

## BOARD OF REGENTS, STATE OF IOWA UIHC COMMITTEE MEETING

October 18, 2006

8:30-11:30 a.m.

Clasen Memorial Board Room, UIHC  
Iowa City, Iowa

- |                                     |   |
|-------------------------------------|---|
| I. Introductory Comments            | Regent Robert N. Downer, Chair<br>Donna Katen-Bahensky, Director and Chief Executive Officer  |
| II. Quality and Safety at UIHC      | Donna Katen-Bahensky<br>Charles Helms, MD, Ph.D., Medical Director, Office of Clinical Quality, Safety, and Performance Improvement<br>Mary Kay Brooks, RN, MSN, Senior Administrative Associate, Office of Clinical Quality, Safety, and Performance Improvement |
| III. Hospital Safety Program Update | Donna Katen-Bahensky<br>Daniel Fick, MD, Senior Assistant Hospital Director   |
| IV. Operational Improvement         | Donna Katen-Bahensky<br>Sabi Singh, Director, Operational Improvement   |
| V. Operations and Finance Report    | Donna Katen-Bahensky<br>Anthony DeFurio, Chief Financial Officer  |
| VI. IowaCare Update                 | Donna Katen-Bahensky<br>Stacey Cyphert, Special Advisor to the President, Special Advisor to the Dean of CCOM, Senior Assistant Hospital Director   |
| VII. Director's Remarks             | Donna Katen-Bahensky  |

# **Quality and Safety at UIHC: Principles and Practices**

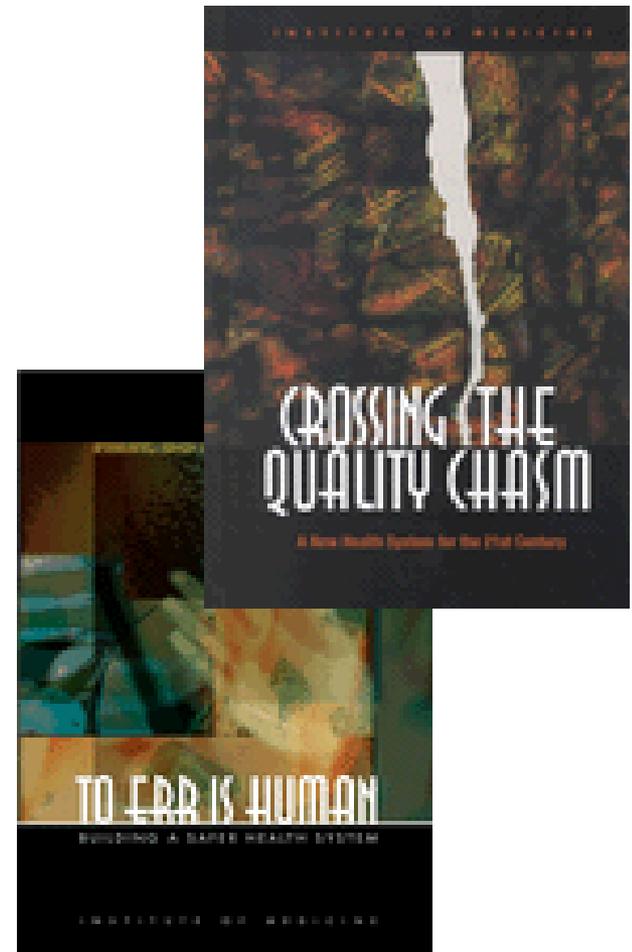
**Charles Helms, MD, Ph.D.**

**Mary Kay Brooks, RN, MSN**

Office of Clinical Quality, Safety, and Performance Improvement

# Emergence of Hospital Quality and Safety Issues

- A high cost healthcare system with access problems,
- ...that varies in the quality and safety of care delivered.
  - **Crossing the Quality Chasm**, Institute of Medicine, 2000
  - **To Err is Human**, Institute of Medicine, 1999

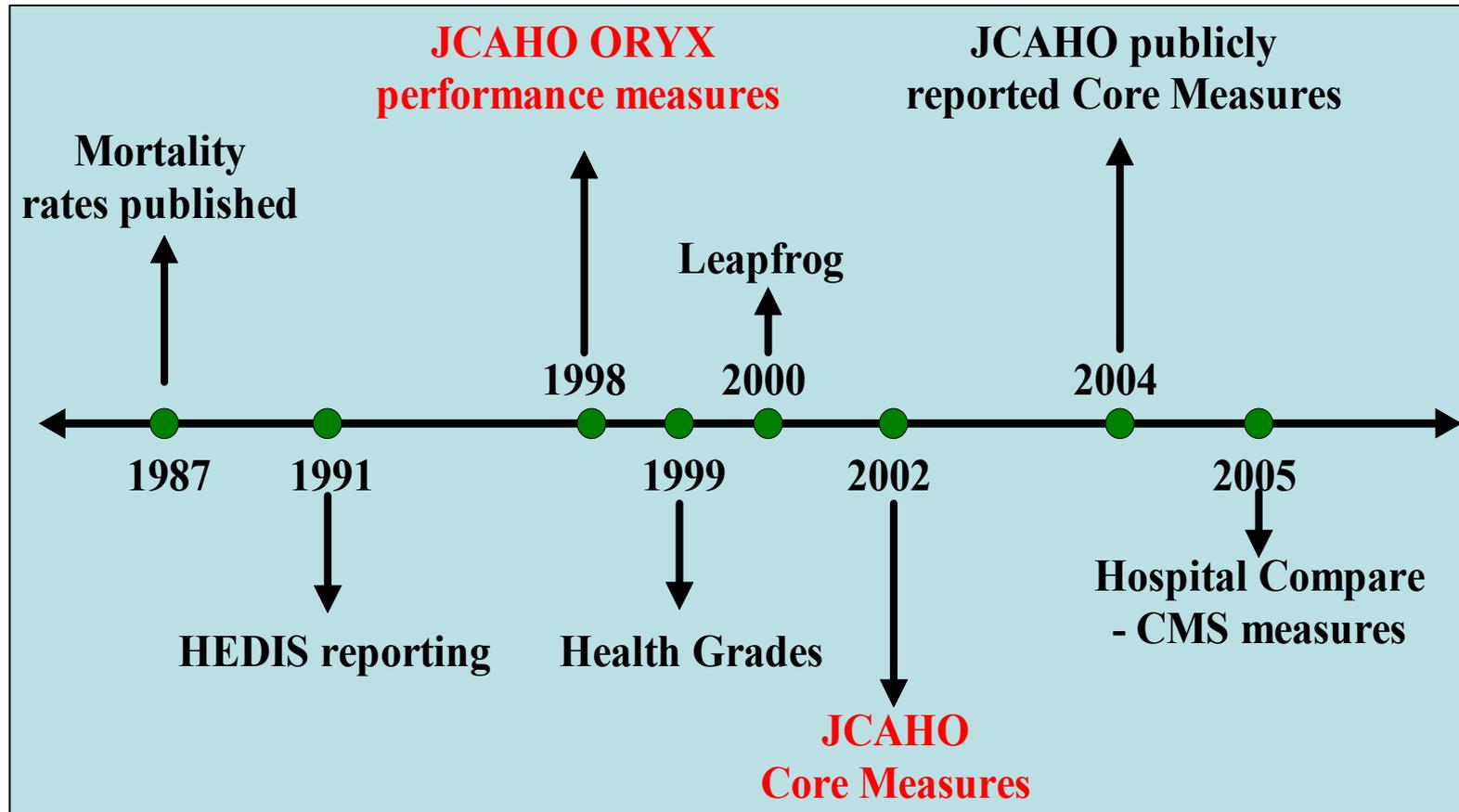


## Why is Public Reporting Important?

- It's the right thing to do.
- The public wants and needs healthcare information.
- Sooner or later financial reimbursement will be linked to quality and safety.



# History of Public Reporting of Quality – Where the Metrics Came From



- HEDIS: Health Plan Employer Data and Information Set
- JCAHO- Joint Commission of Accreditation of Healthcare Organizations
- CMS- Centers for Medicare and Medicaid Services

## Public Report Cards – UIHC Guiding Principles

- UIHC is committed to sharing information publicly through reliable local, state and national Report Cards that will help improve the quality and safety of our patient services.
- UIHC is committed to using information from reliable Report Cards to identify opportunities for improvement and to guide continuous performance improvement efforts in safety and quality of patient care.
- Exceptional Outcomes Strategy – UIHC Strategic Plan (2005-2010).

## Choosing a Report Card – UIHC Conclusions

- We believe the public and providers are best served by hospital Report Cards using quality/safety information:
  - that is understandable, focused and relevant to user groups, from individual members of the public to individual hospitals.
  - that is derived from clinical data (e.g., patient records) rather than from administrative data (e.g., financial forms).
  - that is derived using explicit methodology to verify and risk-adjust data.
  - that may be directly applied by providers to improve processes of care.

## Report Cards Used by UIHC

<b><u>Peer Group</u></b>	<b><u>Source</u></b>
<ul style="list-style-type: none"><li>• US Hospitals</li><li>• Academic Health Centers</li><li>• NICU</li><li>• Magnet Hospitals</li><li>• Cardiac Surgery Centers</li><li>• Iowa Hospitals</li></ul>	<ul style="list-style-type: none"><li>• Hospital Compare (CMS) and JCAHO</li><li>• University HealthSystem Consortium</li><li>• Vermont-Oxford Network</li><li>• American Nurses Credentialing Center</li><li>• Society of Thoracic Surgeons</li><li>• Iowa Healthcare Collaborative</li></ul>

## Iowa Healthcare Collaborative (IHC)

- Partnership between the Iowa Hospital Association (IHA) and the Iowa Medical Society (IMS)
- Purpose- promote culture of performance improvement for Iowa healthcare
- Annual report



# JCAHO/CMS Quality Measures

- Population specific measure sets
  - Acute myocardial infarction - 9 measures
  - Heart failure - 4 measures
  - Pneumonia - 11 measures
  - Pregnancy and related conditions - 3 measures
  - Surgical Care Improvement Project - 6 measures
- Found on JCAHO and CMS websites

# JCAHO Quality Check Website

- Provides rolling year of clinical data results
- Symbols indicate above average, average, or below average performance

		Compared to other Joint Commission Accredited Organizations	
		Nationwide	Statewide
<b>Behavioral Health Care</b>	<a href="#">2004 National Patient Safety Goals (see details)</a>		 *
	<b>Hospital</b>	<a href="#">2005 National Patient Safety Goals (see details)</a>	
Reporting Period: Oct 2004 - Sep 2005	<a href="#">National Quality Improvement Goals:</a>		
	<a href="#">Heart Attack Care (see details)</a>		
	<a href="#">Heart Failure Care (see details)</a>		
	<a href="#">Pregnancy Care (see details)</a>	 <sup>2</sup>	 <sup>2</sup>

 Above Average

 Average

 Not Displayed

# Hospital Compare Website

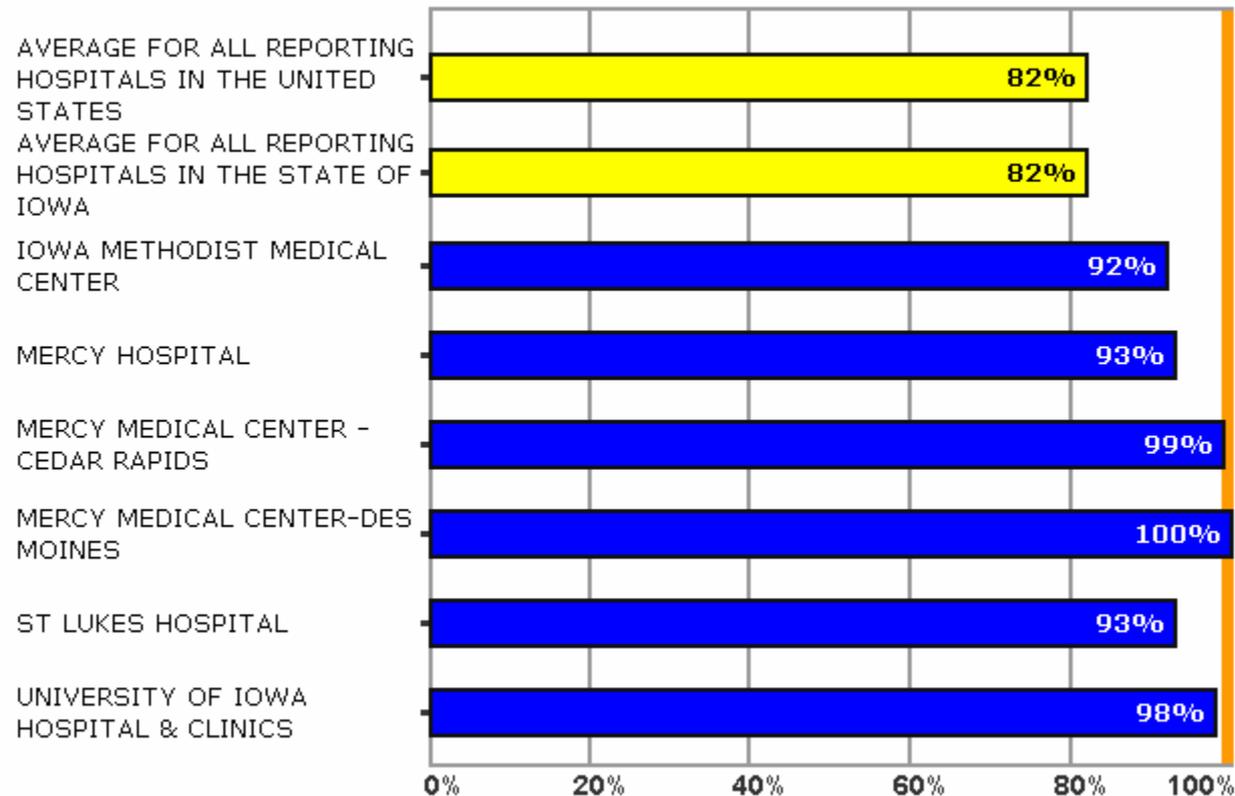
- Launched in April 2005
- Sponsored by Centers for Medicare & Medicaid Services (CMS), American Hospital Association (AHA), & Association of American Medical Colleges (AAMC)
- Consumer-oriented display of core measures:
  - AMI - acute myocardial infarction
  - HF - heart failure
  - PN - pneumonia measures (community-acquired)
  - SIP - surgical infection prevention
- Rolling year's worth of data
- <http://www.hospitalcompare.hhs.gov>

# Hospital Compare Website

## % of Heart Attack Patients Given Smoking Cessation Advice/Counseling

Jan 2005 – Dec 2005

Top  
Hospitals  
100%



Top Hospitals represents the top 10% of hospitals nationwide. Top hospitals achieved a 100% rate or better.

