

A spiral-bound notebook with a light beige, textured cover. The metal spiral binding is visible on the left side. The text is centered on the cover.

Continuous Improvement

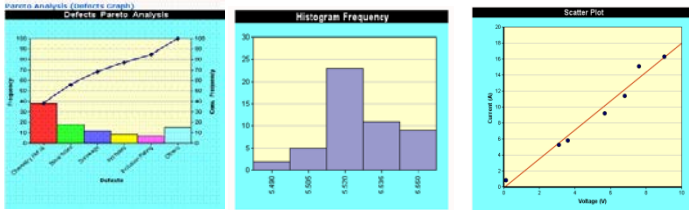
Problem Solving & Improvement



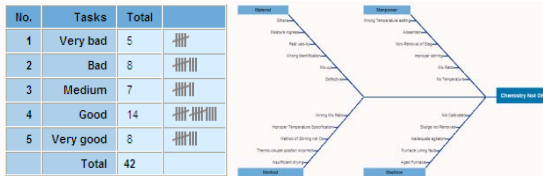
Problem Solving Tools

7QC Tools

Pareto Analysis Histogram Scatter Plot



Tally Sheet Cause-Effect Diagram



RCA (Root Cause Analysis) Incident Details

Complaint No	2	Relationship	Visitor
Person Effected	Rozita Ahmad	Person Complaining	Ahmad Ibrahim
Name	Rozita Ahmad	Name	Ahmad Ibrahim
Gender	Female	Gender	Male
NRIC No	42424353	NRIC No	750579709
Date Of Birth	02-May-2007	Date Of Birth	01-Jun-2007
Race	Chinese	Race	Malay
Incident Type	Internal Complaint		
Describe the Incident	The patient fainted and fell to the floor after being given an IV drug.		
Immediate Corrective Action	The drug was changed immediately. The patient was assured of the correct medicine and put in intensive care.		
What the complainant wants to see happen	The nurse on duty used the drug for the patient in the next bed because both patients have similar problems but the drugs prescribed are of different concentrations.		
Department	Gen Surgery NW 11	Complaint Type	Communication Misinformation or failure in communication (but not a failure to consult) Give inaccurate/wrong information
Event Type	-gentis Medication Preparation/Dispensing	Contributing Factor	Task and technology factors Decision making skills Availability, use and reliability of specific types of tests, e.g. blood testing
Impact	Moderate	Risk	Possible
Investigation Level	2 Minimal	Status	Not Resolved
Final Remarks	Successfully resolved the matter		

Complaint Analysis

Date of Incident	02-May-2007	03-May-2007	04-May-2007	05-May-2007	06-May-2007	07-May-2007	08-May-2007	09-May-2007	10-May-2007	11-May-2007	12-May-2007	13-May-2007
Date of Complaint												
Date of Informing Department												
Date of acknowledgement to Complainant												
Date of Letter to HOD for Actioning												
Date of Response from HOD after Actioning												

5 Why's

1	Nurses lack knowledge on childs behavior		
1	Why?	Why did the nurse lacks the knowledge on childs behavior?	Nurse have no proper training on childs care
2	Why?	Why the nurse mistakenly given the medication on the wrong patient?	Because the nurse not aware patient moved to the other bed without informing the nurse
3	Why?	Why did the nurse not aware patient move to other bed?	Because the nurse dont bother to check if the patient on the bed same patient listed
4	Why?	Why did the nurse failed to check if patient still the same patient listed on tear record	Because the nurse is stress from work and in a hurry to go home after the long hour working shift
5	Why?	Why was the nurse stressed and in a hurry to go home?	Because of shortage of nurses on duty and the nurse have another responsibility in her family after work

