



“Presenting Data” in a Quality Improvement Perspective

Its Time to Ignore the Traffic Lights

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Examples of data presentation

Health System Milestones
KUMARTYCASE/WH/VE/GEN/AL/SEX

Comparison of MDC between 1995 and 1997

MDC	MDC Description	95 Cases	95 TLVW	Avgd. month	Wgt for Avg. Cases	HL Mix	97 Cases	97 TLVW	97 Mix	Mix Chng	Chng Cases	Wgt Chng Cases	Wgt Chng	Total Wgt Chng
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
24	Multiple Trauma	6	15,8895	2	5.2288	2.6449				(2.8144)	(2)	(5.2288)		(5.2288)
25	HIV/AIDS/Immunodeficiency	2	5,2293	1	1.7431	2.8147				(0.0006)	0	0.5716	(0.5008)	0.0710
14	Pregnancy & Childbirth	5	2,0883	2	0.6954	0.4178	1	18.14	1.8141	(0.4173)	(2)	(0.6954)		(0.6954)
21	Poisoning/Toxic Drug	33	40,0499	11	13.6199	1.2378	30	40,2879	1.0280	(0.2090)	(1)	(1.2378)	(2.0790)	(3.3177)
7	Diabetes Mellitus & Pancreas	158	284,1856	56	48.0519	1.5720	81	86,8373	1.4075	(0.1650)	0	7.8977	(10.0672)	(2.2046)
23	Health Services	127	23,8232	3	7.9411	0.8623	28	21,9248	0.7984	(0.1628)	20	17.6468	(4.4630)	13.1836
17	Malignant Neoplasms	205	273,9150	60	91.3036	1.3362	75	91,8402	1.2245	(0.1118)	7	8.9077	(8.3718)	0.5366
13	Female Reproductive	129	142,4130	39	47.4710	1.1790	32	32,3849	1.0165	(0.1621)	(1)	(11.0570)	(3.2686)	(15.1362)
5	Circulatory	1,838	3,180,9188	613	1,060,3063	1.7306	677	1,105,4540	1.6329	(0.0974)	64	111,3379	(84,1000)	26,1477
20	Accidental Injury	16	1,4388	5	3.8127	0.7140	4	2,3507	0.5957	(0.0752)	(1)	(0.9452)	(0.3000)	(1.2540)
9	Digestive	703	1,041,2700	234	349,0383	1.4807	244	346,3624	1.4165	(0.0702)	10	14,4003	(17,1885)	(2,7882)
16	Blood	41	43,3888	11	14,4829	1.0583	14	14,1050	1.0078	(0.0004)	0	0.3328	(0.7407)	(0.3579)
3	Ear, Nose, Mouth & Throat	66	48,5987	22	15,5320	0.7168	30	28,8953	0.9645	(0.0324)	17	12,4283	(1,2038)	11.1824
10	Endocrine, Nutritional & Metabolic	127	178,7186	52	50,3062	0.9450	80	73,6778	0.9210	(0.0240)	18	18,8863	(4,9237)	14,7716
1	Nervous System	507	882,1833	179	217,3938	1.2145	158	238,7077	1.1455	(0.0160)	19	23,0760	(3,7880)	18,3078
2	Eyes	4	2,0584	1	0.9855	0.1381	9	2,1837	0.7279	(0.0119)	2	4.2348	(0.0306)	1.1958
11	Kidney & Urinary	256	330,8283	88	110,2764	1.2833	88	112,0693	1.2734	(0.0069)	2	2,5646	(0.7847)	1,7828
4	Respiratory	730	1,009,9681	243	336,8664	1.3810	280	388,8340	1.3816	(0.0028)	37	60,7280	(0,5544)	59,1778
8	Musculoskeletal	894	1,418,5035	288	472,8345	1.5897	328	523,3800	1.5863	0.0006	30	47,6006	3,1847	50,7566
12	Male Reproductive	35	82,0519	20	33,6840	1.0460	38	41,1927	1.0562	0.0102	10	10,1118	0.3970	10,0067
22	Burns	1	0.9369	0	0.3123	0.3366	1	0.8547	0.9547	0.0176	1	0.8218	0.0178	0.0421
19	Mental Health	28	22,3857	8	7.4458	0.7677	17	14,0070	0.8240	0.0250	5	5,1160	0.4463	0.5623
9	Skin, Subcutaneous Tissues & Breast	152	129,1139	51	43,0360	0.8494	59	52,1840	0.8845	0.0350	8	7,0789	2,0074	5,1460
18	Infectious & Parasitic	131	201,4336	44	67,1445	1.5377	58	80,1017	1.0118	0.0742	15	23,6275	4,3767	27,8572
26	Associated w/ All MDCs	66	425,8208	22	141,8403	0.4218	18	144,8914	0.8041	1.6032	(4)	(35,8073)	(28,8964)	3,0511
	Grand Total	8,213	9,560,0636	2,514	3,183,8899	1.5144	2,358	3,421,9195	1.4524	(0.0020)	257	317,4210	(82,3914)	236,0286

How many meetings?

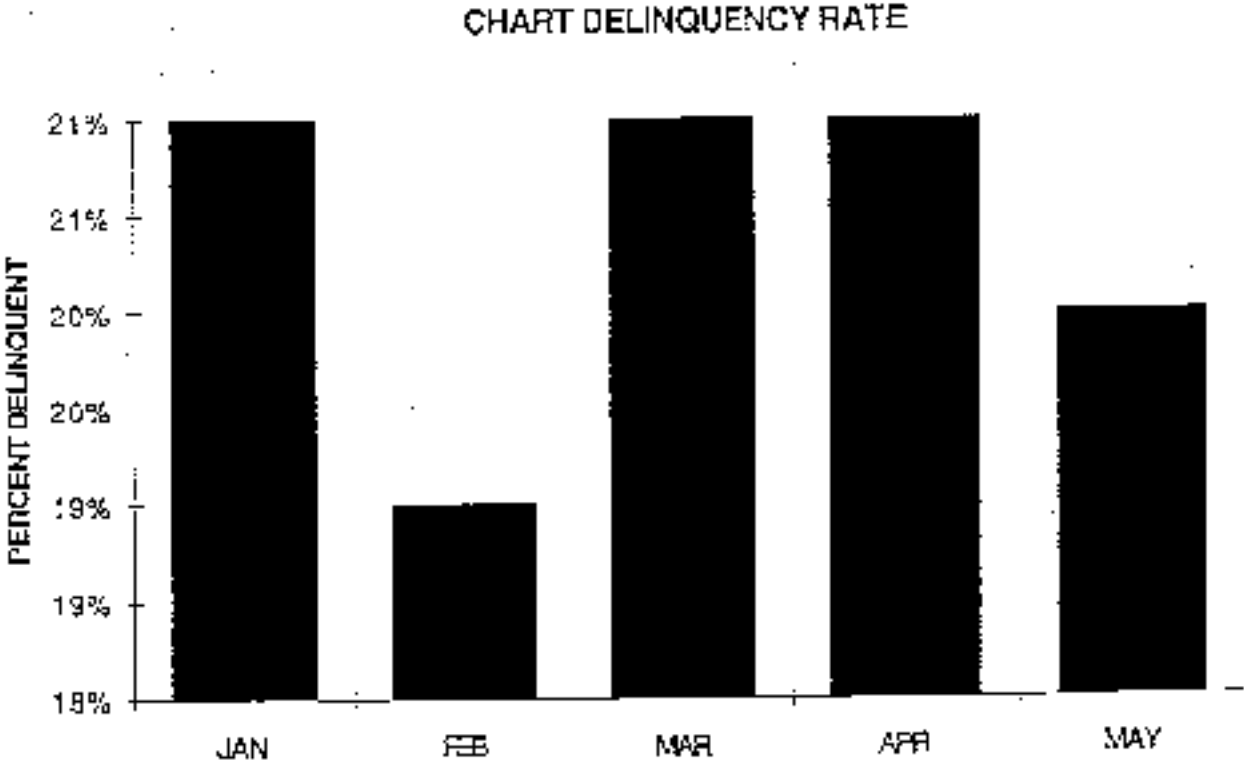
“Traffic Lights” ?