# Acute Myocardial Infarction

Acute Myocardial Infarction (AMI)	CY2004 Q2	CY2004 Q3	CY2004 Q4	CY2005 Q1	CY2005 Q2	CY2005 Q3	CY2005 Q4	CY2006 Q1
<b>Appropriate Care Measure: % of patients that received appropriate JCAHO/CMS AMI processes of care</b>	81% n=52	77% n=74	85% n=73	92% n=83	96% n=66	96% n= 71	92% n=75	NA
AMI-1 Aspirin at Arrival	100% n=15	96% n=26	100% n=31	100% n=21	100% n=25	100% n=22	100% n=16	100% n=25
AMI-2 Aspirin Prescribed at Discharge	100% n=51	94% n=70	100% n=67	100% n=80	100% n=63	99% n=70	100% n=65	100% n=65
AMI-3 ACEI or ARB for LVSD (ARB added 1/2006)	77% n=13	70% n=10	88% n=16	83% n=18	100% n=17	100% n=10	88% n=16	77% n=13
AMI-4 Adult Smoking Cessation Advice/Counseling	69% n=26	81% n=32	90% n=31	97% n=38	100% n=27	100% n=32	97% n=32	100% n=23
AMI-5 Beta Blocker Prescribed at Discharge	98% n=50	100% n=72	100% n=67	99% n=76	100% n=64	99% n=68	100% n=65	100% n=66
AMI-6 Beta Blocker at Arrival	100% n=14	96% n=22	96% n=28	100% n=21	100% n=23	100% n=20	100% n=14	100% n=21
AMI-8 Median Time to PCI* (minutes)	797 n=5	208 n=8	122 n=14	123 n=3	130 n=5	94 n=3	103 n= 6	82 n=5
AMI-8a PCI Received within 120 Minutes of Hospital Arrival (added 7/2004)**	NA	50% n= 8	64% n=14	33% n=3	40% n=5	67% n=3	50% n=6	100% n=5
AMI-9 Inpatient Mortality	8.8% n=34 exp= 5.7%	0.0% n=43 exp= 6.0%	5.8% n=52 exp= 6.4%	6.3% n=48 exp= 5.8%	3.9% n=51 exp= 3.8%	5.8% n=52 exp= 4.3%	2.2% n= 46 exp= 5.5%	4.3% n=47 exp= 5.6%



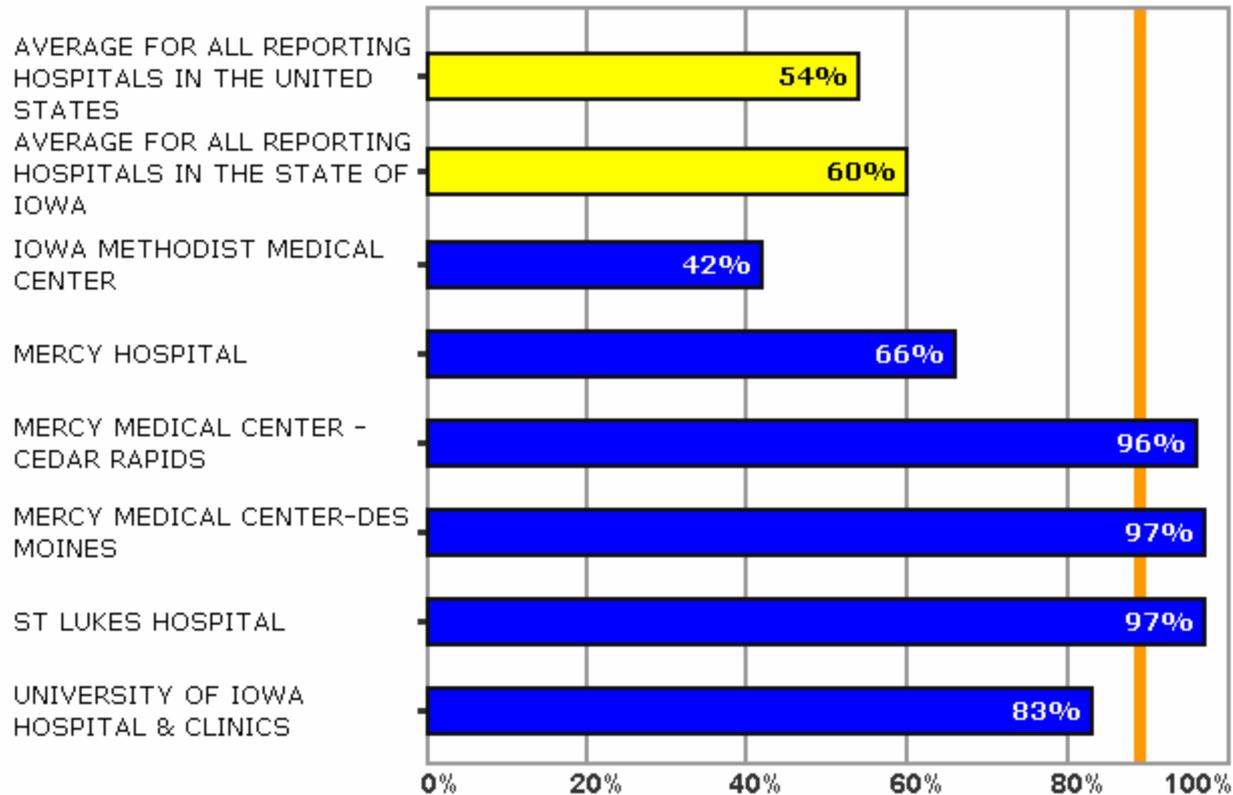
Although UIHC may be performing at or higher than external institutional benchmarks on some measures, internal benchmarks of excellence have been established. Performance Improvement teams continue to work in achieving these benchmarks.

# Hospital Compare Website

## % of Heart Failure Patients Given Discharge Instructions

Jan 2005 – Dec 2005

Top Hospitals  
89%



Top Hospitals represents the top 10% of hospitals nationwide. Top hospitals achieved a 89% rate or better.

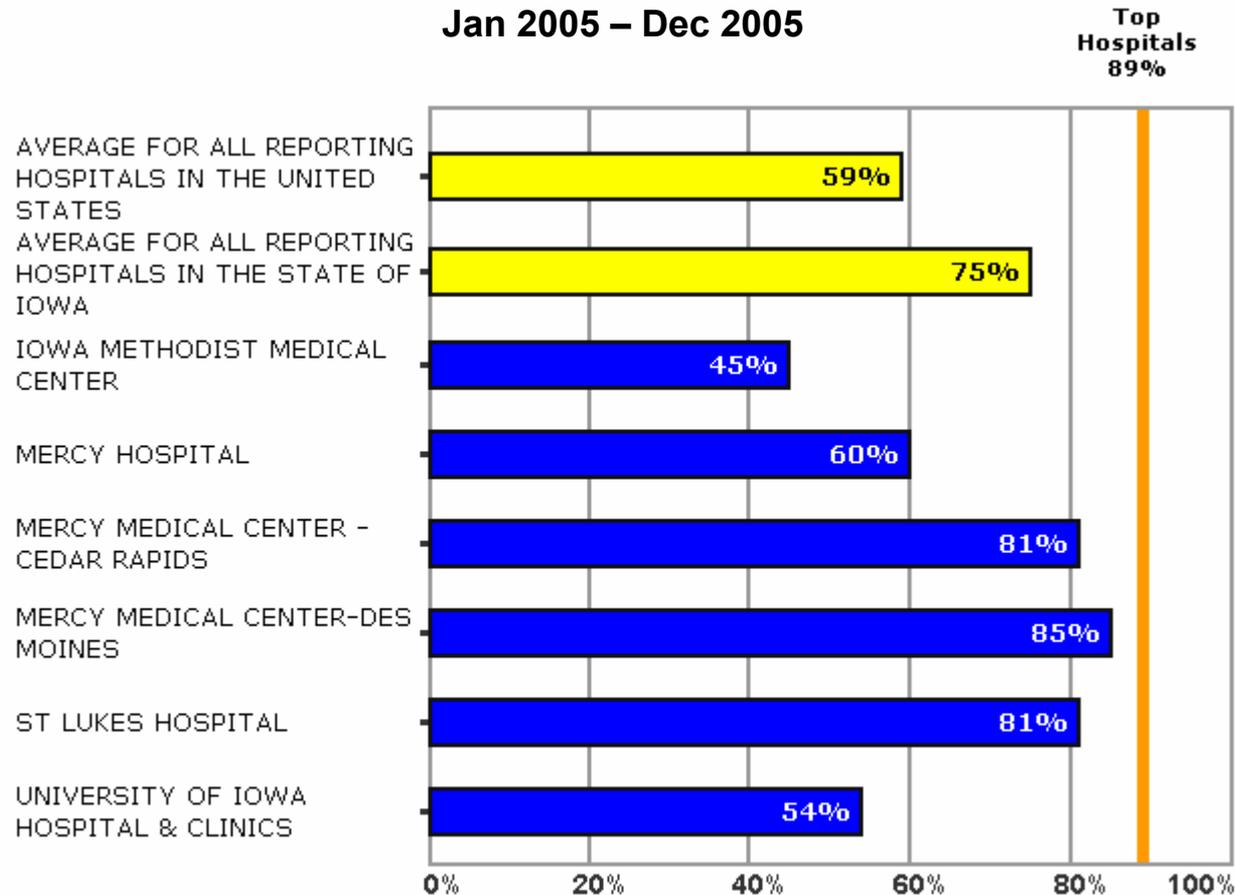
# Heart Failure

Heart Failure (HF)	CY2004 Q2	CY2004 Q3	CY2004 Q4	CY2005 Q1	CY2005 Q2	CY2005 Q3	CY2005 Q4	CY2006 Q1
<b>Appropriate Care Measure: % of patients that received appropriate JCAHO/CMS HF processes of care</b>	47% n=86	44% n=94	59% n=75	60% n=81	73% n=82	89% n=65	78% n=72	NA
<b>HF-1 Discharge Instructions</b>	51% n=78	43% n=76	63% n=71	72% n=76	86% n=73	93% n=58	84% n=63	79% n=66
HF-2 Evaluation of LVS Function	98% n=86	96% n=94	95% n=75	96% n=81	99% n=82	99% n=65	97% n=72	99% n=73
HF-3 ACEI or ARB for LVSD (ARB added 1/2005)	87% n=53	92% n=49	94% n=49	85% n=59	78% n=50	92% n=36	85% n=47	82% n=51
HF-4 Adult Smoking Cessation Advice/Counseling	41% n=17	30% n=23	86% n=29	68% n=28	94% n=18	87% n=15	75% n=16	96% n=22
Activity Discharge Instructions	81%	71%	89%	100%	100%	98%	100%	100%
Diet Discharge Instructions	81%	86%	97%	100%	100%	100%	100%	100%
Follow-Up Discharge Instructions	82%	84%	93%	100%	100%	99%	100%	100%
Medication Discharge Instructions	86%	78%	86%	96%	96%	100%	100%	100%
Symptoms Worsening Discharge Instructions	72%	76%	92%	87%	87%	92%	95%	88%
Weight Monitoring Discharge Instructions	59%	62%	80%	80%	80%	93%	84%	80%

Although UIHC may be performing at or higher than external institutional benchmarks on some measures, internal benchmarks of excellence have been established. Performance Improvement teams continue to work in achieving these benchmarks.

# Hospital Compare Website

## % of Pneumonia Patients Assessed and Given Pneumococcal Vaccination



Top Hospitals represents the top 10% of hospitals nationwide. Top hospitals achieved a 89% rate or better.

# Community Acquired Pneumonia

Pneumonia (PN)	CY2004 Q2	CY2004 Q3	CY2004 Q4	CY2005 Q1	CY2005 Q2	CY2005 Q3	CY2005 Q4	CY2006 Q1
<b>Appropriate Care Measure: % of patients that received appropriate JCAHO/CMS PN processes of care</b>	14% n=64	43% n=47	3.9% n=51	33% n=52	11% n=35	42% n=36	24% n=33	NA
PN-1 Oxygenation Assessment	98% n=61	100% n=40	98% n=49	100% n=47	100% n=32	97% n=34	100% n=30	100% n=35
PN-2 Pneumococcal Vaccination	0% n=20	44% n=16	45% n=20	69% n=16	37% n=19	58% n=12	57% n=14	41% n=22
PN-3a Blood Cultures Performed Within 24 Hours Prior to or 24 Hours After Hospital Arrival for Patients Who Were Transferred or Admitted to the ICU Within 24 Hours of Hospital Arrival	New JCAHO Measure effective July 2005					33% n=3	75% n=4	100% n=2
PN-3b Blood Cultures Performed in the Emergency Department Prior to Initial Antibiotic Received in Hospital	72% n=43	69% n=26	55% n=29	80% n=39	76% n=25	73% n=26	73% n=26	82% n=17
PN-4 Adult Smoking Cessation Advice/Counseling	33% n=18	23% n=13	35% n=17	21% n=14	27% n=11	78% n=9	11% n=9	39% n=13
PN-5 Antibiotic Timing (Median)*	253 min n=54	221 min n=24	183 min n=27	153 min n=30	153 min n=20	220 min n=19	187 min n=25	135 min n=31
PN-5a Initial Antibiotic Received Within 8 Hours of Hospital Arrival	80% n=54	91% n=21	96% n=26	93% n=30	100% n=20	90% n=19	96% n=25	90% n=31
PN-5b Initial Antibiotic Received Within 4 Hours of Hospital Arrival	48% n=54	62% n=21	65% n=26	77% n=30	65% n=20	63% n=19	60% n=25	68% n=31
PN-6 Initial Antibiotic Selection for CAP in Immunocompetent Patient	New Measure	90% n=20	76% n=21	88% n=32	89% n=19	88% n=8	67% n=9	100% n=15
PN-6a Initial Antibiotic Selection for CAP in Immunocompetent – ICU Patient	New Measure	100% n=1	0% n=2	50% n=4	33% n=3	n = 0	0% n=1	100% n=1
PN-6b Initial Antibiotic Selection for CAP in Immunocompetent – Non-ICU Patient	New Measure	90% n=19	84% n=19	93% n=28	100% n=16	88% n=8	75% n=8	100% n=14
PN-7 Influenza Vaccination	NA	NA	41% n=29	44% n=16	NA	NA	57% n=23	62% n=21

