



 **Duke University Hospital**

Clinical Care | Education | Research





Singapore Healthcare Management Congress 2014

HM 14 - Organizational Excellence at Duke University Hospital

August 20, 2014

Mr. William Burton, Assistant Vice President,
Performance Services

Mrs. Jennifer Rose, Senior Director, Performance
Services



Outline

- **Tools to Achieve Performance Excellence**
 - Balanced Scorecard
 - Hand Hygiene
- **Case Study**
 - Organizational Improvement Efforts and Physician Engagement: Care Bundles



Balanced Scorecard



How It Works (from 10,000 feet)

Culling Data from Multiple Sources



Data Warehouse Extraction



"Life Data" Collection



Direct Key Entry



Custom-developed application integrates data from multiple sources to create hospital-wide, department-specific dashboards

Entity	Q1	Q2	Remarks
Administrative	12	1	12/10
Physician/Staff	15	32	12/10
Medical Staff	1	16	12/10
Medical Residents	10	10	12/10
Medical Students	1,000	1,000	12/10
Patients			
ICU	100	100	12/10
CCU/ICU	10	10	12/10
Outpatient	10	10	12/10
Opd	10	10	12/10
PT	10	10	12/10
OT	10	10	12/10
Physicians			
Administrative	10,000	10,000	12/10
Physician/Staff	10,000	10,000	12/10
Medical Staff	10,000	10,000	12/10
Medical Residents	10,000	10,000	12/10
Medical Students	10,000	10,000	12/10



Balanced Scorecard Application (BSC)

Statistics

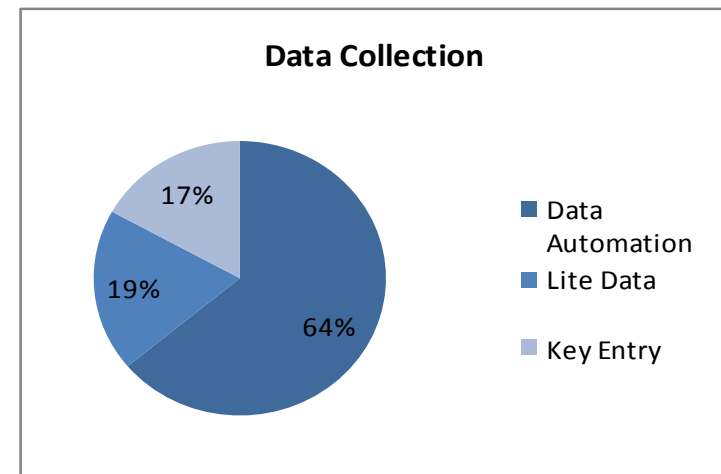
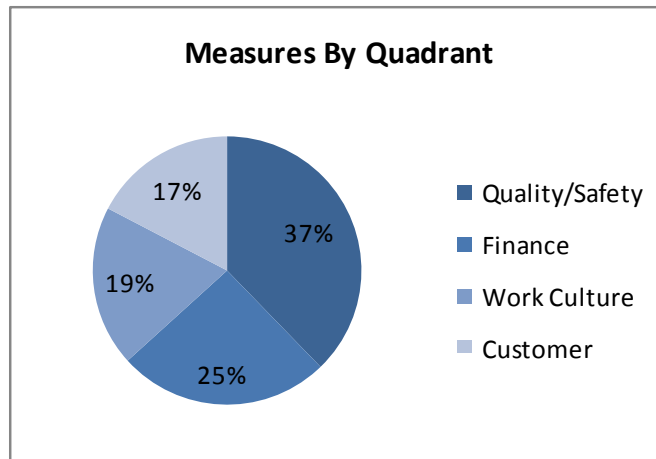
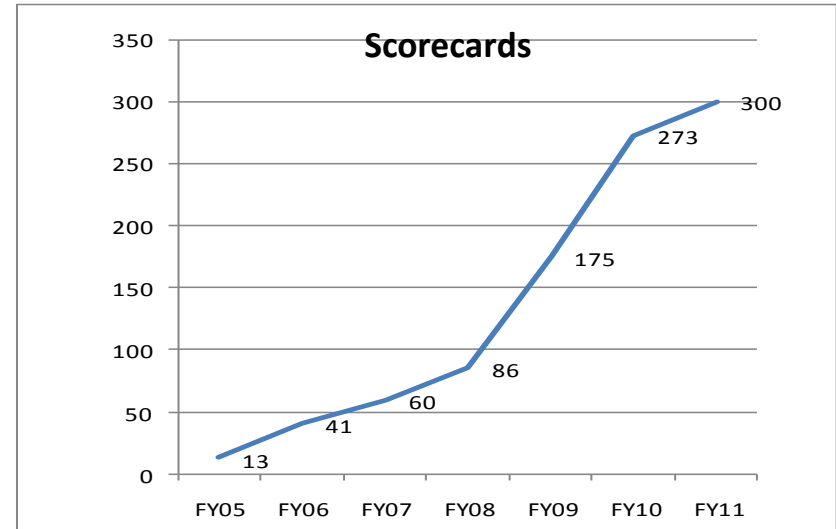
Distinct Scorecards: 350

Distinct measures: 443

Average Measures per Scorecard: 17.6

Trend Graphs: 5,288

Measure Frequency (89% monthly | 11% quarterly)





Balanced Scorecard Application

Performance Services
Helping you monitor and improve performance.

