



**DMC**<sup>TM</sup>

**Harper University Hospital**  
**Hutzel Women's Hospital**



**Quality Measure Indicators + Throughput Metrics +  
Automated Dashboard  
= Innovation to Improve Quality Goals**

# DMC Harper- Hutzal Hospital

- The DMC is an 8 facility academic medical center
- Harper-Hutzal is an ANCC Pathway to Excellence™ Hospital
- 567 beds
- Tertiary care facility with OB, Level III NICU, 25 OR suites and outpatient procedural areas, and Center of Excellence in Minimally Invasive GYN, Stroke and Bariatric Surgery





# DMC Harper- Hutzell Hospital

- HIMSS Level 6 Facility
- Cerner<sup>®</sup> client since 1999 conversion to CPOE, Barcode Med Administration and Nursing Documentation in 2006
- Surgical Documentation conversion in 2009 (Cerner Surginet)
- Smart Rooms implemented in 2011 with Cerner VitalsLink, AlertLink and Spacelabs Telemetry



# Objectives

---

1. Verbalize the design process for the creation of mutual quality goals inclusive of creating a culture of safety.
2. Translate data into action to create a culture of safety and improve patient data outcomes through the use of an automated dashboard.

# A Robust EMR/CIS – But Has It Achieved Its Intention?



*always there.*

- Safety and Healing
  - Do our clinicians have the information they need to make wise and safe clinical decisions?
  - Does the technology support healing as a goal?
- Quality
  - Is the information in our EMR current, reliable, and accurate?
- Value
  - Does use of our EMR contribute to achieving our strategic goals as a health system?



# Our Journey

---

- The journey to become a High Reliability Organization requires planning based on consistent, validated data.
- Pay for Performance, CMS, Joint Commission and other regulatory and certifying agencies utilize quality indicators to ascertain compliance with key quality practices.
- These practices are often tied to reimbursement or incentive monies.
- Leadership at HUH HWH realized that leaders had no one place to find their quality performance in “real time”



# Opportunity Identified

---

- How could we use the rich source of data available in our electronic medical record to drive excellence and hardwire care related to core measures and nurse-sensitive quality indicators?

# Lots of Electronic Tools

List: CM HUH 9ICU/IMCU/HDIA Page 1 of 1 | [Previous](#) | [Next](#) [Expand all](#) | [Collapse all](#)

Patient Demographics		- AMI						
Name	Date Of Birth	FIN	Room Bed	ED	Inpatient	Discharge	Status	ED
<b>Core Measure Status</b>		500000696996	8507/01	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Ordered	N/A
		130000035225	9503/01	N/A	N/A	N/A	N/A	<input checked="" type="radio"/>
		130000032537	9507/01	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Ordered	N/A
		130000035274	9510/01	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Ordered	<input type="radio"/>
		100001088051	8509/01	N/A	N/A	N/A	N/A	<input checked="" type="radio"/>
		840000213149	9508/01	N/A	N/A	N/A	N/A	N/A
		100001092814	8504/01	N/A	N/A	N/A	N/A	<input type="radio"/>
		100001136520	HDIA/02	N/A	N/A	N/A	N/A	<input type="radio"/>
		180000998633	HDIA/07	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Ordered	N/A
		180000967158	HDIA/01	N/A	N/A	N/A	N/A	<input checked="" type="radio"/>
	100001136462	HDIA/05	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<a href="#">Assess</a>	<input type="radio"/>	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19

Facility: HARPER-HUTZEL

Nurse Unit	Patients at Risk	Prevention Task Completed	PU Prevention Orderset Activated	Management Task Completed	PU Management Orderset Activated
HA - 10WS	3	100.00 %	100.00 %	0.00 %	0.00 %
HA - 2BNS	4	50.00 %	50.00 %	0.00 %	0.00 %
HA - 4ICU	3	100.00 %	150.00 %	100.00 %	100.00 %
HA - 4WS	6	133.33 %	133.33 %	0.00 %	33.33 %
HA - 5BN	4	50.00 %	50.00 %	0.00 %	0.00 %
HA - 5ICU	2	100.00 %	100.00 %	100.00 %	100.00 %
HA - 6B	6	25.00 %	50.00 %	0.00 %	0.00 %
HA - 6ICU	3	100.00 %	200.00 %	100.00 %	50.00 %
HA - 8WS	2	50.00 %	50.00 %	0.00 %	0.00 %
HA - 9ICU	3	66.67 %	66.67 %	0.00 %	0.00 %
HA - 9WS	4	66.67 %	66.67 %	100.00 %	0.00 %
HA - IMCU	4	100.00 %	100.00 %	100.00 %	0.00 %
HU - 2WN	2	50.00 %	50.00 %	0.00 %	0.00 %
<b>HARPER-HUTZEL Total</b>	<b>46</b>	<b>71.43 %</b>	<b>80.00 %</b>	<b>72.73 %</b>	<b>45.45 %</b>