Indicator	Trust Status	A&E	Cancer	Crit Care	Medicine	O&G	Paeds	SR&T	Surgery	T&O
IP Activity										
OP Activity										
A&E 4 hr Wait										
IP >6 months										
Op > 13 weeks										

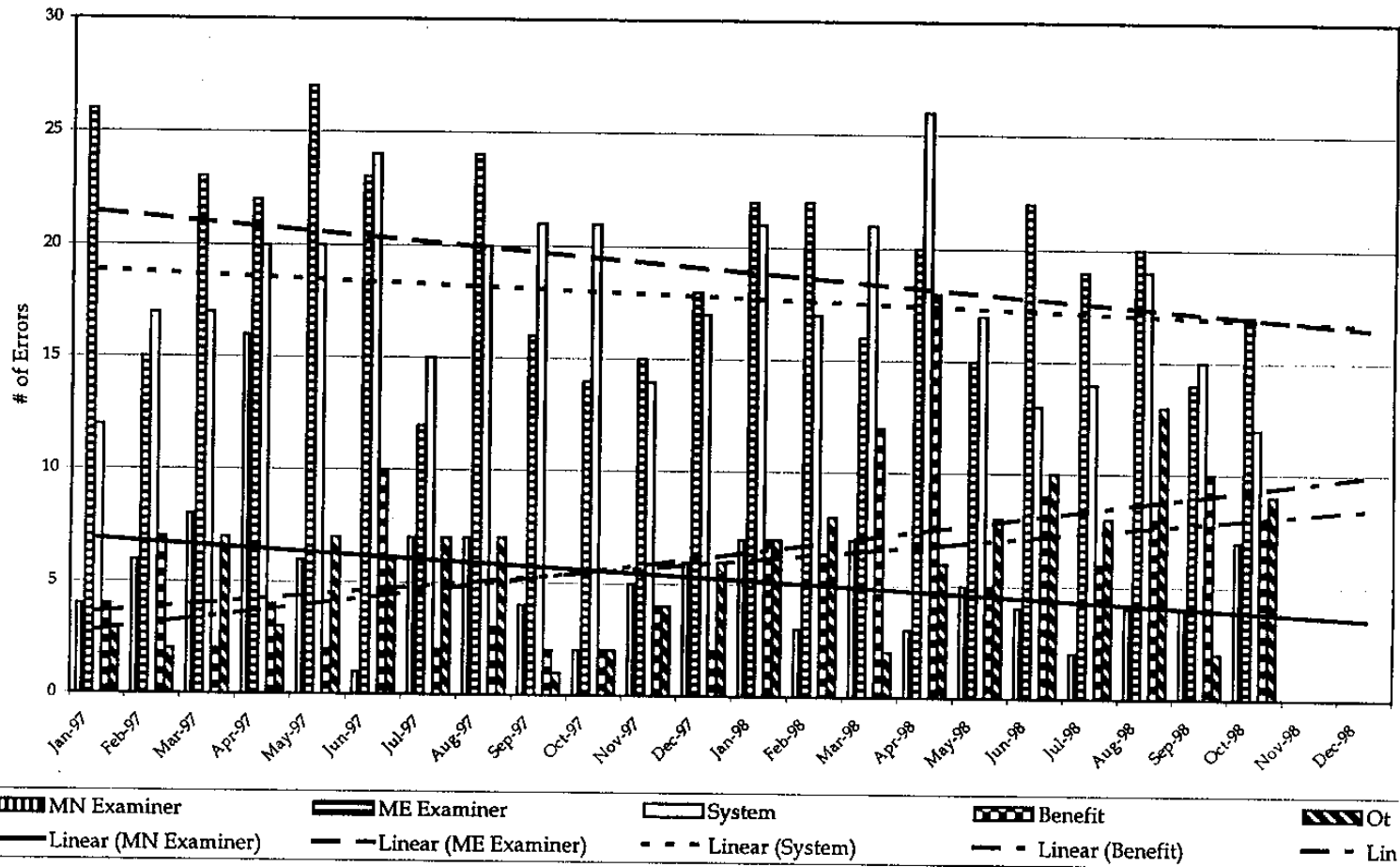
Status Key

	On Target or Achieved
	Below or Worse than Target
	Significantly Below or worse than Target

Examples of data presentation



Source of NMIS Claims Errors



Clinical Effectiveness Dashboard

Quarterly Statistics for All SHAs

Period Date:
2006 Quarter 1

Primary Care Trusts

Emergency Admissions (ACS)

Rating: 106.6

ALERT



[Trend Analysis](#)



Outpatient Appointments

Rating: 98.7

ALERT



[Trend Analysis](#)



Surgical Threshold

Rating: 93.6

ALERT



[Trend Analysis](#)



Acute Care Trusts

Length of Stay

Rating: 12.6%

ALERT



[Trend Analysis](#)



Day Case Rate

Rating: 71.7%

ALERT



[Trend Analysis](#)



Pre-Operative Bed Days

Rating: 24.5%

ALERT



[Trend Analysis](#)