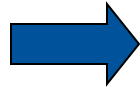
January 4, 2010

Available Reports

Report Type	DSM	DSM	DSM	DSM	DSM	DSM	DSM
Advanced Clinical (AC)							
Labor & Professional Mgmt							
Financial Performance							
Performance Improvement							
Quality/Operational Exp							
Key Risk & Resources							
Align Your Site							
About Us							
Contact Us							
Help							
Privacy Policy							
IT Team Page							
Linked Applications							

Critical Success Factors (CSFs)

Measure	DSM	DSM	DSM	DSM	DSM	DSM	DSM
Quality and Patient Safety							
Average Length Of Stay (ALOS) - OR Inpatient Excludes Newborns							
Quality and Patient Safety							
Average Length Of Stay (ALOS) - Outpatient Excludes Newborns							
Quality and Patient Safety							
Average Length Of Stay (ALOS) - Excludes Newborns							
Quality and Patient Safety							
CGI Evidence-Based Care Score							
Quality and Patient Safety							
CGI Evidence-Based Care Score - AMI							
Quality and Patient Safety							
CGI Evidence-Based Care Score - AF							
Quality and Patient Safety							
CGI Evidence-Based Care Score - PNE							
Quality and Patient Safety							
CGI Evidence-Based Care Score - SCIP							
Quality and Patient Safety							
30 Day 90 Day 180 Day							
Quality and Patient Safety							
Infection Control - Catheter Associated Primary Bloodstream Infection							
Quality and Patient Safety							
Med Safety - Total Preventable ADEs With Severity Index Greater Than 2 As Pct Of Total Reported ADEs							
Quality and Patient Safety							
Patient Falls With Injury Per 1000 Inpatient Days (NORISQ Criteria)							
Quality and Patient Safety							
Patient Flow - Left Without Being Seen							
Quality and Patient Safety							
Pressure Ulcer - Rate Of Assessed Patients With Hospital Acquired Pressure Ulcers							
Quality and Patient Safety							
Customer Service							
Patient Satisfaction - Inpatient Mean Score							
Quality and Patient Safety							
Patient Satisfaction - Inpatient Mean Score							
Quality and Patient Safety							
Patient Satisfaction - Outpatient Tests And Treatment Mean Score							
Quality and Patient Safety							
Patient Satisfaction - Room Cleanliness Mean Score							
Quality and Patient Safety							
Finance							
Flex Expense Percent Variance							
Quality and Patient Safety							
Flex PTE Percent Variance							
Quality and Patient Safety							
Total Contribution Margin Excludes Pass thru							
Quality and Patient Safety							
Volume - Discharges							
Quality and Patient Safety							
Volume - Provider Visits							
Quality and Patient Safety							



Duke University Hospital/Heart (2009-12 Jun)
Balanced Scorecard - CSF

Measure	Actual	Target	YTD Actual	YTD Target	Freq
QUALITY AND PATIENT SAFETY					
Average Length Of Stay (ALOS) - Excludes Newborns **	6.8	5.76	6.55	5.96	M
CGI Evidence-Based Care Score - AMI **	98.11%	97.89%	97.74%	97.89%	M
CGI Evidence-Based Care Score - AF **	98.48%	98.17%	94.71%	98.17%	M
Selection Control - Catheter Associated Primary Bloodstream Infection **	1.35	2.70	2.73	2.70	M
Med Safety: Total Preventable ADEs With Severity Index Greater Than 2 As Pct Of Total Reported ADEs **	4.98%	5.54%	5.54%	5.54%	M
Patient Falls With Injury Per 1000 Inpatient Days (NORISQ Criteria) **	0.71	0.69	0.60	0.69	M
Pressure Ulcer - Rate Of Assessed Patients With Hospital Acquired Pressure Ulcers **	3.7%	4.8%	4.8%	4.8%	M
CUSTOMER					
Patient Satisfaction Inpatient Mean Score **	86.2	85.4	86.4	85.4	M
Patient Satisfaction Outpatient Tests And Treatment Mean Score **	90.5	90.9	90.4	90.9	M
Patient Satisfaction Room Cleanliness Mean Score **	79.2	80.2	81.2	80.2	M
FINANCE					
Flex Expense Percent Variance **	-12.10%	0.00%	5.10%	0.00%	M
Flex PTE Percent Variance **	-5.30%	0.00%	5.70%	0.00%	M
Total Contribution Margin Excludes Pass thru **	\$7,314,363	\$3,047,348	\$26,363,717	\$12,403,754	Q
Volume - Discharges **	340	576	4,460	7,138	M
Volume - Provider Visits **	2,420	6,433	86,710	77,088	M

