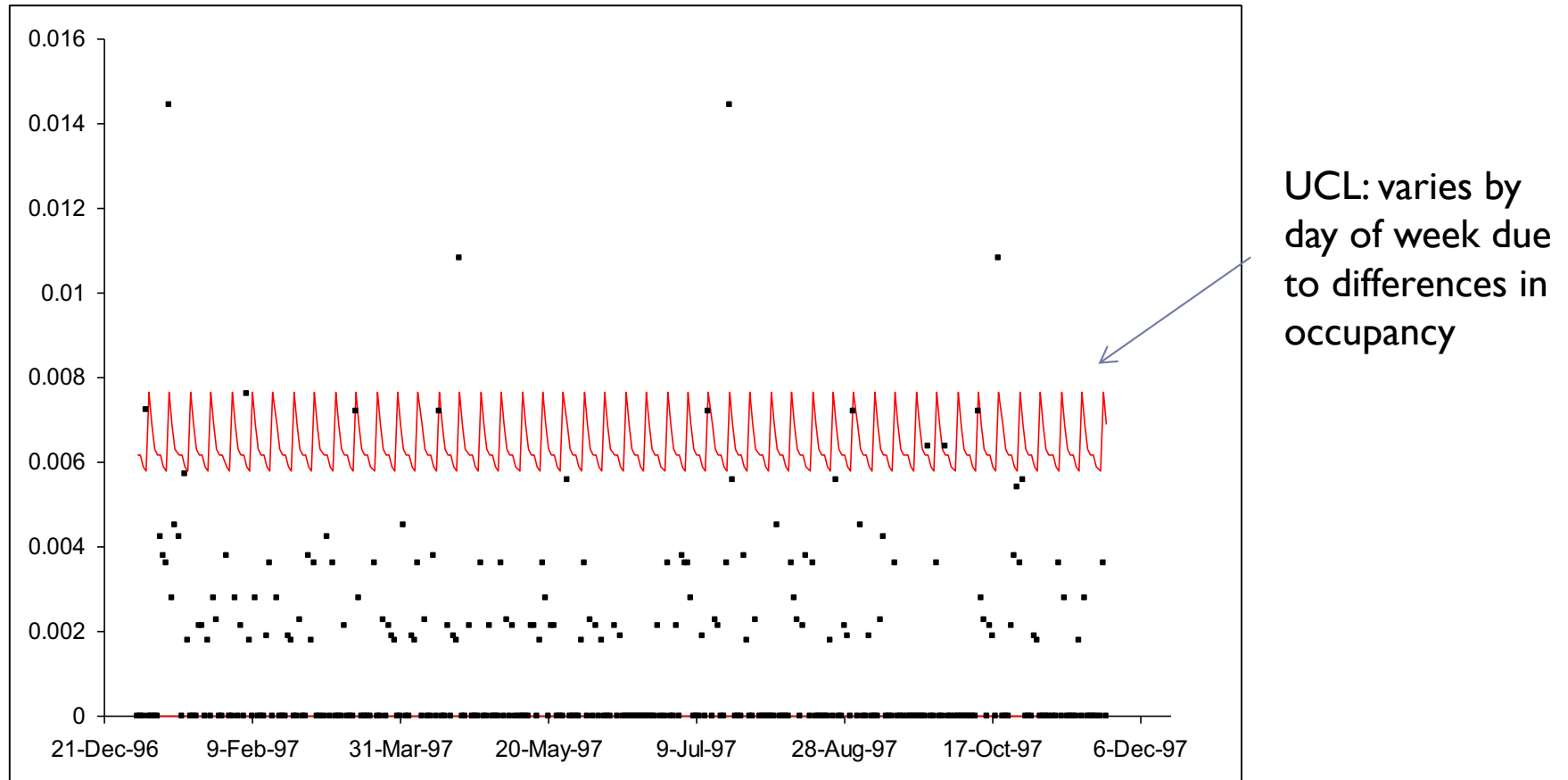
- 7 samples, one for each day of week: each sample includes all defects occurring that day of the week during Jan-Nov.
- Size of each sample is the total occupancy on that day of the week (different for each sample due to differences in occupancies).
- Sunday is statistically different.