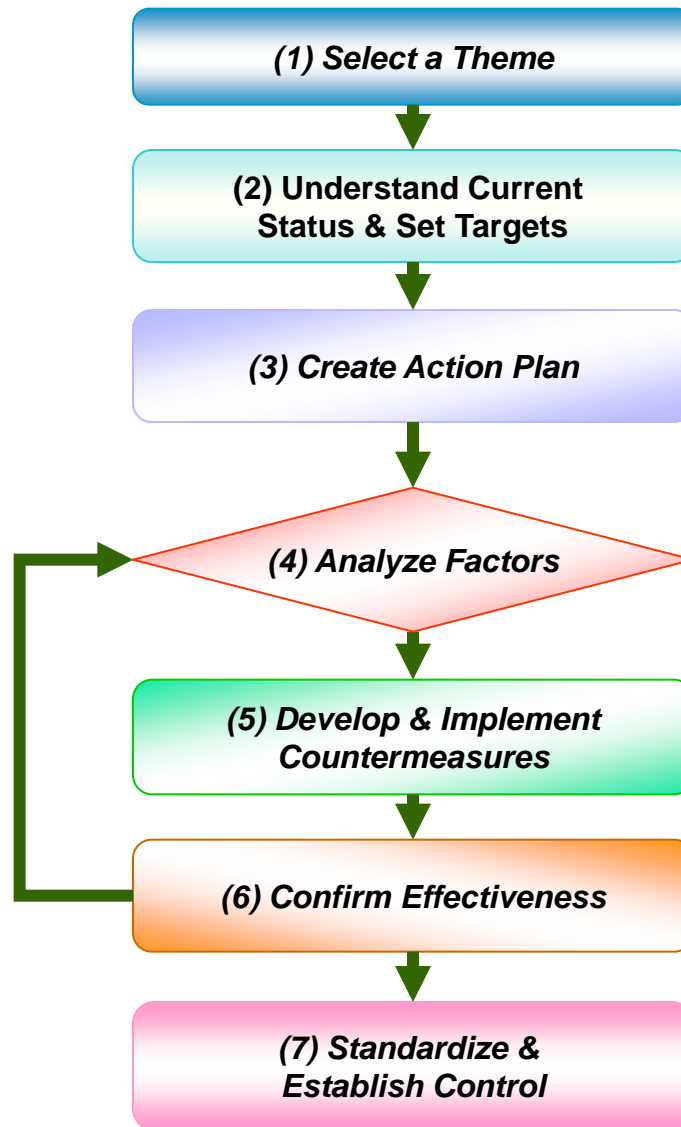
Root Cause

Shortage of nurses on duty and the nurse have another responsibility in her family after work

All tools supported by iCT-M® software



Problem Solving Process





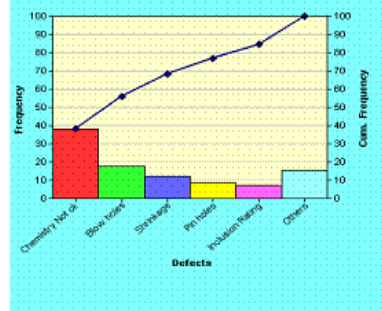
Select a Theme

1. Narrow the focus

Pareto Analysis

No.	Description	Defects	Description	Defects	% Defects	Cum. % Defects	Comments
1	Blow holes	265	Chemistry Not ok	575	30.3	30.3	Valid Few
2	Porosity	56	Blow holes	265	17.6	56.0	Valid Few
3	Chemistry Not ok	476	Skewage	166	12.9	69.9	Valid Few
4	Drainage	105	Pin holes	130	8.7	77.9	Valid Few
5	Inclusion Rating	112	Inclusion Rating	112	7.5	84.4	Valid Few
6	Cold shut	11	Dimensional Defects	86	8.4	90.8	Trivial Many
7	Pin holes	130	Porosity	56	3.7	94.5	Trivial Many
8	Dimensional Defects	30	Cracks	19	1.2	95.7	Trivial Many
9	Edge cutting defective	12	High Hardness	12	1.1	96.8	Trivial Many
10	Handling Damages	6	Edge cutting defective	12	0.6	97.7	Trivial Many
11	Rough Surface	8	Cold shut	11	0.7	98.4	Trivial Many
12	Edges chip off	5	Rough Surface	8	0.6	99.0	Trivial Many
13	High Hardness	17	Handling Damages	6	0.4	99.3	Trivial Many
14	Poor Machinability	5	Edges chip off	5	0.3	99.7	Trivial Many
15	Cracks	18	Poor Machinability	5	0.3	100.0	Trivial Many
Total		1992	Total	1858			