Lighting Scheme: Blue = Exceeds Expectations; Green = Fully Achieves; Yellow = Between prior year's avg performance (or similar) and Fully Achieves; Red = Below prior year's avg performance, budget, or similar

DUHS Performance Services, 7/19/2010 11:21:41 AM

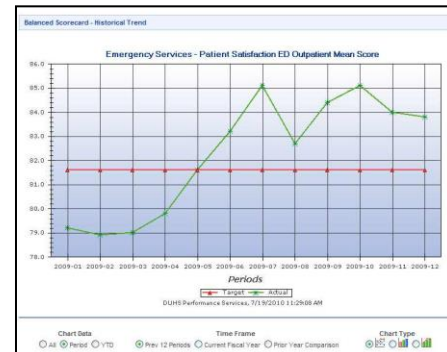


Duke University Hospital / Childrens (2009-12 Jun)
Period Aggregate - Critical Success Factors

Measure	CHILD	5100	5300	7700P	CHC	ICN	Lenox Bator	PBMT	PCICU	PICU
Average Length Of Stay (ALOS) - Excludes Newborns	10.42									
Med Safety: Total Preventable ADEs With Severity Index Greater Than 2 As Pct Of Total Reported ADEs	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Pressure Ulcer - Rate Of Assessed Patients With Hospital Acquired Pressure Ulcers										
Pressure Ulcer - Rate Of Assessed Patients With Unit Acquired Pressure Ulcers		0.00%	0.00%				0.00%	0.00%	0.00%	0.00%
Average Time To Answer in Seconds - Scheduling					95					
Patient Satisfaction Inpatient Mean Score	88.5	89.2	87.5							
Patient Satisfaction Room Cleanliness Mean Score	80.7	82.1	72.1							
Flex Expense Percent Variance	-22.25%	5.30%	18.60%		18.10%	-1.10%	27.56%	-2.10%	-6.40%	-6.40%
Flex PTE Percent Variance	-10.41%	-3.60%	28.80%		3.60%	-3.90%	15.70%	4.40%	-18.50%	-18.50%
Percent Of Co-Pay Collections					93.6%		95.4%			
Total Contribution Margin Excludes Pass thru	(8672,022)									
Volume - Discharges	388									

Lighting Scheme | ESC Enhancements & Changes | Target Methodology
DUHS Performance Services, 7/19/2010 11:32:24 AM

DukeMedicine
Center Performance Reporting
- DRUGS -
- LABOR -





Duke's Balanced Scorecard

 Duke University Hospital (2014-11 May) Balanced Scorecard - CSF					
Measure	Actual	Target	YTD Actual	YTD Target	Freq
QUALITY AND PATIENT SAFETY					
Average Length Of Stay (ALOS) CMI Adjusted: Excludes Newborns ^{CSF}	3.21	3.39	3.30	3.39	M
CMS Evidence-Based Care Score ^{CSF}	100.00%	95.50%	98.83%	95.50%	M
CMS Evidence-Based Care Score: OP Surgical ^{CSF}	100.00%	97.50%	98.22%	97.50%	M
CMS Process of Care: ED-1b Median Time from ED Arrival to ED Departure for Admitted ED Patients ^{CSF}	396	369	428	369	M
CMS Process of Care: IMM-2 Influenza Immunization ^{CSF}	88.97%	91.00%	59.09%	91.00%	M
CMS Process of Care: Left Without Being Seen ^{CSF}	7.0%	5.2%	7.4%	5.2%	M
CMS Process of Care: OP-18 Median Time from ED Arrival to ED Departure for Discharged ED Patients ^{CSF}	255	206	294	206	M
Infection Prevention: Hand Hygiene ^{CSF}	95.2%	90.0%	88.2%	90.0%	M
Infection Prevention: ICU Central Line Associated Primary Bloodstream Infection, NHSN Defined ^{CSF}	0.83	0.78	1.35	0.78	M
Inpatient Mortality Ratio ^{CSF}	0.82	0.74	0.85	0.74	M
PSI 90 - AHRQ Patient Safety Indicator Composite ^{CSF}		0.67	0.67	0.67	Q
Readmission Within 30 Days - Same Hospital, UHC Defined ^{CSF}	14.32%	12.77%	14.17%	12.77%	M
CUSTOMER					
CG CAHPS: Global Rating ^{CSF}	85.6%	83.1%	85.1%	83.1%	M
HCAHPS: Hospital Environment ^{CSF}	59.2%	64.0%	62.3%	64.0%	M
HCAHPS: Percent of Dimensions Meeting Achievement Threshold ^{CSF}	62.5%	87.5%	87.5%	87.5%	M
HCAHPS: Responsiveness of Hospital Staff ^{CSF}	60.1%	62.0%	62.5%	62.0%	M
Patient Satisfaction OP T & T Mean Score: CT ^{CSF}	92.7	94.6	93.2	94.6	M
Patient Satisfaction OP T & T Mean Score: MRI ^{CSF}	92.7	94.6	92.3	94.6	M
FINANCE AND GROWTH					
FTEs Per Adjusted Occupied Bed ^{CSF}	5.03	5.00	5.14	5.01	M
Operating Income ^{CSF}	\$21,327,050	\$11,247,678	\$115,913,345	\$108,541,907	M
Volume: Billed Technical Visits ^{CSF}					M
Volume: Discharges ^{CSF}	3,410	3,382	36,371	36,173	M
Volume: Outpatient Visits ^{CSF}	93,730	88,588	940,560	948,323	M
Volume: Surgical Procedures ^{CSF}	3,233	3,406	34,831	36,104	M
WORK CULTURE					
Diverse Hire Rate: Senior Level Positions ^{CSF}	0.00%	13.85%	17.65%	13.85%	M
Diversity: My entity values employees from different backgrounds ^{CSF}		4.25		4.25	YTD
Percent Terminations Annualized: Overall ^{CSF}	12.65%	13.10%	12.65%	13.10%	M
Work Culture: Commitment Indicator ^{CSF}		4.10		4.10	YTD
Work Culture: Percent Tier III Units ^{CSF}		20.23%		20.23%	YTD
Lighting Scheme: Blue = Exceeds Expectations; Green = Fully Achieves; Yellow = Between prior year's avg performance (or similar) and Fully Achieves; Red = Below prior year's avg performance, budget, or similar					
DUHS Performance Services, 7/29/2014 8:18:56 AM					