Key: ■ On Target ■ Cause for Concern ■ Areas that need Attention



Why Change

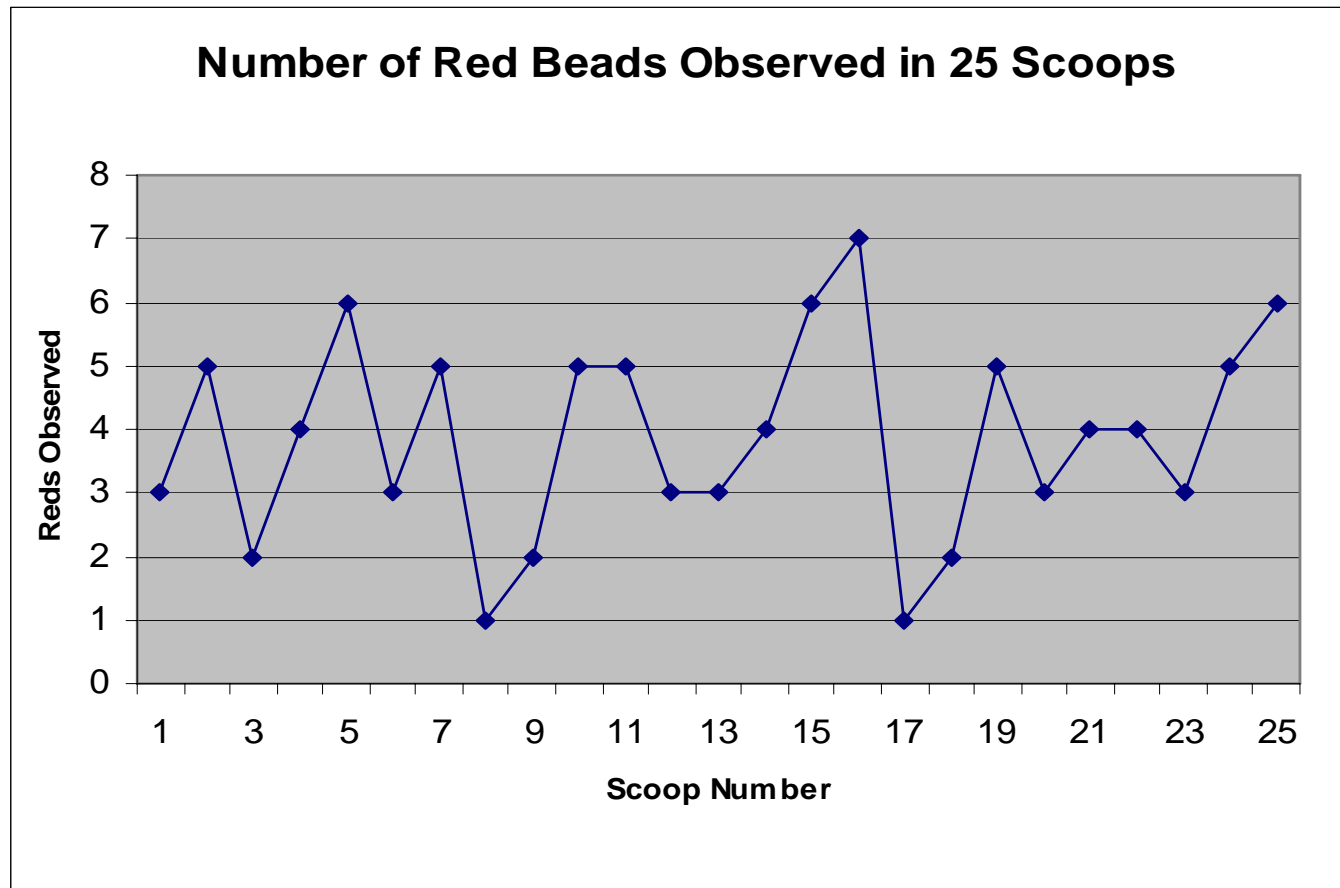
- To have the right conversations about the data, deeper questions are able to be asked
- So the variation in a process can be determined and responded to appropriately
- Not to react to individual data points or incidents
- Not to make the wrong assumptions about the data
- To have the ability to drill down to establish causes and improvement opportunities
- So too much time isn't spent interpreting the data



Variation

- There are TWO kinds of variation
 - Common cause (Inherent, “Systemic”)
 - Special cause (Unique occurrence, “One off”)

Variation





Variation

Treating one as the other **MAKES THINGS WORSE**

- The human tendency is to treat ALL variation as “one off” (special cause)
- Even if things “shouldn’t” happen, you might be “perfectly designed” to have them happen



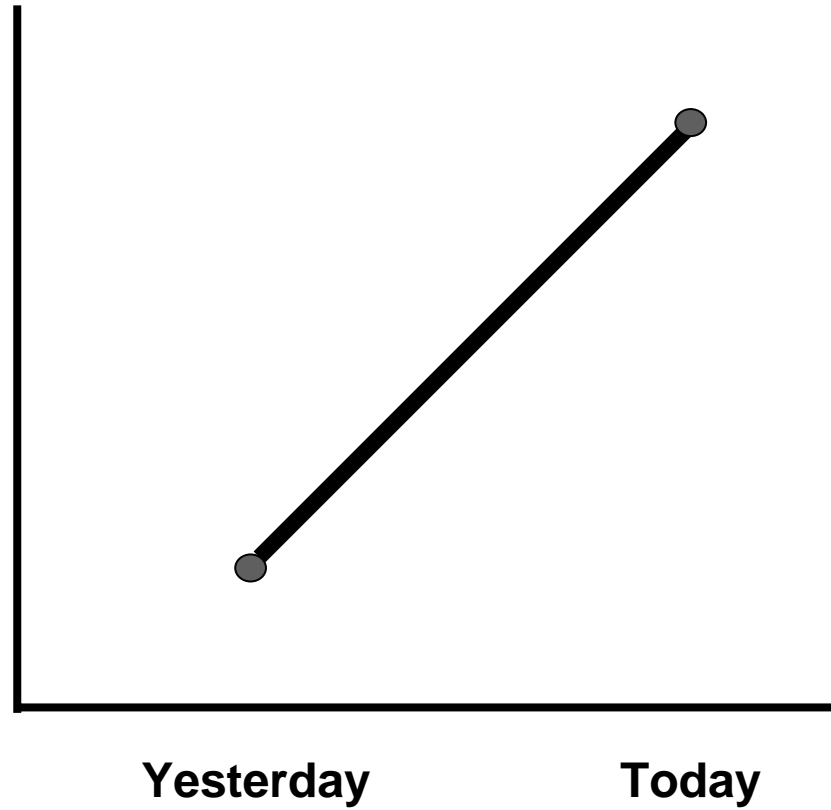
Sources of Variation

- People – every person is different
- Materials – each piece of material/item/tool is unique
- Methods – signatures for example
- Measurement – samples from certain areas etc can bias results
- Environment – the effect of seasonality on hospital admissions



Given two numbers...

Something
Important



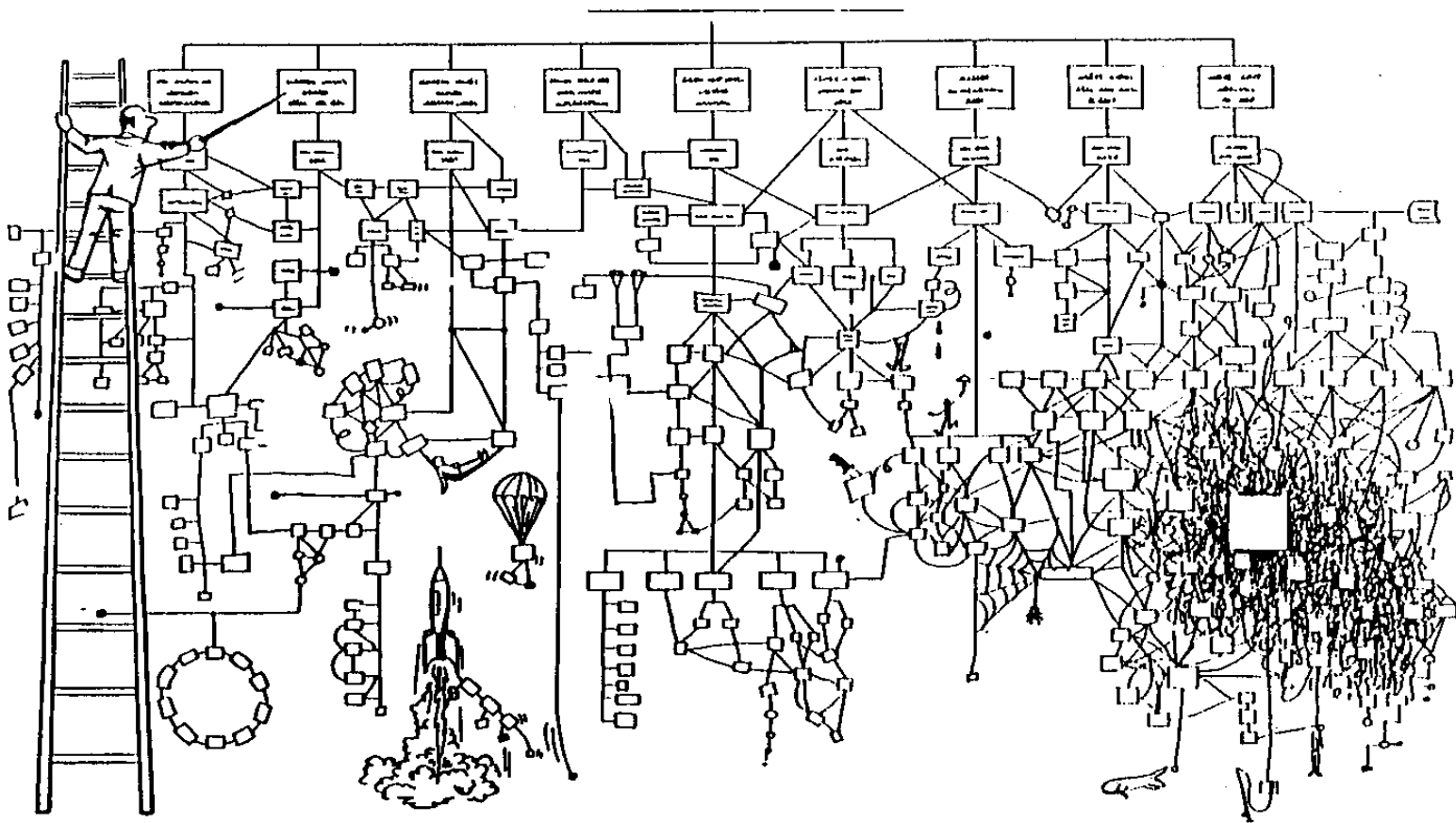
...one will be bigger!



