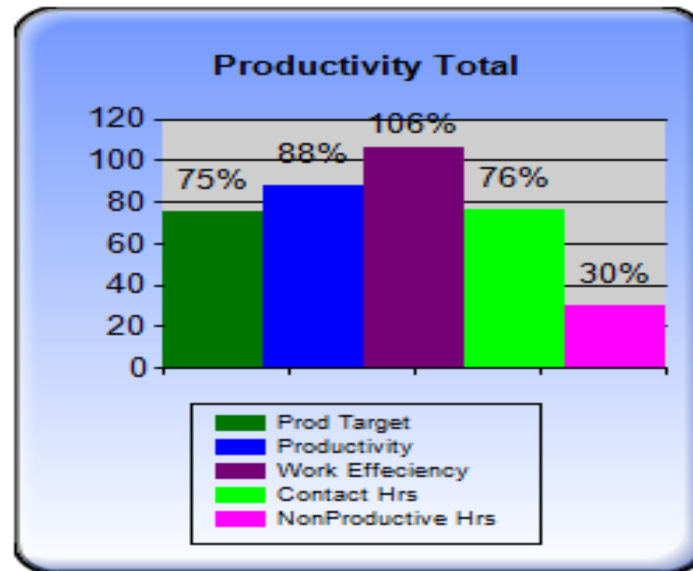


Achieving Results through Analytics and Dashboards

October 14 , 2010



Our Speakers

- **Noel Miller, Director of Orthopedics, MHS**
 - 11 years experience in Rehabilitation
 - 9 years with Brooks Rehabilitation Hospital as a Case Manager and now Orthopedic Program Director

- **Karen Green, CIO, CPHIMS**
 - 21 Years Health IT implementation & Management
 - 10 years CIO of Post Acute Health System



Our results are real, we promise!

Agenda

Key Outcomes	Noel Miller
Dashboard Overview	Karen Green
Making the Case: Brooks Rehabilitation	Karen Green
Results to Date	Noel Miller
Lessons Learned	Karen Green & Noel Miller
Questions and Answers	

Today's Presentation Goals

- To provide a basic understanding of dashboards, the value they can offer, and critical success factors
- Review of how Brooks has made the case for using analytics and dashboards including challenges, approach, and what is currently being delivered
- Review how our organization is applying the dashboard at different levels and the results we have achieved

Analytics/Dashboards Overview



What is a Dashboard?

A dashboard is a display, preferably electronic, comprised of key data measures that have been selected to support focused monitoring of clinical, financial, or operational activities.



Why create a dashboard?

- Provides an easy way to quickly monitor key measures to insure that they are performing at the desired level
- Enhances the ability to identify, track, trend measures
- Allows the ability to proactively address key areas of performance
- Uncovers opportunities for continuous improvement

KPIs . . Metrics . . Measures??

- **Metrics, measures, and indicators** are quantitative indicators
- **Key Performance Indicators (KPIs)** are the selected metrics used to help an organization define and measure progress toward organizational goals
- **Data Warehouse** – A central repository of electronically stored data that is collected from various business systems of an organization.
- **Analytics** – How an organization arrives at an optimal or realistic decisions based on quantitative and/or qualitative measures.

Examples of Measures

Type	Example
Financial	Payor mix, case mix index, supply cost
Operational	Average LOS, patient days, wait time, NHPPD
Human Capital	Time to fill positions, skill mix, employee turnover rate
Satisfaction	Satisfaction rates (e.g. physician, staff, patient) likelihood to recommend
Clinical Quality	Patient outcomes following treatment, functional status, key clinical data (e.g. lab values, vital signs), health behaviors
Marketing	Outcomes, referral by person/provider/reason
Service/Performance	Efficiency, productivity

Dashboards: Critical Success Criteria

1. Must have an executive sponsor
2. Measures must correlate to the purpose of the dashboard and support the initiative's goals and objectives
3. The goals and objectives should be supported by the organizations strategic plan
4. Establish a oversight structure/governance model- data normalization and standards are critical
5. Transparency is important, so we don't limit who can see what.

Dashboards: Critical Success Criteria

6. Make the dashboard measurable
7. Have a reliable data sources
8. Have agreed upon measurement criteria (e.g. inclusions and exclusions)
9. Create targets and goals
10. Identify dedicated resources
11. Analytics aren't just a project, they are an ongoing initiative.