Pareto Analysis (Defects Graph)
Defects Pareto Analysis

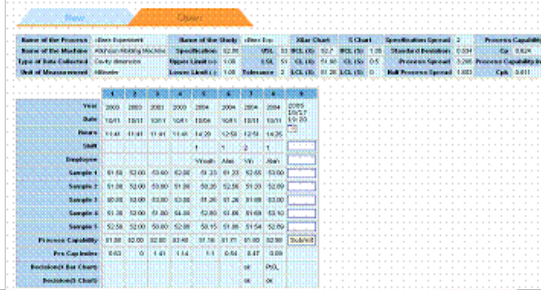


Pareto Analysis
Cause-Effect

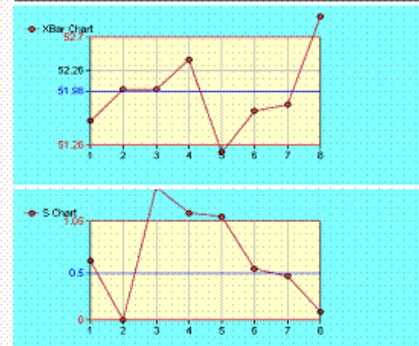
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2. Look at control status

XBar S Chart Process



XBar S Chart

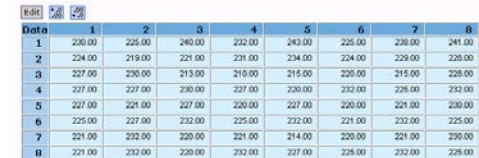


Control Chart

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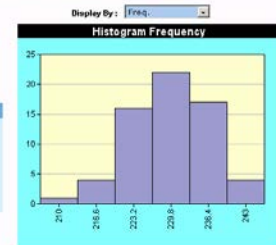
3. Quantify process capability

Histogram



Min. Value: 210.00
 Max. Value: 243.00
 Stdev: 6.591
 No Of Cells: 6
 Cell Interval: 6.000

Specification	Freq.	Cum. Freq.	Rel. Freq.	Cum. Rel. Freq.
210.000	1	1	0.020	0.020
218.000	4	5	0.080	0.100
222.000	16	21	0.250	0.330
228.000	22	43	0.340	0.670
236.400	17	60	0.270	0.940
243.000	4	64	0.060	1.000



