

“Data Insanity”: The Silent Improvement Killer

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Harmony Consulting, LLC

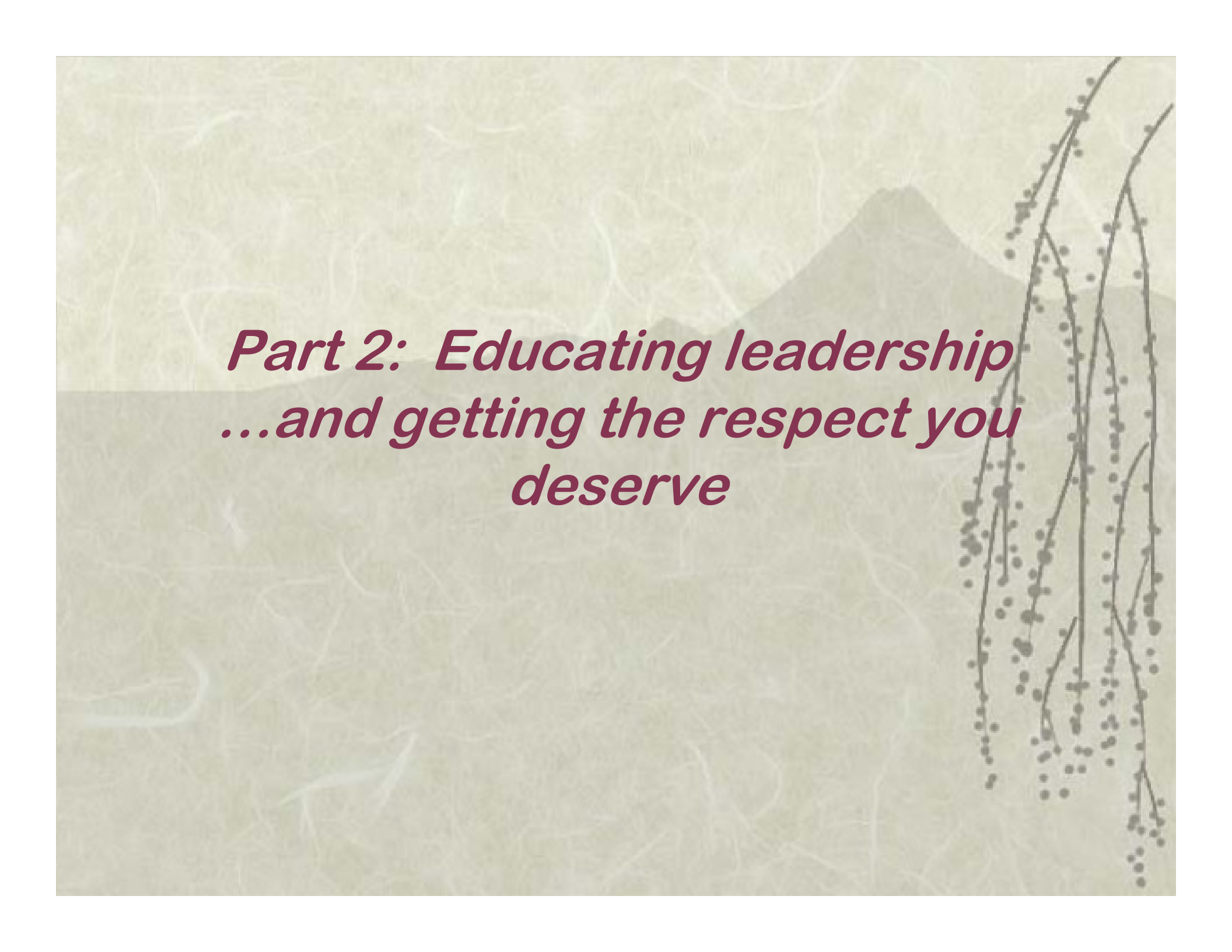
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Web Site: www.dbharmony.com

The Quality Colloquium Preconference Symposium

August 17, 2009

The background features a light beige, fibrous paper texture. A dark grey silhouette of a mountain peak is visible in the upper right. A dark, thin branch of a willow tree with small, dark buds hangs down from the top right corner.

*Part 2: Educating leadership
...and getting the respect you
deserve*

How many meetings?

Health System Milestones
K O N O R T A R T Y C A S B W W E I S E N Y A L S W O K

Medicare Cases

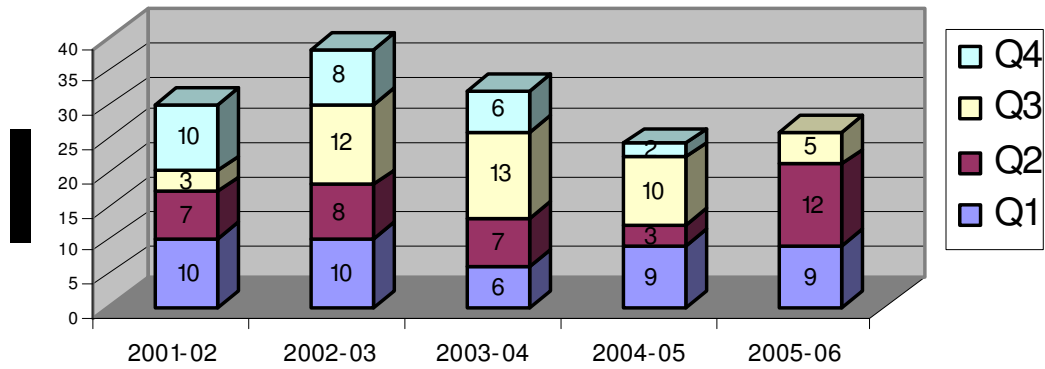
Attachment B

Comparison of MDC between 1996 and 1997.