Making the Case: Brooks Rehabilitation



About Brooks

- Brooks Health has a 35-year tradition of providing quality inpatient and outpatient physical rehabilitation care to North East Florida
- 143-bed inpatient facility
- extensive network of more than 25 outpatient centers
- An established home health services division
- A 5-star 68 bed Skilled Nursing Facility
- Cutting-edge research facility offering more than 20 clinical trials

Business Situation

- Multiple business lines and disparate systems created limited insight into financial & clinical metrics affecting the business from the senior management team to clinic managers, to staff.
- Lack of visibility into key metrics affected Brooks' ability to monitor and respond to changes within our own business, industry and markets.

First Steps – for Brooks

- **Identified a champion. . . . The COO**
- **Developed a Roadmap**
 - Completed a gap analysis
 - Evaluated build vs. buy
 - Determined to build
- **Educated stakeholders and proposed it to our Board**

“This is not about a specific project or application”

This is a business initiative that positions us to be more data driven using tools that needs to be robust and flexible enough to evolve with the challenges we face at Brooks:

- Growth in new business lines
- Closer scrutiny of existing business lines
- Changing regulatory and market environment
- Greater need for transparency
- The payment landscape is changing



Approach

“Let’s hire a couple of smart people, and build this thing”
COO, Michael Spigel

Decided to build it on a Microsoft platform:

- Users were familiar with tools already
- We were already Implementing Share Point for our Employee Intranet
- Many of our feeder system are SQL based or soon would be
- Platform is scalable and allowed us to start small and start with existing KPI dashboards\excel spreadsheets
- Brought in technical expertise who also had healthcare knowledge to architect it
- Created Analytics team who partner with the business units to design and develop, and rollout the dashboards


Solution Delivered

- A comprehensive scorecard solution that brings data from multiple systems into a consolidated data warehouse to display key metric performance.
- The solution allows analysis to filter down to multiple organizational levels including executives, directors, and managers, as well individual clinicians so all departments remain focused on delivering excellent performance using a single set of organizational metrics.
- The solution highlights performance & trending on common inpatient and outpatient metrics including:
 - Program performance, Patient evaluations, service units, patient visits, customer service, daily census, Medicare admissions and discharges, LOS
 - We are moving towards predictive analysis

Results to Date



IP Dashboard for all units across the hospital



























 **By Unit** Demo

Date Filter: **July 2010** ▾

Unit

Unit Filter: **All** ▾

Inpatient By Unit

	MTD-Actual	MTD-Budget	Month Budget	Projected	PTD-Actual	PTD-Budget	YTD-Actual	YTD-Budget	
 Admissions	256	250.00 	250.00	0.00	256	250.00 	1,678	1,647.01 	
Medicare	150	150.00 	150.00	0.00	150	150.00 	1071	988.21 	
Non-Medicare	106	100.00 	100.00	0.00	106	100.00 	607	658.81 	
 Patient Days	3919	3,704.00 	3,704.00	0.00	3,919.00	3,704.00 	25,659.00	24,753.99 	
Medicare	2233	2,222.40 	2,222.40	0.00	2233	2,222.40 	15321	14,852.40 	
Non-Medicare	1686	1,481.60 	1,481.60	0.00	1686	1,481.60 	10338	9,901.60 	
ADC	126.42	119.48 	119.48	0.00	126.42	119.48 	121.03	116.76 	
Discharges	257	246.00 	246.00	0.00	257	246.00 	1,648	1,618.99 	

View of Patients Discharged within our Continuum of Care

Filter 1: Filter 2:

Trending Graph Year

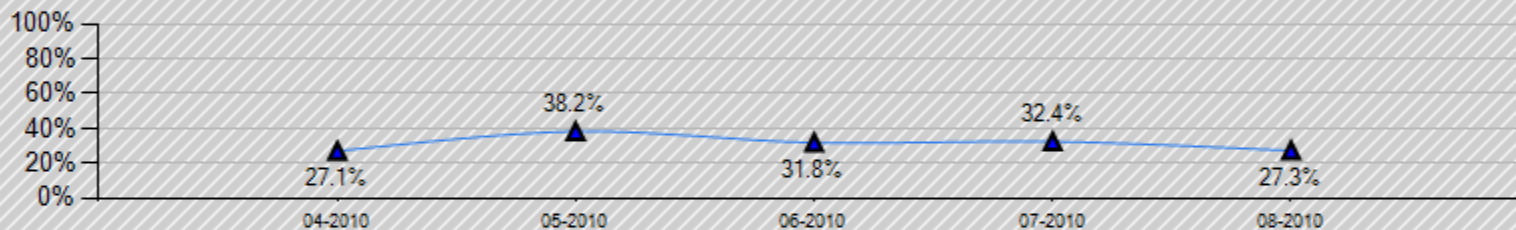
1 of 1 100% Find | Next Select a format Export