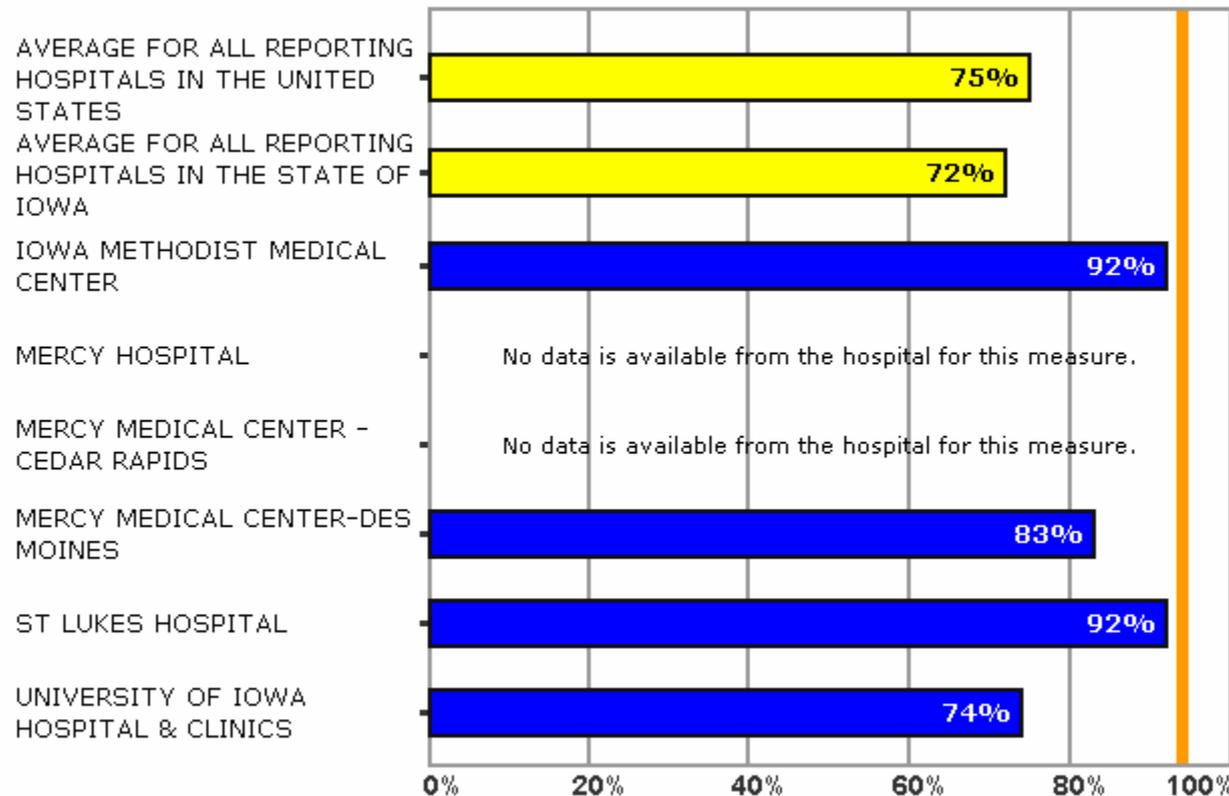
Although UIHC may be performing at or higher than external institutional benchmarks on some measures, internal benchmarks of excellence have been established. Performance Improvement teams continue to work in achieving these benchmarks.

# Hospital Compare Website

## % of Surgery Patients Who Received Preventative Antibiotic(s) One Hour Before Incision

Jan 2005 – Dec 2005

Top Hospitals  
94%



Top Hospitals represents the top 10% of hospitals nationwide. Top hospitals achieved a 94% rate or better.

## Surgical Care Improvement Project (SCIP)

Surgical Infection Prevention (SIP)	CY2005 Q1	CY2005 Q2	CY2005 Q3	CY2005 Q4	CY2006 Q1
Appropriate Care Measure: % of patients that received appropriate JCAHO/CMS SIP processes of care	26% n=148	30% n=166	27% n=156	34% n= 150	NA
→ SIP-1 Prophylactic Antibiotic Received Within 1 Hour Prior to Surgical Incision	69% n=102	74% n=122	73% n=112	80% n=147	82% n=129
*SIP-2 Prophylactic Antibiotic Selection for Surgical Patients	76% n=112	75% n=166	70% n=156	75% n=149	75% n=132
SIP-3 Prophylactic Antibiotics Discontinued Within 24 Hours (48 Hrs for Cardiac Surgery and CABG) After Surgery End Time	43% n=145	51% n=161	53% n=149	54% n=141	62% n=122

*Metrics 1-3 impact the following populations:  
CABG, Cardiac Surgery, Hip/Knee Replacement,  
Colon Surgery, Vascular Surgery, and Hysterectomies*

## What is Our Role?

- Understand and practice evidence-based care – the right thing to do
- Be aware of the metrics, recognizing that they measure how well we are performing and documenting evidence-based care
- Know and understand the source and limitations of the data
- Set and review priorities on an ongoing basis through the UIHC's University Hospital Advisory Committee
- Identify when problems exist and work to address them – performance improvement is ongoing
- Managers and providers review reports with staff at least quarterly

# Future Reporting

- Patient satisfaction
  - Hospital Consumer Assessment of Health Plans (HCAHPS)
  - Allows inter-hospital comparisons
  - Create incentives to improve quality of care
  - Enhance public accountability
  - Data collection starts Oct. 2006



## Future Reporting (cont'd)

- Pay for performance
- Future measures under consideration
  - ICU
  - Ambulatory Care
  - Pain management
  - DVT/PE Prevention
  - Children's asthma JCAHO measures
  - Infection reporting
- Physician Voluntary Reporting Program (PVRP)  
CMS launched in Jan. 2006; first report due - Dec. 2006
  - 16 measures on cardiac, renal, diabetic, and surgical care



## Closing the Quality/Safety Gap: The Task

- **Cooperation:** Healthcare providers, payers and the public cooperating in an evidence-based process that does not undermine public confidence; that addresses patient confidentiality and provider liability concerns clearly and constructively.
- **Communication:** Using reliable hospital quality/safety information to inform the public and to support continuous hospital performance improvement efforts.
- **Commitment:** Persistence, responsibility and resources.

## References

- Agency for Healthcare Research and Quality - Measuring Healthcare Quality: <http://www.ahrq.gov/qual/measurix.html>
- JCAHO Quality Check: <http://www.jointcommission.org>
- Hospital Compare: <http://www.hospitalcompare.hhs.gov>
- National Committee for Quality Assurance (NCQA): <http://www.ncqa.org>
- National Quality Forum: <http://www.qualityforum.org>
- Physician Voluntary Reporting Program  
[http://www.cms.hhs.gov/PVRP/01\\_Overview.asp](http://www.cms.hhs.gov/PVRP/01_Overview.asp)
- The State-of-the-Art of Online Hospital Public Reporting: A Review of Forty-Seven Websites  
<http://www.delmarvafoundation.org/newsAndPublications/reports/index.html>

# Hospital Safety Program Update

**Daniel Fick, MD**

Senior Assistant Director,

Safety Officer

## Culture of Safety

- We assume all UIHC healthcare workers attempt to deliver safe and effective patient care
- Most incidents resulting in harm can be traced back to complex systems factors
- Blaming people doesn't improve the system
- Front line staff are able to report and recognize errors or near misses without fear of retaliation
- Enhancing patient safety requires creating a culture in which openness and learning are valued

# FY 2007 Safety Program Goals

## Set priorities

- Establish incident and ad hoc health care infection review team
- Evaluate UHC incident reporting system
  - Patient Safety Net
- Conduct Safety Walk Rounds Pilot
- Support the development of publicly reported patient safety metrics

## Multidisciplinary Incident Investigation Team (MIIT)

- Weekly review all incident reports with a Harm Score of E through I or any worrisome Near Misses
- Improve consistency and timeliness of follow-up
- Identify system-based causes and select opportunities for improvement
- Provide meaningful feedback about lessons learned to care givers
- MIIT implemented 9/13/2006
- Members: Physicians; Nursing; Pharmacy; Patient Representatives; Legal; Compliance; Pathology; Radiology; and Office of Clinical Quality, Safety, and Performance Improvement



# Ad Hoc Operations Committee on Health Care Infection

- Committee will meet as needed to evaluate sensitive issues related to health care infections
- Committee can recommend activation of Hospital Emergency Command System (HEICS)
- 8 Members
  - 3 Director's Staff
  - 3 CQSPI
  - 1 Operations
  - Chief of Staff

# UHC Patient Safety Net

- Demo held September 11, 2006
  - 30 UIHC staff attended
    - Nursing, Pharmacy, CQSPI, Legal, Compliance, HCIS, Physicians, and Others
- Positive step allowing us to assess a web-based system that provides benchmarking
- Benefits
  - One system for patient, staff, and visitor incident reports
  - Web based reporting capabilities and email notification
- Concerns
  - Lack of standard definitions between UHC (University HealthSystem Consortium) users

## Safety Walk Rounds Pilot

- Provide an informal venue for front line staff to discuss safety issues in the organization
  - Show leadership commitment to creating a culture of safety
- Pilot proposal will be presented to Professional Practice Subcommittee (PPS) in October 2006
  - Pilot will occur November/December 2006
- Five nursing areas will be selected to participate in pilot
  - 4 inpatient and 1 ambulatory
- Pilot Walk Rounds Team: Chief of Staff, Safety Officer, Nursing, Compliance, and CQSPI (no more than 5 staff conducting rounds)

## Agency for Healthcare Research and Quality (AHRQ) Quality Indicators Validation Pilot

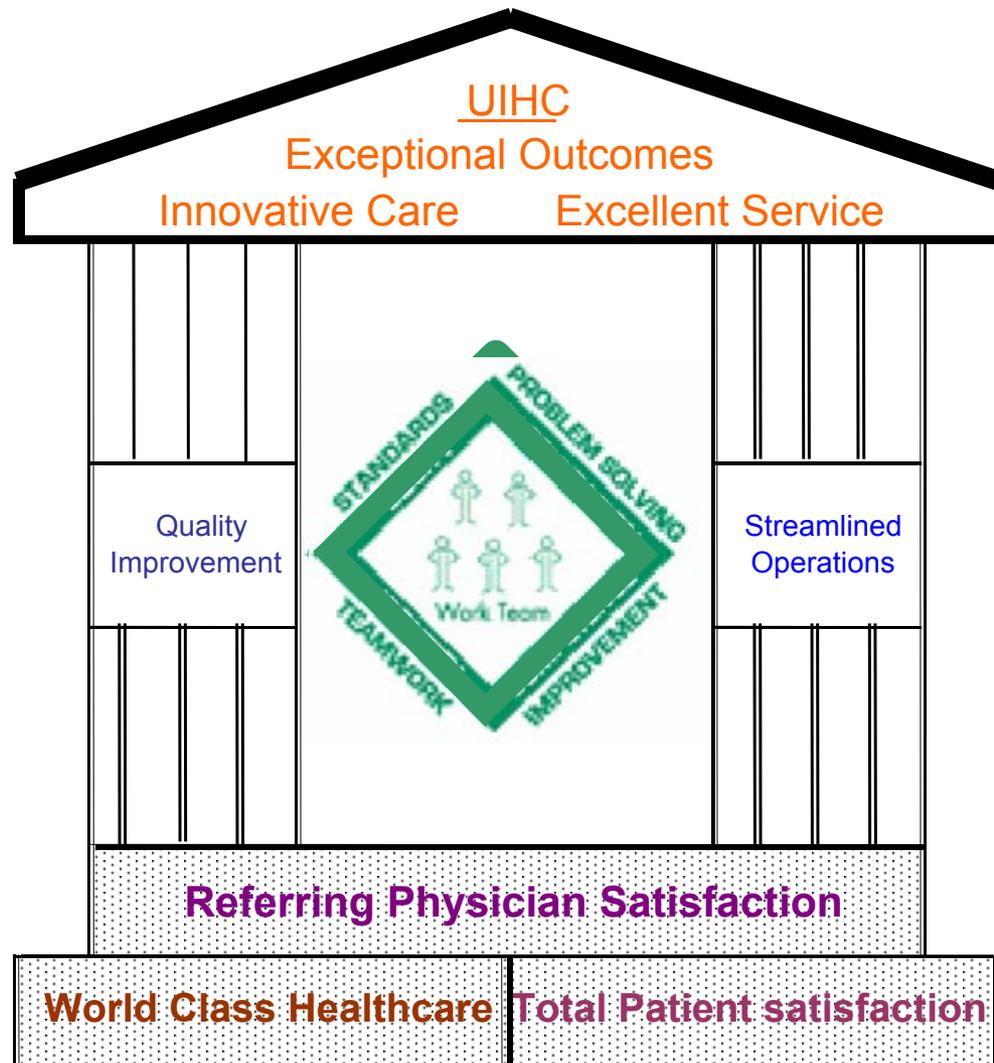
- AHRQ requesting to partner with 5-7 organizations to validate AHRQ Patient Safety Indicators
  - UIHC applied to participate in August 2006
- Purpose of project:
  - Gather scientific evidence on indicators
  - Learn how to better interpret metrics
  - Evaluate need for refinement to metrics
- UIHC was notified in September 2006 that we were selected as a partner for this project
  - Project will begin in October/November 2006