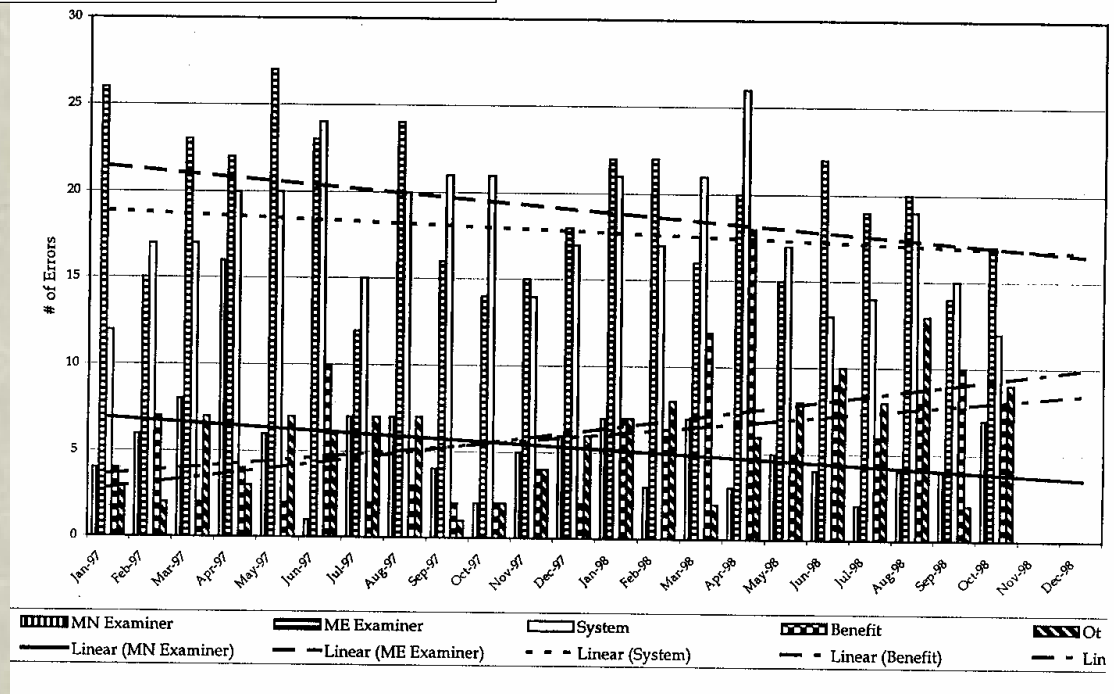
MDC	MDC Description	96 Cases	97 Cases	Diff	% Change	96 Cases	97 Cases	Diff	% Change	96 Cases	97 Cases	Diff	% Change	Total % Change
24	Multiple Trauma	6	15,888	2	5.2288	2,6149	-	18,141	1,8141	(2,8149)	(10.7149)	(2)	(5.2288)	(5.2288)
25	Human Immunodeficiency	2	6,229	1	1.7431	2,6147	1	18,141	1,8141	(0.0000)	0	0.0000	(0.0000)	0.0000
14	Pregnancy & Childbirth	5	2,088	2	0.6954	0.4178	-	-	-	(0.4173)	(2)	(0.6954)	(0.6954)	(0.6954)
21	Poisoning/Toxic Drug	33	40,049	11	13,6159	1,2378	10	10,2079	1,0208	(0.2080)	(1)	(1.2378)	(2.0790)	(3.3177)
7	Hepatitis & Pancreas	168	284,185	56	68,0519	1,6720	81	85,0373	1,4075	(0.1850)	0	7,8977	(10,0872)	(2,2046)
23	Health Services	37	23,823	9	7,9411	0,8823	28	21,1248	0,7384	(0.1829)	20	17,6668	(4,4509)	(13,1036)
17	Myeloproliferative & Neoplasms	205	279,910	60	91,5036	1,0362	75	91,8402	1,2245	(0.1118)	7	8,9077	(0,3711)	0.5086
13	Female Reproductive	128	142,4120	31	47,4710	1,1129	32	32,3849	1,0105	(0.1021)	(11)	(11,8570)	(3,2580)	(15,1262)
5	Circulatory	1,638	3,180,918	613	1,060,308	1,7306	577	1,305,4540	1,6329	(0.0974)	64	11,1379	(88,1002)	(66,1477)
20	Alcohol/Drug Use	16	1,4380	6	3,8127	0,7140	4	2,3507	0,6957	(0.0752)	(1)	(0,9552)	(0,3000)	(1,2540)
9	Digestive	703	1,017,270	284	349,090	1,4807	244	346,3624	1,4195	(0.0702)	10	14,4005	(17,1385)	(2,7378)
16	Blood	41	43,888	11	14,825	1,0583	14	14,1050	1,0078	(0.0008)	0	0,3326	(0,7107)	(1,1824)
3	Ear, Nose, Mouth & Throat	60	48,5987	22	15,5320	0,7188	50	28,8953	0,6845	(0.0324)	17	12,4283	(1,2838)	(14,7716)
10	Endocrine, Nutritional & Metabolic	187	178,7106	62	50,3062	0,9450	80	78,6778	0,9210	(0.0240)	18	18,8893	(1,9237)	(14,7716)
1	Nervous System	507	882,183	178	217,3938	1,2145	158	238,7077	1,1955	(0.0190)	19	23,0760	(3,7880)	(18,3078)
2	Eye	4	2,9584	1	0,9595	0,7391	3	2,1837	0,7279	(0.0119)	2	4,2348	(0,0305)	1,1952
11	Kidney & Urinary	258	330,828	88	110,2764	1,2823	80	112,0693	1,2734	(0.0089)	2	2,5640	(0,7817)	1,7823
4	Respiratory	710	1,009,969	283	336,8564	1,3816	280	388,8540	1,3816	(0.0000)	37	60,7280	(0,5144)	50,1778
8	Musculoskeletal	594	1,118,5035	288	472,8345	1,0887	328	523,3800	1,5853	0,0000	30	47,6006	3,1847	50,7555
12	Male Reproductive	39	82,0519	20	30,6840	1,0450	38	41,1927	1,0562	0,0102	10	10,1118	0,3970	40,0087
22	Burns	1	0,3350	0	0,3123	0,9358	1	0,8347	0,9547	0,0174	1	0,8218	0,0128	0,8421
19	Mental Health	28	22,3857	9	7,4458	0,7077	17	14,0073	0,8240	0,0260	8	8,1160	0,4463	0,5623
9	Skin, Subcutaneous Tissue & Breast	152	129,1139	51	43,0360	0,6494	50	52,1840	0,8845	0,0350	8	7,0788	2,0374	5,1480
18	Infectious & Parasitic	131	201,4336	44	67,1445	1,5377	58	80,1017	1,6118	0,0742	15	23,6715	4,3787	27,8572
25	Associated w/ All MDCs	66	425,8208	22	141,8403	0,4518	18	144,8814	0,6461	1,6082	(4)	(25,8073)	(28,8554)	(3,0511)
	Grand Total	6,319	9,560,0096	2,404	3,185,8899	1,5144	2,356	3,421,9195	1,4524	(0,0000)	257	317,4210	(62,3914)	(236,0286)

Pages & pages...

MRSA Bacteraemia 2001-02 to 2005-06



NMIS Claims Errors



I HATE bar graphs & trend lines!!!!

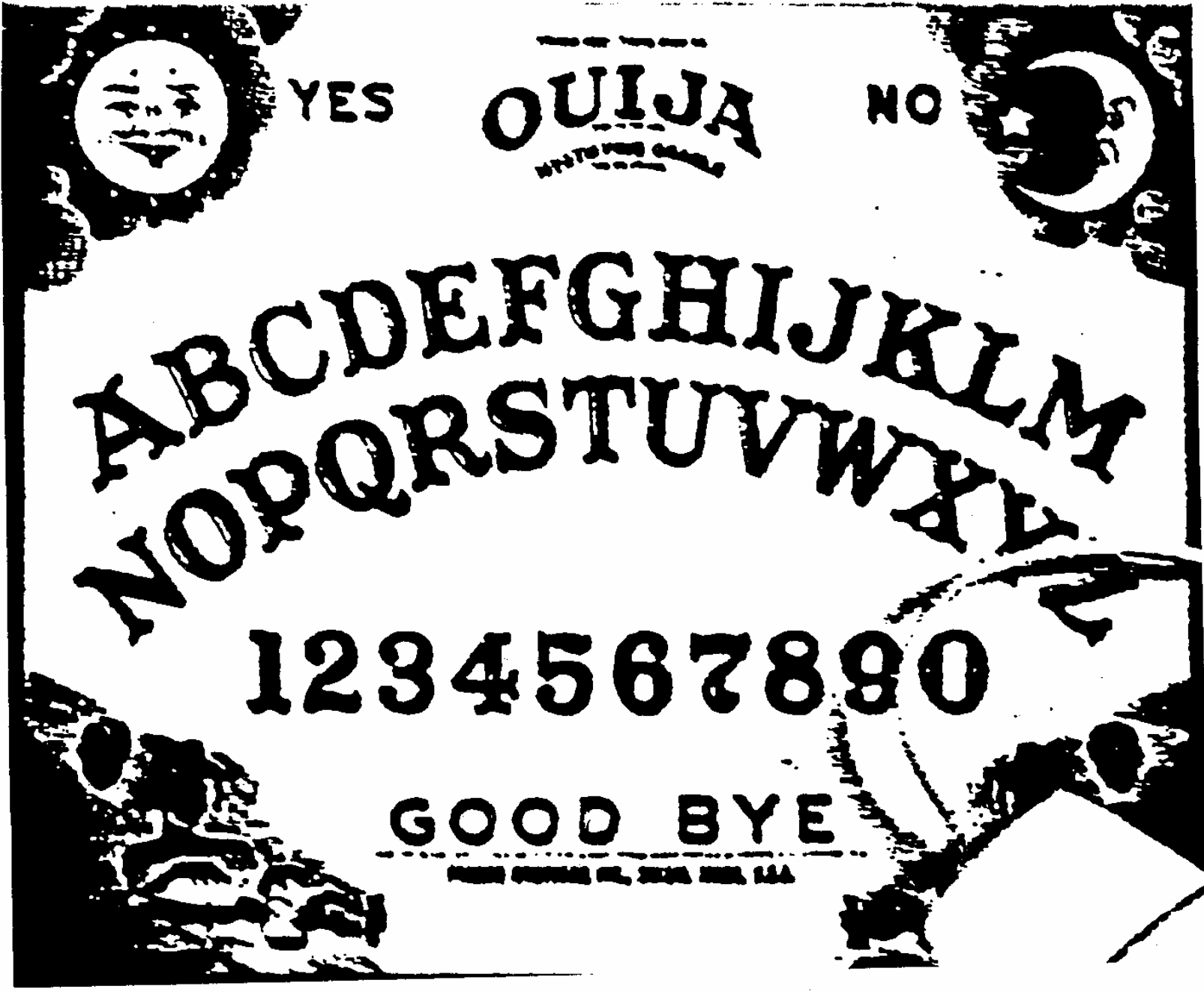
“Traffic Lights” ?