Discharge Services: 2010

ALL : ALL

Percent of Patients Discharged to Brooks Home Care Advantage



Month Year (*)	# of Discharges Home	Discharged Services					Service Recommended	
		HH (Brooks)	HH (Other)	OP Brooks	OP Other	Other	Yes	No
08-2010	143	27.3%	33.6%	26.6%	4.9%	10.5%	100.0%	0.0%
07-2010	182	32.4%	30.8%	20.9%	7.1%	12.1%	100.0%	0.0%
06-2010	148	31.8%	28.4%	23.6%	14.9%	7.4%	100.0%	0.0%
05-2010	157	38.2%	28.7%	23.6%	4.5%	11.5%	100.0%	0.0%
04-2010	181	27.1%	28.7%	30.4%	5.0%	12.7%	100.0%	0.0%
2010	811	31.3%	30.0%	25.0%	7.2%	11.0%	100.0%	0.0%

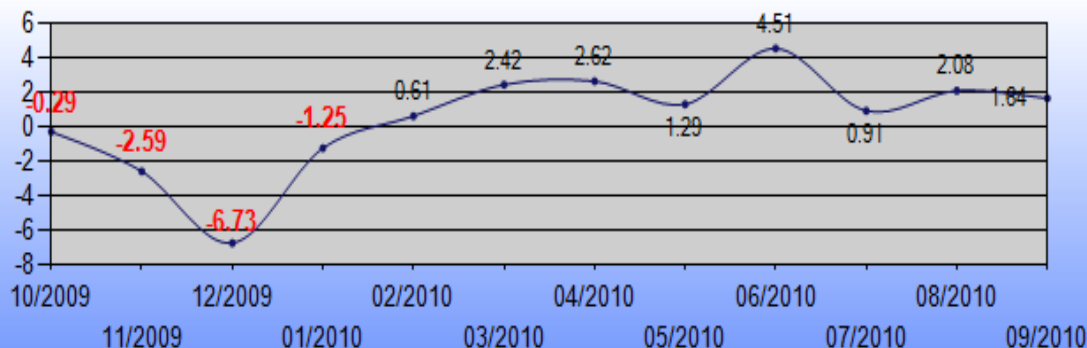
Performance



InPatient Staff Scorecard

Demo data

ORTHO: 3 Hour Compliance - % Variance From Target



Avg of Months (*)		
KPI	Act	Var
3 Hour	80.44	0.44
\$ Per Case	5162.86	-330.14
\$ Per Case/ Day	411	38
DC Comm	72.58	-2.81
DC Home	69.94	0.60
FIM	1.86	0.00
LOS (GL)	12.74	-0.26
Pat Sat	91.20	0.10

(*) October 2009 Thru September 2010

KPI	10-09			11-09			12-09			01-10			02-10			03-10		
	Tar	Act	Var	Tar	Act	Var	Tar	Act	Var	Tar	Act	Var	Tar	Act	Var	Tar	Act	Var
3 Hour	80.00	79.71	-0.29	80.00	77.41	-2.59	80.00	73.27	-6.73	80.00	78.75	-1.25	80.00	80.61	0.61	80.00	82.42	2.42
\$ Per Case	0	0	0	0	0	0	0	0	0	5493	4947	-546	5493	5397	-96	5493	4797	-696
\$ Per Case/ Day	373	410	37	373	410	37	373	414	41	0	0	0	0	0	0	0	0	0
DC Comm	0.00	72.41	0.00	0.00	71.43	0.00	0.00	64.29	0.00	77.39	85.19	7.80	77.39	78.26	0.87	77.39	72.41	-4.98
DC Home	65.80	72.41	6.61	65.80	71.43	5.63	65.80	60.71	-5.09	0.00	81.48	0.00	0.00	78.26	0.00	0.00	68.97	0.00
FIM	1.86	1.55	-0.31	1.86	1.53	-0.33	1.86	1.71	-0.15	1.86	1.93	0.07	1.86	2.03	0.17	1.86	1.96	0.10
LOS (GL)	13.70	13.78	0.08	13.70	13.84	0.14	13.70	13.93	0.23	12.70	11.40	-1.30	12.70	12.50	-0.20	12.70	11.70	-1.00
Pat Sat	91.00	90.50	-0.50	91.00	92.30	1.30	91.00	93.10	2.10	91.06	90.00	-1.06	91.06	87.20	-3.86	91.06	93.30	2.24