# Operations Improvement at UIHC

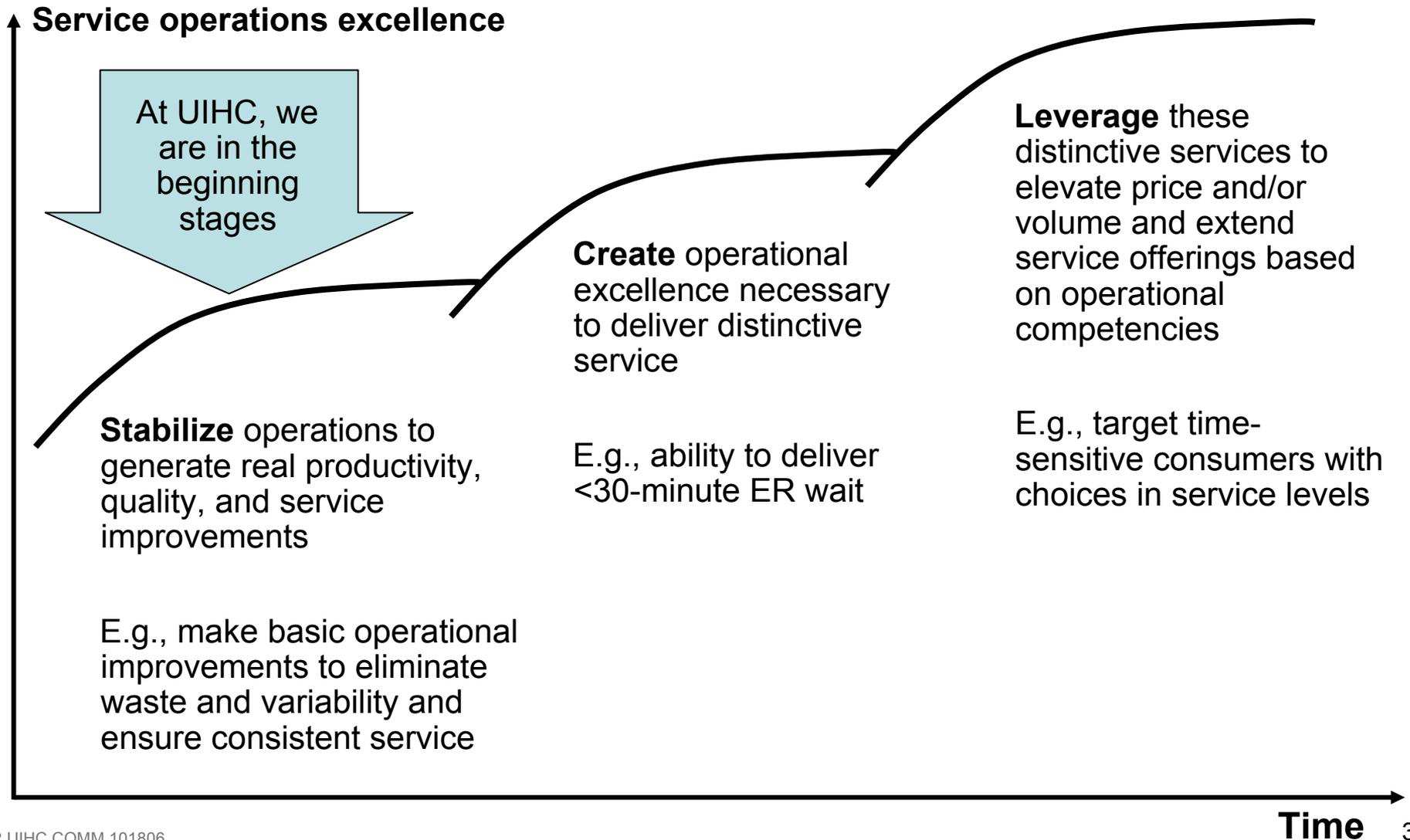
**Sabi Singh**

Director, Operational Improvement

# UIHC Philosophy for Continuous Improvement

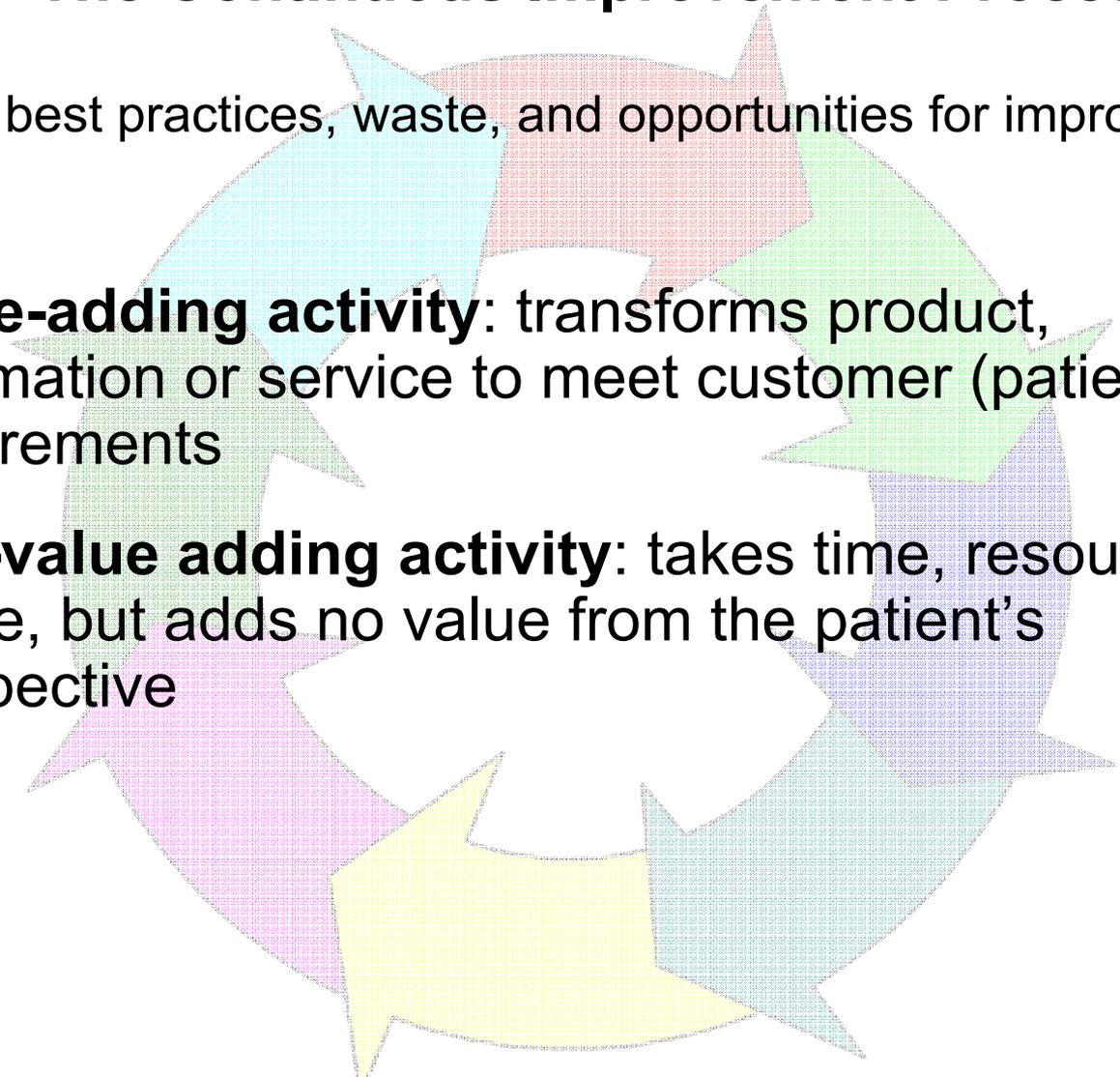


# Transformation is a Multi-year Journey

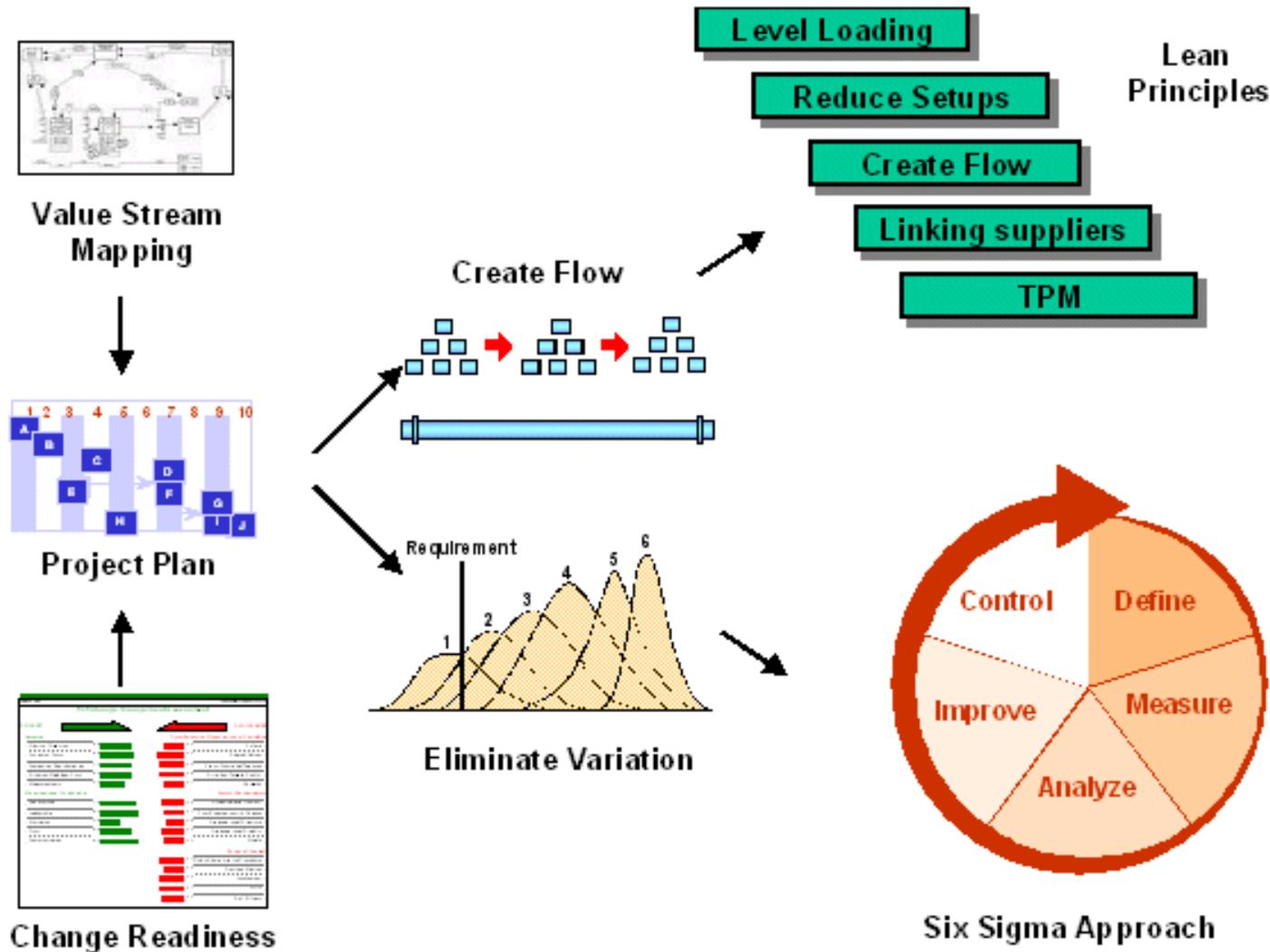


# The Continuous Improvement Process

Identify best practices, waste, and opportunities for improvement

- 
- **Value-adding activity:** transforms product, information or service to meet customer (patient) requirements
  - **Non-value adding activity:** takes time, resources or space, but adds no value from the patient's perspective





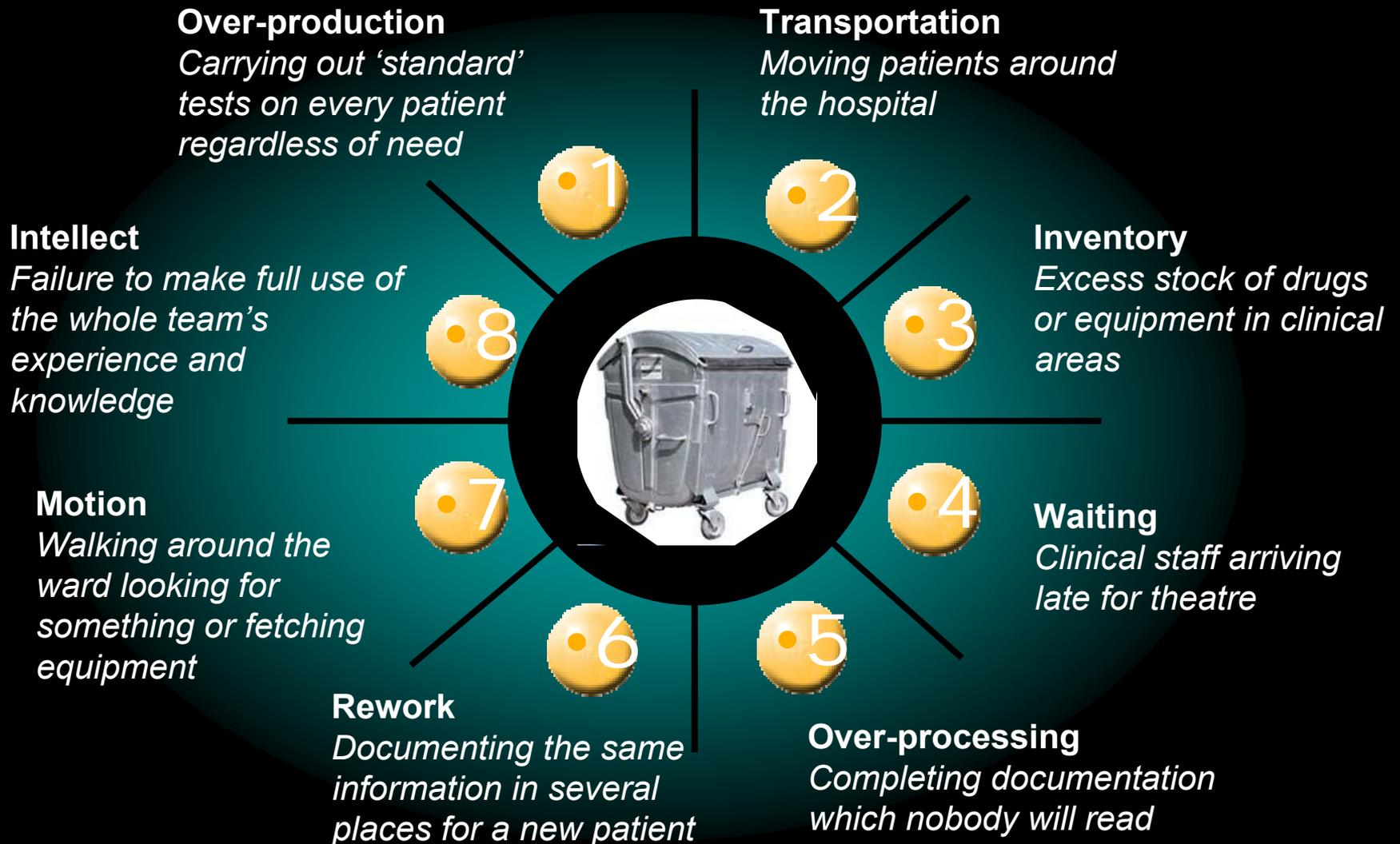
Change Readiness

Six Sigma Approach

## What is “Lean?”

“A philosophy of **continuous improvement** based on **setting standards** aimed at **eliminating waste** through **participation** of **all employees.**”

# Lean Targets the 8 Types of Waste



## What is “Kaizen?”

**Comprised of the Japanese words  
meaning “change” and “better”**

**Typically, kaizen is thought of in terms of “events”  
which are focused on rapid improvement by breaking  
down a process, removing waste, and implementing  
the improved process as the new standard.**

# History of Lean/Kaizen at UIHC

- First Kaizen event conducted at UIHC in June of 2004 in conjunction with Iowa Business Council
- Participants
  - UIHC faculty and staff
  - College of Public Health
  - Iowa Department of Public Health
  - Pella Corporation
  - Maytag Corporation
  - TBM Consulting Group
- Focus Area
  - Radiology, Computed Tomography (CT) Scans
- Accomplishments
  - Wait time – decreased from 1' 54" to 1' 16" (33% reduction)
  - Throughput – increased from 64 to 84 patients per day (31% increase)

## History of Lean/Kaizen at UIHC (cont'd)

- UIHC Office of Operational Improvement established in July of 2005
- Subsequent projects have included:
  - Central Sterilizing Services/Urology – Implement Kanban\* System
  - Pharmacy (6RC) – Medication Turnaround Time
  - Cancer Center Clinics – Flow, Wait Time, Length of Stay
  - Emergency Trauma Center – Wait Time, Length of Stay
  - Infusion Suite – Pharmacy Interface
  - Internal/Family Medicine Inpatient (6RC) – Admission Planning, Discharge Planning, Length of Stay
  - GI Clinic – Wait Time, Length of Stay, Capacity for Additional Procedures
  - Ambulatory Standards of Excellence

\* Stocking system using signals to make production systems respond to real needs and not predictions and forecasts.