## Pressure Ulcer Report



# More Electronic Tools

1	Unit	FIN	PN Screen Response	Administration Date/Time
2	2BNS	100001070604	* Administer 0.5 ml Pneumococcal vaccine, SQ	
3	2WN	500000720515	Administer 0.5 ml Pneumococcal vaccine, IM	
4	3WN	500000721182	Administer 0.5 ml Pneumococcal vaccine, IM	
5	3WN	500000721554	Administer 0.5 ml Pneumococcal vaccine, IM	
6	3WS	500000706654	Administer 0.5 ml Pneumococcal vaccine, IM	
7	5BC	100001132511	Administer 0.5 ml Pneumococcal vaccine, IM	
8	5BC	100001136314	Administer 0.5 ml Pneumococcal vaccine, IM	
9	6B	100001089018	* Administer 0.5 ml Pneumococcal vaccine, SQ	09/14/2012 06:30:00 AM
10	6B	100001112851	Administer 0.5 ml Pneumococcal vaccine, IM	
11	6B	180000992990	* Administer 0.5 ml Pneumococcal vaccine, SQ	
12	6B	180000998617	Administer 0.5 ml Pneumococcal vaccine, IM	
13	6B	180000999540	Administer 0.5 ml Pneumococcal vaccine, IM	09/18/2012 12:56:00 PM
14	8WS	130000035175	Administer 0.5 ml Pneumococcal vaccine, IM	09/15/2012 09:04:00 AM
15	8WS	130000035233	Administer 0.5 ml Pneumococcal vaccine, IM	
16	8WS	130000035753	Administer 0.5 ml Pneumococcal vaccine, IM	
17	4ICU	100001073582	Administer 0.5 ml Pneumococcal vaccine, IM	09/13/2012 11:49:00 AM
18	5ICU	180000944306	Administer 0.5 ml Pneumococcal vaccine, IM	09/02/2012 09:06:00 PM
19				

**Immunization Report**

## Catheter Days

### Urinary Catheter Insertion/Discontinuation

#### Activity Type

- Assess
- Discontinue
- Insert
- Inserted and Removed
- Other:

#### Catheter

Catheter Type	Catheter Insertion Date/Time	Catheter Discontinue Date/Time	Comment
Indwelling catheter	09/17/2012 16:55	<Date/Time>	
<Alpha>	<Date/Time>	<Date/Time>	

#### Insertion Site

- Suprapubic
- Ureteral
- Urethral

#### Catheter Size

- 3.5 French
- 5 French
- 6 French
- 8 French
- 10 French
- 12 French
- 14 French
- 16 French
- 18 French
- 20 French
- Other:



# Dashboard Development

---

- Hospital COO and the Director of Clinical Transformation lead a multidisciplinary team whose goal was to innovate and create a tool and process that would empower unit leaders and staff nurses to deliver consistent, safe care.
- Team members: Hospital Administrator, Staff RN, Quality RN, Data Analyst, Physicians & Finance department

# Purpose of the Electronic Dashboard



- Demands placed on a nurse's time can lead to key pieces of quality initiatives being missed or undocumented.
- In order to avoid the problem of missing documentation, unit leaders needed a data source that would aid them in assisting the staff nurses to be accountable for their care and documentation.



# Goal of the Electronic Dashboard

---

- The goal of the electronic Dashboard is to synthesize all the various quality indicators and present them in a real time dashboard.
- Unit leaders could then use this data to as a tool to support staff nurses in daily nursing practice.