Histogram

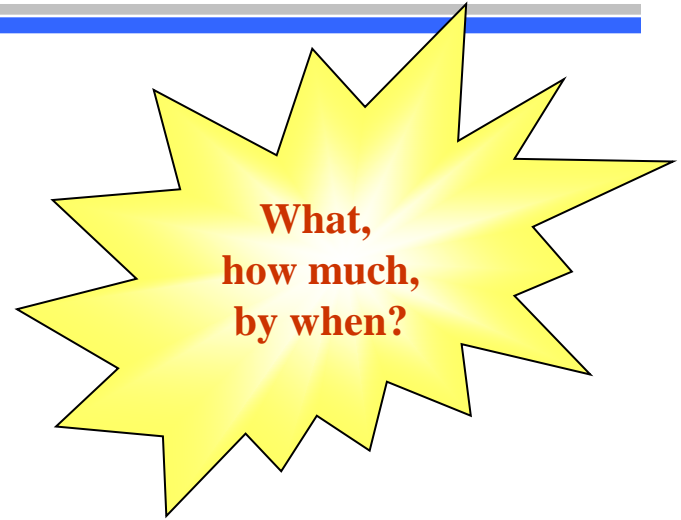
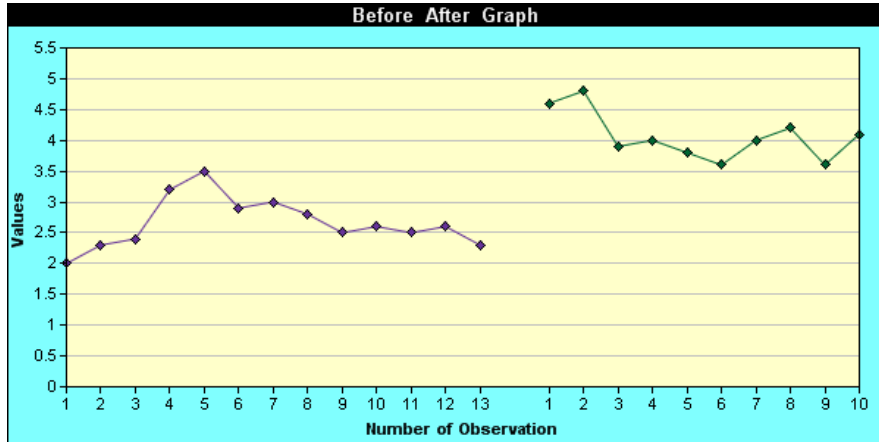
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Understand Current Status & Set Targets

Belmah Strategies

Line Graph (Before-After)



Gantt Chart

From Date :
 To Date :

				Nov - 2007																		
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
				Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo
-	Phase 1	8/1/2006	9/20/2006	51																		
	Awareness meeting	08/01/2006	08/01/2006	1																		
-	Managers briefing	8/2/2006	9/20/2006	50																		
	Senior managers	08/02/2006	08/04/2006	3																		
	Head of Departments	08/03/2006	08/05/2006	3																		
	Senior Supervisors	09/13/2006	09/20/2006	8																		
-	Phase 2	8/7/2006	9/2/2006	27																		
	Seiri activities	08/07/2006	08/15/2006	9																		
	Seiton activities	08/14/2006	08/18/2006	5																		
	Seiso activities	08/20/2006	08/26/2006	7																		
	Seiketsu activities	08/28/2006	09/02/2006	6																		
-	Phase 3	9/4/2006	9/9/2006	6																		
	Audit	09/04/2006	09/06/2006	3																		
	Shitsuke activities	09/06/2006	09/09/2006	4																		
-	Phase 4	9/11/2006	9/16/2006	6																		
	Selection of best 5S area	09/11/2006	09/13/2006	3																		
	Reward	09/13/2006	09/16/2006	4																		