# Kaizen Project Selection Criteria

- Voice of the Customer
  - Patients and families
  - Internal customers (MDs, staff)
- Feasibility from a resource and data standpoint
- Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis
- Tied to the mission and vision
- SMART Goals – tied to strategic initiatives

**S** = Specific

**M** = Measurable

**A** = Attainable

**R** = Realistic

**T** = Timely

# Holden Comprehensive Cancer Center (HCC)

## DEFINING THE PROBLEM

Demand exceeded chair capacity by 5% during peak hours causing:

- Patient wait times to increase
- Treatment delay
- Employee overtime utilization

## OBJECTIVES OF THE PROJECT

*Project Charter*

To improve efficiency in the Holden Comprehensive Cancer Center at UIHC using Lean Sigma Principles

**Boundaries:** Check-In, Lab, Vitals, Medication Preparation, and Infusion Therapy  
**Scope:** Patient flow through the above processes  
**Goals:** Reduce patient wait time by 30%  
 Reduce average overall length of stay by 10%  
 Increase throughput by 10%  
 Reduce staff distance by 50%

Figure 1. Percent of Patients per Scenario

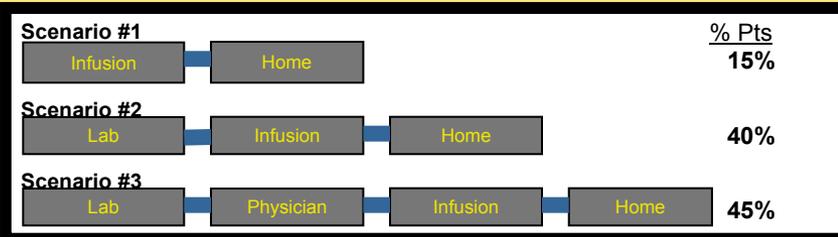


Figure 2. Patient Flow in the Cancer Center



## CHANGES IMPLEMENTED

### *Scheduling*

- Adopted a front-loading system to smooth patient load
- Created a visual method to simplify scheduling

### *Satellite Pharmacy*

- Implemented a fax system to enhance chemotherapy orders
- Established automated paging alerts for administering drugs

### *Cancer Clinic*

- Rerouted patient flow for minimal waiting room time
- Assigned nursing assistant new duties for better care

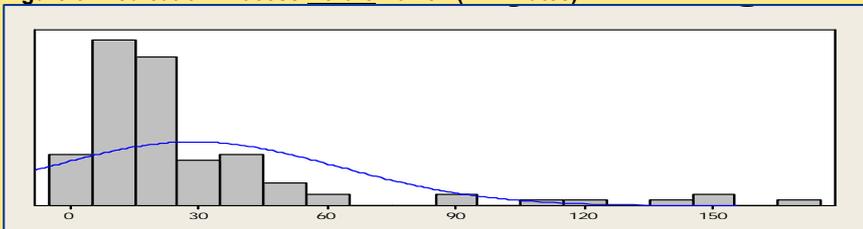
### *Infusion Suite*

- Developed pod systems to organize nurse assignments
- Relocated medication and supplies for efficient access

# TOOLS USED FOR RAPID IMPROVEMENT

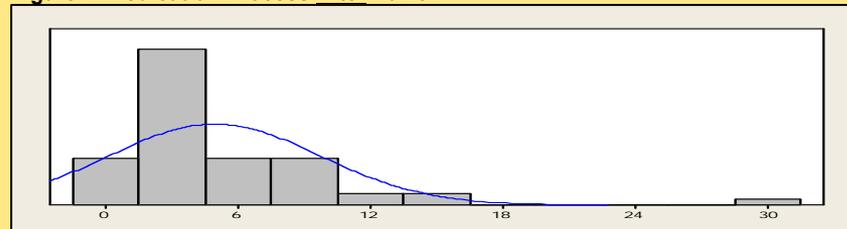
## Process flow maps and time studies captured medication processing time

Figure 3. Medication Process Before Kaizen (in minutes)



Mean: 28.72 minutes Standard Deviation: 33.98 minutes

Figure 4. Medication Process After Kaizen



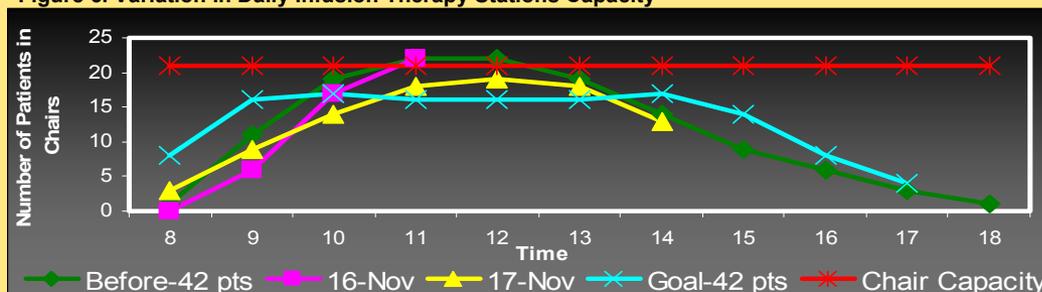
Mean: 4.95 minutes Standard Deviation: 4.78 minutes

## Heijunka Boxes & census data monitored capacity and front loading methods

Figure 5. Heijunka Box (Scheduling Matrix)

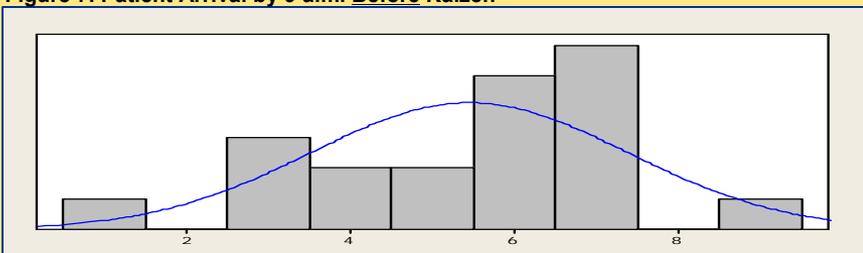
THE UNIVERSITY OF IOWA HOSPITALS AND CLINICS												
INFUSION SUITE												
CHAIR UTILIZATION TREND for the Month of _____												
DAY:	TIME:										NOTES	
	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM		6 PM
1												
2												
3												
4												
5												
6												
7												
8												
10												

Figure 6. Variation in Daily Infusion Therapy Stations Capacity



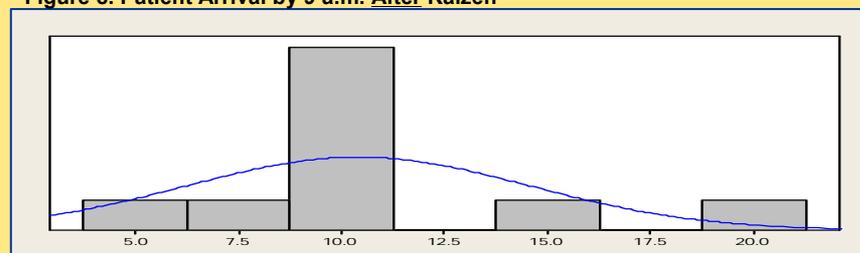
## Front load scheduling and 1-day prior reminders level-loaded patient volumes

Figure 7. Patient Arrival by 9 a.m. Before Kaizen



Mean: 5.45 patients Standard Deviation: 1.93 patients

Figure 8. Patient Arrival by 9 a.m. After Kaizen



Mean: 10.40 patients Standard Deviation: 1.17 patients

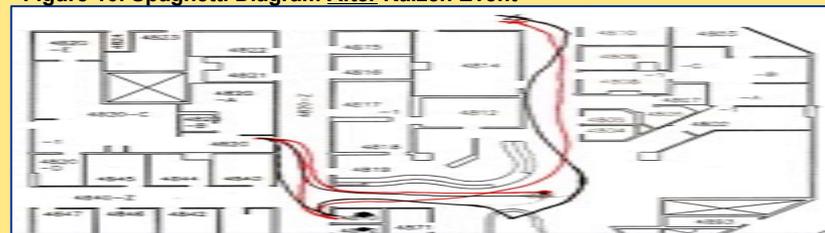
## Spaghetti Charts demonstrated excessive walking and identified inefficiencies

Figure 9. Spaghetti Diagram Before Kaizen Event



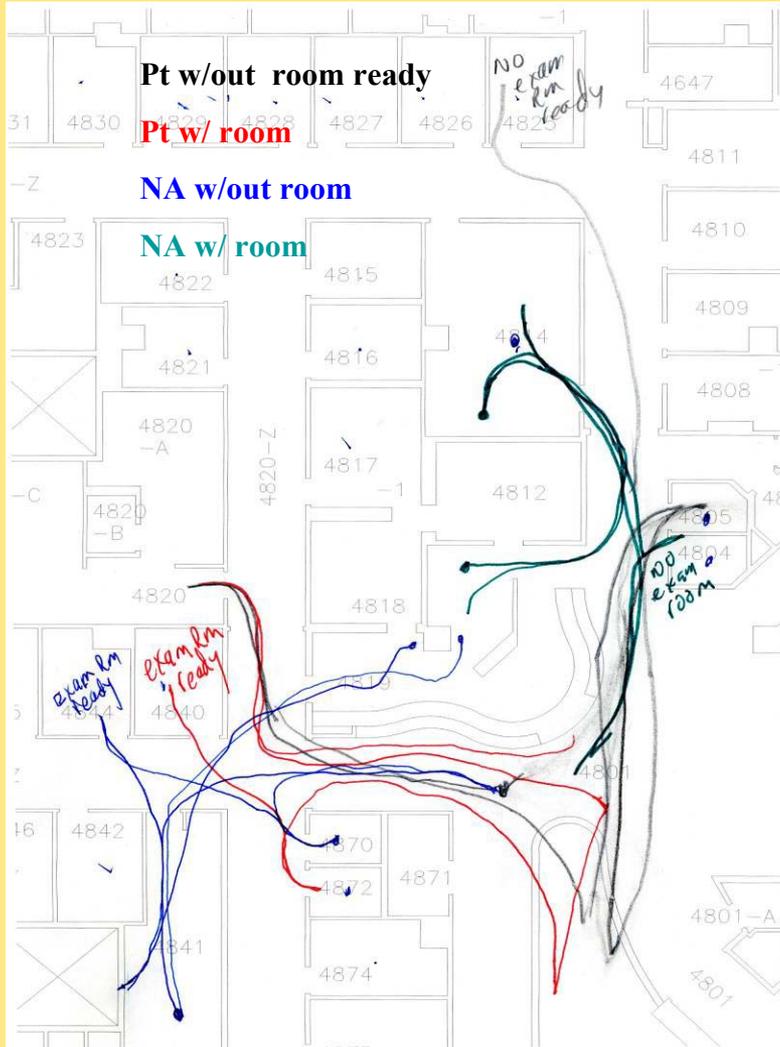
Patient without room ready  
 Patient with room  
 Nursing Assistant without room  
 Nursing Assistant with room

Figure 10. Spaghetti Diagram After Kaizen Event

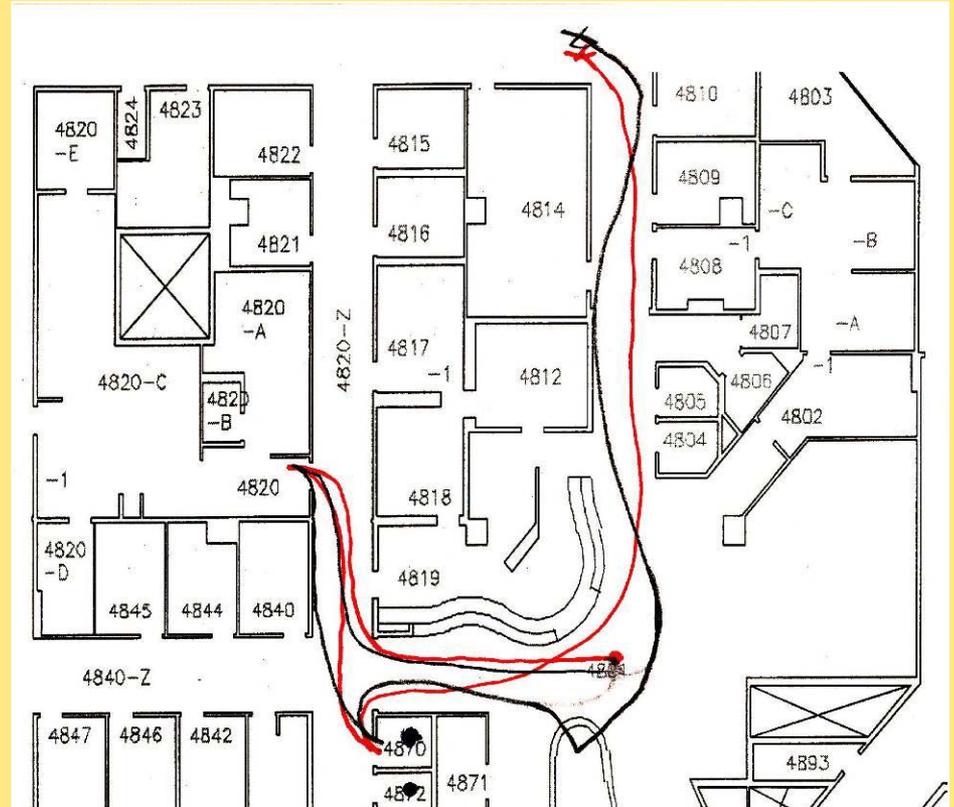


# CLINIC TRAFFIC PATTERNS

Before



After



## RESULTS ATTAINED

Goal	Before	After	% Improvement
Reduce patient wait time by 30%	32 minutes	3 minutes	91% reduction
Reduce overall ALOS by 10% w/ same resources	235 minutes	186 minutes	21% reduction
Increase throughput by 10%	42 pts./day (at peak)	68 pts./day (at peak)	38% increase
Reduce staff walking distance by 50%	RN: 900 ft./pt. Clinic NA: 230 ft./day	RN: 90 ft./pt. Clinic NA: 0 ft./day	RN: 90% reduction Clinic NA: 100% reduction