“Confucian” Operational Definition

- “Person with one clock knows what time it is...”
- “...person with two clocks not so sure!”

*Your current processes are **perfectly** designed to get the results they are already getting*





Three “theorems” of process-oriented thinking:

- Your current processes are *perfectly designed* to get the results you are already getting...and will continue to get,
- Your current processes are also perfectly designed to take up (over) 100% of the people’s time working in them—waste is disguised as useful work,
- Improving quality = Improving processes (More consistent *prediction*)



A new view on presenting data

○ From:

- Bar graphs, Colours & Faces

To:

- Collecting data over time
- Trends of Seven
- Run of eight or more (all above or below the median)
- *Asking better questions!*
- *Reacting appropriately to variation*



Trend

- Special Cause – a sequence of 7 or more points continuously increasing or decreasing
- Omit any point that repeats the preceding value
- If total number of observations is 20 or less, 6 points can be used opposed to 7 to declare a trend

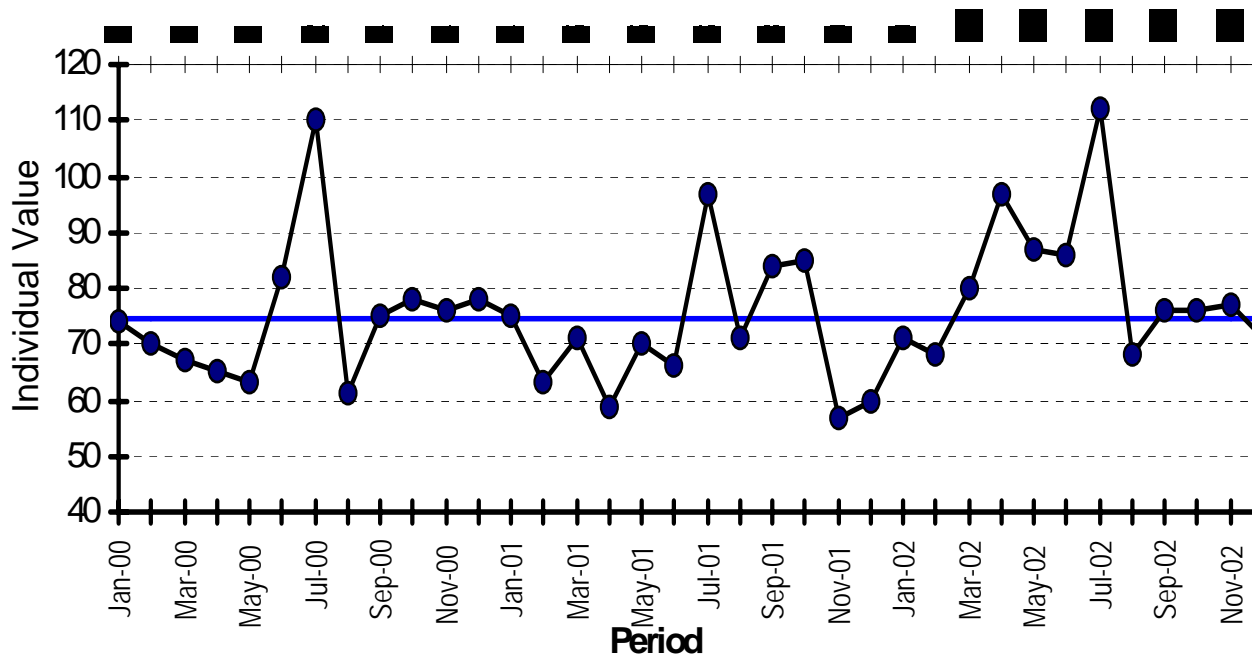


Run

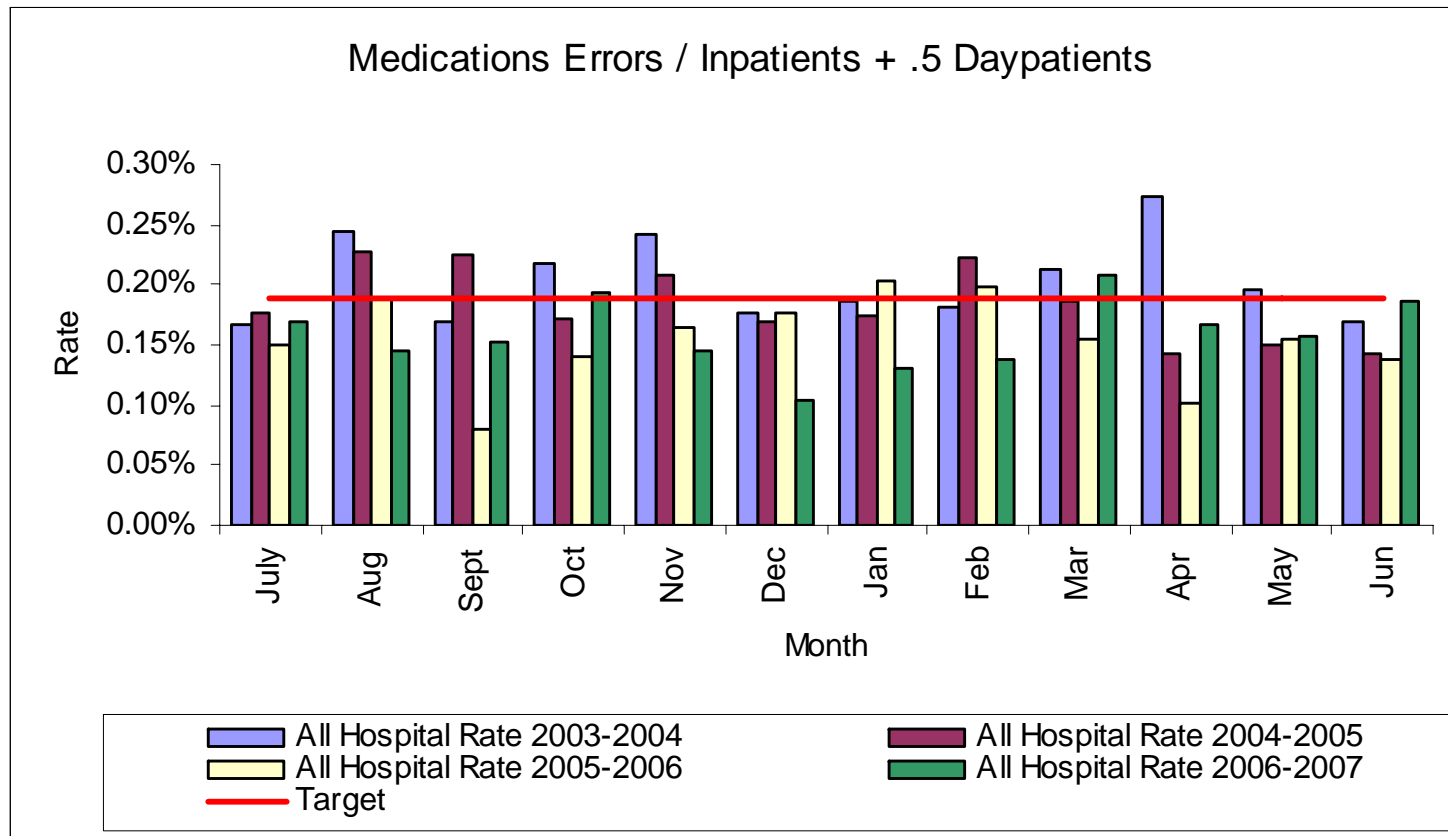
- A run of 8 or more indicates a change.
- A run consists of a set of points either all above or all below the median. It is broken and begins a new “run” when a data point crosses the median.
- Any data point on the median neither breaks nor adds to the current run

