

The Development of A Report Card for the Infectious Prevention Service Line (IPSL)

Ronald G. Nahass, MD, MHCM, FIDSA^{1,2,3}, Sharon Parrillo, BSRN, CIC³ Patricia Lafaro, BS RN CIC³,

Pauline McDonough, MS, MT (ASCP)³, Salvatore Moffa, MD, MBA³,

Luigi Brunetti, PharmD, MPH, BCPS, CGP^{2,3}

¹ID CARE, Hillsborough NJ, ²Rutgers, The State University of New Jersey, Piscataway, NJ

³Robert Wood Johnson University Hospital Somerset, Somerville, NJ



BACKGROUND

- HEALTH SYSTEMS COMMONLY USE SERVICE LINES TO DESCRIBE ACTIVITY THAT DRIVES REVENUE AND PROFIT
- INFECTIOUS DISEASES ARE IMPORTANT HEALTH CONCERNS THAT HAVE MAJOR IMPACT ON HOSPITAL MARGINS AND HAVE GAINED INCREASED SCRUTINY
- THE IDSL IS AN IMPORTANT VALUE BASED ACTIVITY THAT BRINGS BOTTOM LINE IMPROVEMENT THROUGH COST AND RISK REDUCTION RATHER THAN INCREASED PATIENT VOLUME.
- IT IS A HOSPITAL SYSTEM ACTIVITY THAT CROSSES SEVERAL DISCIPLINES AND FOR WHICH A SPECIFIC METHOD OF MEASUREMENT TO COMPARE PERFORMANCE TYPICAL OF A SERVICE HAS NOT BEEN DEVELOPED.
- WE HAVE DEVELOPED A REPORT CARD FOR THIS ACTIVITY AND PRESENT OUR 3 YEAR PERFORMANCE IN HOPE OF HELPING TO DEVELOP A STANDARD OF MEASURE.

OBJECTIVES

TO DEVELOP A EASY TO REVIEW MEASUREMENT TOOL FOR THE IDSL WHICH

- PROVIDES A FRAMEWORK FOR COMPARISON ACROSS SYSTEMS
- PROVIDES THE OPPORTUNITY TO BENCHMARK AND FOCUS IMPROVEMENT
- PROVIDES LEADERS OF THIS TYPE OF ACTIVITY THE OPPORTUNITY TO ILLUSTRATE VALUE

METRIC DEVELOPMENT

SYSTEM BASED ACTIVITIES FOCUSED ON INFECTIOUS DISEASES WERE GROUPED INTO 4 CATEGORIES

A. RESOURCES MANAGEMENT (RM)

- Expense areas heavily influenced by team activities
- Included in report card – Antimicrobial agents, regulated medical waste
- Not included in report card - Microbiology laboratory utilizations, device management

B. INFECTION PREVENTION & PATIENT SAFETY (IP/PS)

- Standard NHSN metrics
- Microbiology metrics for MDRO prevalence
- Hand hygiene performance
- Institutional Mortality

C. EMPLOYEE HEALTH (EH)

- Influenza vaccine rates
- Sharps injuries both as an absolute number and rate per 10,000 patient days

D. ANTIMICROBIAL STEWARDSHIP (AS)

- Days of Therapy (DOT) per Day of Risk (DAR) was chosen metric.
- Cost was followed as a resource metric not a stewardship metric

VALIDATIONS

BENCHMARKS WERE IDENTIFIED FOR THE KEY METRICS IN THE REPORT CARD

- IF A BENCHMARK COULD NOT BE IDENTIFIED IN THE LITERATURE INTERNAL BENCHMARKING FROM EARLIER YEARS WERE USED AS COMPARISONS
- HARMS ASSESSMENT FOR INTERVENTIONS WERE EVALUATED BY MONITORING INSTITUTIONAL MORTALITY AS A GLOBAL MEASURE OF ADVERSE EFFECT FROM THE ACTIVITY