# HUH-HWH Daily Huddle Dashboard

09/19/12	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Unit	Current Census	Discharge Weekly Goal	Variance Discharges	# of Pts with LOS >6 Days (Calendar Days)	Total # of Pts in CDU	Total OBS Pts	Total OBS Pts in >24 hours	Total # of CHF pts meeting core measures	Total # CHF pts	% CHF Compliance	Total # of AMI pts meeting core measures	Total # of AMI pts	% AMI Compliance				
2BNS	20	36	-14	4		1											
2WN	20	45	5	0													
2WS	17	46	8	0													
3WN	11	2	1	0		1											
3WS	5	14	-4	2		1											
4WS	23	42	-4	7				2	3	67 %							
5BS	10	0	3	0	4	7					0	3	0 %				
5BC	23	0	6	0		23	6				0	1	0 %				
5WS	15	16	-16	3				3	4	75 %							
6B	34	44	3	14				8	7	114 %	0	1	0 %				
8WS	19	38	-8	3				3	5	60 %	0	2	0 %				
9WS	23	31	-7	8				3	4	75 %	0	4	0 %				
10WS	24	34	-7	12		1		1	1	100 %	0	1	0 %				
4ICU	8	3	-2														
5ICU	8	2	1														
6ICU	10	2	1														
8IMCU	4	12	-6					1	1	100 %	0	1	0 %				
9ICU	9	3	1					1	1	100 %	0	2	0 %				
SCN	17																
NICU	10																

- Each unit displays with Current Census, LOS, IP vs. OBS Status
- Tabs at bottom of report are the details of summary display

# Quality Metrics: Core Measures, Immunization Status, Urinary Catheter Days, Pressure Ulcer Status, Re-admits within 30 days & Fall Risk patients

Total # of Pts qualifying for PN Immunization	Total # of Pts immunized for PN	PN Compliance %	Total Pt/Fam PN Refused	Total Pts still need immunization screening	# Pts w Urinary Catheter Days >48 hours	Count of Stage 1 PU from Yesterday	Count of Stage 2 PU from Yesterday	Count of Stage 3 PU from Yesterday	Count of Stage 4 PU from Yesterday	Count of Unable to Stage PU from Yesterday	Patients who had a visit in the previous 30 days	Total At Risk for Falls
1	1	100 %	12		2		1				2	6
2	1	50 %	8	1								
			9		1							
			5									
1	0	0 %	6		1							
4	3	75 %	9					1	1	1	4	14
			5	1				1				2
2	1	50 %	8		2		1	1	1		8	9
3	3	100 %	8	3	3		1			1	8	21
			7	1	1						5	6
2	1	50 %	4	2	1		2				14	12
2	0	0 %	6	2	2	1	1		1		11	10
			11	1							1	2
1	1	100 %			3							3
1	1	100 %	2		3	1	1		1		4	3
	1		5	1	3						5	5
			4	1	2						4	4

# Procedural Areas & OR Summary

	A	B	C	D	E	F	G	H	I	J
1		<b>Emergency</b>	<b>Inpatient</b>	<b>Observation</b>	<b>Outpatient</b>	<b>Preadmit</b>	<b>TOTAL</b>		<b>TARGET</b>	<b>Variance</b>
2	<b>ED Visits</b>	86	14	22	2		124		103	21
3	<b>LRC Visits</b>		8	3	18		29			
4	<b>Cath Visits</b>		2		16	1	19			19
5	<b>Hemo Visits</b>		13		15		28			28
6	<b>L&amp;D</b>		9				9		14	-5
7		<b>Inpatient</b>	<b>Observation</b>	<b>Outpatient</b>	<b>TOTAL</b>	<b>TARGET</b>	<b>OR Variance</b>			
8	<b>Main OR</b>	17	1	22	40	32	8			
9	<b>Virtual Main OR</b>			5	5					
10	<b>Endo</b>	5	1	29	35	28	7			
11	<b>SDS</b>	1		17	18	13	5			

- ED, Cath Lab, Hemodialysis, Labor & Delivery, Endoscopy and OR report previous day metrics



# Implications for Practice

---

- Dashboard brings a summary view to nurse leaders as the CEOs of their clinical areas
- Detail tabs to allow for quick drill down to unit level metrics
- Dashboard sent to unit leaders by 0600 daily
  - Report reviewed at shift change safety huddles with staff to review together and work to hardwire the processes for best practice for patient care
  - Report focuses attention on quality, driven by data available