Quality and Patient Safety

FY15 Strategic Objectives	FY15 CSF Goals (DUH, DRH, DRAH)
Quality & Patient Safety	
Provide coordinated care across all settings	1. CMS Inpatient Evidence-Based Care Score (AMI, HF, PNE, SCIP, STK, VTE, IMM)
	2. CMS Outpatient Evidence-Based Care Score (HOP)
	3. Readmission Rate
	4. Mortality
	5. ED LWBS
	6. Length of Stay Ratio (new)
Provide safe patient care	7. Patient Safety Index (PSI)
	8. Hospital Acquired Infections (CLABSI, CAUTI)



Overview of Proposed Quality and Safety Measures

Measure	Current Performance	Target	Target Methodology
Composite IP EBCS	92.2%	95%	UHC Top quartile
Outpatient EBCS	97%	99%	UHC Top quartile
Readmission Rate	14.4%	13.05%	UHC Median
Mortality O/E ratio	.85	.79	UHC Top quartile
ED LWBS	8%	3.5%	Stepped approach to national avg. of 1.9%
LOS Index	1.13	1.02	UHC Median
PSI Index	.67	.66	UHC Top quartile



Patient Experience

FY15 Strategic Objectives	FY15 CSF Goals (DUH, DRH, DRAH)
<i>Patient Experience</i>	
Provide every patient with the best experience	1. HCAHPS – Percent of Dimensions Meeting Achievement Threshold
	2. Outpatient Test & Treatment Mean Score: CT
	3. Outpatient Test & Treatment Mean Score: MRI
	4. CGCAHPS – Access and Office Staff Domains
	5. ED Outpatient Satisfaction
Be available for patients who need our care	6. <i>Scheduled Visits Within 72 Hours (New/Consult)</i>
	7. <i>Template Utilization – YTD</i>
	8. <i>Provider Cancellation Rate (< 4 weeks)</i>



Overview of Proposed Patient Experience Measures

Measure	Current Performance	Target	Target Methodology
HCAHPS % dimensions	87.5%	87.5%	7 of 8 dimensions meeting VBP threshold
HCAHPS, Staff Responsiveness	63.5	63.6	VBP Achievement threshold
HCAHPS, Hospital Environment	62.3	64.4	VBP Achievement threshold
OP CT	93.7	94.6	PG Top quartile
OP MRI	92.6	95	PG top quartile
CG CAHPS Access	61.1	62.6	Stepped approach to top quartile
CG CAHPS Office Staff	88.9	90	Stepped approach to top quartile
ED Satisfaction	79.5	88.1	PG Top quartile



Work Culture

FY15 Strategic Objectives	FY15 CSF Goals (DUH, DRH, DRAH)
Work Culture	
Maintain a workforce that is committed, motivated and equipped	1. Work Culture Commitment Indicator <i>2. Percent Terminations: Overall</i>
Foster equity and respect of all individuals	3. WC Question on diversity
Support each other in the delivery of high quality care	4. % Tier III (based on Power Items Score)



Finance & Growth

FY15 Strategic Objectives	FY15 CSF Goals (DUH, DRH, DRAH)
<i>Finance & Growth</i>	
Deliver high value care	1. Operating Income
	2. Cost per Episode of Care (New for FY15)
	3. FTE per AOB
Deliver targeted growth	4. Volume: Discharges
	5. Volume: Surgical Procedures
	6. Volume: Outpatient Visits
	7. Volume: Entity Strategic Growth Initiatives



