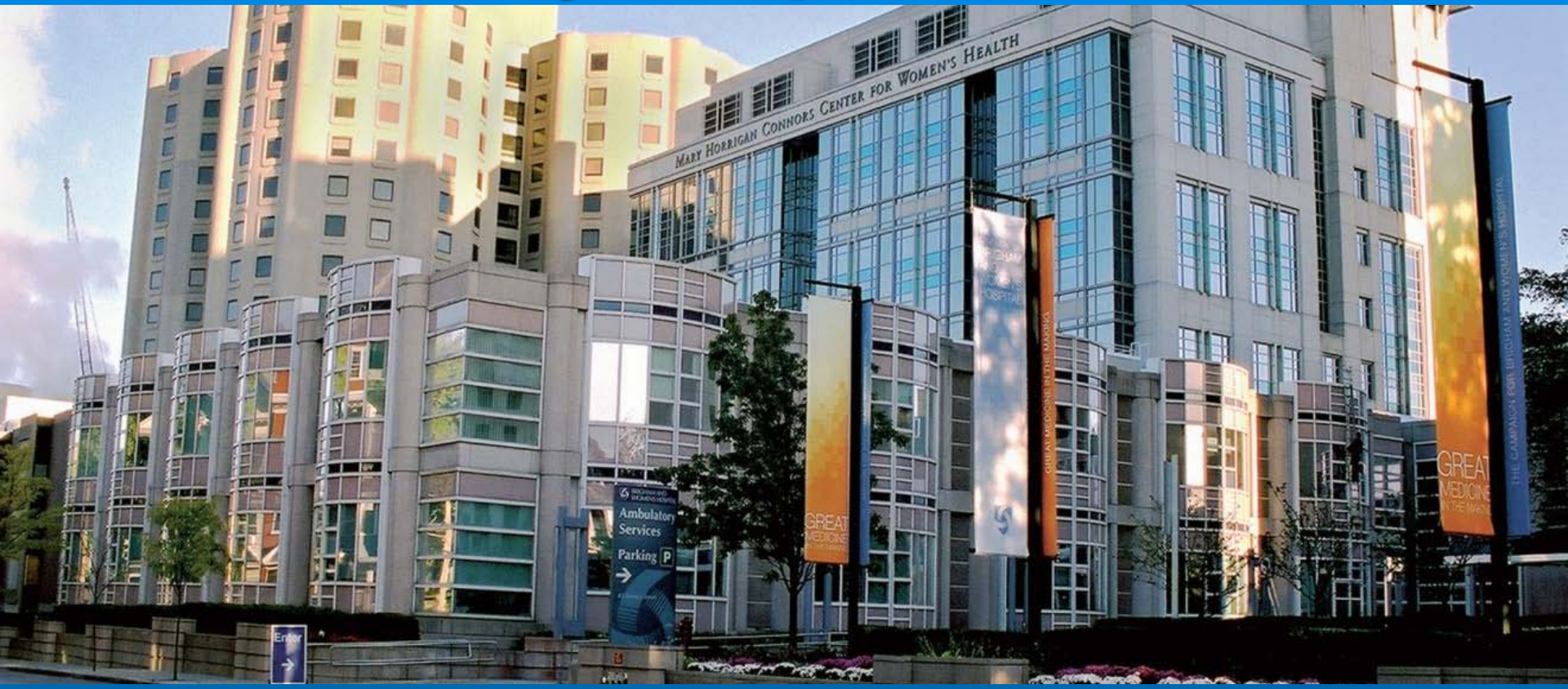
Facilitating Teamwork Improves the Quality of Inpatient Care



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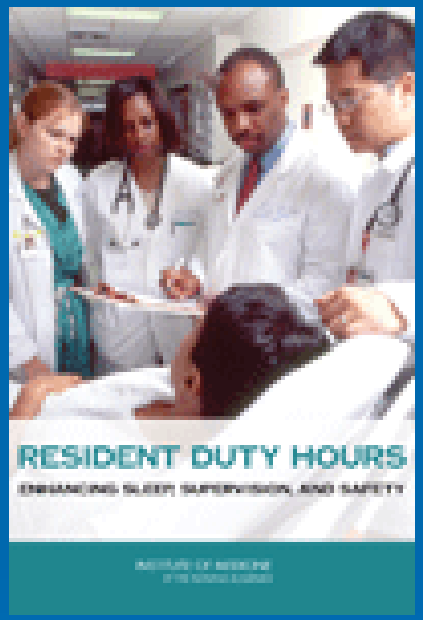
PARTNERS HEALTHCARE

BWH

Background

- Healthcare environments are
  - Are increasingly large and complicated
  - Have dispersed patients
- Poor teamwork contributes to
  - Poor communication
  - Errors
  - Low morale
- We hypothesized that enhancing teamwork within a redesigned schedule and program could improve care quality.