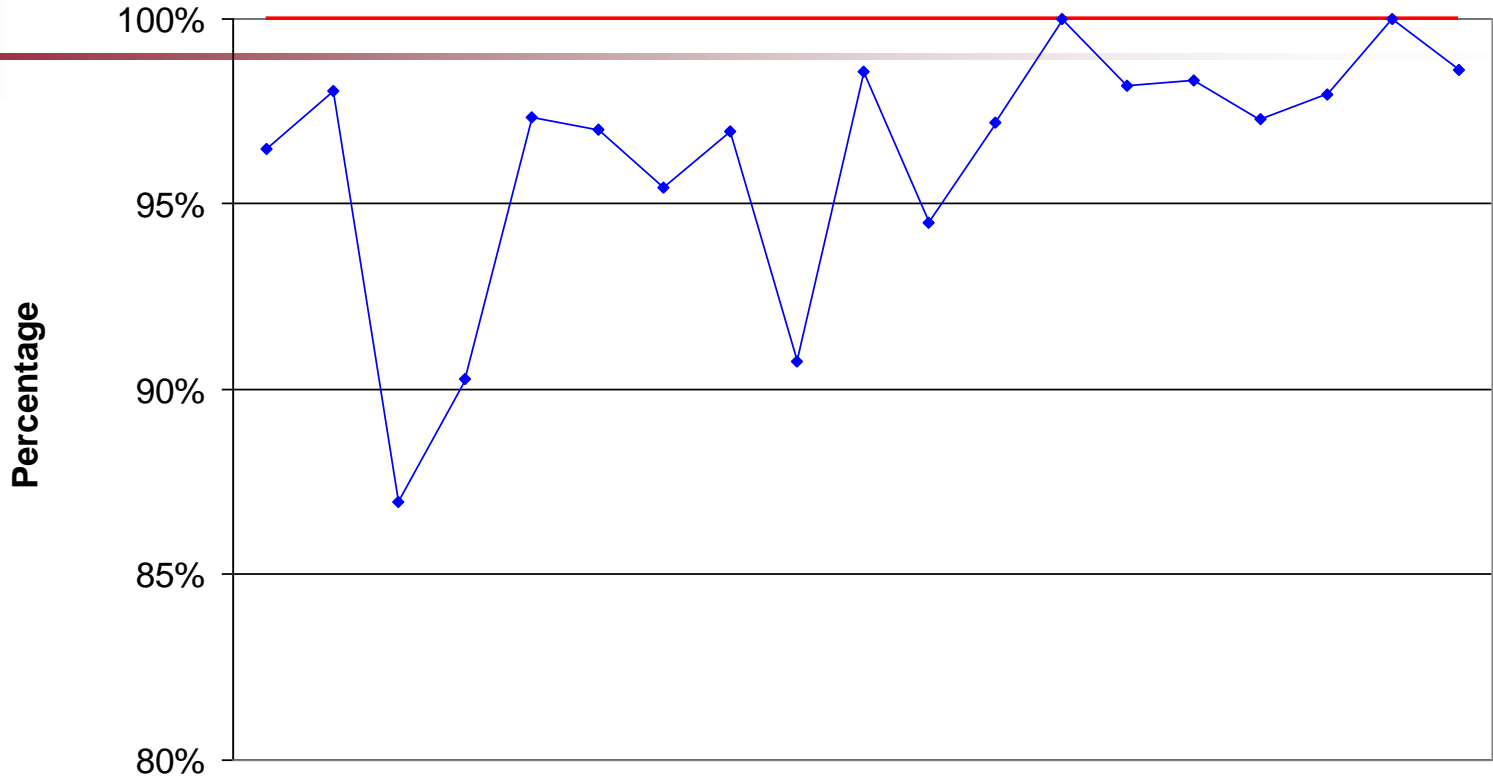


# Results

---

- Improvement in core measure outcomes for CHF & Pneumonia
- Lead our system in Immunization screening with 94.4% compliance for 3<sup>rd</sup> Quarter
- Hardwire quality measures as part of routine care