Hand Hygiene



Background

- Historical poor performance
- Limited observation data collection which yielded:
 - Retrospective data
 - Small sample size with little specificity
 - Questionable validity of data
- Innovative approach proposed by Infection Control to:
 - Increase sample size
 - Provide more concurrent feedback
 - Increase specificity
 - Increase the efficiency of reporting

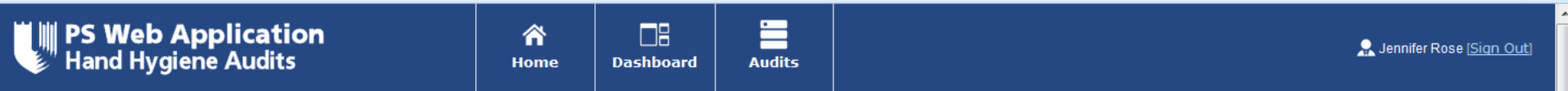
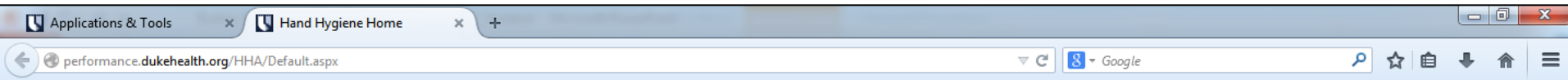


Solution

- Dedicated observers (nursing students)
- Handheld data capture tool
- Web-based concurrent reporting
- Reporting down to role level within organization (physician, nurse, etc.)



Demo



Welcome to Hand Hygiene Audits

View your entity details by selecting from the links below.

Duke University Hospital
Compliance last 30 days

96.2

[Dashboard](#)

[Audits](#)

[DUH Infection Prevention](#): 684-5457

Duke Raleigh Hospital
Compliance last 30 days

96.3

[Dashboard](#)

[Audits](#)

[DRAH Infection Prevention](#): 954-3166

Duke Regional Hospital
Compliance last 30 days

89.7

[Dashboard](#)

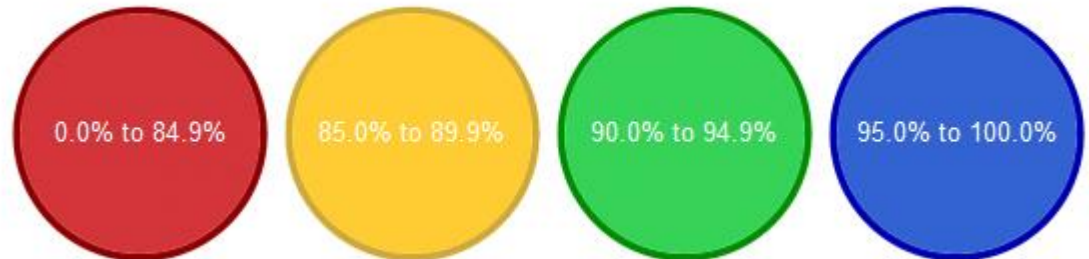
[Audits](#)

[DRH Infection Prevention](#): 470-7171

Hand Hygiene Related Resources & Info

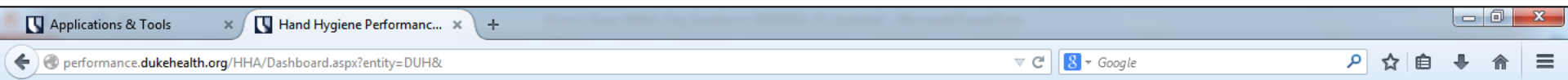
- [About the DUHS Hand Hygiene Solution](#)
- [How-to Guide: Improving Hand Hygiene](#)
- [The Sound of Two Hands Washing: Improving Hand Hygiene](#)
- [Improving Adherence to Hand Hygiene Practice: A Multidisciplinary Approach](#)

Legend





Demo



PS Web Application Hand Hygiene Audits

Home Dashboard Audits

Jennifer Rose [Sign Out]

Hand Hygiene Home >> Hand Hygiene Performance Dashboard

This page is under construction. More features on the way!

Hand Hygiene Performance Dashboard

All DUH **DRAH** DRH

Entity	Loc Type	Last 30 Days	Obs	Last 60 Days	Obs	Last 90 Days	Obs
DUH	Inpatient	95.9%	762	94.8%	5434	95.5%	10494
DUH	Outpatient	98.2%	340	97.9%	1330	97.6%	2590