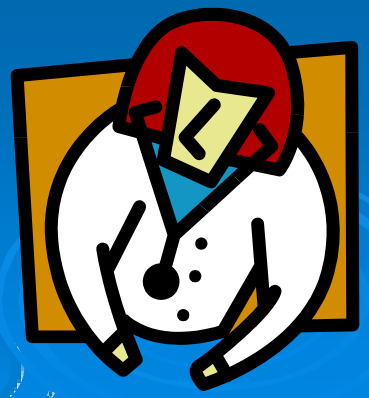
IOM Report

Redesigning Our Teams

Priorities from Focus Groups

- Nurture teams
- Enhance collaboration
- Balance patient-volume relative to education
- Dedicate some time for learning
- Provide higher-quality feedback

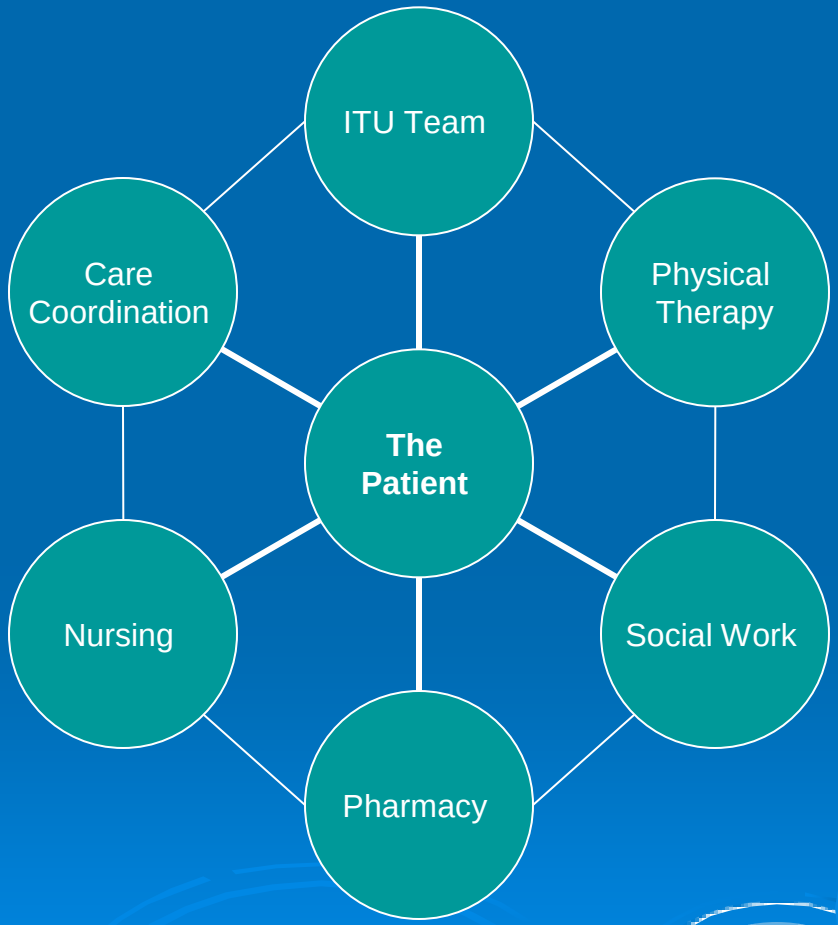
Extreme time demands dilute the relationships between residents, nurses and faculty



Lots of Autonomous Groups

- Key collaborators
  - Dept. of Medicine leadership
  - Nursing
  - ER
  - Admissions
- Key Physician Groups
  - PCPs
  - HVMA
  - Subspecialists
- Support services
  - Pharmacy
  - Social work
  - Care coordination
  - Rehabilitation