Productivity Monitoring

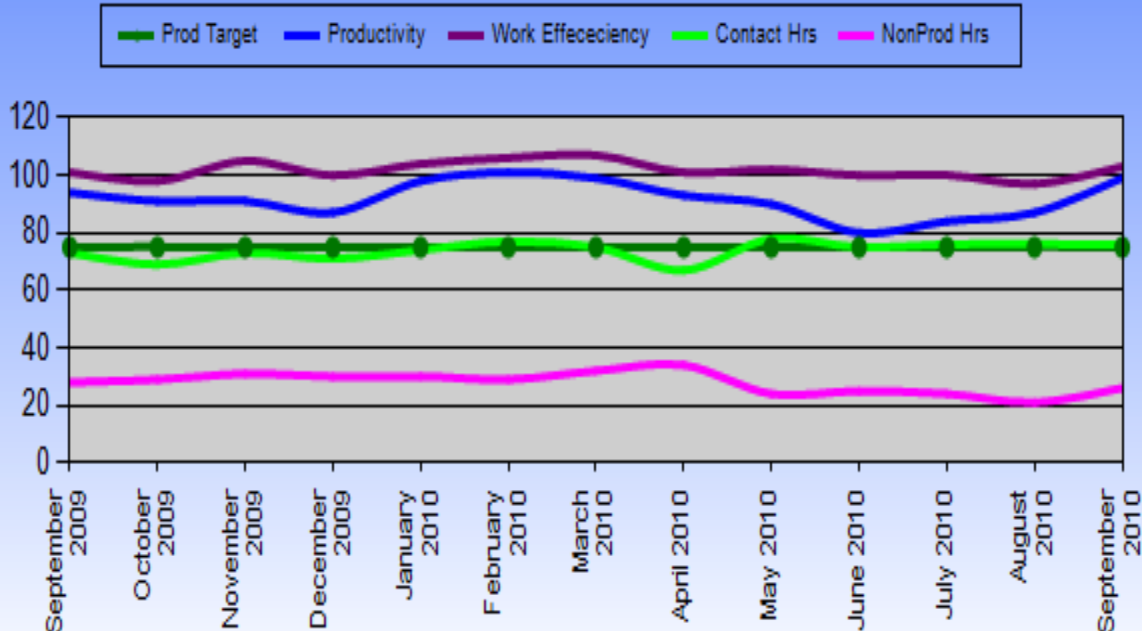
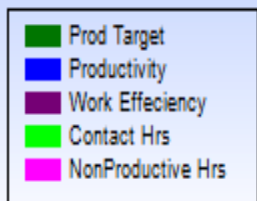
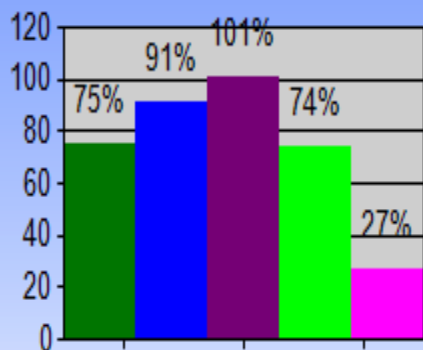


IP Productivity Report (Program): Ortho

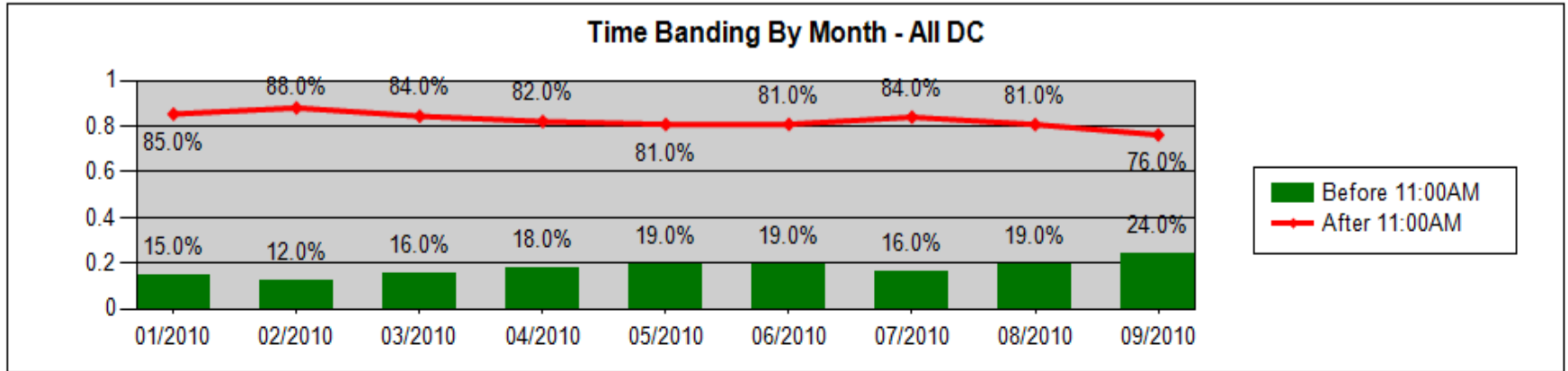
(Days Of Week: 5 Days (M-F))