Entity	Loc Type	Location	Last 30 Days	Obs	Last 60 Days	Obs	Last 90 Days	Obs
DUH	Inpatient	CHC RECOVERY	97.2%	36	97.5%	120	98.7%	236
DUH	Inpatient	DMP 3RD FLOOR RECOVERY ROOM	97.5%	40	98.6%	72	98.8%	254
DUH	Inpatient	DMP 6E MED/PULMONARY MICU	100.0%	16	93.5%	124	95.9%	246
DUH	Inpatient	DMP 6W TRAUMA SICU	83.3%	12	93.7%	126	96.8%	248
DUH	Inpatient	DMP 7E CARDIOTHORACIC SURGERY	100.0%	31	94.8%	115	93.5%	247
DUH	Inpatient	DMP 7W GENERAL/THORACIC/CARDIOTHORACIC SURGERY	95.8%	24	94.6%	92	94.7%	244
DUH	Inpatient	DMP 8E NEURO ICU	100.0%	9	98.8%	161	94.9%	277
DUH	Inpatient	DMP 8W NEUROLOGY/NEUROSURGERY	100.0%	8	90.4%	146	92.7%	248
DUH	Inpatient	ER SIDE A INPATIENT	83.3%	18	97.5%	118	98.0%	254
DUH	Inpatient	ER SIDE B INPATIENT	94.4%	18	96.4%	138	97.9%	236
DUH	Inpatient	ER SIDE C INPATIENT	100.0%	16	93.9%	132	96.5%	226
DUH	Inpatient	ER SIDE E INPATIENT	100.0%	2	100.0%	2	100.0%	2
DUH	Inpatient	ER SIDE P INPATIENT	100.0%	11	93.6%	125	96.7%	239
DUH	Inpatient	N21 GEN SURG-GI MEDICINE	93.8%	32	91.3%	184	92.1%	302
DUH	Inpatient	N23 GENERAL SURGERY	92.3%	26	94.6%	184	93.0%	314



Demo

Applications & Tools x Hand Hygiene Performanc... x +

performance.dukehealth.org/HHA/Dashboard.aspx?entity=DUH&

PS Web Application
Hand Hygiene Audits

Home Dashboard Audits

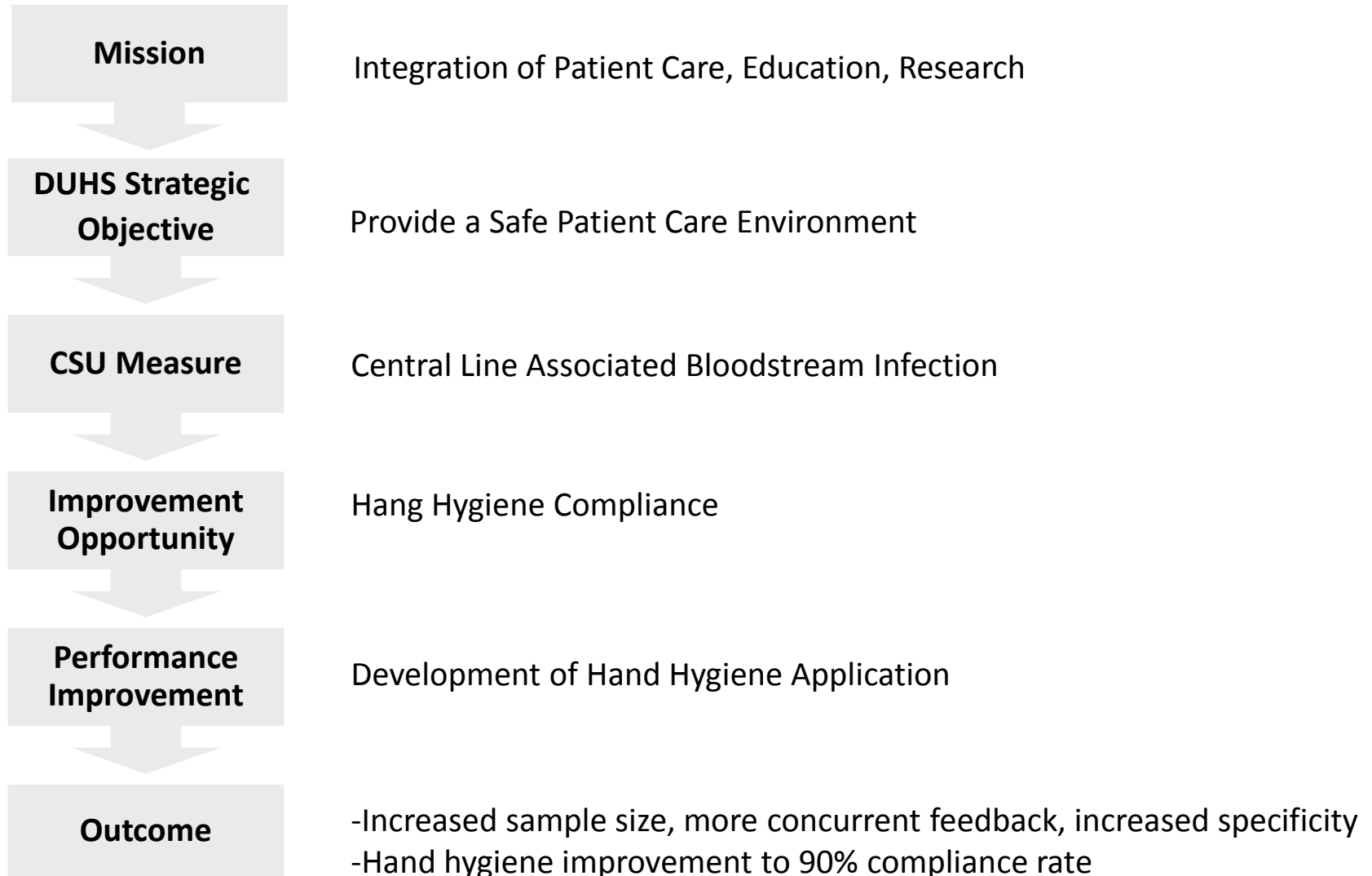
Jennifer Rose [Sign Out](#)