The new way

Medication Errors

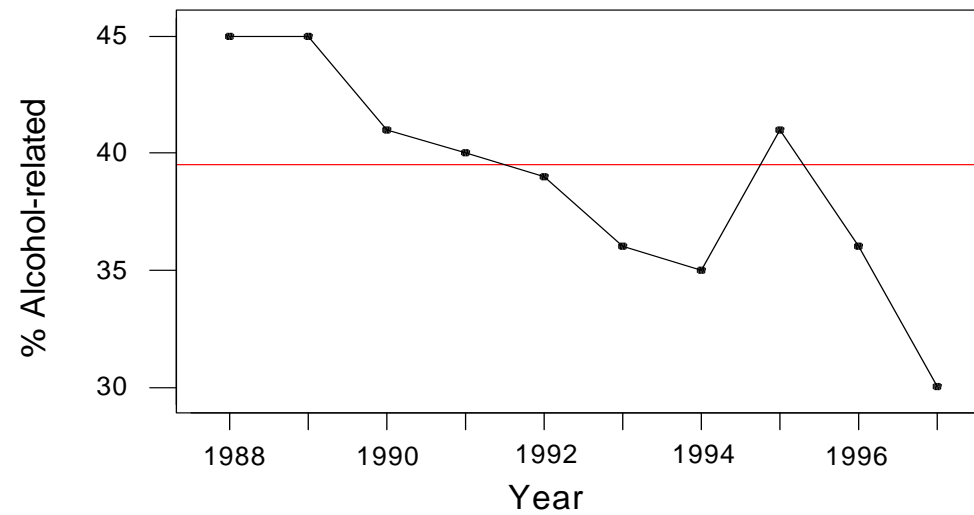


The old way



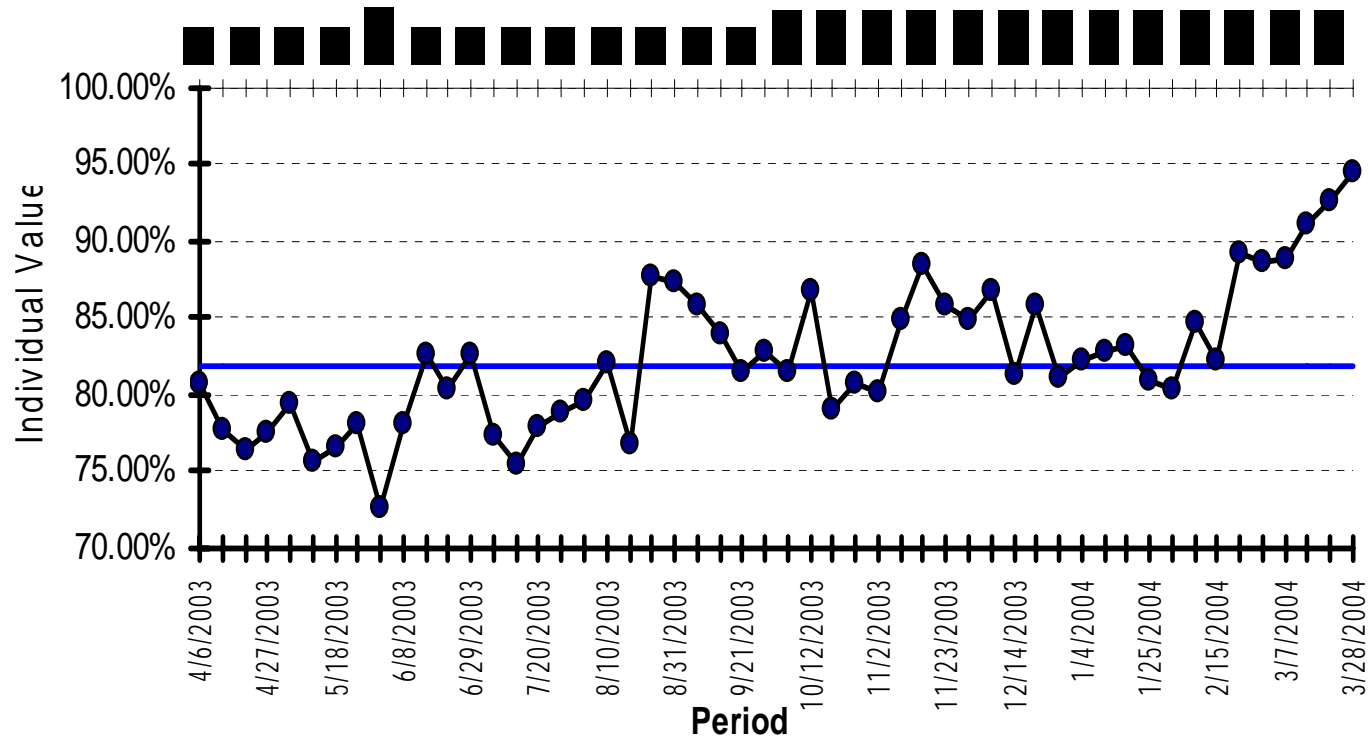
Is there a trend or isn't there?