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

RUBBISH!!!!



YES

OUIJA

NO

ABCDEFGHIJKLM
NOPQRSTUVWXYZ

1234567890

GOOD BYE

MADE IN U.S.A.

***Vague data
collected in response to a...***

**Vague problem
will yield...**

**Vague solutions,
which, in turn, will yield...**

Vague results



Ah-h-h... “Benchmarking”

“The target is for 90% of the bottom quartile to perform at the 2008 average by the end of 2009.”

??

Transition to More “Advanced” Skills

❖ From:

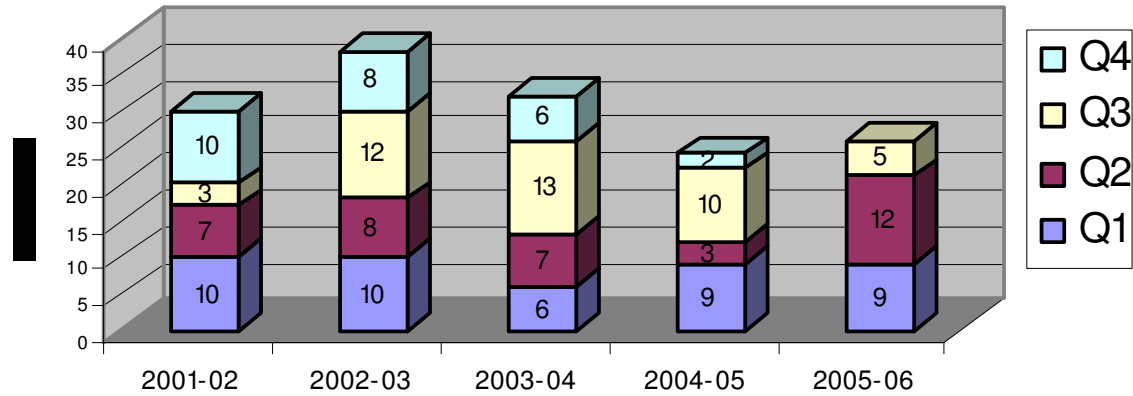
- Colors & Faces & Drawing circles

❖ To:

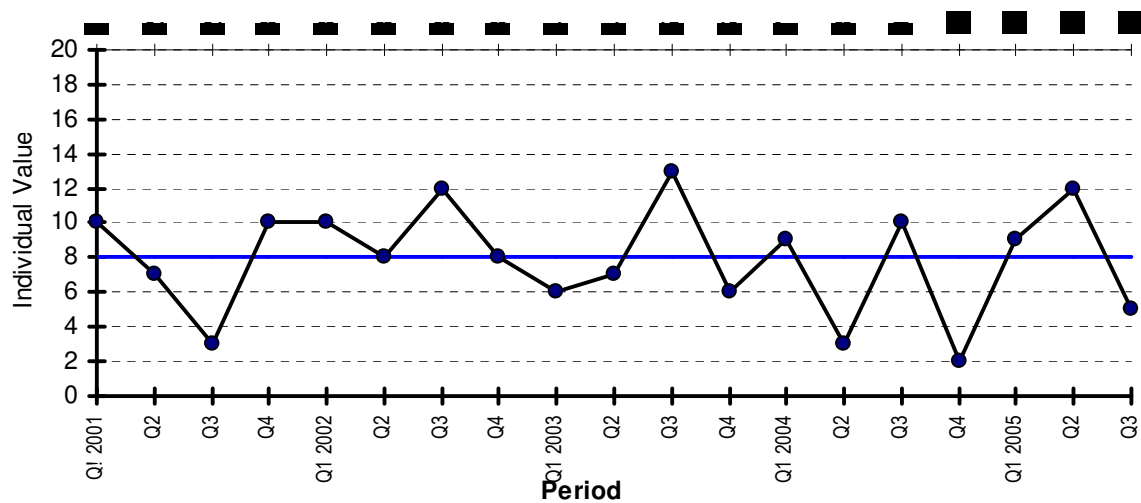
- “Plotting the dots!”
- Counting up to “8”
- Subtracting two numbers
- Sorting a list of numbers
- *Asking better questions!*
- *Reacting appropriately to variation*

What to do in a boring meeting NOW?

MRSA Bacteraemia 2001-02 to 2005-06



Quarterly MRSA Bacteraemias



**Plot
the
Dots!**

“Assignment” before Part 2

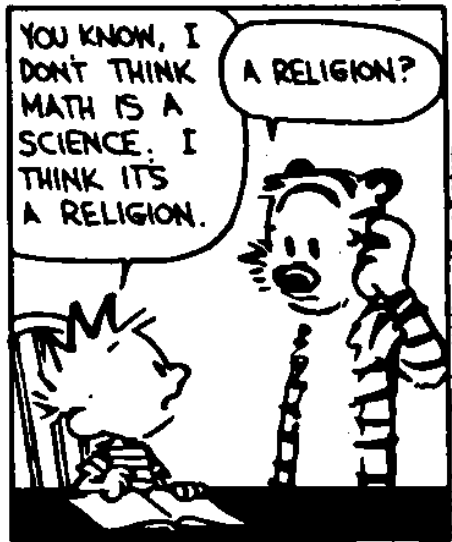
1. Calculate the moving ranges (19 data points produce 18 moving ranges):

Absolute values: (7-10), (3-7), (10-3), (10-10), (8-10)...(5-12)

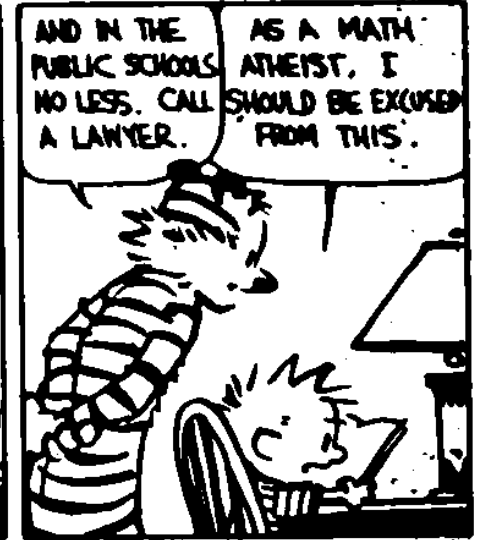
2. Determine MR_{Med} : Sort them from smallest to largest
Average the 9th & 10th in this SORTED sequence