(DATE RANGE: 9/1/2009 TO:9/21/2010)

Productivity Total



Date Range: 1/1/2010 To 9/21/2010



Physicians	All DCs		Time Bands					
	Count	% of Total	Before 11:00 AM			After 11:00 AM		
			Count	% of Phy	% of All	Count	% of Phy	% of All
	1	0.0%	0	0.0%	0.0%	1	100.0%	0.0%
HOFMANN MD,MARK C	10	0.5%	0	0.0%	0.0%	10	100.0%	0.0%
JOHNS MD,JEFFERY SCOTT	349	16.6%	69	19.8%	3.0%	280	80.2%	13.0%
KOSLOWSKI MD,HARRY M.	34	1.6%	5	14.7%	0.0%	29	85.3%	1.0%
NABIZADEH MD,SHAHRIAR	460	21.9%	75	16.3%	4.0%	385	83.7%	18.0%
NGO MD,KENNETH	3	0.1%	1	33.3%	0.0%	2	66.7%	0.0%
PARIS MD,TREVOR H	268	12.7%	59	22.0%	3.0%	209	78.0%	10.0%
PRUDENCIO,MACONCEPCION CONNIE	108	5.1%	14	13.0%	1.0%	94	87.0%	4.0%
SRINIVASA MD,SARALA H	408	19.4%	75	18.4%	4.0%	333	81.6%	16.0%
WEISS,HOWARD B.	463	22.0%	69	14.9%	3.0%	394	85.1%	19.0%
TOTAL:	2104	100.0%	367		17.4%	1737		82.6%

Outpatient Clinic Dashboard

Brooks OP Network

Demo

Data current as of January 4 2010 - Business Day 1 out of 20

Ref. Results - Clinic

Customer Service

Location Productivity

General Reports

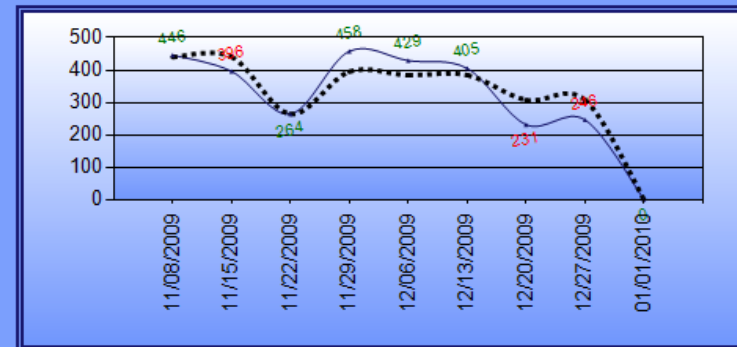
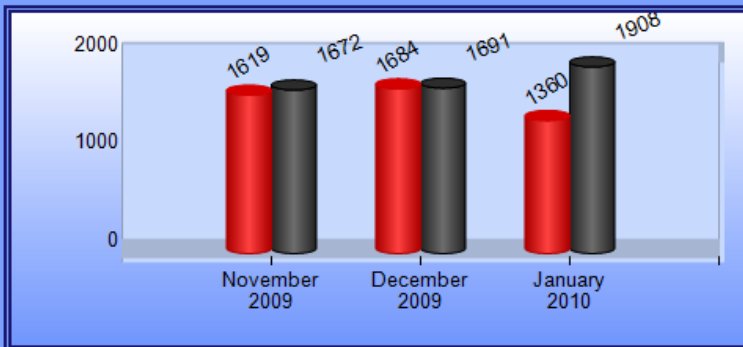
Customer Satisfaction: **92.18 - (22 Responses)**