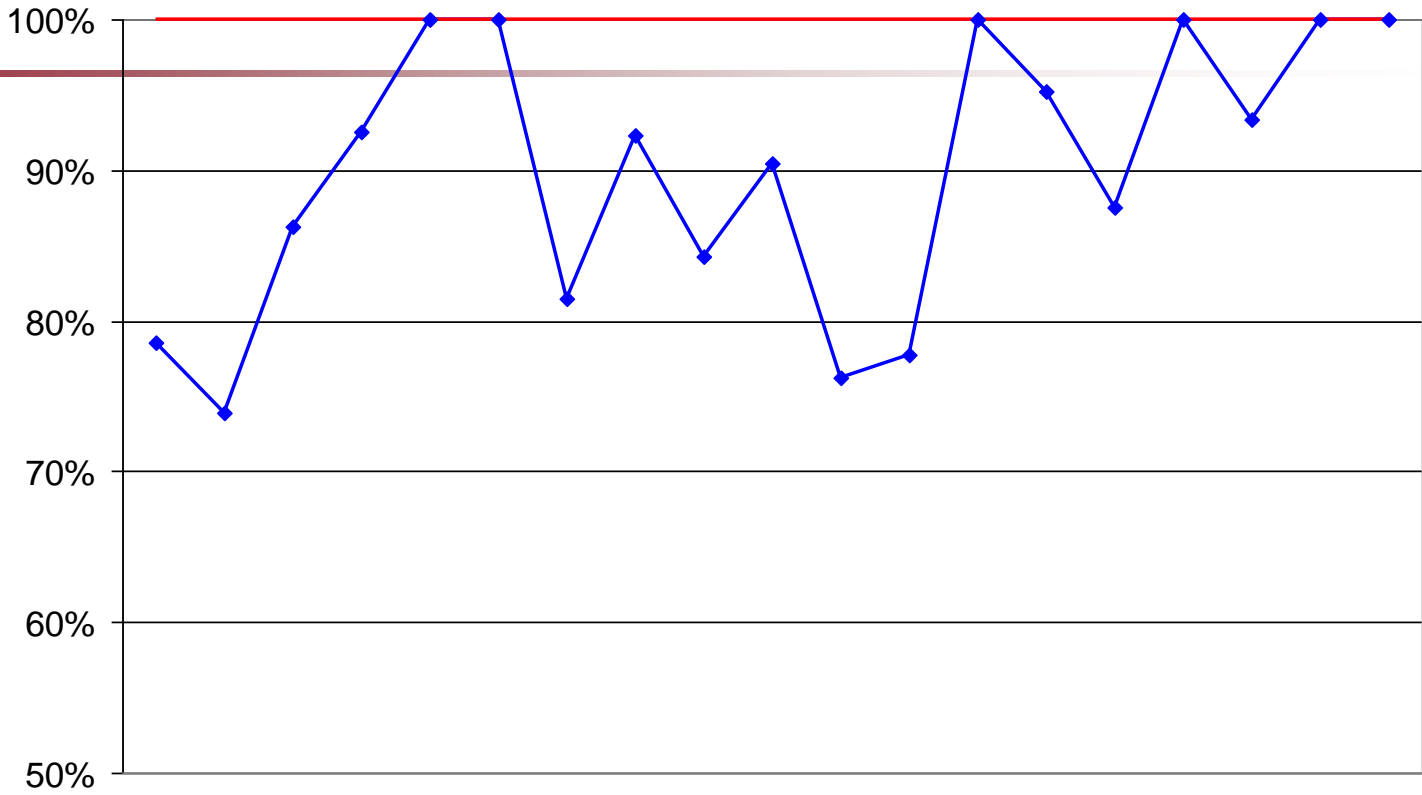
# Heart Failure



	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12
—◆— HF Appropriate Care	96%	98%	87%	90%	97%	97%	95%	97%	91%	99%	95%	97%	100	98%	98%	97%	98%	100	99%
— Benchmark	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