Create Action Plan

Report And Action Plan

From Date

 To Date

Report and action plan including risks

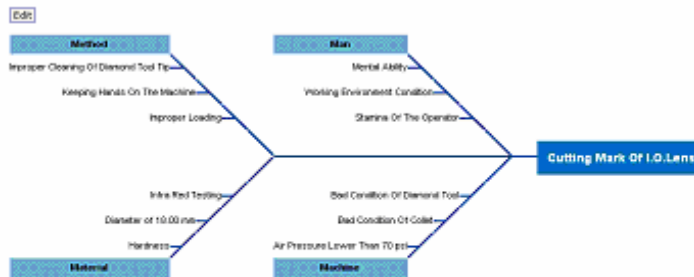
No.	Root Cause	Risk Reduction Action	Resources	PIC	From Date	To Date	Duration	Apr - 2007																
								11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
								We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	
1	Shortage of nur				12-Apr-2007	25-Apr-2007	13																	
1	Increase staff	Assign mor	Hire more	Alan	12-Apr-2007	17-Apr-2007	5																	
2	Nurses should h	Nurses sho	Provide ap	Brian	16-Apr-2007	19-Apr-2007	3																	
3	5 S Housekeepin	Apply 5S H	Provide nu	Collin	19-Apr-2007	25-Apr-2007	6																	
4	The following s	Design and	Give nurse	Doreen	19-Apr-2007	25-Apr-2007	6																	
2	Management seld				25-Apr-2007	07-May-2007	12																	
1	Chief Nurse sho	Design and	Chief nurs	Elaine	25-Apr-2007	07-May-2007	12																	
2	ICT should be i	Make appoi	Encourage	Frenie	25-Apr-2007	07-May-2007	12																	
3	If possible mus	Encourage	Provide nu	Geraldine	25-Apr-2007	07-May-2007	12																	
3	Deliver good qu				07-May-2007	29-May-2007	22																	
1	Management shou	Designate	Give train	Helen	07-May-2007	22-May-2007	15																	
2	Clinical Perfor	Plan a tra	Provide CP	irene	22-May-2007	24-May-2007	2																	
3	Use appropriate	Select app	Submit bud	Janete	22-May-2007	24-May-2007	2																	
4	Provide Quality	Send hospi	Call a Qua	Karen	25-May-2007	29-May-2007	4																	



Analyze Factors

Cause and Effect Diagram

Fish Bone Diagram



➤ Summarize relations between causes and effect

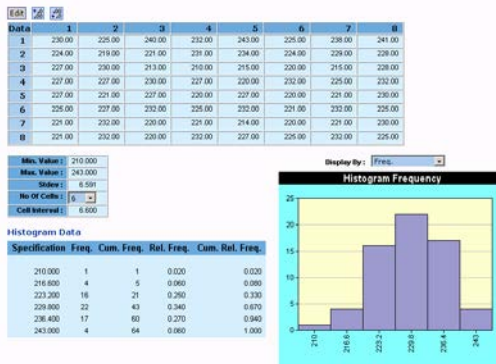
Tally Sheet

No.	Tasks	Total	
1	Very bad	5	
2	Bad	8	
3	Medium	7	
4	Good	14	
5	Very good	8	
	Total	42	

➤ Assemble the data

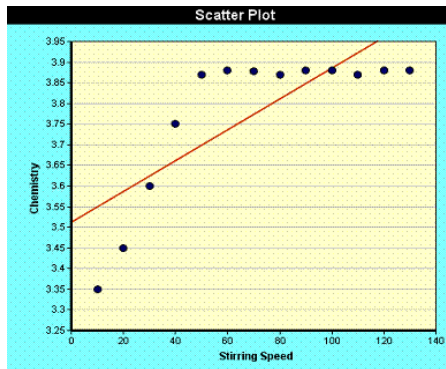
Histogram

Histogram



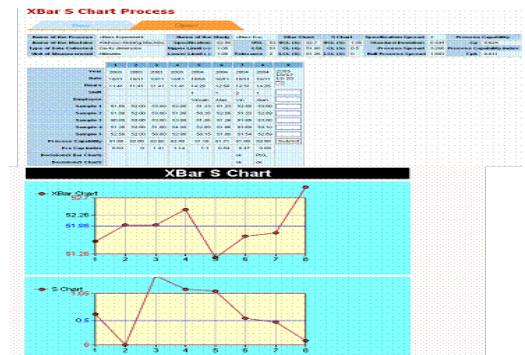
➤ Try stratification

Scatter Diagram



Check interrelationships

Control Chart (for analysis)