**Scheduled Not Billed: 124

Cancellation Rate: 16.42% - (December 2009)

EVALUATIONS

<u>MTD Evaluations</u>	<u>MTD Target</u>	<u>Proj. Var (%)</u>	<u>Visits Per Eval (10/06-01/04)</u>	<u>Scheduled</u>
68	95.4	-28.72	10.11	405



VISITS

<u>MTD Visits</u>	<u>MTD Target</u>	<u>Proj. Var (%)</u>	<u>Units Per Visit (10/06-01/04)</u>
750	922.65	-18.71	3.63



Outpatient Analytics Dashboard

Data as of: - Business Day: 10 of 21

Date: **August 2010** ▼

Location: **Outpatient** ▼

Outpatient ▼

	MTD-Actual	MTD-Budget	Month Budget	Projected	% Variance	Daily Expectation	PTD-Actual	PTD-Budget	YTD-Actual	YTD-Budget
Evals	2,045.00	1,969.00 ●	1,969.00	NA	3.86 ●	NA	3,980.00	3,924.99 ●	15,693.00	15,482.00 ●
Visits	19,210.00	19,026.00 ●	19,026.00	NA	0.97 ●	NA	37,687.00	37,887.00 ◆	148,730.00	150,900.01 ◆
Units	70,751.00	69,467.00 ●	69,467.00	NA	1.85 ●	NA	138,701.00	138,401.00 ●	545,400.00	552,141.00 ◆
Units\Visit	3.68	3.65 ●	NA	NA	NA	NA	3.68	3.65 ●	3.67	3.66 ●
Visits\Eval	9.39	9.66 ◆	NA	NA	NA	NA	9.47	9.65 ◆	9.48	9.75 ◆
RVU	0.80	NA	NA	NA	NA	NA	NA	NA	NA	NA

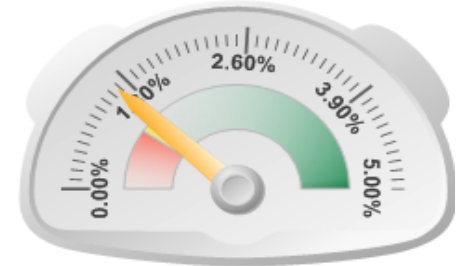
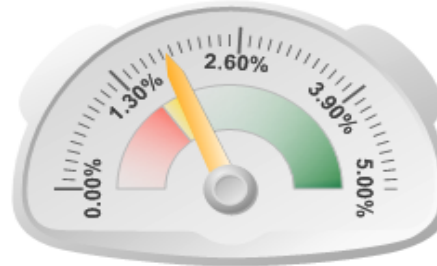
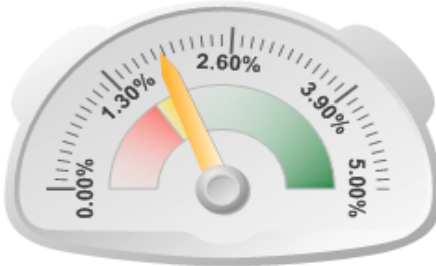
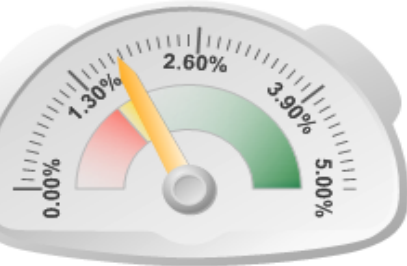
Evals ▼

QDASH - Avg Change Per Visit

NDIndex - Avg Change Per Visit

LEFS - Avg Change Per Visit

Oswestry - Avg Change Per Visit



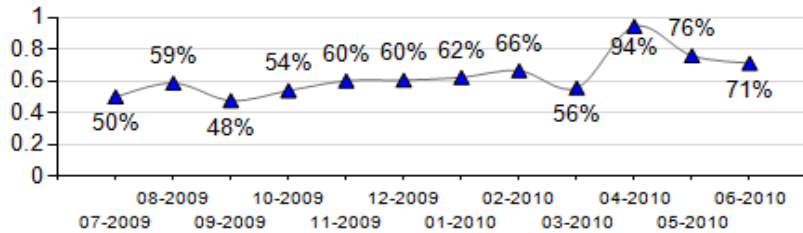
OP: **1.77%** Clinic: **1.77%** ●
% Not Completing Test: **42%**