ITU Interdisciplinary team



Making it Happen

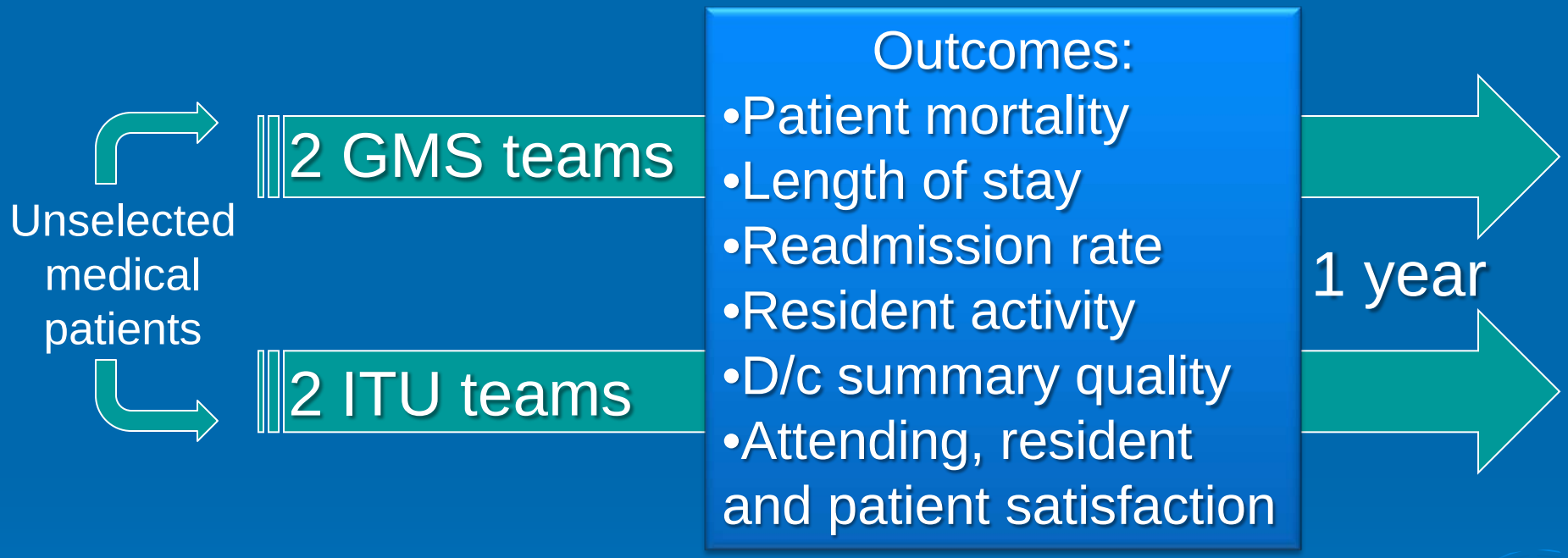
- Personnel
  - Teaching attendings
  - Nursing Staff
  - Project admin
- Regionalization
  - 27-bedded space
  - All patients in the space are ITU pts
  - All ITU patients are in that space
- Space
  - Project staff space
  - Teaching and feedback space
  - Attending work area

Daily Schedule

- 2 hrs — Team Work Rounds
- 1 hr — Morning Report
- 1 hr — Attending/Resident Teaching
- 15 mins — Interdisciplinary Rounds

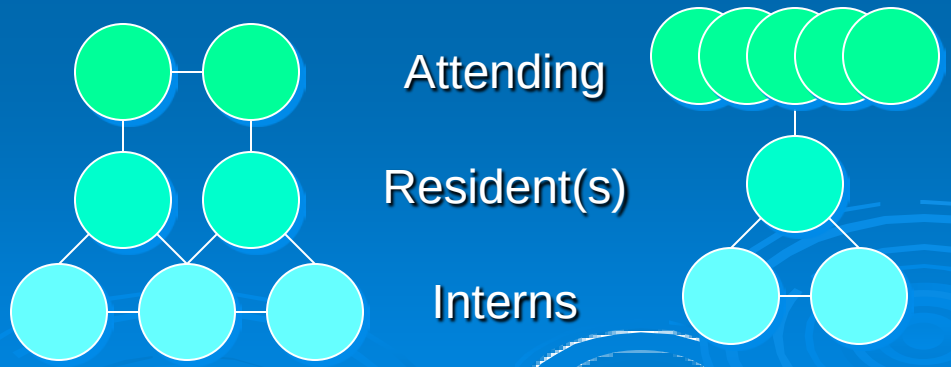
Experimental Design

Trial Schema



Team Differences

	ITU	GMS (control)
Team Structure	2 residents 3 interns	1 resident 2 interns
Supervision	2 co-attgs present on site	Multiple care attgs Variable contact
Workload	Max census of 15 pts (~4-5 pts per intern)	Max census per ACGME limits (~6-8 pts per intern)