[Hand Hygiene Home](#) >> Hand Hygiene Performance Dashboard

Entity	HCW Type	Last 30 Days	Obs	Last 60 Days	Obs	Last 90 Days	Obs
DUH	EKG		0	100.0%	20	100.0%	34
DUH	EVS	72.7%	22	92.7%	82	93.6%	156
DUH	FS	88.9%	9	84.7%	111	91.3%	309
DUH	LT	100.0%	7	100.0%	25	100.0%	43
DUH	MD	93.3%	149	92.1%	764	94.0%	1290
DUH	MD Student	100.0%	8	95.8%	48	96.4%	110
DUH	NCA	97.9%	97	95.6%	551	94.3%	985
DUH	NP	83.3%	6	87.5%	8	96.2%	26
DUH	Nursing Student		0	92.3%	26	96.3%	54
DUH	Other	96.1%	51	92.1%	431	92.0%	847
DUH	PA	100.0%	3	100.0%	3	100.0%	7
DUH	PRMO	100.0%	4	100.0%	8	100.0%	32
DUH	PT	100.0%	12	100.0%	46	100.0%	94
DUH	RN	98.2%	709	96.4%	4496	96.9%	8786
DUH	ROT	100.0%	12	100.0%	46	100.0%	84
DUH	RT	71.4%	7	87.9%	33	85.6%	97
DUH	SW		0	100.0%	6	100.0%	12
DUH	TP	100.0%	5	100.0%	39	95.9%	97
DUH	XRT	100.0%	1	100.0%	21	100.0%	21



Alignment





Outline

- Tools to Achieve Performance Excellence
 - Balanced Scorecard
 - Hand Hygiene
- Case Study
 - Organizational Improvement Efforts and Physician Engagement: Care Bundles



Care Bundles



Purpose

- Development of bundles to improve the value of patient care:
 - Quality measures
 - Cost
 - Patient experience
- Organize teams around bundles
- ***Engage physicians*** in the improvement process

Proposed Approach



Phase	Step
Define/Measure	Perform initial analysis by service line and DUHS hospital Internal trends and metrics include: discharges, ALOS, variable direct cost/case (overall and by top 5 cost buckets), 30 day readmissions, CMI, by CSU overall and by top 10 Base DRGs, Ad-hoc
	Measure opportunities to benchmark --> ALOS, cost index, and resource utilization compared to UHC median/top quartile, and within the Service Line Analytics tool
	Analyze
Drill-down into targeted improvement areas to identify root causes of variation	
Work with Senior leadership to identify improvement target for each area (10% reduction in variable direct cost/case)	
Improve	Work with clinical and operational leadership to identify improvement plan through use of: RIE, best practice identification (internal and external), "just do its", Lean, etc.
	Identify necessary resources and changes, and communicate to stakeholders
	Implement improvement plan
Control	Monitor performance through use of scorecard (ALOS, variable direct cost/case)

Areas of Focus










Timeline	Area
Launched Spring-Summer 2013	<i>Ortho</i>
	Heart
	Gen Surg (Vascular, Colorectal, SurgOnc)
	Hospital Medicine
	Transplant (solid tumor)
	Dept of Medicine
	Periop
	Neuro
	Oncology
	OB
	DRH
	DRAH
	Kickoff Winter 2013/ Early 2014
<i>Imaging</i>	
<i>Critical Care</i>	
Emergency Services	
Psych	
Peds	
Bariatrics	
BMT	
Endoscopy	



Interdisciplinary Team

- Team Chair: Medical Director for Orthopedics
- Members:
 - Orthopedics Administrator
 - Nursing Unit Manager
 - Practice Administrator
 - Physical Therapy
 - Home Health
 - Performance Services Engineer

