838 CONTINUOUS IMPROVEMENT EFFORT SHOWN TO BE WORTH ITS WEIGHT IN BLOOD

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Background The Department of Pathology identified an opportunity to optimise specimen turn-around-time (TAT) to meet customer expectation (patient and providers). More than 10% of the blood specimen are not resulted within the 60 min customer expectation. The team focused on the top five specimen analytes representing over 80% of the volume through the lab. The team followed the DMAIC process to utilising Lean and Six Sigma tools to identify predicted and unpredicted opportunities in specimen processing.

Objectives Optimised specimen turn-around to create a process that meet customer expectation of=60 mins 95% of the time.

Methods Implementation of project improvements by the team included a daily shift huddles using a common format with visual controls, supervisor standard work to view huddles weekly, elimination of multiple non-value activities (e.g., specimen initializing), level loading, cross-training, and the identification of a daily 'Flow Master' to communicate issues in real-time. These combined improvements yielded significant TAT reductions in all 5 tests. The improvements in TAT among the five test ranged from 8% to 26%.

Results

Abstract 838 Table 1

Test	TAT Mean Before	TAT Mean After	Mean P-value	% TAT Improv
HGB	28.08	20.73	0.001	26
K	44.70	39.56	0.001	11
pH	12.51	11.34	0.001	9
PTT	34.94	31.95	0.001	9
TNI	58.80	51.75	0.001	12
Overall	37.16	31.79	0.001	14

Conclusions Since the implementation of solutions the laboratory continues to track and maintain improvements. A control plan is in place to evaluate laboratory performance when it is out of specification and action is required. This project clearly demonstrated that improvements can be magnified when used in combination with Lean Six Sigma methodology and tools.

841 ROUTINE SUPPLEMENTATION OF PROBIOTICS FOR PREVENTION OF NECROTIZING ENTEROCOLITIS IN PREMATURE INFANTS—A QI PROJECT

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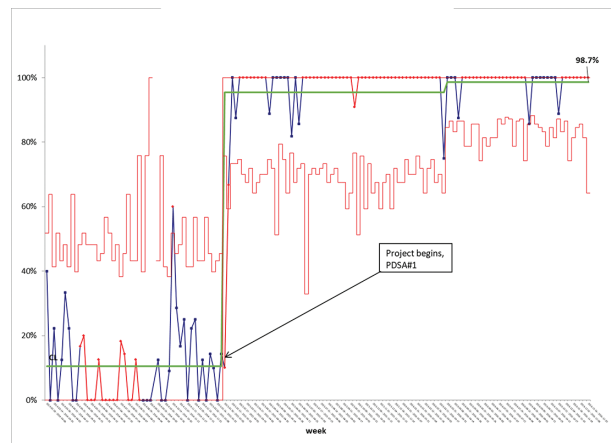
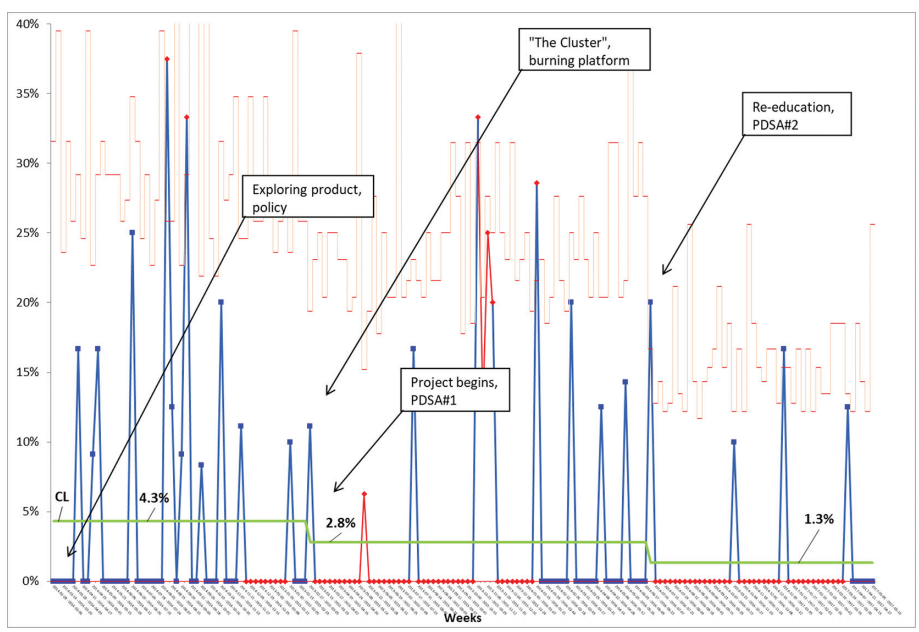
Background Necrotizing enterocolitis (NEC) carries high rates of mortality and morbidity in perterm infants. Our NEC rates over 6 years, were in higher quartiles of the Vermont-Oxford Network and prompted an improvement project.