3. Multiply MR_{Med} by 3.865 (round it)

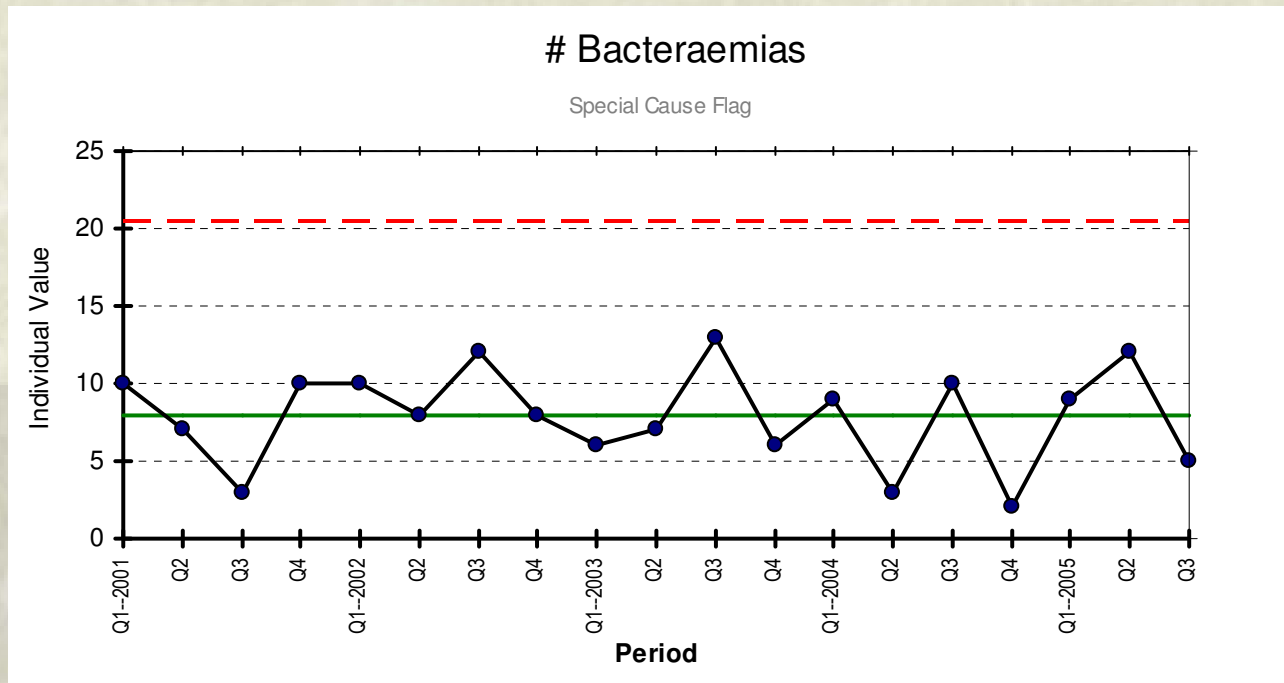
4. The average of the 19 data point is 7.9, let's call it ~8
Calculate $8 \pm [3.14 \times MR_{Med}]$



YEAH. ALL THESE EQUATIONS ARE LIKE MIRACLES. YOU TAKE TWO NUMBERS AND WHEN YOU ADD THEM, THEY MAGICALLY BECOME ONE NEW NUMBER! NO ONE CAN SAY HOW IT HAPPENS. YOU EITHER BELIEVE IT OR YOU DON'T.



YIKES!



Med MR = 4

$MR_{\max} = 4 \times 3.865^* \sim 15$

$8 \pm (4 \times 3.14^*) \sim [0 - 20]$

•From theory:
Doesn't change

*“Matrix” 150
bacteraemias?*

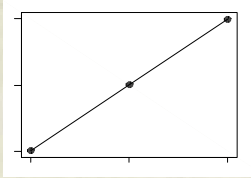
N	"Green"	"Yellow"	"Red"
21-28	≥ 10	5-9	< 5
29-32	> 10	6-10	≤ 5
33-46	≥ 15	10-14	< 10
47-49	> 15	11-15	≤ 10
50-64	≥ 20	15-19	< 15
65-67	> 20	16-20	≤ 15
68-82	≥ 25	20-24	< 20
83-85	> 25	21-25	≤ 20
86-100	≥ 30	25-29	< 25
101-104	> 30	26-30	≤ 25
105-119	≥ 35	30-34	< 30
120-122	> 35	31-35	≤ 30
123-137	≥ 40	35-39	< 35
138-141	> 40	36-40	≤ 35
142-156	≥ 45	40-44	< 40
157-160	> 45	41-45	≤ 40
161-175	≥ 50	45-49	< 45
176-178	> 50	46-50	≤ 45
179-193	≥ 55	50-54	< 50
194-197	> 55	51-55	≤ 50
198-212	≥ 60	55-59	< 55
213-216	> 60	56-60	≤ 55

"MBFC" Goal Table



Microsoft Excel
Worksheet

More Bad Habits: The Myth of Trends

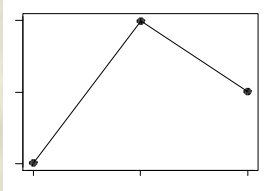


“Upward Trend” (?)

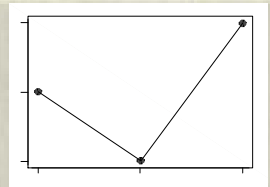
This month...

vs. last month...

vs. 12 months ago

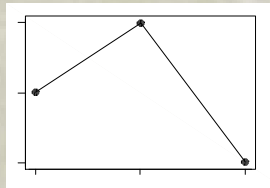


“Downturn” (?)



“Rebound” (?)

3 Months of Quarterly results...

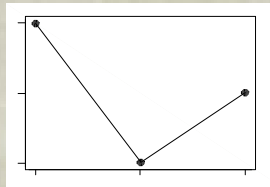


“Setback” (?)

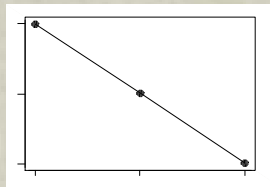
This quarter...

vs. last quarter...

vs. same quarter last year



“Turnaround” (?)



“Downward Trend” (?)

Common Cause STRATEGY

Medication Error Meeting

2000		2001		2002	
	<u>Errors</u>		<u>Errors</u>		<u>Errors</u>
Jan 00	74	Jan 01	75	Jan 02	71
	70		63		68
	67		71		80
	65		59		97
	63		70		87
	82		66		86
Jul 00	110	Jul 01	97	Jul 02	112
	61		71		68
	75		84		76
	78		85		76
	76		57		77
	78		60		71

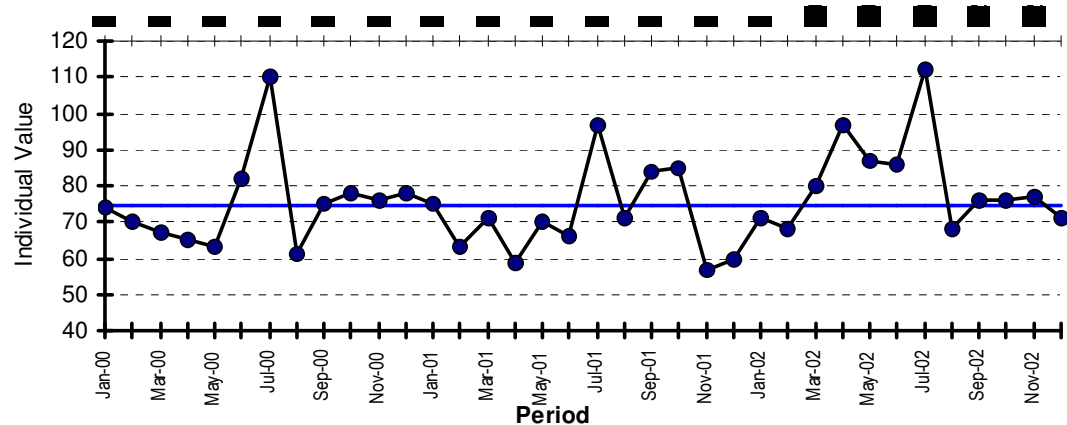
Is there a *pattern* to the high points or low points?