Resident Activity, Satisfaction and Discharge Summary Quality

Resident Activity

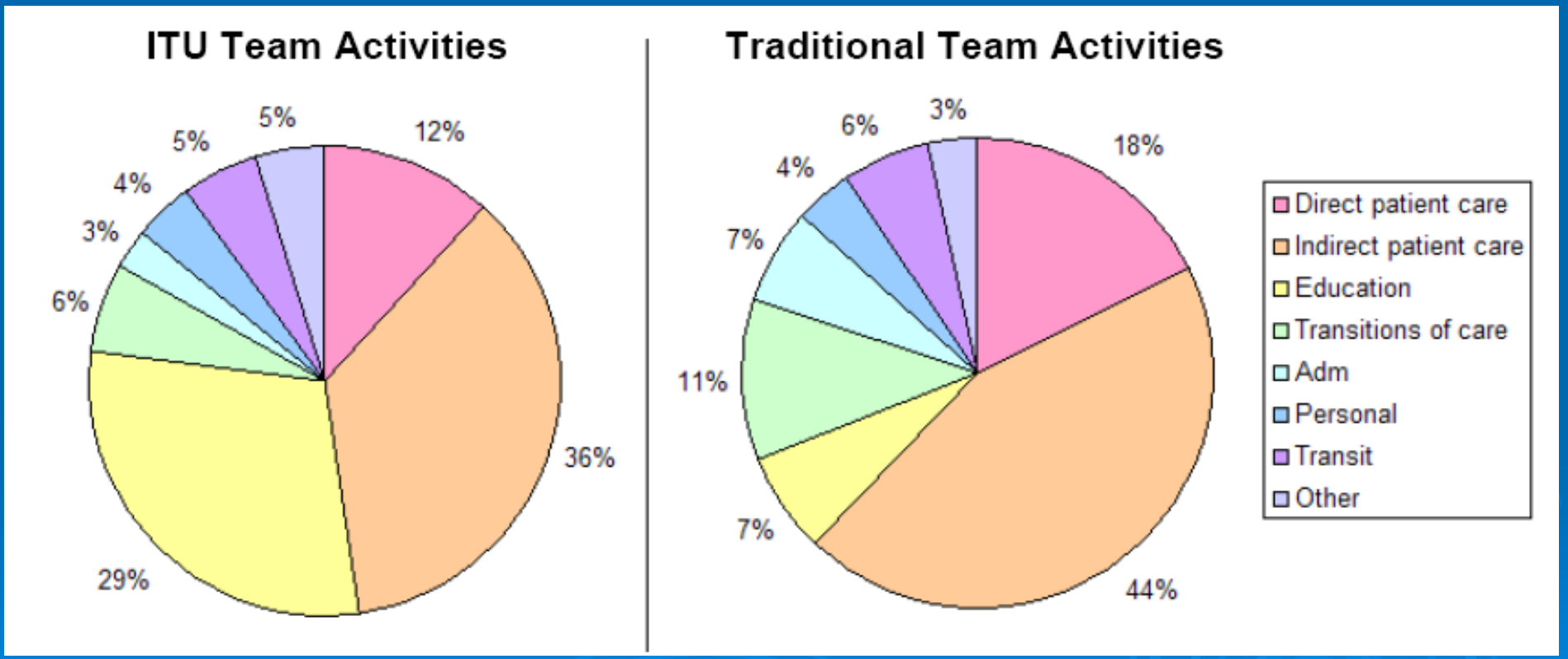
ITU residents spent much more of their time in educational activities than GMS residents

	ITU	GMS
Direct Patient Care	12%	18%
Indirect Patient Care	36%	44%
Education**	29%	7%
Transitions of care	6%	11%
Other	17%	20%

**P=0.003

Distribution of Activities

- ITU residents spent more of their time in education.