OP: **1.87%** Clinic: **1.87%** ●
% Not Completing Test: **48%**

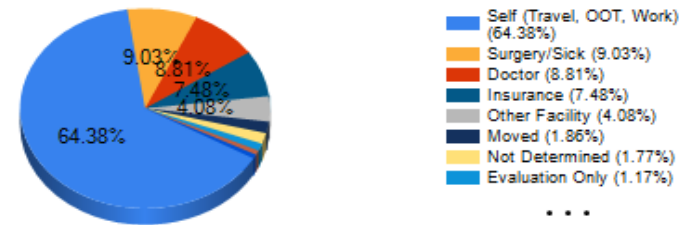
OP: **1.85%** Clinic: **1.85%** ●
% Not Completing Test: **43%**

OP: **1.17%** Clinic: **1.17%** ●
% Not Completing Test: **45%**

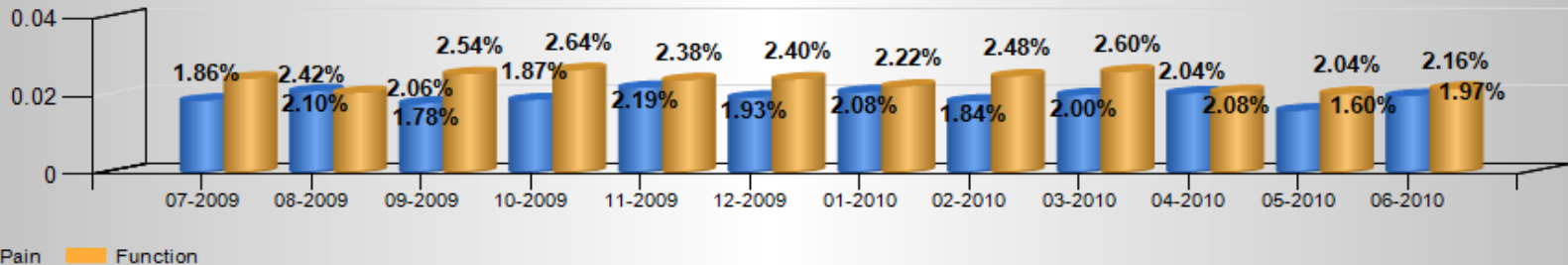
% Completing Program



% Reasons Not Completing Program



Pain/Function - Avg Change Per Visit



Executive Dashboard Views

BROOKS

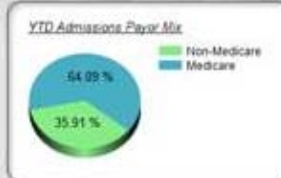
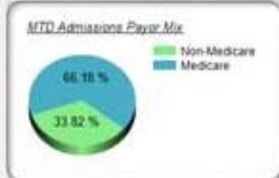
Inpatient

MTD Avg Census: 113.53

YTD Avg Census: 120.81



Admissions (MTD)	Admissions (YTD)	Patient Days (MTD)	Patient Days (YTD)
(Score:Target) 136 : 150	2066 : 2030	2271 : 2327	31773 : 30894



Outpatient



II Top 3 Rated Clinics - (20 or more surveys)

III Bottom 3 Rated Clinics - (20 or more surveys)

Evaluations (MTD)	Evaluations (YTD)
(Score:Target) 973 : 1147	16389 : 16538

Visits (MTD)	Visits (YTD)
(Score:Target) 9933 : 11105	157940 : 161432



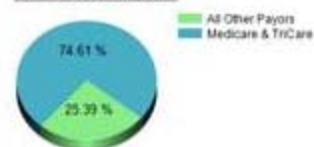
Home Health

Medicare & TriCare YTD Admissions for Home Health: 1778

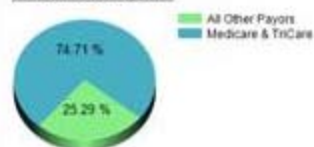
■ Projected Value for the Month



MTD Admissions Payor Mix



YTD Admissions Payor Mix

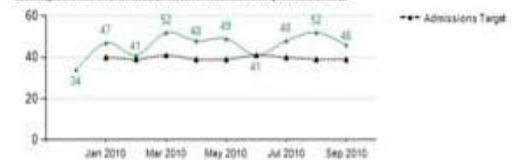


Skilled Nursing Unit

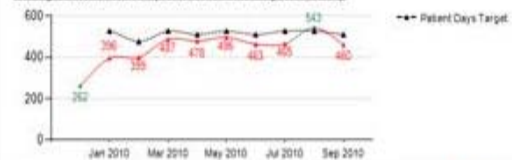
**Data complete as of 9/19/2010 - (There are 262 out of 263 days accounted for in 2010)