Descriptive Statistics

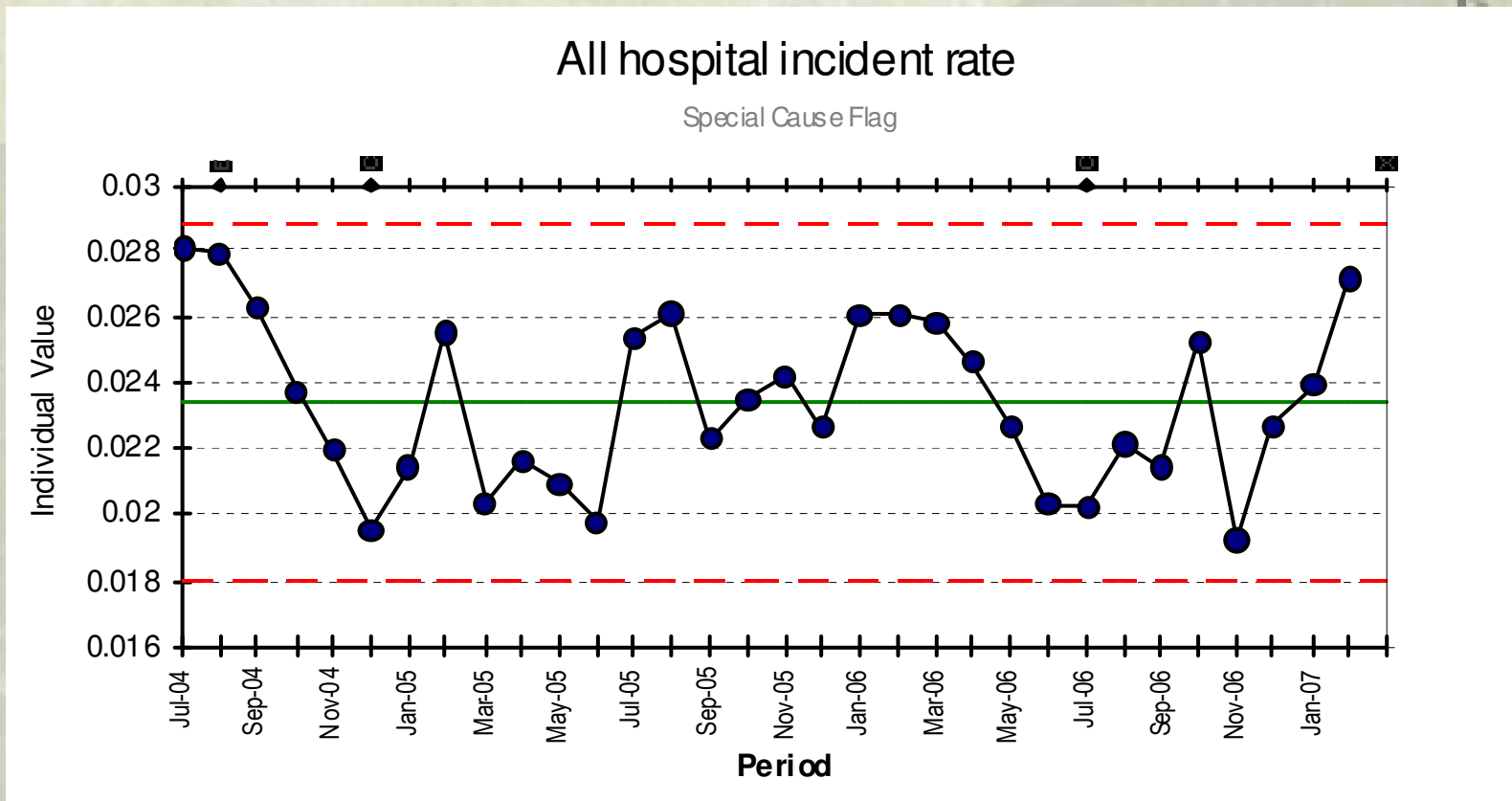
N	Mean	Median	TrMean	StDev	SE Mean	Minimum
36	75.72	74.50	74.63	12.91	2.15	57.00

Maximum	Q1	Q3
112.00	67.25	81.50

Medication Errors

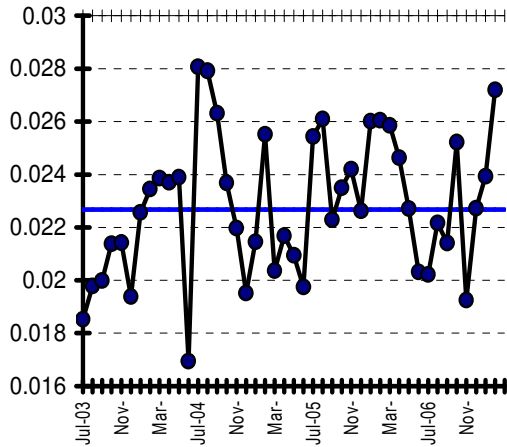


“Own” the “Learning & Growth” sub-business

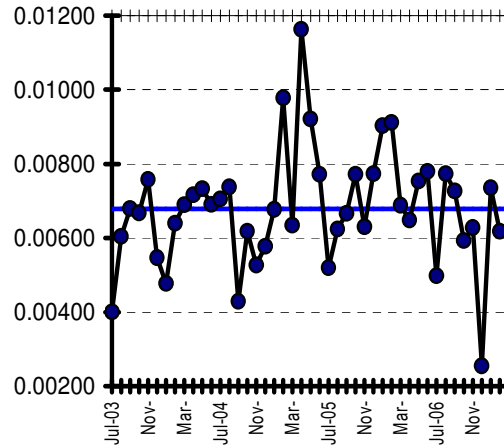


“Peeled” “Incidents”