Look at changes over time



Develop and Implement Countermeasures

W3 Programme

Edit Report Setup From Date 04/10/2007 To Date 05/27/2007 View

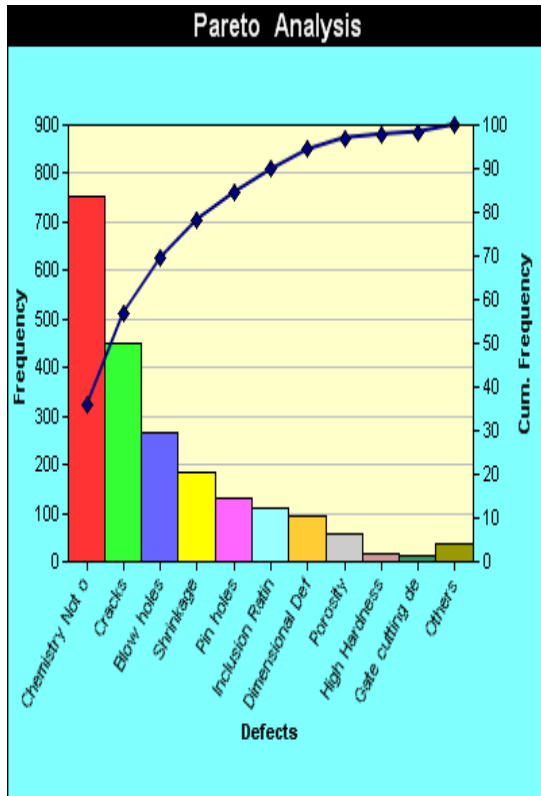
Thorough action plan is necessary

No.	Root Cause	Recommendations	Resources	PIC	From Date	To Date	Duration	Apr - 2007															
								10	11	12	13	14	15	16	17	18	19	20	21	22	23		
								Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo		
1	Shortage of nur				12-Apr-2007	25-Apr-2007	13																
1	Increase staffi	Assign mor	Hire more	Allan	12-Apr-2007	17-Apr-2007	5																
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3	If possible mus	Encourage	Provide nu	Geraldine	25-Apr-2007	07-May-2007	12																
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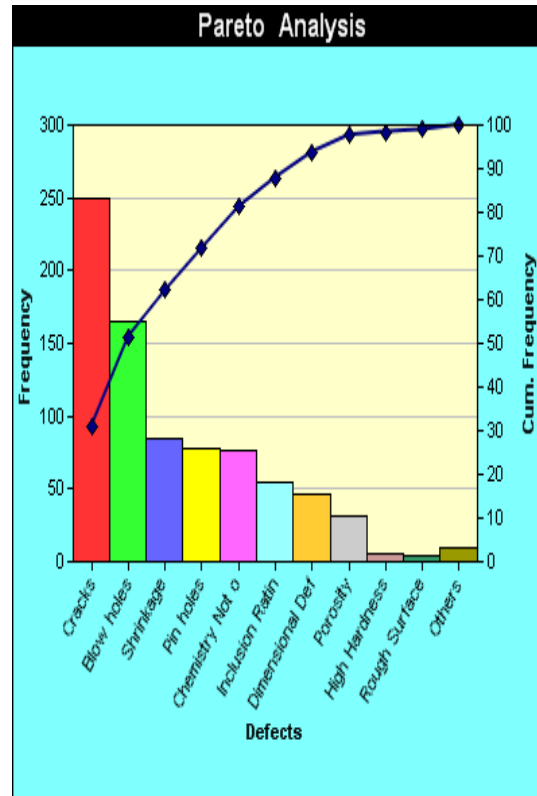