Run Chart of Alcohol-Related Fatalities: 1988 - 1997



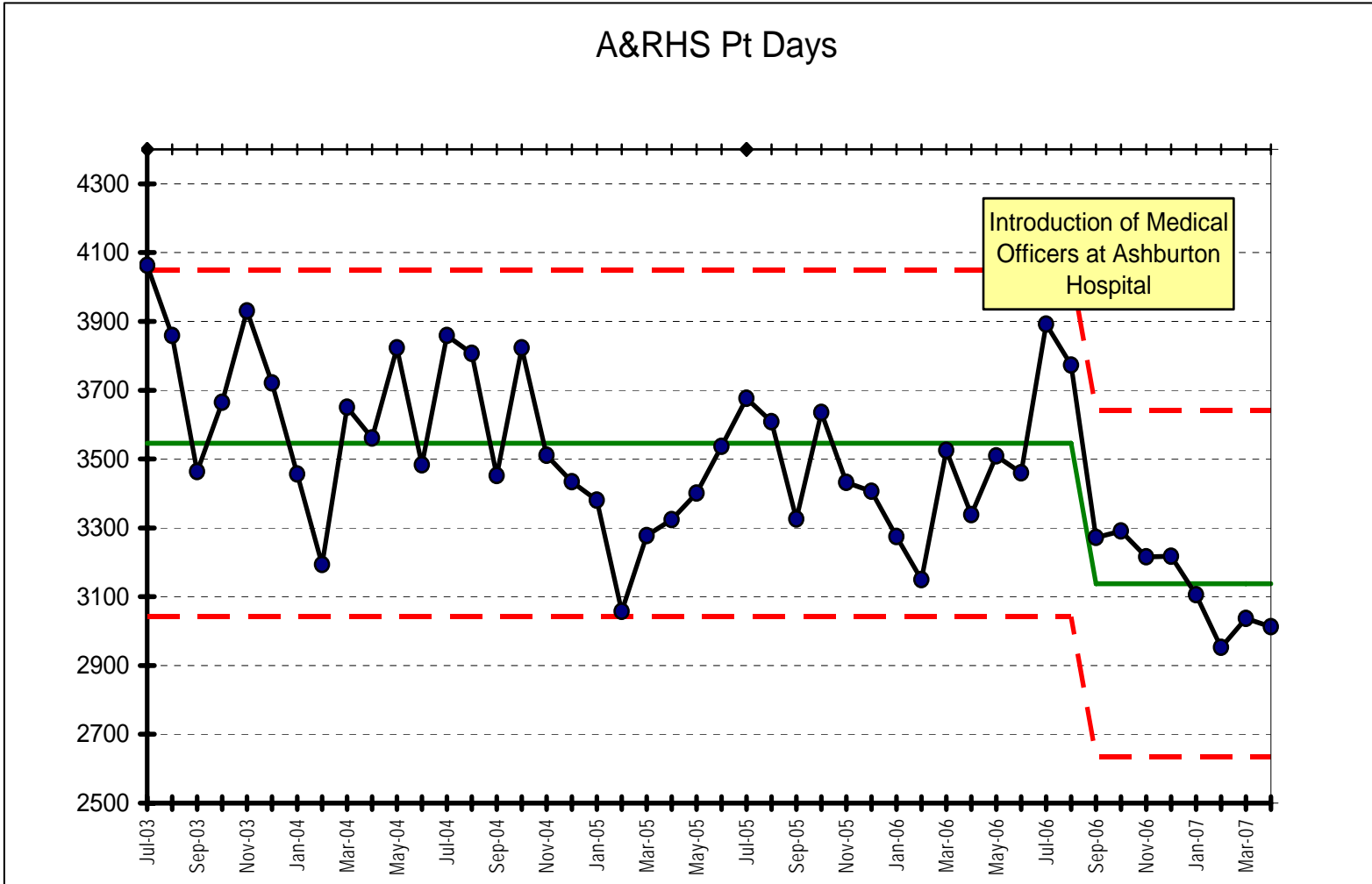
TREND?

% Total seen < 4 Hours

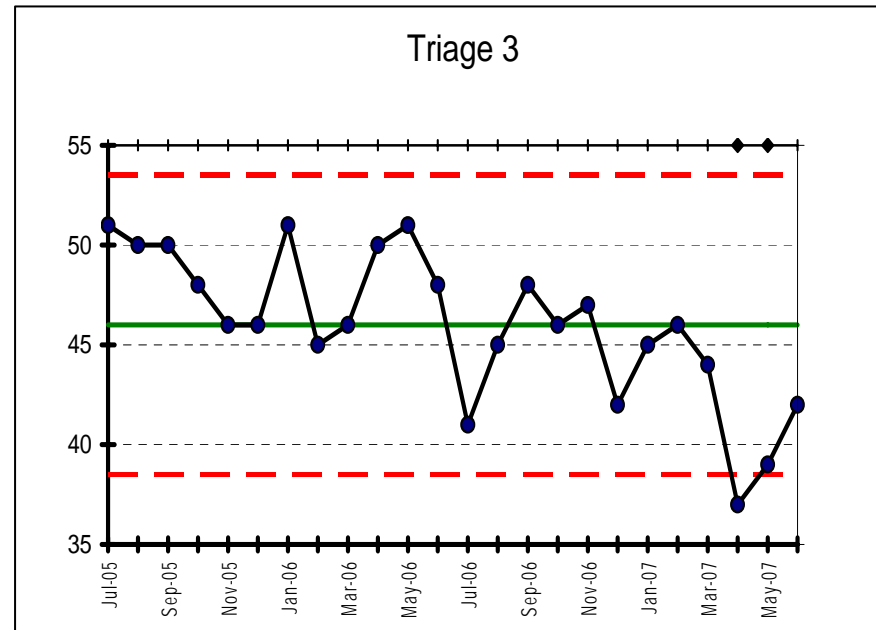
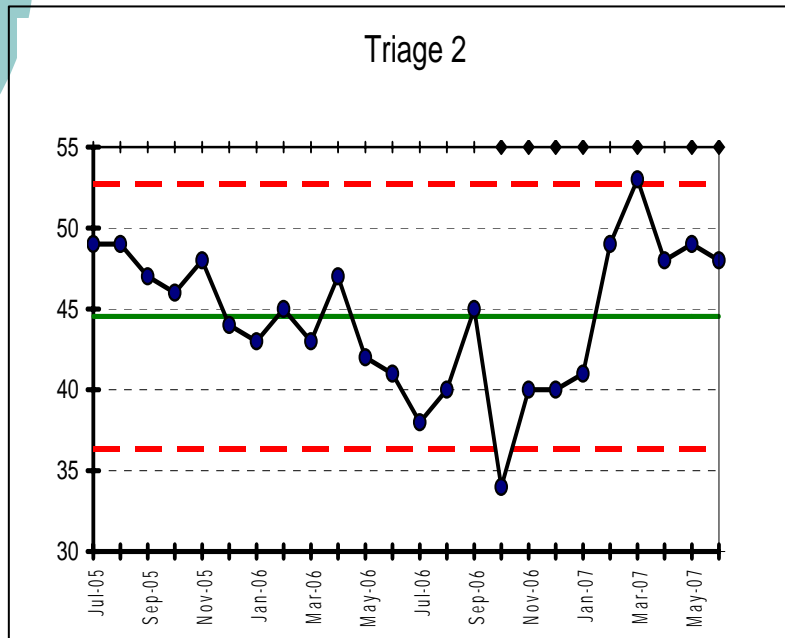