Knee

Patient's Inpatient Clinical Pathway		Before Surgery	Day of Surgery	Day 1 After Surgery	Day 2 After Surgery
People You Will Meet 	<ul style="list-style-type: none"> Physician Team Nurses Patient Resource Manager Business Office Professional 	<ul style="list-style-type: none"> Physician Team Nurses Patient Resource Manager Respiratory Therapist Physical Therapist Occupational Therapist 	<ul style="list-style-type: none"> Physician Team Nurses Patient Resource Manager Respiratory Therapist Physical Therapist Occupational Therapist 	<ul style="list-style-type: none"> Physician Team Nurses Patient Resource Manager Physical Therapist Occupational Therapist 	<ul style="list-style-type: none"> Physician Team Nurses Patient Resource Manager Physical Therapist Occupational Therapist
Tests 	<ul style="list-style-type: none"> Blood tests Urine sample (if needed) Knee X-ray Electrocardiogram (EKG), if needed 	<ul style="list-style-type: none"> Blood tests 	<ul style="list-style-type: none"> Blood tests 	<ul style="list-style-type: none"> Blood tests 	<ul style="list-style-type: none"> Blood tests
Treatments 	<ul style="list-style-type: none"> Vital signs Height and weight Shower with antibacterial soap 	<ul style="list-style-type: none"> Vital signs will be monitored more frequently Intravenous (IV) Incision care Bladder tube, if needed Breathing exercises Drain 	<ul style="list-style-type: none"> Vital signs Intravenous (IV) Incision care with hand washing Bladder tube removed Breathing exercises Drain removed 	<ul style="list-style-type: none"> Vital signs Incision care Breathing exercises 	<ul style="list-style-type: none"> Vital signs Incision care Breathing exercises
Medications 	<ul style="list-style-type: none"> Continue current prescribed medications unless specified by your doctor You will be told which medication to take the morning before surgery 	<ul style="list-style-type: none"> Oxygen overnight, if needed Antibiotic Pain medicine in a nerve block or IV, if needed Blood clot prevention IV for fluids and medication Medication for nausea if needed 	<ul style="list-style-type: none"> Regional anesthesia catheter removed Antibiotic Pain medicine Blood clot prevention Medication for nausea if needed 	<ul style="list-style-type: none"> Pain medication Blood clot prevention IV discontinued 	<ul style="list-style-type: none"> Pain medication Blood clot prevention IV discontinued
Diet 	<ul style="list-style-type: none"> Regular Nothing to eat or drink after midnight (or time specified by anesthesiologist) 	<ul style="list-style-type: none"> Regular diet if not nauseated 	<ul style="list-style-type: none"> Regular diet 	<ul style="list-style-type: none"> Regular diet 	<ul style="list-style-type: none"> Regular diet
Activity 	<ul style="list-style-type: none"> No restrictions on activity 	<ul style="list-style-type: none"> You may be assisted out of bed and walking if able Begin Physical Therapy and Occupational Therapy exercises and activities 	<ul style="list-style-type: none"> Continue exercises and walking with assistance 	<ul style="list-style-type: none"> Continue exercises and walking with assistance Stair training and car transfers, if needed 	<ul style="list-style-type: none"> Continue exercises and walking with assistance Stair training and car transfers, if needed
Teaching 	<ul style="list-style-type: none"> Physical Therapy for evaluation, if needed Work with equipment which will be used at home Pre-operative teaching Pre-operative class Pre-operative DVD Dukehealth.org 	<ul style="list-style-type: none"> Hand washing Incentive spirometer use Pain management Activity restrictions Knee precautions Communication board in room will demonstrate your daily goals 	<ul style="list-style-type: none"> Incentive spirometer use Pain management Activity restrictions Knee precautions Home care needs Home equipment needs How to take your medications after discharge 	<ul style="list-style-type: none"> Hand washing Incentive spirometer use Pain management Activity/transfers (car and stair training) Knee precautions How to give yourself medications after discharge 	<ul style="list-style-type: none"> Hand washing Incentive spirometer use Pain management Activity/transfers (car and stair training) Knee precautions How to give yourself medications after discharge



Knee 90 Day Carepath

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Procedure	30 Days prior	30 Days post	60 Days post	90 Days post
Total Knee Replacement	Initial MD visit Medical exam ROM Strength Gait Outcome measures Radiographs-knee Provides patient education materials: joint packet, DVD Pre-operative visit Blood work Type and screen Basic Metabolic Panel Anesthesia Total Joint Class (complimentary) Physical Therapy Evaluation (as needed-1 visit)	First Post-op Clinic Visit ROM: 0-90 degrees, or more* Gait Radiographs Hip to ankle (femur) Hip to ankle (tibia/fibula) Knee (AP and LAT) Sutures out POD#12-14 Physical Therapy (Home Health vs. Outpatient) Evaluation and Treatment within 72 hours post discharge, minimum of 2 times/week until full extension and at least 90 degrees of flexion achieved.	Second Post-op Clinic Visit Gait ROM; 0-90 degrees, or more Continue Physical Therapy as needed if range of motion is less than 0-90 degrees.	Final postoperative clinic visit for examination. Continue Physical Therapy as needed.

* Consider knee manipulation between 4 and 8 weeks.



Questions?

William Burton

william.burton@duke.edu

Jennifer Rose

jennifer.rose@duke.edu