## PROJECT EFFECTS

### *Productivity*

- Reducing excessive motion allows more efficient use of nursing and staff time
- Improving communication between Infusion Therapy and the Pharmacy eliminates redundant work
- Creating more capacity enables more effective use of resources

### *Quality of Care*

- Developing the pod system organizes caregivers and keeps them in closer proximity to their patients
- Reducing wait times shortens overall length of stay
- Reducing noise and commotion improves patient experience

### *Cost to the Institution*

- Increasing capacity without increasing staffing costs allows for greater possibilities for generating revenue
- Adjusting skill mix more appropriately leads to more effective operations
- Increasing patient throughput decreases salary and benefit expenses per patient

#### At Capacity: Staff Salary and Benefit Expenses per Patient Visit

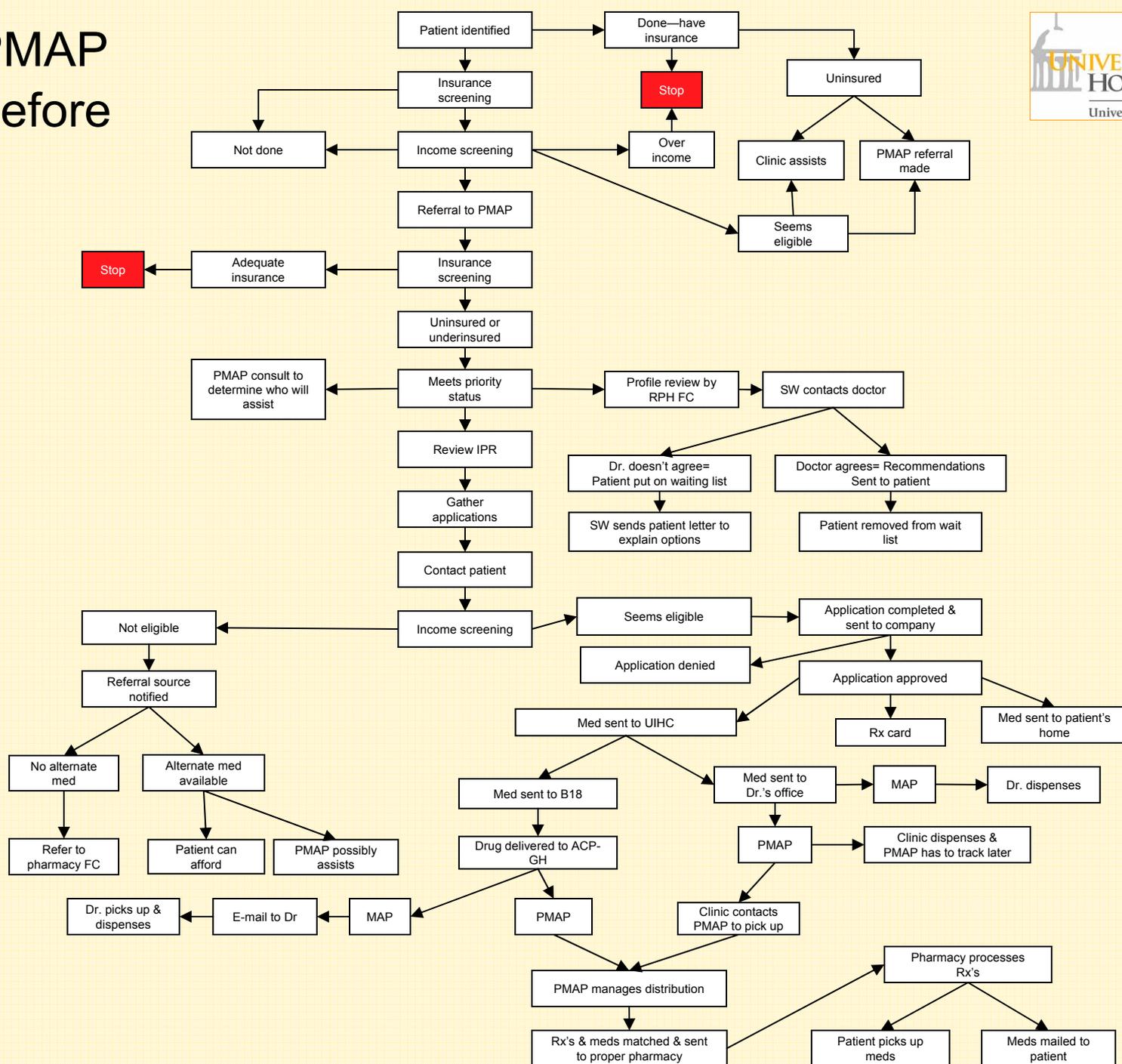
Before the Kaizen Event	\$84.20
After the Kaizen Event	\$51.04

# Patient Medical Assistance Program (PMAP)

## Size of Problem Required Changes

- PMAP had wait list of 14 months (>300)
- Pharmacists' expertise not maximized
- Bifurcated system: due to high demand, PMAP could not provide services to all Clinics and Inpatient areas.
- In areas where PMAP could not assist, physicians, nurses, social workers and other providers were asked to provide PMAP services. This created unacceptable variation.

# PMAP Before



# Patient Medical Assistance Program - Results

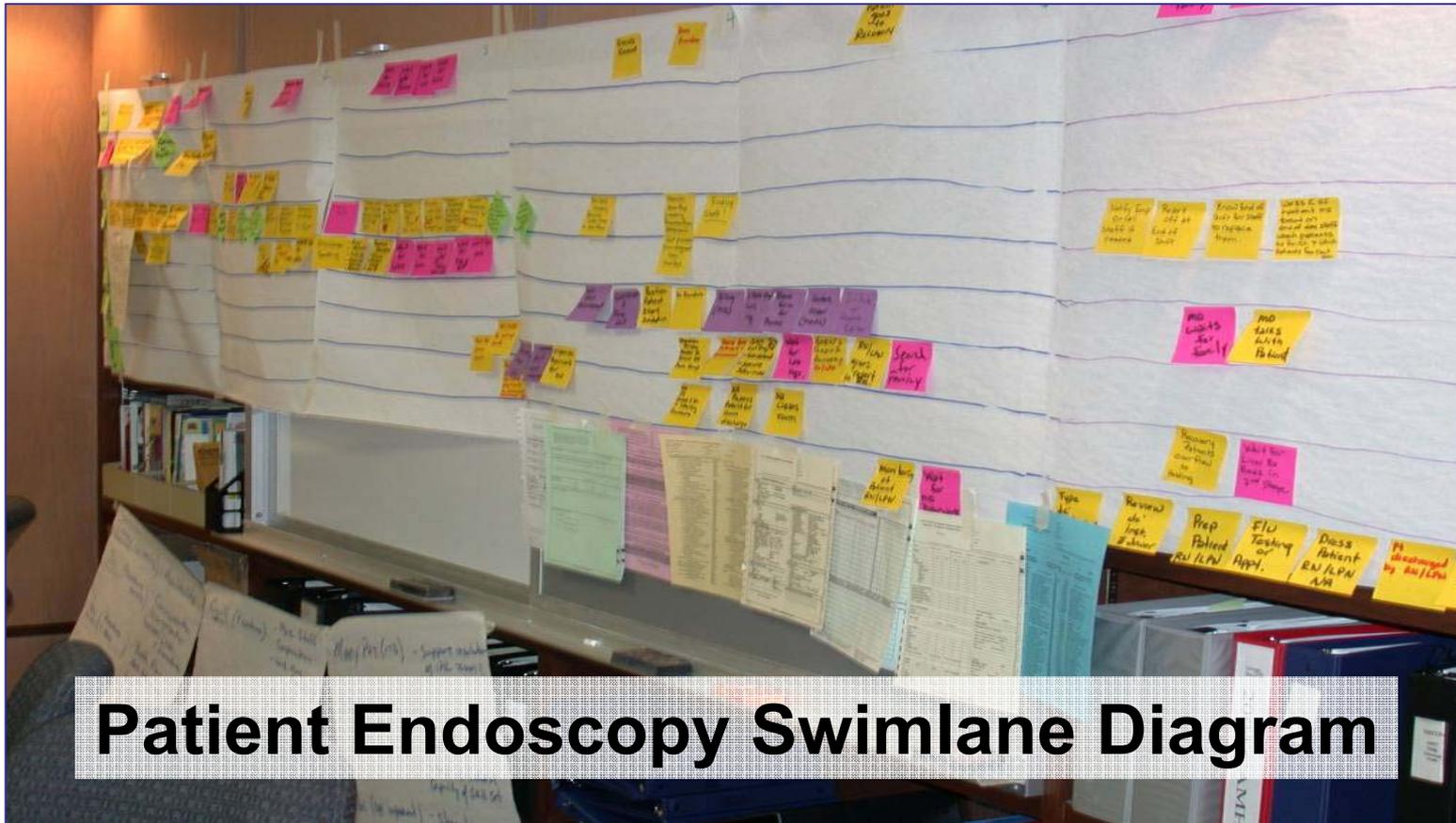
## Solution

- Develop a single Medication Assistance Center (MAC) for all UIHC patients requiring help accessing medications.

## Outcome

- Wait list went from >300 patients with a 14th month wait to <30 patients with 2-3 week wait.

## GI Clinic



68 Steps, 23 Delay Points, 6 Decision Points  
10 Forms, 45 Work-Up Widgets in the Patient Process

## GI Clinic – Results

Metric	Current	Target	Results
Patient Lead Time	83 days (n=37)	58 days (30%)	Open access for screening colonoscopies
Patient Length of Stay	204 mins (n=67)	143 mins (30%)	Approx 153 mins (25%)
Blood Draw Protocol			-90 min when needed
Searching for Patient/Family			-10 minutes
Work-Up and Holding			-10 minutes
MD Admin in Procedures			-7 minutes
Recovery			-20 minutes
New Protocols		+5	+ 6 Call Ahead, Work-Up, Blood Draw Charge Nurse, In-Patient, Recovery

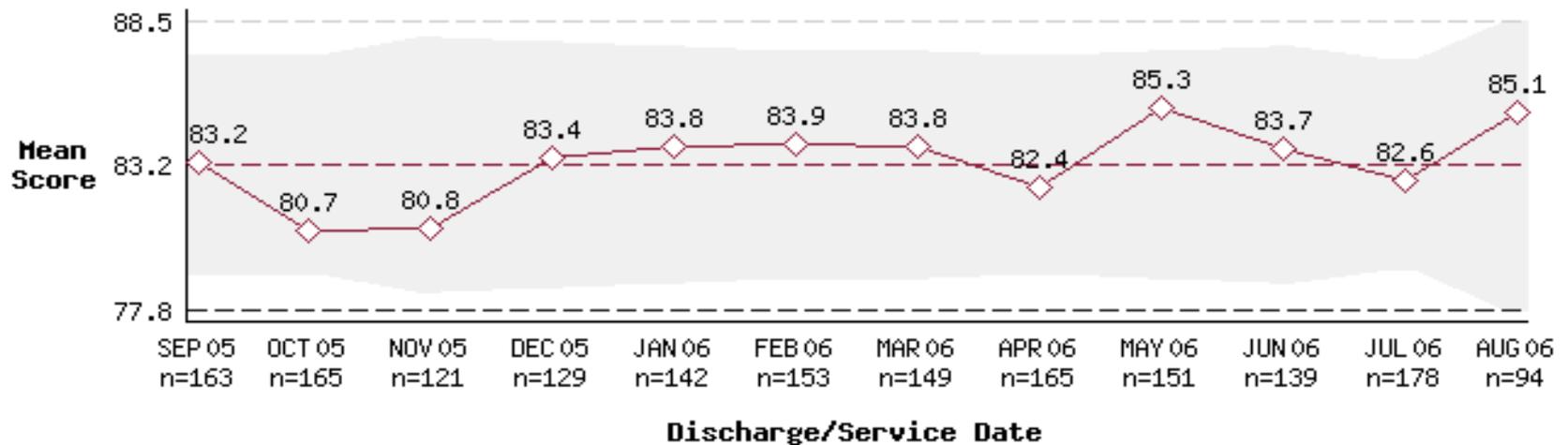
# ETC Adult Wait Time

## - Overall Mean score

University of Iowa Hosp & Clinics – Emergency Department

### Control Chart

Overall Mean Score



# Central Sterilizing Services/Urology – Results

<b>Target Sheet</b>				
		<b>Before Kaizen</b>	<b>After Kaizen</b>	<b>% Change</b>
<b>1) Inventory</b>				
	a) Case Carts	317 items	244 items	25%
	b) Pass Thru	898 items	341 items	62%
<b>2) Distance Traveled</b>				
	a) Case Carts	660 steps	557 steps	16%
	b) Baskets	907 steps	639 steps	30%
<b>3) Lead Time</b>				
		1025 minutes	1025 minutes	0%
<b>4) Cycle Time</b>				
	a) Pass Thru	45 min each	10 min each	78%
	b) Baskets	225 sec.	95 seconds	60%
	c) Case Carts	22 min 30 sec	10 min 45 sec	50%
<b>5) Quality - # of calls/case</b>				
		5 per case	0 calls per case	100%
<b>6) 5-S score</b>				
	OR	2.6	2.9	10%
	CSS	2.1	2.6	19.20%

# FY 2006-2007 Operational Improvement Project Requests

- 22 departmental requests submitted for review
- The following have been granted priority status:

<b>AREA</b>	<b>PROJECT</b>	<b>CHAMPION</b>
Ortho/Radiology Clinic	Patient Flow	Dr. Johnston, Janet Roe
Central Sterilizing Services/Gynecology	Set-up Kanban System	T. Shuff
Central Sterilizing Services/Transplantation	Set-up Kanban System	T. Shuff
Vascular Service-GSG	Patient Flow, Wait Time	Dr. Jamal Hobballah
Material Services	Material Handling and Safety	T. Gaillard
GI Clinic	Patient Flow, Wait Time	Dr. Summers, Dr. Field
Emergency Trauma Center	Wait Time, Length of Stay	Dr. Dickson
Allergy Immunotherapy	Shot Line Process – Length of Stay, WT, Non-value-added Steps, Distance Traveled	Keri Semrau
Neurology/Neurosurgery/Surgery (6JC/7JC)	Process Efficiency	M. K. Brooks, M. Titler
Cardiothoracic Surgery	Process Improvement, Length of Stay	Dr. Iannettoni