THE REPORT CARD

Category	Metric	Year			Grade	Bench Mark
		2013	2014	2015		
Resource Management	Abx Budget (% of total)	6.9%	9.3%	9.4%	Yellow	RC
	Antibiotic S / Patient day	\$8.05	\$11.23	\$10.84	Yellow	RC
	Red Bag Waste (RMW) (lb)	97,611	78,607	77,625	Green	IHI
	RMW (\$)	\$37,092	\$29,871	\$20,183	Green	IHI
	RMW (Tons/OR)	3.8	3	3	Green	IHI
Infection Prevention & Patient Safety	TJI Rate	0.6%	2.7%	1.1%	Yellow	HC
	Colectomy	2.4%	2.6%	1.9%	Green	HC
	TAH	0.0%	2.7%	0.0%	Green	HC
	CAUTI (N)	33	37	9	Green	HC
	Crit Care CLASBI (N)	2	1	0	Green	HC
	VAP (N)	1	0	0	Green	HC
	HA Cdiff Rate/1,000 days	1.07	0.67	0.53	Green	HC
	% ESBL Kleb	8.6%	5.0%	6.0%	Green	JMI
	%ESBL E. Coli	7.6%	7.9%	9.5%	Green	JMI
	%MRSA	54%	51%	48%	Red	IB
	%CRE	2.3%	1.8%	0.3%	Green	NHSN
	%CRP	20.0%	15.0%	13.0%	Green	IB
	Hand Hygiene	68%	55%	68%	Red	Beckers
Mortality	1%	1.04%	0.96%	Green	IB	
Employee Health	Influenza Vaccine Rate	95%	95%	93%	Yellow	IB
	Sharps Injuries (N)	28	19	23	Red	IB
	Sharps Injuries/10,000 Patient Day	4.2	2.8	3.4	Green	VA
Antimicrobial Stewardship	DOT per 1000 DAR	492	485	406	Green	MM
	HA Cdiff Rate/1,000 days	1.07	0.67	0.53	Green	HC

RMW = Regulated Medical Waste, HA = Healthcare associated, CRP = Carbapenemase resistant pseudomonas, CRE = Carbapenemase resistant enterobacteriaceae, ESBL = Extended spectrum beta-lactamase, DOT = Days of Treatment, DAR = Days at Risk, RC = Regional Comparison, IHI = Institute for Healthcare Improvement, HC = Hospital Compare, JMI = JMI Laboratories, IB = Internal Benchmark, VA = Veterans Administration, MM = MedMine.

RESULTS – SELECTED HIGHLIGHTS

- TRENDS AND RANDOM VARIATION ARE EASILY SEEN.
- DOT FOR THE 3-YEAR TIME PERIOD DECREASED FROM 492 TO 406/1000 DAR
- RM DEMONSTRATED AN INCREASE IN ANTIMICROBIAL COST AND DECREASED COST OF RMW.
- DESPITE DECLINES IN ANTIMICROBIAL UTILIZATION AND INCREASES IN CMI, MORTALITY RATES WERE UNCHANGED.

POTENTIAL ENHANCEMENTS

- LABORATORY STEWARDSHIP MEASURES
- OUTBREAK MANAGEMENT ACTIVITIES
- BRAND AND IMAGE MEASURES FOR PATIENT SAFETY

CONCLUSIONS

- THE IDSL IS AN IMPORTANT SERVICE LINE IN A HEALTH SYSTEM. IT PROTECTS PATIENT SAFETY AND REDUCES COSTS
- ACTIVITIES OF THE TEAM FOCUSED ON INFECTIOUS DISEASES WITHIN A HEALTH SYSTEM CAN BE EASILY MEASURED AND BENCHMARKED IN REAL TIME RATHER THAN ABSTRACTED FROM AN ADMINSTRATIVE DATABASE
- MEASUREMENT IS ASSUMING A GREATER ROLE IN VALUING CONTRIBUTIONS OF PROVIDERS IN HEALTHCARE DELIVERY
- CREATING A NATIONAL STANDARD FOR THIS ACTIVITY TO PROVIDE A METHOD FOR INTER-FACILITY COMPARISON IS CRITICAL TO PERFORMANCE IMPROVEMENT
- FURTHER REFINEMENT, DEVLOPMENT, AND ADOPTION OF THIS REPORT CARD WILL BE NEEDED TO CREATE A STANDARD APPROACH TO VALUE MEASUREMENT

ACKNOWLEDGEMETS

The senior administrative staff at RWJS for their long term commitment to support this activity for protection of our patient's safety.