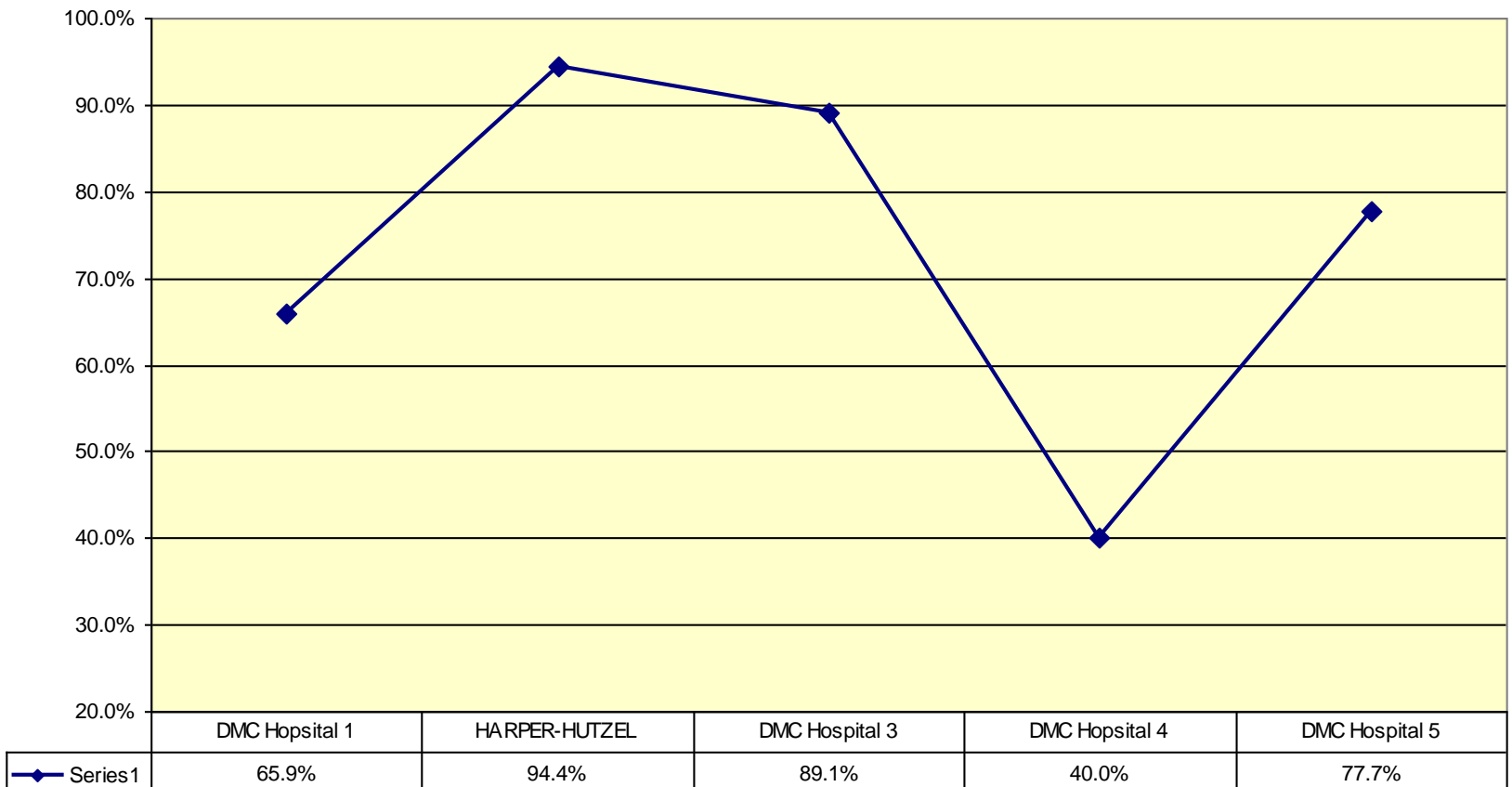
# Pneumonia

Percentage



	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12
PN Appropriate Care	79%	74%	86%	93%	100%	100%	81%	92%	84%	90%	76%	78%	100%	95%	88%	100%	93%	100%	100%
Benchmark	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

# Immunization Compliance





# Unintended Benefits

---

- Improved adoption of documentation in general
- Daily unit safety & quality huddles became more consistent
- Bedside report and handover for patient practices became more consistent
- Daily meeting – review great catches, falls, throughput



# Authors

---

- Valerie Gibson, MSA, BSN, RN, NE-BC
  - Chief Operating Officer, Detroit Medical Center Harper-Hutzel Hospital
- Christine Bowen, MSN, RN, CCRN
  - Chief Nursing Officer, Detroit Medical Center Harper-Hutzel Hospital
- Corinne Hamstra, BSN, RN
  - Director Clinical Transformation, Detroit Medical Center Harper-Hutzel Hospital
- Michele Seator, MSN, RN
  - Manager, Magnet Program, Detroit Medical Center Harper-Hutzel Hospital
- Contact e-mail: [mseator2@dmc.org](mailto:mseator2@dmc.org)