# Only Sundays, Room Cleaning



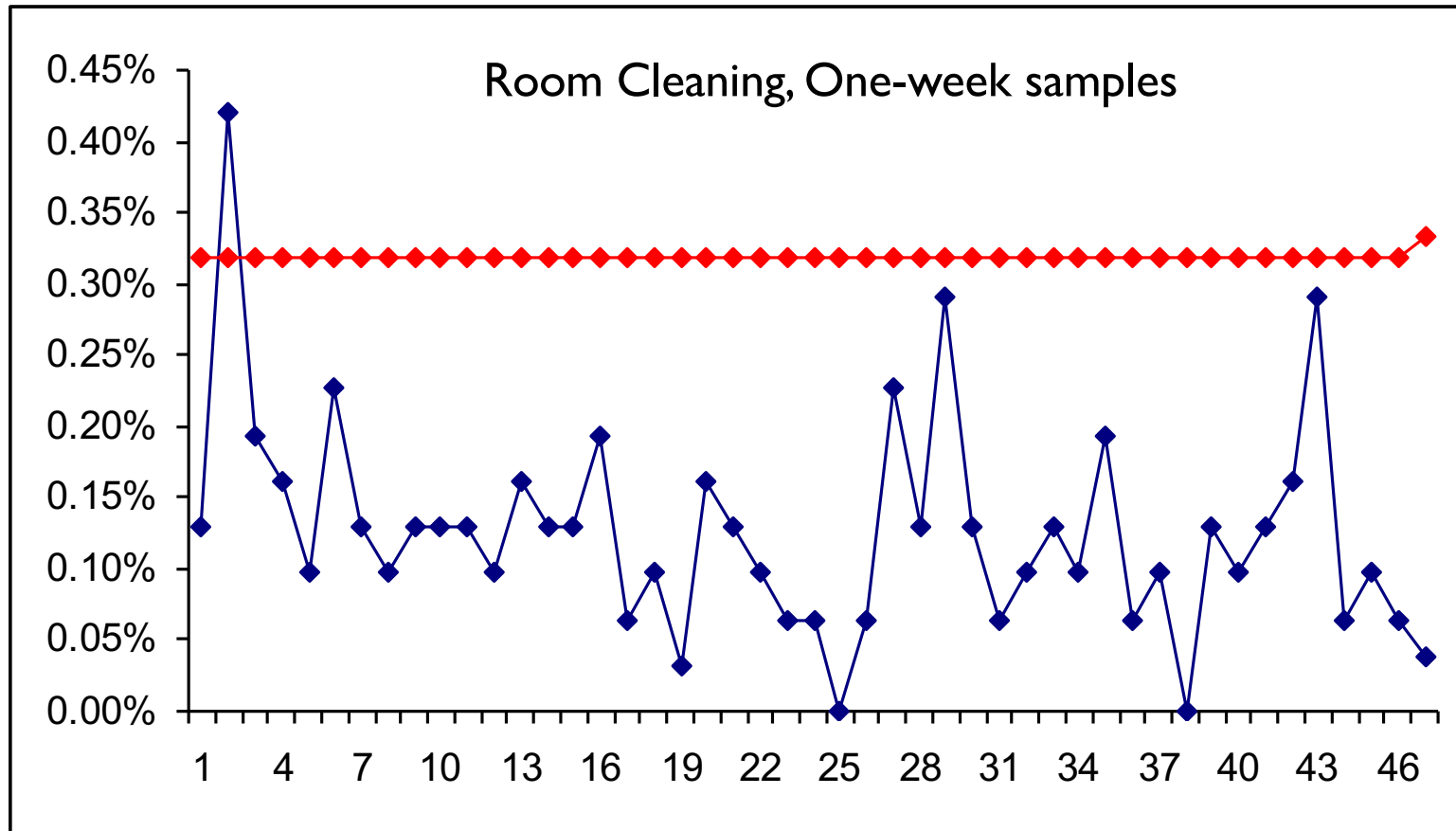
- Considers Sunday room cleaning as a different process.
- Not only is Sunday different from other days (previous graph)-- it is also out-of-control when considered as a separate process.

# If Room Cleaning were the same process every day...



8 out of control days, not surprisingly 4 of which are Sundays

# Importance of choosing sample groups



- Within-sample variation includes both common and special causes.
- Fail to detect problems due to poor grouping of sample.



# Ritz-Carlton Takeaways

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- ▶ Monitor *the process* to detect potential problems.
  - ▶ Data collection.
  - ▶ Use tools of process control to diagnose problems.
- ▶ Use problems as an opportunity for improvement.
- ▶ Keep in mind customer specifications.
- ▶ Tools of quality management can be used effectively in service companies.