Confirm Effectiveness

Pareto Analysis

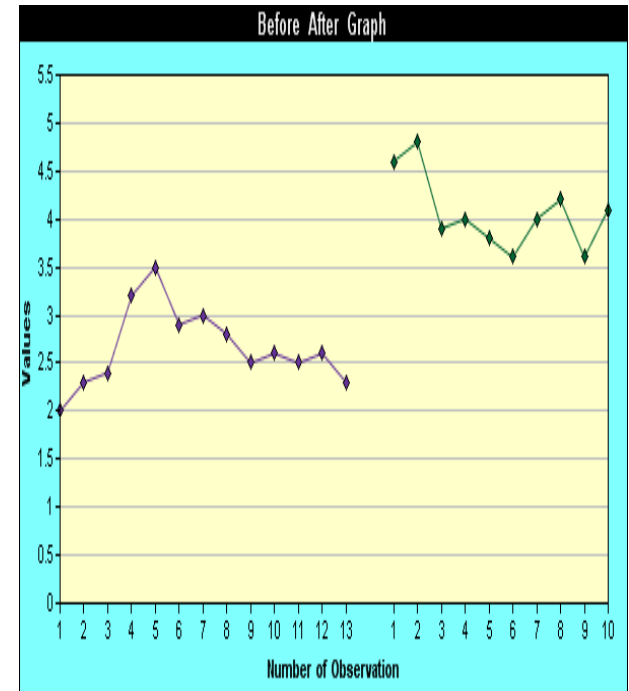


Before



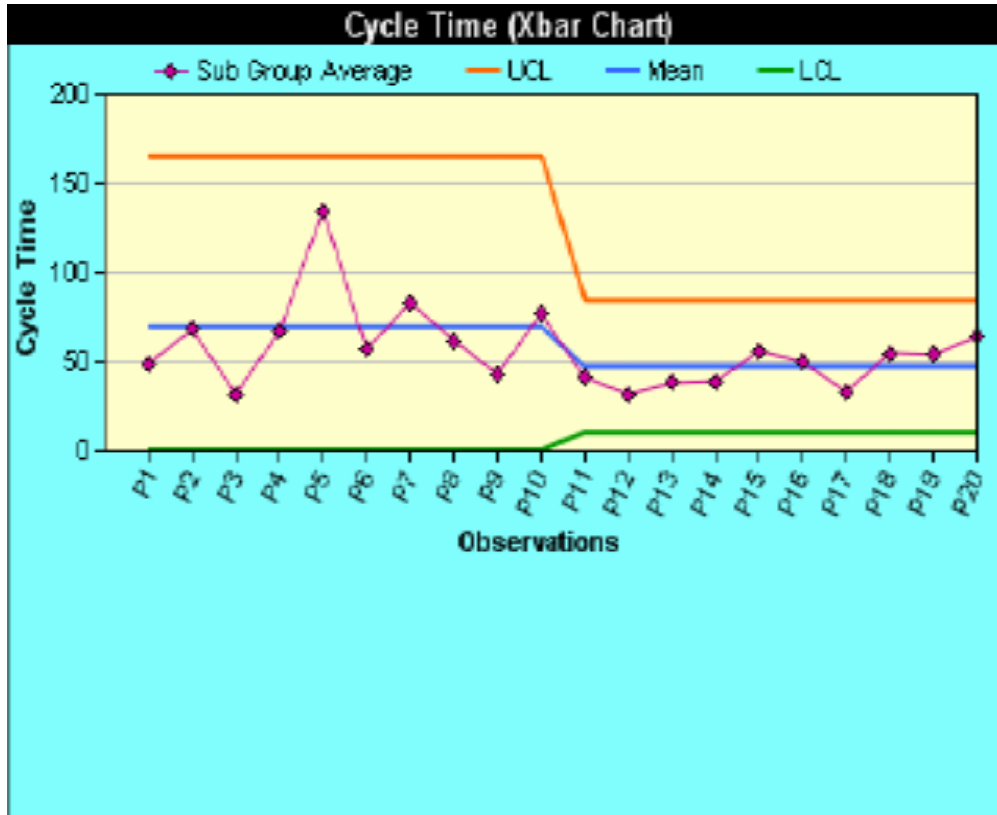
After

Line Graph (Before-After)





Standardize & Establish Control



Control Chart

No.	Tasks	Total	
1	Very bad	5	
2	Bad	8	
3	Medium	7	
4	Good	14	
5	Very good	8	
	Total	42	

Tally Sheet