Admissions (MTD)	Admissions (YTD)	Patient Days (MTD)	Patient Days (YTD)
(Score:Target) 33 : 26	409 : 344	307 : 340	4034 : 4468

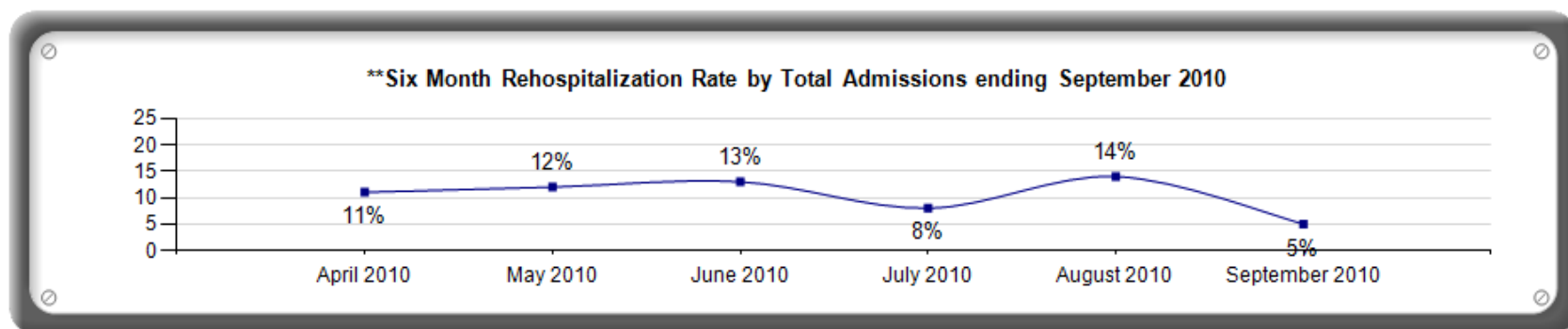
Rolling 12 Month Trend - (Current Month is Projected Value)



Rolling 12 Month Trend - (Current Month is Projected Value)



Next steps – Watching transitions in care



**Rehospitalization figures are based on the first 30 days of an Inpatient stay.

****Rehospitalization Detail:(September 2010 to September 2010)**

	<u>Rehospitalization</u> ⇅	<u>Admits</u> ⇅	<u>Fin Class Rehosp. %</u> ⇅	<u>Total Rehosp. %</u> ⇅	<u>% of Tot. Admits</u> ⇅
<input type="checkbox"/> MEDICARE REHAB	5	90	5.56	71.43	66.18
<input type="checkbox"/> MEDICARE HMO	1	5	20	14.29	3.68
<input type="checkbox"/> PPO	0	10	0	0	7.35
<input type="checkbox"/> MEDICAID	1	10	10	14.29	7.35
<input type="checkbox"/> OTHER	0	6	0	0	4.41
<input type="checkbox"/> CHARITY	0	4	0	0	2.94
<input type="checkbox"/> HMO	0	5	0	0	3.68
<input type="checkbox"/> MEDICAID HMO	0	4	0	0	2.94
<input type="checkbox"/> BLUE CROSS COST BASED	0	2	0	0	1.47
Totals:	7	136	5	--	--

Lessons Learned

Implementation considerations

- It should be treated as an important institutional resource.
- Dashboard data will be closely scrutinized, test thoroughly to make sure your data integrity is intact. Once the dashboards win the trust, they become the “go to” single source for this information.
- As demand escalates, governance for setting priorities will become increasingly important.
- Push this as an ongoing initiative, a core business service, not a one time project.

Lesson Learned & Value realized

Post implementation Results

- When you can engage every level of user, it empowers those users of the data to be stakeholders in business performance and improving that performance.
- As the stakeholders realize the value, they are happy to be “champions” and showcase their dashboard results to the Board.
- As you eliminate printing of reports, a “less paper” culture starts to emerge
- Credibility of data increases as it is presented in real time versus financial period end. It becomes more “mission critical” instead of a “look back” at performance indicators.
- Demand goes beyond reporting “what is” into a tool of predictive analysis for performance improvement

Data must be harnessed to realize its power. Otherwise it is a sea of information that mostly goes under utilized with multiple “ports of truth”.



Thank you!