# **Operating and Financial Performance**

**Year-to-Date August 2006**

**Donna Katen-Bahensky**

Director and Chief Executive Officer

**Anthony DeFurio**

Chief Financial Officer

# Volume Indicators

## July 2006 through August 2006

	Actual	Budget	Prior Year	Variance to Budget	% Variance to Budget	Variance to Prior Year	% Variance to Prior Year
<b>Operating Review (YTD)</b>							
Admissions	4,661	4,439	4,342	222	5.0% ●	319	7.3% ●
Patient Days	30,661	28,489	29,407	2,172	7.6% ●	1,254	4.3% ●
Length of Stay	6.58	6.42	6.77	0.16	2.5% ○	(0.19)	-2.9% ●
Average Daily Census	494.53	459.50	474.31	35.03	7.6% ●	20.23	4.3% ●
Surgeries - Inpatient	1,798	1,794	1,759	4	0.2% ○	39	2.2% ○
Surgeries - Outpatient	1,913	1,892	1,855	21	1.1% ○	58	3.1% ●
Emergency Treatment Center Visits	6,481	5,936	5,778	545	9.2% ●	703	12.2% ●
Outpatient Clinic Visits	112,784	110,392	110,798	2,392	2.2% ○	1,986	1.8% ○
Case Mix	1.7518	1.7360	1.7632	0.0158	0.9% ○	(0.0114)	-0.6% ○
Medicare Case Mix	1.8174	1.8797	1.9105	(0.0623)	-3.3% ●	(0.0931)	-4.9% ●

 <b>Greater than 2.5% Favorable</b>	 <b>Neutral</b>	 <b>Greater than 2.5% Unfavorable</b>
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# Comparative Financial Results

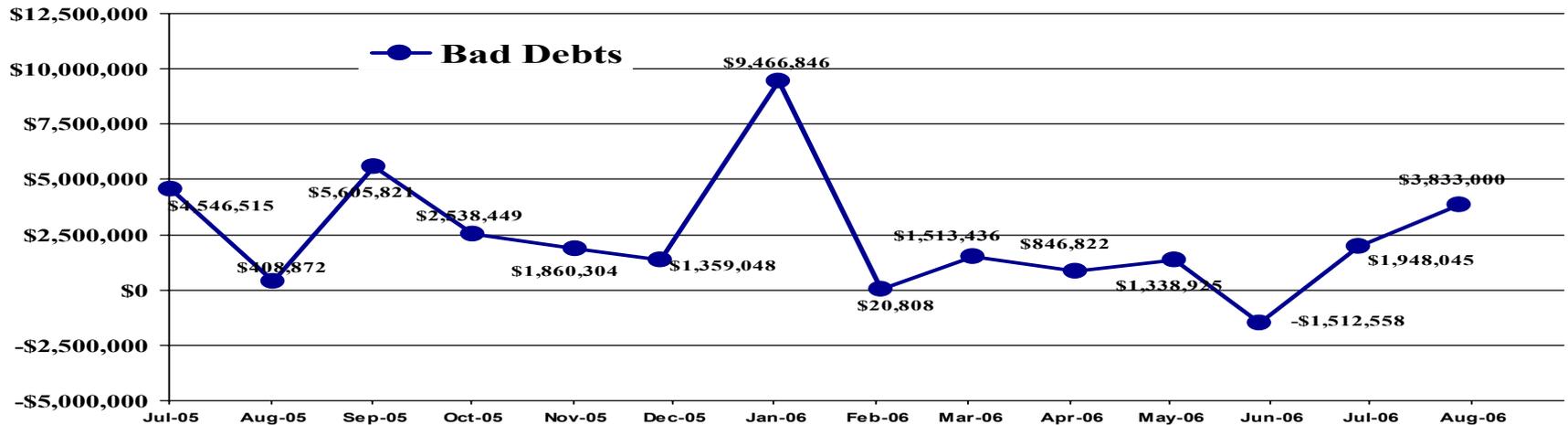
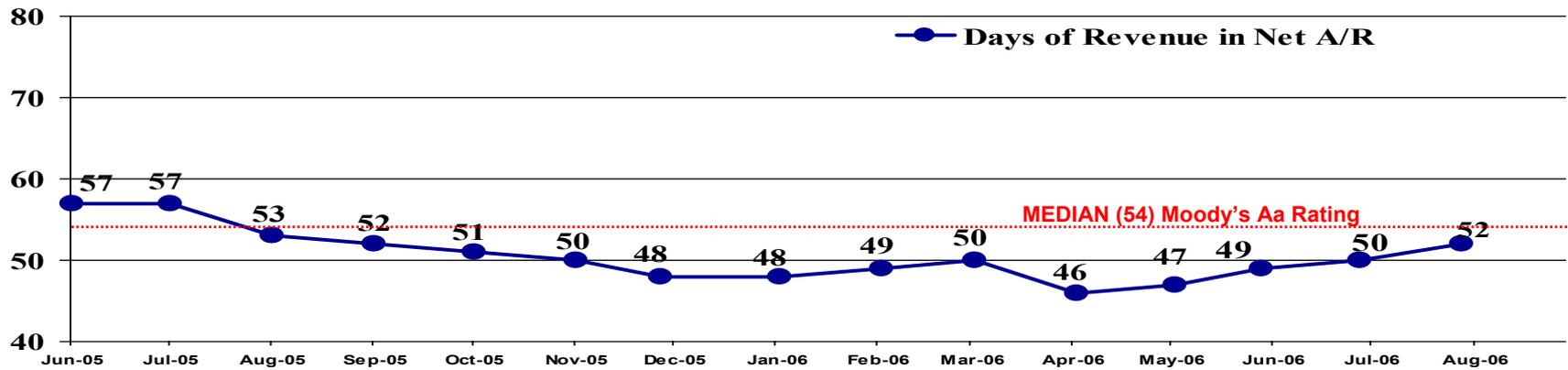
July 2006 through August 2006

	Actual	Budget	Prior Year	Variance to Budget	% Variance to Budget	Variance to Prior Year	% Variance to Prior Year
<b>NET REVENUES:</b>							
Patient Revenue	\$121,726	\$119,363	\$108,665	\$2,363	2.0%	\$13,061	12.0%
Appropriations	2,234	2,234	2,234	0	0.0%	0	0.0%
Other Operating Revenue	6,457	6,595	7,092	(138)	-2.1%	(635)	-9.0%
<b>Total Revenue</b>	<b>\$130,417</b>	<b>\$128,192</b>	<b>\$117,991</b>	<b>\$2,225</b>	<b>1.7%</b>	<b>\$12,426</b>	<b>10.5%</b>
<b>EXPENSES:</b>							
Salaries and Wages	\$65,862	\$65,811	\$59,915	\$51	0.1%	\$5,947	9.9%
General Expenses	50,093	49,255	45,045	838	1.7%	5,048	11.2%
Operating Expense before Capital	115,955	115,066	104,960	889	0.8%	10,995	10.5%
<b>Earnings Before Depreciation, Interest, and Amortization (EBDITA)</b>	<b>14,462</b>	<b>13,126</b>	<b>13,031</b>	<b>1,336</b>	<b>10.2%</b>	<b>1,431</b>	<b>11.0%</b>
Capital- Depreciation and Amortization	8,965	9,044	8,807	(79)	-0.9%	158	1.8%
Total Operating Expense	\$124,920	\$124,110	\$113,767	\$810	0.7%	\$11,153	9.8%
<b>Operating Income</b>	<b>\$5,497</b>	<b>\$4,082</b>	<b>\$4,224</b>	<b>\$1,415</b>	<b>34.7%</b>	<b>\$1,273</b>	<b>30.1%</b>
<b>Operating Margin %</b>	<b>4.2%</b>	<b>3.2%</b>	<b>3.6%</b>	<b>1.0%</b>	<b>31.3%</b>	<b>0.6%</b>	<b>16.7%</b>
Gain (Loss) on Investments	2,251	1,634	1,549	617	37.8%	702	45.3%
Non-Recurring Items	0	0	0	0	0.0%	0	0.0%
<b>Net Income</b>	<b>7,748</b>	<b>5,716</b>	<b>5,773</b>	<b>2,032</b>	<b>35.5%</b>	<b>1,975</b>	<b>34.2%</b>
<b>Net Margin %</b>	<b>5.8%</b>	<b>4.4%</b>	<b>4.8%</b>	<b>1.4%</b>	<b>31.8%</b>	<b>1.0%</b>	<b>20.8%</b>

**NOTE:** all dollar amounts are in thousands

# Comparative Accounts Receivable and Bad Debt Expense as of August 31, 2006

	June 30, 2005	June 30, 2006	August 31, 2006
Net Accounts Receivable	\$93,964,049	\$92,246,060	\$95,517,635
Net Days in AR	57	49	52

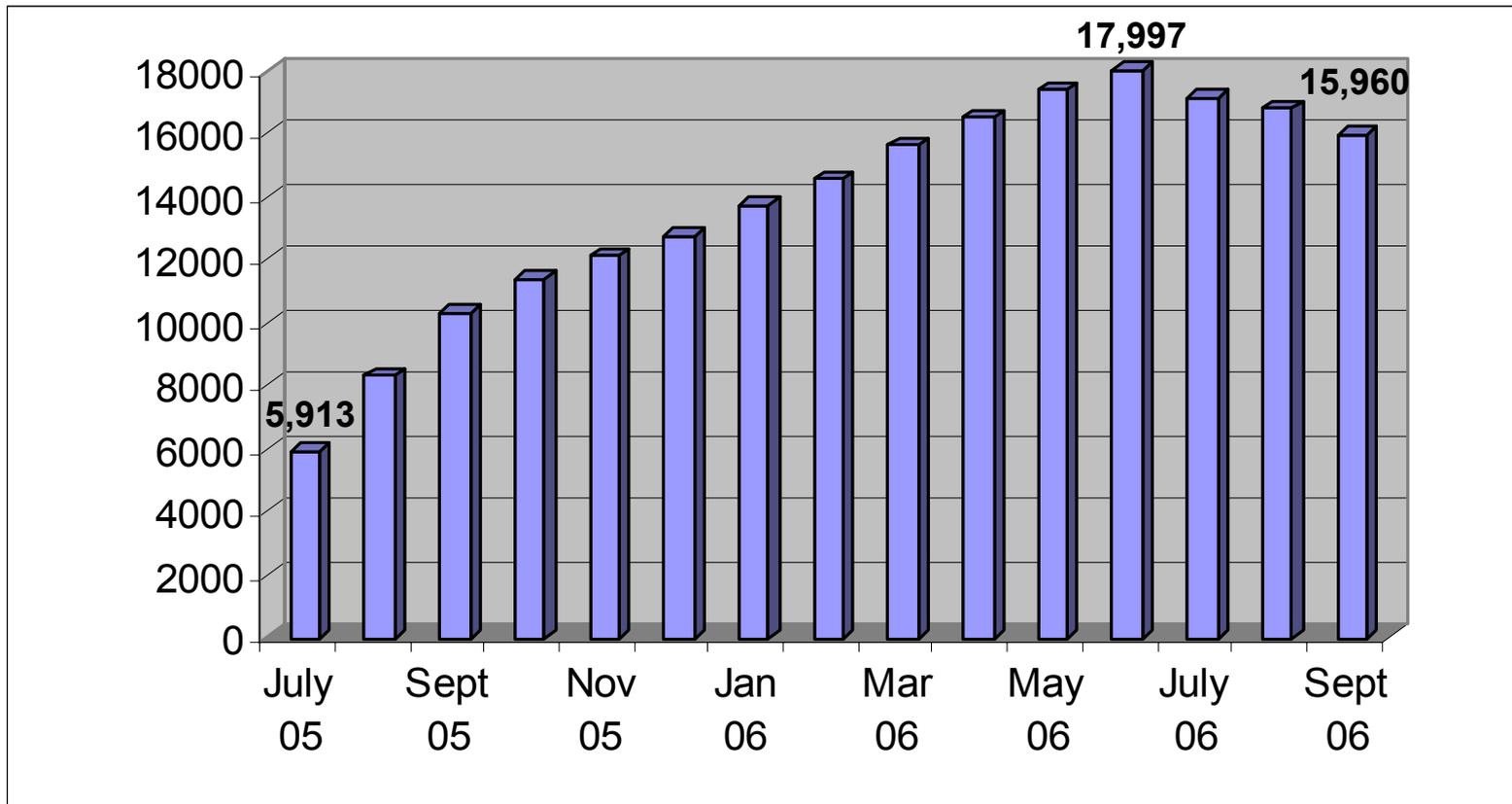


# IowaCare Update

## Stacey Cyphert

Special Advisor to the President,  
Special Advisor to the Dean of CCOM,  
Senior Assistant Hospital Director