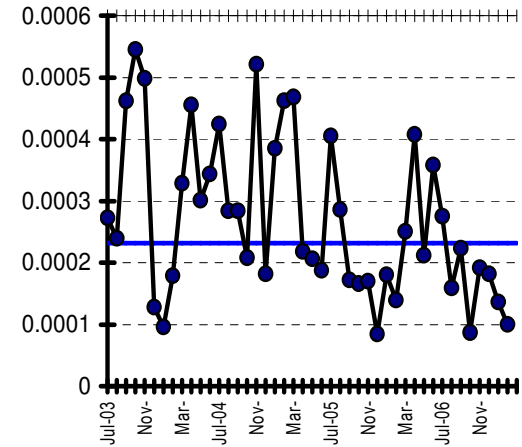
All hospital incident rate



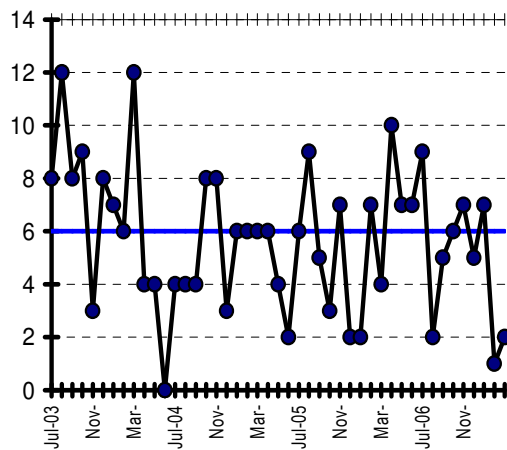
Complaint rate per admission



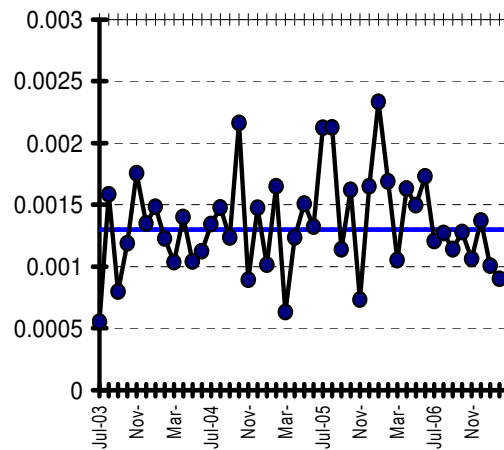
Pressure Ulcer Rate



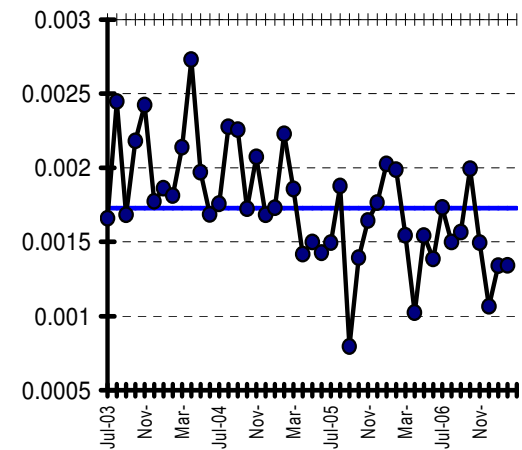
Total Falls



Bacteraemia rate

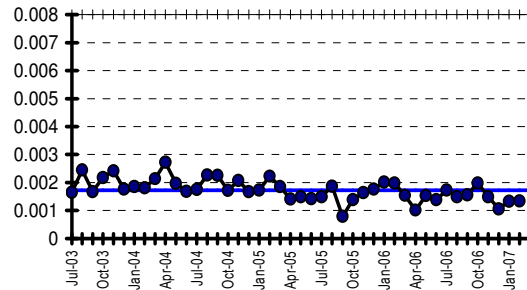


All Hosp_Med_err_rate

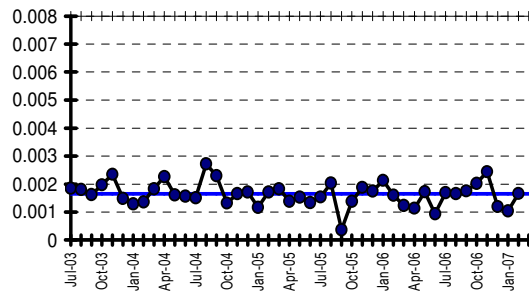


Med Error Rate Comparison

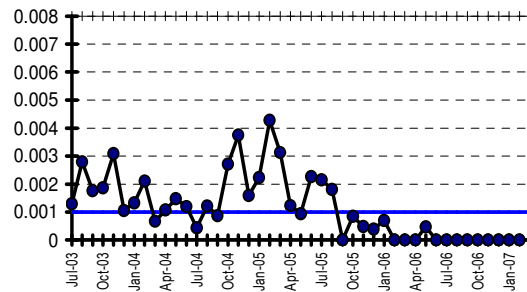
All Hosp_Med_err_rate



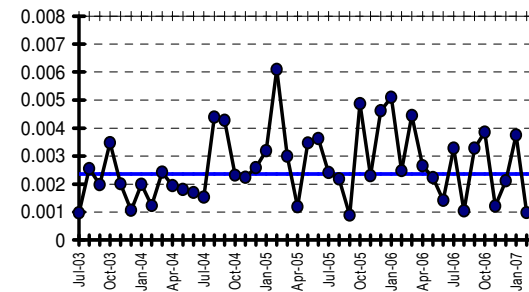
H1_Med_err_rate



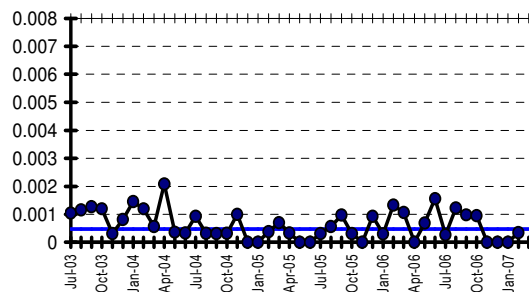
H2_med_err_rate



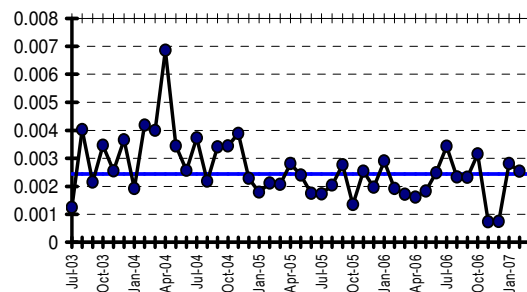
H3_med_err_rate



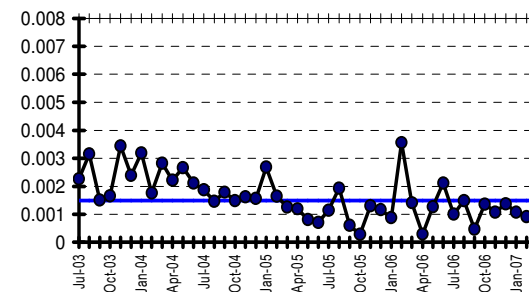
H4_med_err_rate



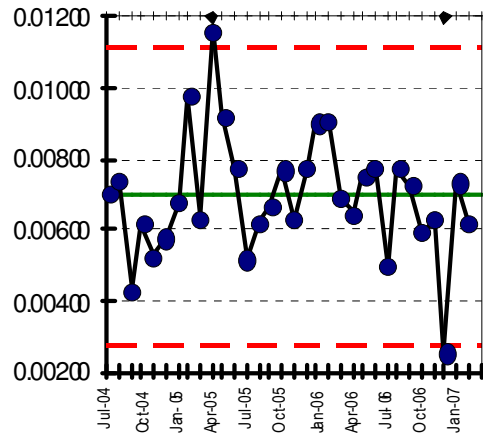
H5_med_err_rate



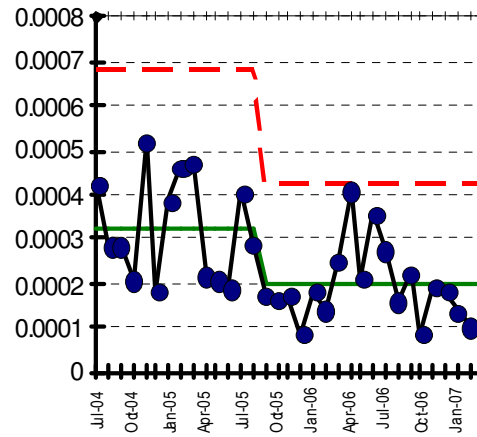
H6_Med_err_rate



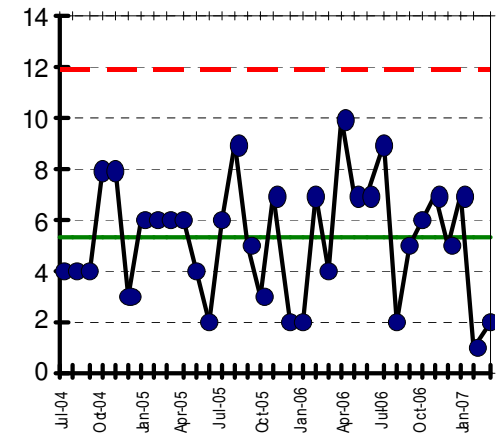
Complaint rate per admission



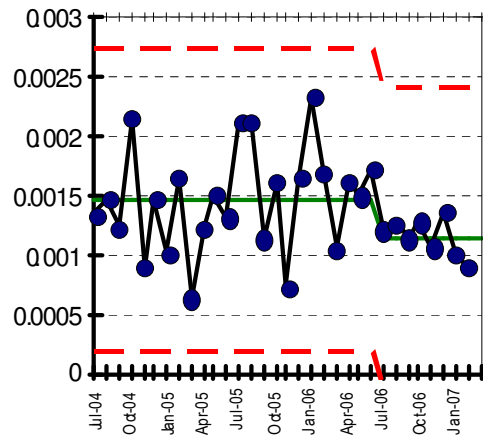
Pressure Ulcer Rate



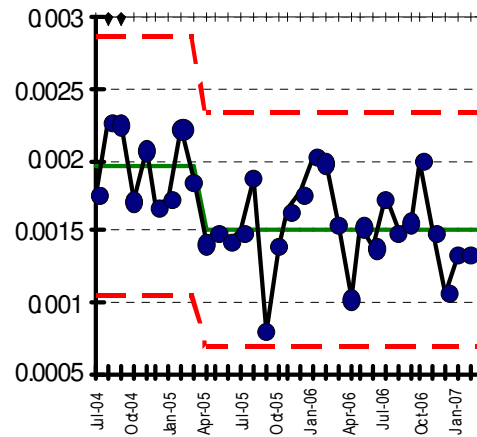
Total Falls



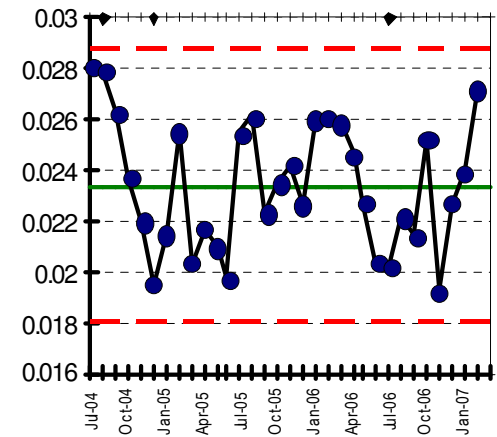