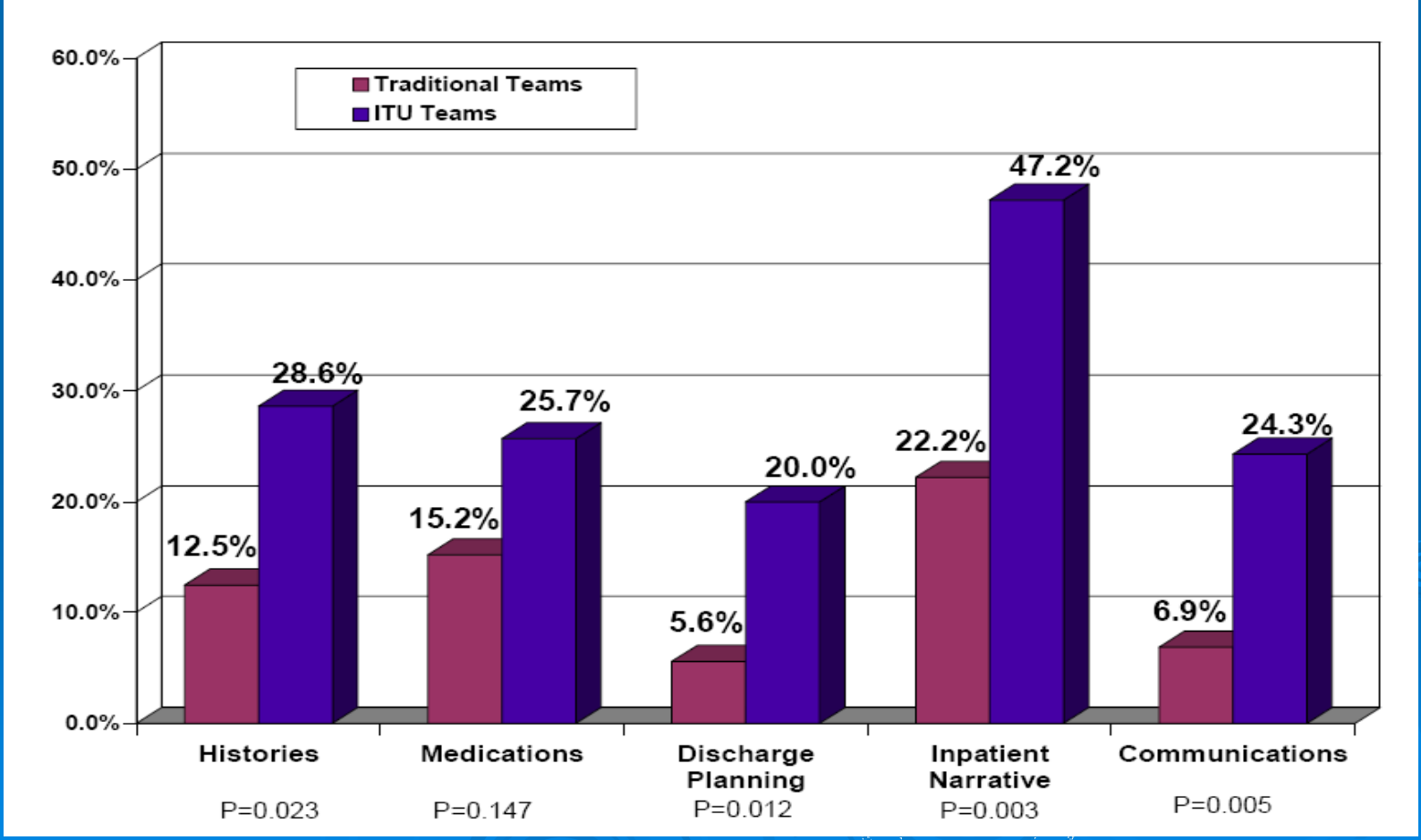


Resident Survey Data

	ITU	GMS	P-value
Number of Residents Returning surveys	98	62	
Number of Surveys	104	62	
I agree with this statement (mean % agreement):			
I enjoyed the rotation	77.9	54.8	0.002
This rotation was closest to an ideal residency experience	41.4	6.4	<.0001
I had more follow-up than usual	22.1	8.1	0.02
I learned new physical exam skills	77.9	30.6	<.0001
I received feedback from my attending	85.6	30.6	<.0001
I learned a lot from this activity this month (mean % agreement)			
Morning report	95.1	58.3	<.0001
My attendings on rounds	83.6	66.1	0.009
Preparing teaching topics	78.9	74.4	0.59
Resident-led didactics	80.0	44.1	<.0001