A&RHS Pt Days



Emergency Triage Times



Emergency Triage Times

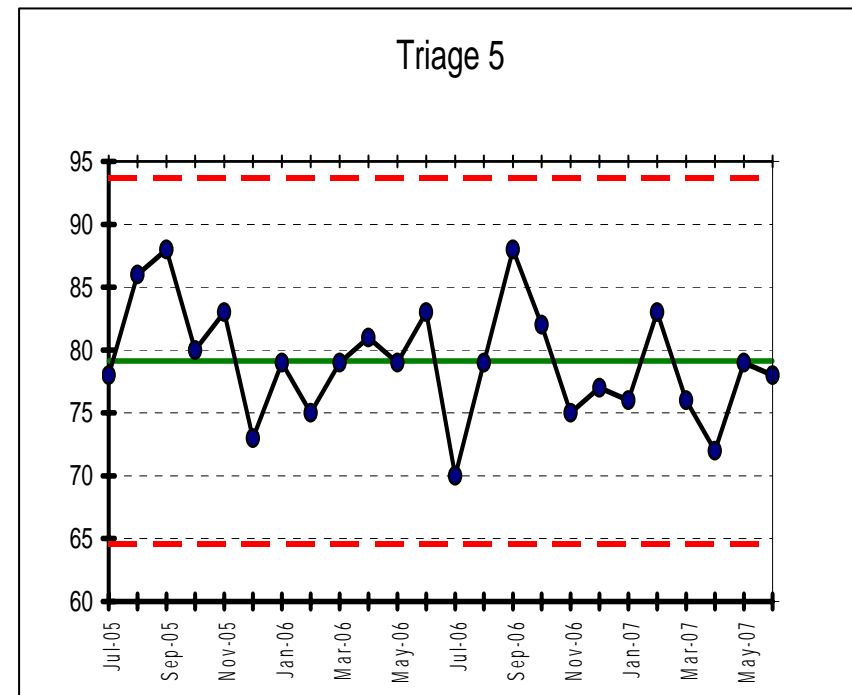
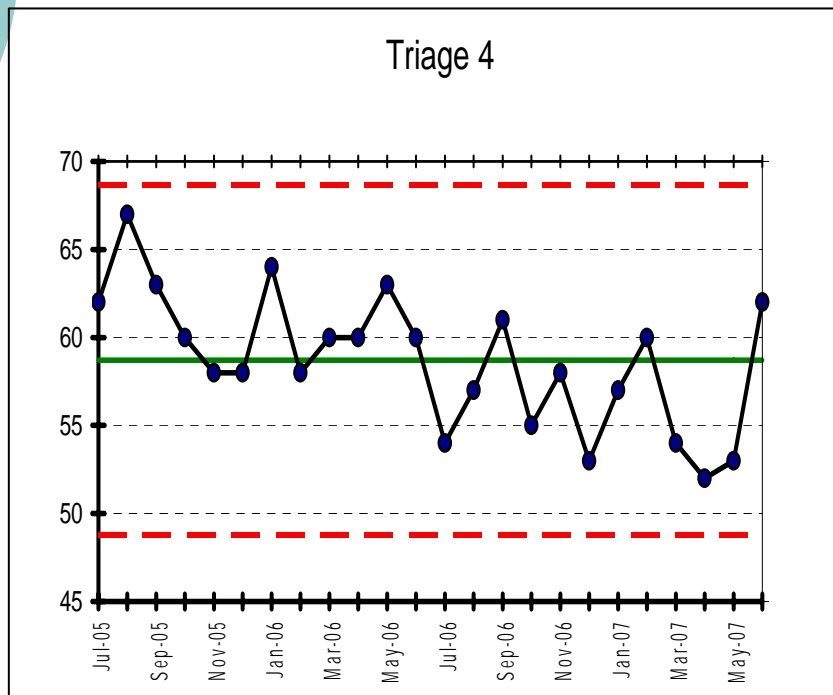