Bacteraemia rate

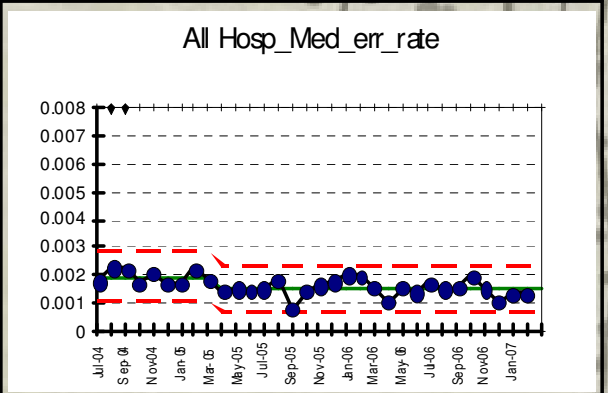
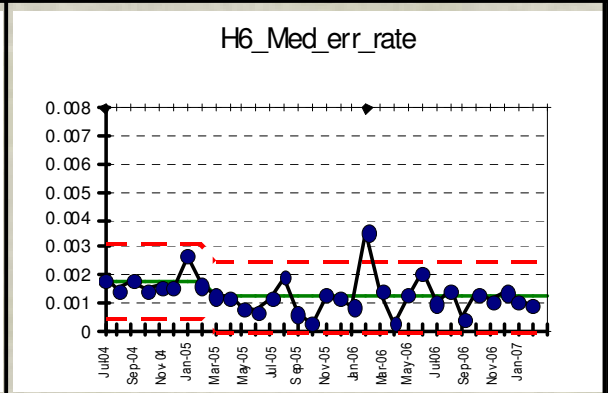
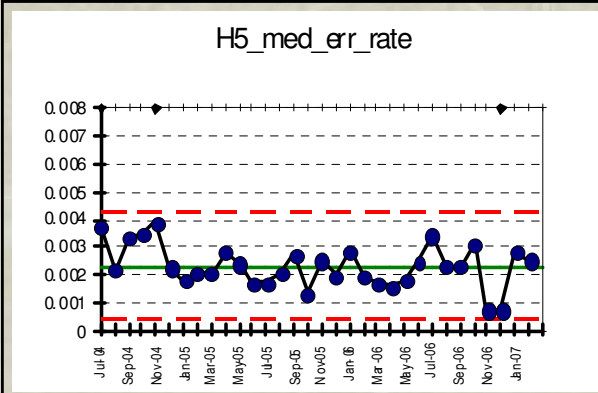
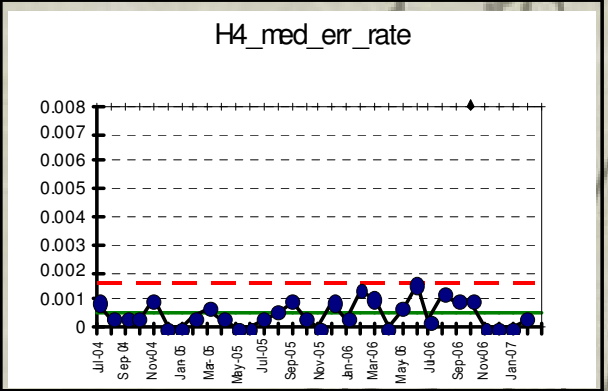
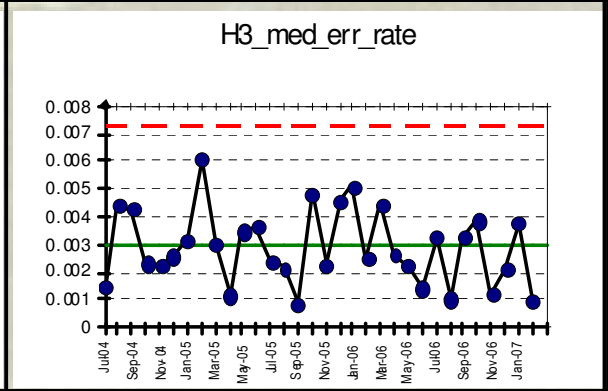
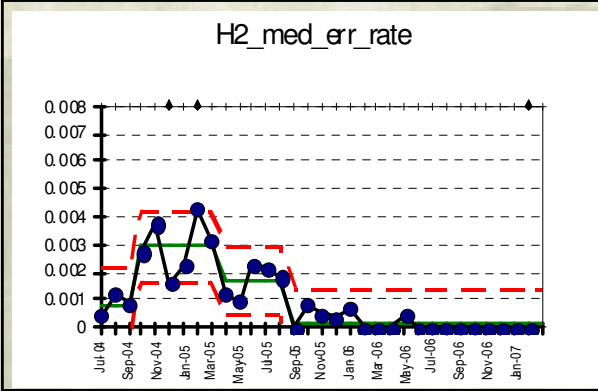
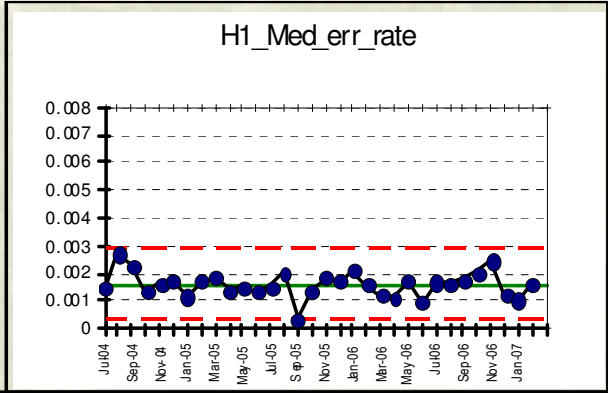


All Hosp_Med_err_rate



All hospital incident rate





I have an Excel macro that will do this

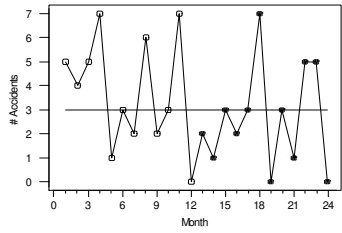
- ❖ E-mail me and I would *delighted* to send you a copy with a tutorial
- ❖ Pour a glass of wine and spend 2-1/2 hours!
- ❖ davis@dbharmony.com
- ❖ www.dbharmony.com

Statistics for Improvement

- ❖ Choose / define an issue in a process context
- ❖ Design & manage *a series of* simple, efficient data collections
- ❖ Use simple analysis / display methods understood by all organizational levels
 - Virtually 99.9+% graphical
- ❖ Assess a situation
 - The current state
 - Identify major opportunities—inappropriate & unintended variation
 - The effects of interventions
- ❖ Hold gains

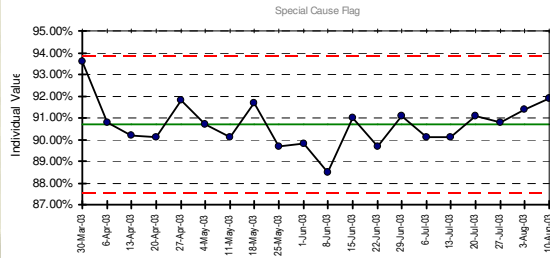
...or this?