Abstract 841 Figure 1 p Chart: % infants<33 wks given biogaia



Abstract 841 Figure 2 p Chart: NEC rates, infants<33 wks GA

Objectives To reduce NEC rates by 30% from 4.5% to 3% by 3/2016 in <33 weeks infants admitted in Sunnybrook NICU.

Methods Multi-professional team used fishbone analyses, process maps, literature review and compliance with hospital Infection Prevention unit. A product was selected (BioGaia, Lactobacillus reuteri; Ferring, Sweden). A policy written and approved. As a forcing mechanism, order for probiotics added to admission orders set. We gave education to staff, parents. We started after a cluster of cases ('burning platform'). PDSA#1 on the first baby was in 2/2015. After first month, issues were addressed, then spot audits assured continuing compliance. Measures: Outcome measures: NEC in infants<33 wk GA, (>=stage 2), Sepsis, Mortality. Secondary outcomes: Sepsis evaluations, Feeding intolerance, Days NPO, Growth rate/week, Antibiotics days, TPN days, Formula days. Process measures: Compliance rate, Probiotics days. Balancing measures: Sepsis, Feeding intolerance

Results One year before (planning periods, 330 infants), and two years into implementation (745 infants). NEC rates declined from 4.3% to a current rate of 1.3%. P-chart of NEC show a sustained reduction, P-chart of compliance shows a sustained compliance. Other outcomes detailed in Table 1. No significant baseline differences.

Conclusions Our QI project used QI tools – teamwork, RCA, aim statement, drivers, standardisation, forcing mechanisms, education, PDSA, and SPC. All supported a feasible, effective, safe, and sustained improvement. Findings are consistent with previous RCTs.

Abstract 841 Table 1 Baseline charactreristics and outcomes

		Cohort										
		pre N=330				post N=607						
		Mean	SD	N	%	Mean	SD	N	%	OR	95%CI	*p*
GA		28.1	2.6			28	2.5					ns
BW		1182	399			1152	384					ns
Male				176	53.3%			317	52.2%			ns
LGA				10	3.0%			26	4.3%			ns
SGA				19	5.8%			47	7.7%			ns
Maternal hypertension				55	16.9%			112	19.1%			ns
Chorioamnionitis				19	5.8%			33	5.6%			ns
NEC	All infants			15	**4.5%**			17	**2.3%**	0.52	0.25-0.99	**0.044**
	VLBW			15	**6.0%**			17	**2.9%**	0.45	0.22-0.91	**0.048**
	ELBW			14	**11.3%**			14	**5.1%**	0.42	0.19-0.93	**0.03**
	<30wk			15	**7.1%**			16	**3.2%**	0.46	0.23-0.91	**0.028**
	<27wk			10	**11.1%**			10	**4.6%**	0.41	0.18-0.96	**0.04**
	microPrems			10	14.3%			8	5.7%	0.4	0.17-0.97	0.06
Mortality				21	6.4%			31	5.1%			ns
Septic work ups		0.44	0.9			0.41	0.8					ns
Sepsis		0.12	0.4			0.1	0.3					ns
Line sepsis		0.05	0.2			0.04	0.2					ns
Days on antibiotics		4	5.2			4.61	6.4					ns
Average growth/wk		43	117			60	218					ns
Feeding intolerance episodes		**0.66**	1			**0.32**	0.7			0.4	0.39-0.41	**<0.01**
TPN days		9.6	6.4			10.5	8					ns
Day of life at 160ml/kg/d		12.7	6.2			13.6	7.3					ns
Days NPO		**1.3**	2.2			**0.8**	1.9			0.5	0.49-0.51	**<0.01**
Formula days		2.4	9.3			3.8	12.9					ns