Figure 2: Conformance to Goal: Control Chart

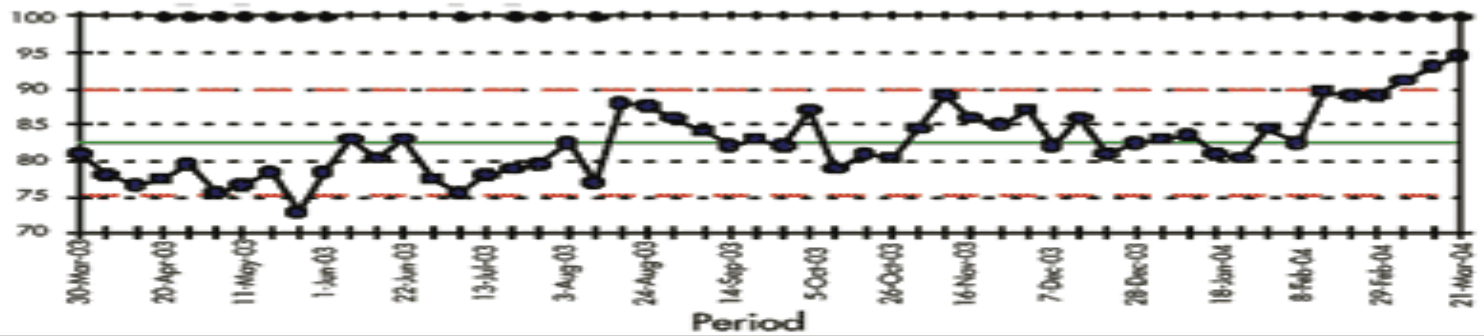


Figure 3: Conformance to Goal: Run Chart

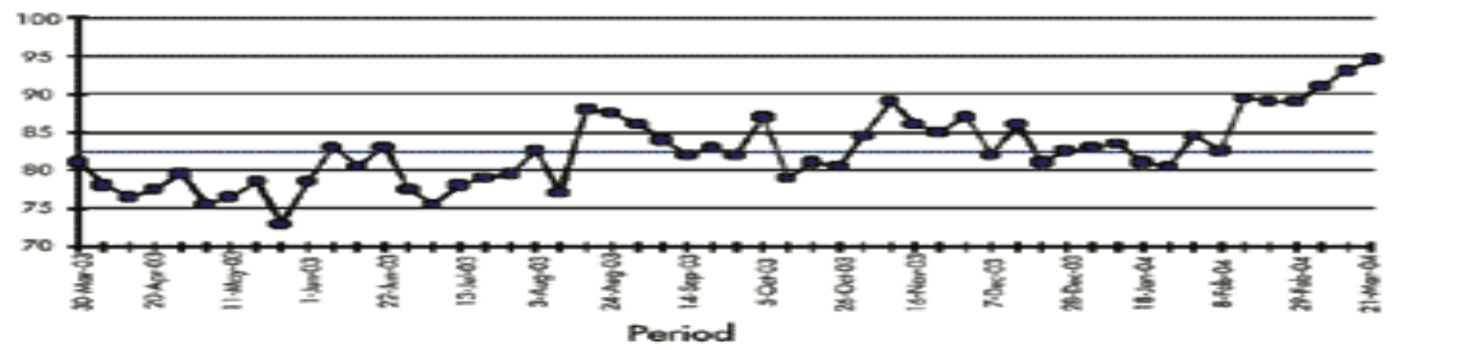


Figure 4: Conformance to Goal: Corrected Control Chart

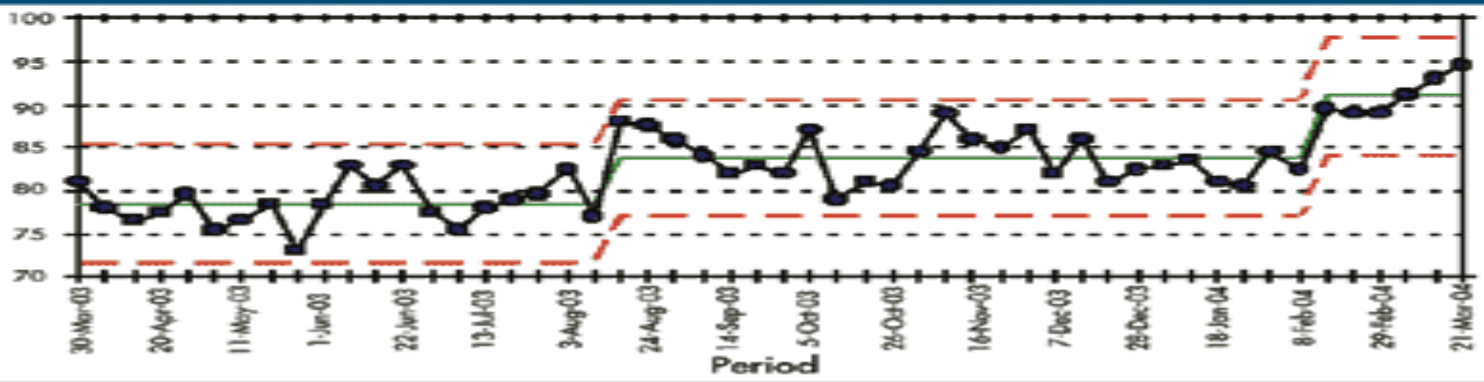


Figure 1: All Hospital Incident Rate

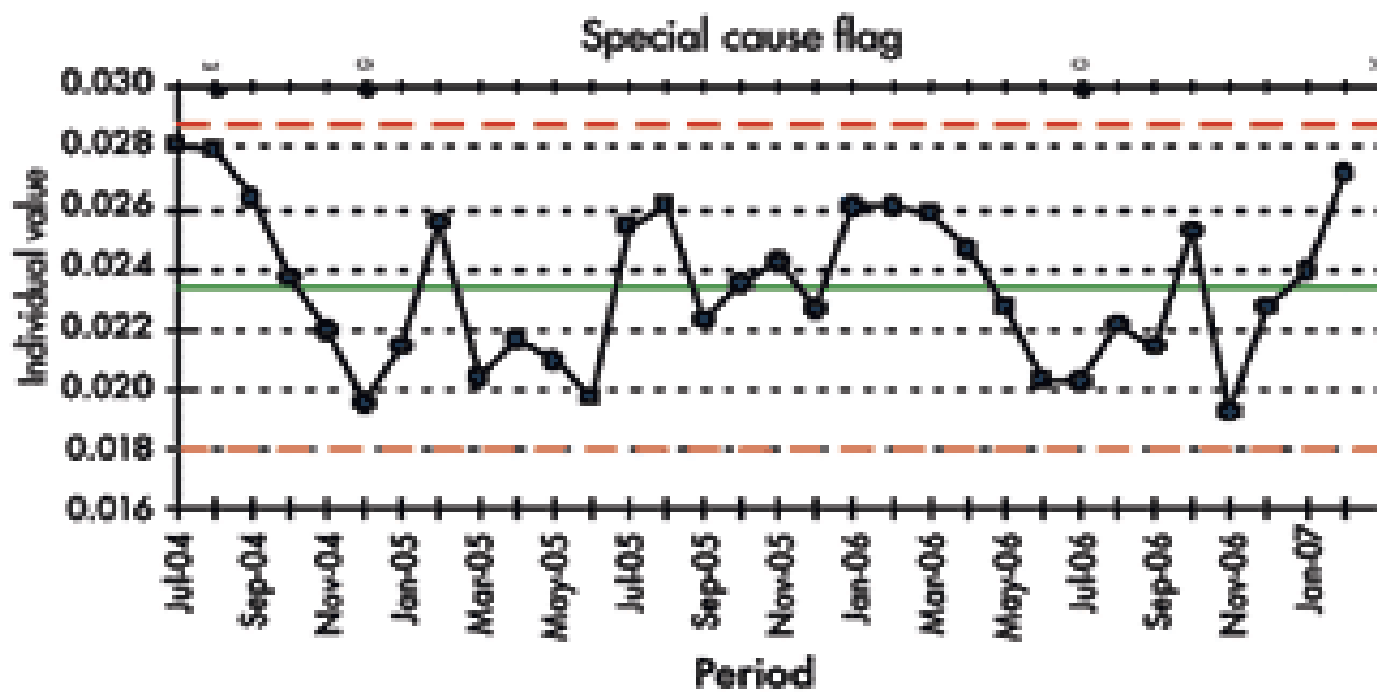


Figure 2: Three Components of Disaggregated Hospital Incident Rate

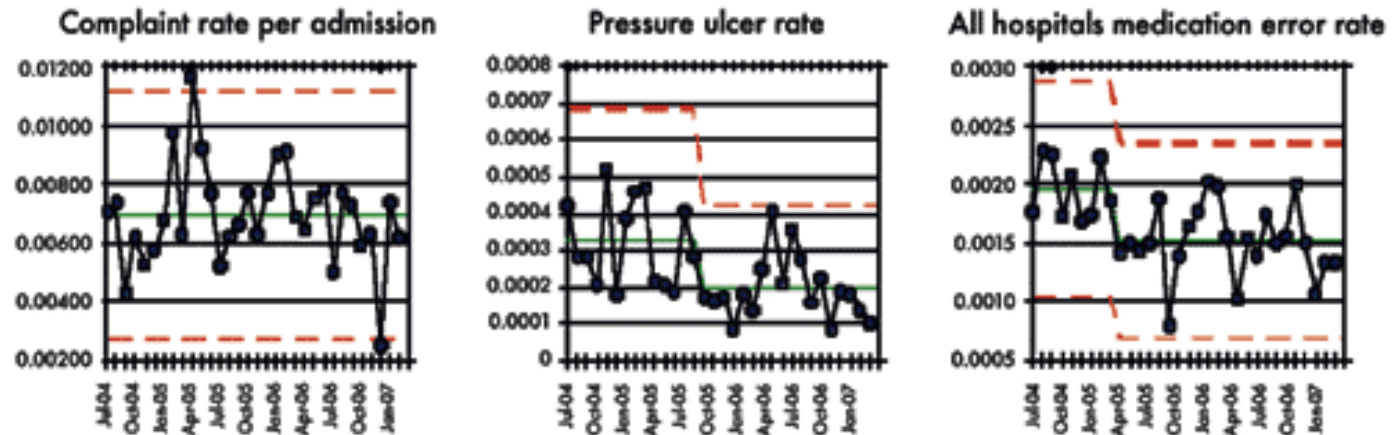
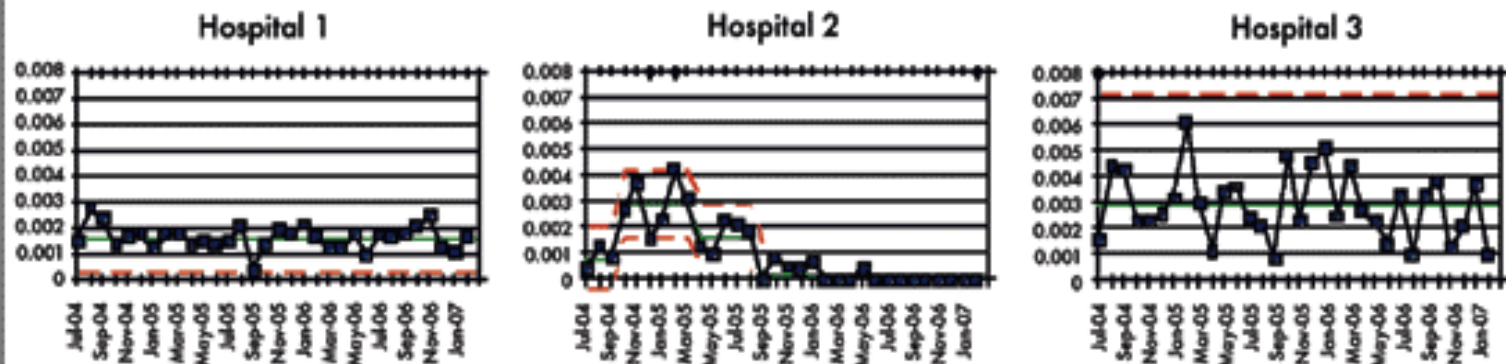


Figure 3: Three Hospitals' Individual Medication Error Rates





references

- WWW.dbharmony.com
- Work book Data "Sanity" Master Class Davis Balestracci 19 & 20 April