Run Chart for Accident Data
1/89 - 12/90

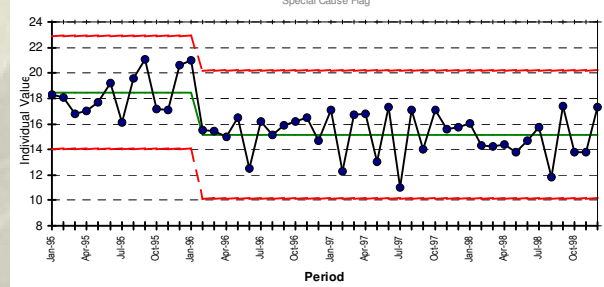


(Median = 3)

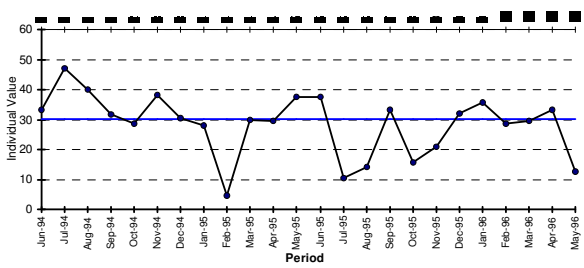
Region 28



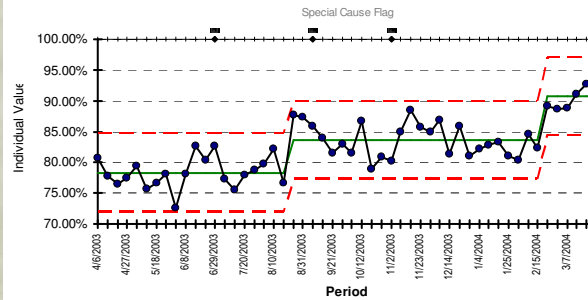
% C-Sections -- Adjusted for "Shift"



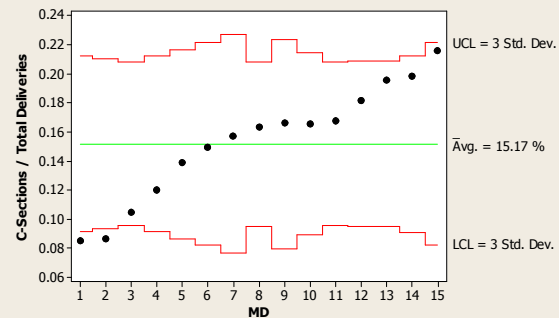
%Vfib



% Total seen < 4 Hours



Analysis of Means for C-Section Rates
Comparison by MD



WHAT IF...

- ❖ 50% reduction in monthly senior management meeting time
- ❖ Eliminating up to one hour each day of managerial review and attempts to interpret unimportant performance data
- ❖ 60% reduction in daily pounds of published performance reports
 - “Backup data”
- ❖ 80% reduction in monthly corporate financial reports

Would this help your improvement efforts?

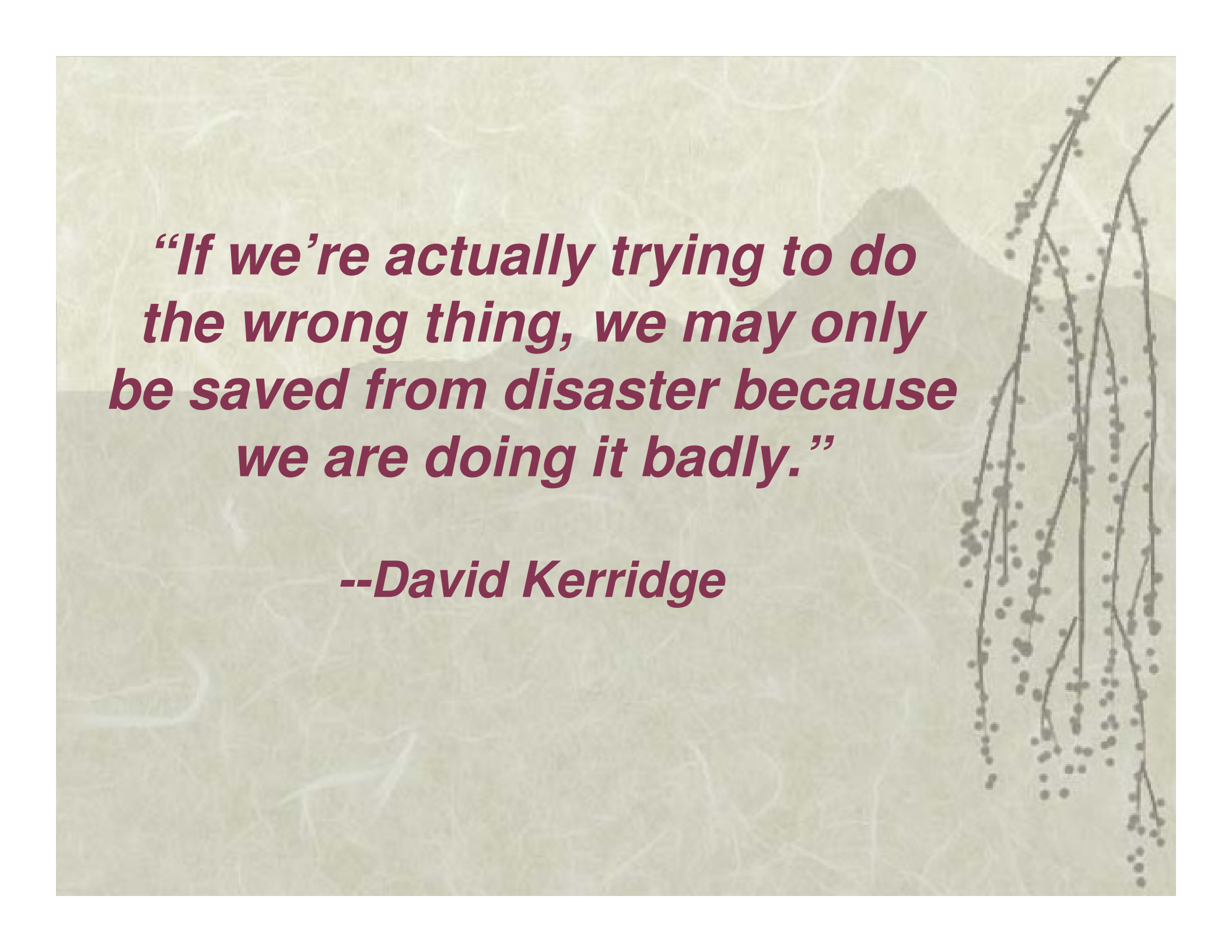
Suggestions when you go back

- ❖ Individual run charts of various “incidents”
- ❖ Run chart of “total number of RCA, ‘sentinel event,’ and ‘near miss’ incidents”
 - IF COMMON CAUSE: Pareto matrix?
- ❖ Run chart of “time between *any* RCA, sentinel event, or ‘near miss’ event”

Are you “perfectly designed” to have “incidents?”

GOOD LUCK...

- ❖ ...and PLEASE keep in touch!
- ❖ I have an all-day Data Sanity seminar that includes the Excel macro
- ❖ davis@dbharmony.com
- ❖ Or give me a business card
- ❖ What would you like?
 - FREE Excel macro (and tutorial) to “plot the dots”
 - Please check out my book: ***Data Sanity: A Quantum Leap to Unprecedented Results***
 - Email me for Preface or Chapter summaries

The background of the slide features a soft-focus landscape. In the upper portion, a range of mountains is visible under a pale sky. On the right side, the dark, slender branches of a willow tree hang down, adorned with small, dark buds or leaves. The overall color palette is muted, consisting of earthy greens, greys, and browns.

***“If we’re actually trying to do
the wrong thing, we may only
be saved from disaster because
we are doing it badly.”***

--David Kerridge