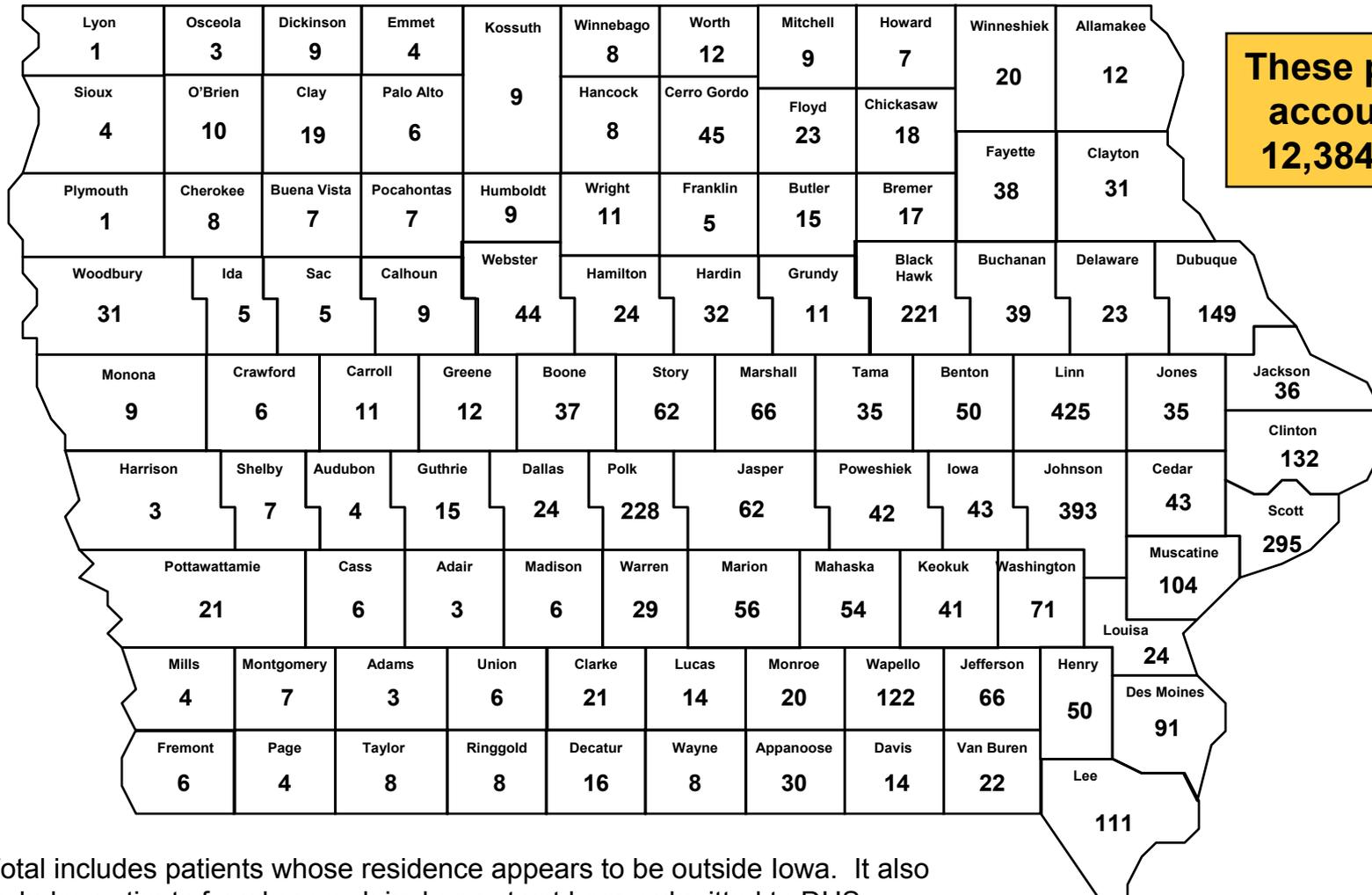
## IowaCare & Chronic Care Enrollment (net of disenrollments)



## IowaCare Volume at UI Hospitals and Clinics Remains Brisk

- Net enrollment in IowaCare and Chronic Care has been declining throughout FY 07 from a peak at the end of June 2006.
- DHS believes, “that much of the decline has to do with the reapplication process, and that the citizen documentation is likely lengthening the time it takes to get re-enrolled.”
- It is unknown at this time the extent to which this decline will continue or if it will impact patient care volume at the UI Hospitals and Clinics.
- FY 07 data through October 1, 2006 shows the UI Hospitals and Clinics has already seen over 4,100 unique IowaCare or Chronic Care patients who have made over 12,000 visits.
- An average of 151 IowaCare patients per week are being transported to and from the UI Hospitals and Clinics on our vans and we have already logged over 149,000 miles in FY 07.

## 4,102 Unique IowaCare & Chronic Care Patients Have Been Seen at the UIHC Between July 1 and September 30, 2006



**These patients account for 12,384 visits.**

Total includes patients whose residence appears to be outside Iowa. It also includes patients for whom a claim has not yet been submitted to DHS.

## Nurse Helpline Agreement Signed

- An agreement whereby the UI Hospitals and Clinics will be paid to provide Nurse Helpline Services for the enrolled IowaCare population has been reached.
  - The goal of the nurse helpline initiative is to assist enrolled IowaCare population members in making appropriate choices about the use of emergency room and other health care services.
  - Operational questions pertaining to IowaCare are not part of the agreement and will be directed to the Department of Human Services.
  - The Nurse Helpline became operational October 2, 2006.
  - Over 500 calls were received in the first week.
  - Toll free number for the helpline is 866-890-5966.
  - The website address is:  
<https://www.uihealthcare.com/appts/ptselfreferform.htm>

## **UI Hospitals and Clinics' Pilot Pharmaceutical and Durable Medical Equipment Programs Are Serving Patients**

- August 14, 2006, the UIHC implemented pilot programs sans reimbursement to facilitate IowaCare beneficiary access to pharmaceuticals and durable medical equipment.
- Through October 6, 2006:
  - Over 12,000 prescriptions have been filled at a cost of approximately \$255,000.
  - DME has been provided at a cost in excess of \$25,000.

## ***The Gazette* Featured IowaCare\***

- Article published September 24, 2006 entitled, “Ups and downs of IowaCare,” by Diane Heldt
- Outlines program volumes, costs, etc.
- Highlights benefits and financial risks of the program

\* See appendix for full text of article

# **Director's Remarks**

**Donna Katen-Bahensky**

Director and Chief Executive Officer

## Director's Remarks

- I. Rating Hospital Heart Care (Gannett)
- II. Edge of Excellence Award
- III. Hospital Security Protocol During Football Games
- IV. Recruitment
- V. Other

# Rating Hospital Heart Care – Gannett (cont'd)

Special report: Rating Hospital Heart Care

**SEARCHABLE DATABASE**

START SEARCHING HERE

Select a state

[Return to the previous screen](#)  
[Return to the database start page](#)

### Understanding this database

Gannett News Service analyzed information about thousands of hospitals to help you determine which hospitals in your area are most likely to provide the most effective treatments for heart attacks and heart failure.

Click the arrows below to find out more about the methodology that was used to compile this database.

- ▶ What we measured
- ▶ How we measured it
- ▶ How we came up with star ratings
- ▶ What period of time we looked at
- ▶ Where we got the data
- ▶ Where we got information about hospitals' characteristics and home counties

### UNIVERSITY OF IOWA HOSPITAL & CLINICS

200 HAWKINS DRIVE  
 IOWA CITY, IA 52242  
 (319) 356-1616

Type: Acute Care Hospitals  
 Total Beds: 813  
 Ownership: Government - State  
 Medical School affiliation: Yes  
 Accredited: Yes

Percent of time heart attack patients got recommended care: 98  
 National Rank: ★★★★★★  
 Within-State Rank: ★★★★★★  
 National Median: 91 Percent  
 State Median: 94 Percent

Percent of time heart failure patients got recommended care : 87  
 National Rank: ★★★★★★  
 Within-State Rank: ★★★★★★  
 National Median: 74 Percent  
 State Median: 76 Percent

# Rating Hospital Heart Care – Gannett

- Understanding the database
  - Gannett News Service analyzed information about thousands of hospitals to help consumers determine which hospitals in their area are most likely to provide the most effective treatments for heart attacks and heart failure.
- What they measured
  - They measured how often hospitals gave recommended treatments for patients who came in with heart attacks and heart failure.
  - Medical evidence says patients who receive recommended treatments are more likely have positive outcomes.
- How they measured it
  - They used composite scoring, an approach that also has been used by government and independent researchers to measure how well hospitals perform in giving recommended treatments. In composite scoring, the numbers of patients who were given each type of treatment are added together. The numbers of patients eligible to receive each of those treatments are added together, too.
  - For each hospital, the first sum is divided by the second. The result is a composite score. Following guidelines used in government and industry, they generated composite scores only for those hospitals that had at least 30 patients in the second sum described above.
- How they came up with star ratings
  - They took all the hospitals for which they could calculate composite scores and ranked the scores from highest to lowest. Once ranked, they divided them into five equal groups, and awarded stars on the basis of those groups.
  - For example, a hospital whose score falls into the top group — the top 20 percent of the composite scores - receives five stars. For state-level star ratings, composite scores are ranked within each state.
- What period of time they looked at
  - The data cover hospital admissions between October 2004 and September 2005 and reflect government data released in June, 2006.

## Edge of Excellence Awards

- Business Growth
  - Businesses that are unique and successful in the way they handled growth or change over the past year. Recognizes companies that have experienced and handled exceptional growth in sales and employment during the past year.
- Best Place to Work
  - Businesses that encourage education and development for their employees, a positive and productive work environment and industry-leading employee benefits. Recognizes companies as the best places to work that exemplify best practices in attracting and retaining valuable employees.
- Community Service
  - Businesses investing in the community through volunteerism, cash contributions and support of non-profit organizations and community activities. Recognizes companies that exhibit outstanding community stewardship and public citizen practices throughout their organization.

# 2006 Community Service Award



## Hospital Security Protocol

- Beginning August 1, 2006, the UI Hospitals and Clinics Access Control procedures were expanded to include screening of all persons entering the hospital after hours.
- Between 9:00 PM and 6:00 AM, patients, visitors, and staff without a valid UI Hospitals and Clinics photo ID badge, are now required to enter through the Main Entrance. Safety and Security staff stationed at that location screen everyone entering the facility during this timeframe.
- As of September 30, 2006 this protocol was extended to include tighter access restrictions during home football games.
- For home football game weekends, the facility is locked down at 9:00 p.m. the Friday beforehand, and access restrictions remain in place until 6:00 a.m. Sunday morning.

# Appendix

# ***The Gazette* Featured IowaCare**

September 24, Page 1A

## **Ups and downs of IowaCare**

**By Diane Heldt**

**Iowa City** - More than 3,000 additional Iowans received medical care at University Hospitals last year under a revamped state program for low-income residents.

The 7,875 patients the hospital treated during the IowaCare program's first year in 2005-06 easily exceeded the 4,500 patients treated during the final year of the State Papers program, which IowaCare replaced.

And while officials involved with the program say that's good for the state, it is a concern, too, because University Hospitals doctors saw those additional patients without receiving payment.

The care amounted to \$10 million in services, when figured at Medicaid rates, that University Hospitals doctors provided without being paid.

IowaCare, which provides health insurance for a sliding fee to adults who do not qualify for Medicaid, saw tremendous growth in year one, a Gazette look at its numbers showed. Patient numbers were so high at University Hospitals that the Legislature gave it \$10.6 million in additional money last session.

## ***The Gazette Featured IowaCare*** (cont'd)

The growth impacts University Hospitals because the University of Iowa has one of only two hospitals participating in IowaCare and the only one open to any enrollee.

IowaCare is an important program for the whole state and one that University Hospitals, the UI Carver College of Medicine and the state Board of Regents remain committed to, officials said. But they will monitor the program to make sure the responsibility remains equitable.

“I want them to continue to see these patients, but I can understand why they’re under such constraints,” University Hospitals Chief Executive Officer Donna Katen-Bahensky said of the doctors. “There’s a limit to how much they can take on.”

The growth in IowaCare has caused already-busy doctors to be busier, which makes it harder for patients to get appointments, officials said. There’s also the matter of staff workload.

Meanwhile, University Hospitals last month began pilot programs offering free prescription drugs and durable medical equipment to Iowa Care patients.

It’s a change officials expect will draw even more people. More than 4,500 prescriptions already have been filled at a cost to University Hospitals of more than \$100,000.

## ***The Gazette* Featured IowaCare (cont'd)**

The rapid growth is a concern for officials who worry about the increasing expectations placed on physicians.

“Long term, we have to find a way to resolve that issue,” Carver College Dean Jean Robillard said. “Like any new program, there are some things that need to be adapted and corrected, but overall this is a great program for the people of Iowa.”

### **Replaced State Papers**

IowaCare launched in 2005, replacing the indigent care program known as State Papers. IowaCare, run by the state Department of Human Services as a subset of Medicaid and seen as a way to more efficiently reach uninsured patients, began its second fiscal year July 1.

Patients can receive services at Broadlawns Medical Center in Des Moines, which serves only Polk County residents, or University Hospitals in Iowa City, as well as the four state mental health institutes.

IowaCare serves people with limited incomes who are not eligible for Medicaid, said Jennifer Vermeer, assistant Medicaid director with the Iowa Department of Human Services.

## ***The Gazette Featured IowaCare*** (cont'd)

The patient increase from State Papers to IowaCare is explained partially by the fact that State Papers had a patient cap, so each county could refer only a certain number. Under IowaCare, anyone who meets the criteria may enroll.

“Our limit is that we have ‘X’ amount of money to spend and we have to be very careful,” Vermeer said.

The state initially gave University Hospitals \$27.3 million for IowaCare’s first year. That was gone by the end of April, and the Legislature approved the additional \$10.6 million. The appropriation for fiscal 2007 again is \$27.3 million, which officials don’t expect to cover the year.

The additional money was a sign that state leaders realized what a significant public service the program is, said Regent Bob Downer, who heads the University Hospitals governance committee.

“They understand the university is conferring a significant benefit both on patients and on the state,” he said.

University Hospitals officials recently received e-mail from several state legislators thanking them for their work with IowaCare.

## ***The Gazette Featured IowaCare*** (cont'd)

“After one year of the program, IowaCare has experienced its up and downs. As policymakers we are always looking for ways to improve this vital program,” read one letter from Reps. Danny Carroll of Grinnell, Dave Heaton of Mount Pleasant and Linda Upmeyer of Garner, all Republicans.

### **Looking ahead**

The regents will continue to monitor IowaCare to gauge its impact on University Hospitals, Downer said. “I think as time goes on there will be a lot more predictability,” he said.

University Hospitals subsidized the IowaCare program in several ways, including \$1 million in transportation reimbursements for patients traveling to Iowa City. The hospital also set up an Iowa Care Assistance Center to field calls and questions.

“Pharmacy and social work has helped out with it — things that are very time-intensive — and it’s hard to quantify those costs,” Katen-Bahensky said.

Phone calls to the Iowa Care Assistance Center more than doubled Aug. 14, the day the new drug trial started, Katen-Bahensky said.

“I worry about the potential for a huge influx of patients,” she said. “I don’t want to see the organization overwhelmed.”

## ***The Gazette* Featured IowaCare (cont'd)**

Statewide, enrollment in IowaCare went from 5,928 in July 2005 to a high of 18,059 in June 2006, increasing every month. Enrollment decreased for the first time in July 2006 and dropped again in August, to 16,420.

That's likely because of a rule that requires all participants to re-enroll annually. Some people may have forgotten to re-enroll, officials said. Also, a new rule requires IowaCare enrollees to provide proof of their legal resident status in the United States.

It's hard to say whether that overall decline will last or how it will impact University Hospitals. More than half of the decline in enrollees came in Polk County, where most patients go to Broadlawns, said Stacey Cyphert, senior assistant hospital director at University Hospitals. University Hospitals "has remained busy, and it's unclear if our IowaCare volume will go down," he said.

### **How IowaCare Works**

IowaCare is limited health care, providing some inpatient and outpatient services, doctor and advanced registered nurse practitioner services, dental services, limited prescription drug benefits and transportation.

It's aimed at residents aged 19-64 with incomes at or below 200 percent of the federal poverty level who do not qualify for Medicaid.

Patients are expected to pay a small monthly premium, though exceptions are made in hardship cases.