Quality of Discharge Summaries

- Blinded evaluation of 142 random discharge summaries



Attending Satisfaction

ITU Attending Surveys

	Agreement
Number of Attendings Returning surveys	41 of 47 (87%)
Number of Returned Surveys	41
Agreement (%):	
Closest to an ideal teaching experience	70%
Teaching skills well utilized	82%
Liked the dual-attending model	90%
Learned from my co-attending	93%

Nursing Satisfaction

Outcomes: Nursing Survey

Question	ITU (n=17)	GMS-14 (n=16)	GMS-15 (n=26)
I can readily reach a team member with questions/concerns	100%	75%	77%
I can usually recognize a medicine resident or intern when I see them	83%	50%	50%
The medicine resident and interns generally know my name	53%	12%	23%
I am regularly invited to contribute to the team's deliberation about patient care	88%	50%	56%
I regularly contribute to the medicine team's deliberations about patient care	95%	72%	66%

Patient Data Results

	ITU	GMS	p-value
Number of Patients	1892	2096	
% Female	58.0%	60.0%	0.13
Race Category			
White	78.0%	80.7%	0.11
African-American	14.1%	13.3%	
Hispanic	4.9%	3.8%	
All Others Declared	3.0%	2.2%	
Mean age (sd)	68.9 (17.6)	69.6 (17.2)	0.22
Insurance			0.29
Private	37.7%	39.6%	
Medicare	32.3%	33.2%	
Medicaid	25.9%	23.5%	
No insurance	4.0%	3.7%	
Diagnosis Category			0.1
Cardiovascular	17.2%	15.1%	
Pulmonary	15.8%	15.0%	
Gastronenterology	12.7%	15.2%	
Renal	8.3%	7.3%	

Primary Results

	ITU	GMS	P-value
Discharge Volume (number of patients)	1892	2096	
Mean daily census per first-year resident	3.5	6.6	
In-patient mortality (%)	1.4	2.2	0.04
Expected mortality (%)	1.7	1.7	
O/E Mortality Ratio	0.79	1.26	<.0001
Average LOS (mean days [se])	4.1 (.09)	4.6 (.10)	0.0002
Expected LOS (mean days)	4.0	4.0	
O/E LOS Ratio	1.03	1.15	<.0001
Readmissions within 30 days (%)	6.9	8.0	0.19

*O/E = observed to expected; LOS = length of stay

Inpatient Metric	ITU	GMS
Pneumonia		
Pneumococcal Vaccination	37/53 (70%)	34/48 (71%)
Adult Smoking Cessation Advice	8/8 (100%)	5/6 (100%)
Influenza Vaccination	25/42 (60%)	30/42 (71%)
Acute Myocardial Infarction		
Aspirin at Discharge	11/11 (100%)	3/3 (100%)
ACEI/ARB at Discharge	2/2 (100%)	1/1 (100%)
Adult Smoking Cessation Advice	1/1 (100%)	0/0 (0%)
Beta-blocker at Discharge	10/10 (100%)	4/4 (100%)
Heart Failure		
Discharge Instructions	50/63 (79%)	47/53 (89%)
LVEF Assessment	91/91 (100%)	74/74 (100%)
ACEI/ARB for LVSD	17/17 (100%)	11/11 (100%)
Adult Smoking Cessation Advice	9/9 (100%)	10/10 (100%)

Press-Ganey Patient Satisfaction Data

	Prior Yr	ITU	GMS
Number of Patients Returning surveys	599	315	306
% Satisfied			
Admission	80.7	83.3	82.9
Doctors	86.1	88.9	87.1
Tests and Treatments	84.9	86.0	85.9
Discharge	81.2	83.1	82.5
Overall	86.5	90.1	89.9

*None of the GMS vs. ITU differences were significant

Cost Effectiveness Estimates

CMI adjusted days saved per pt	0.3 days
Annualized days saved/annual admits	530d/1767pts
SAVINGS	
Backfill incremental margin	$196,501
Savings from unreimbursed direct cost	$486,336
	$725,306
COSTS	
Incremental ITU staffing	$354,372
INTANGIBLES	
Recruitment/retention, satisfaction	

Comments

Nursing Comments:

- “We have established a more team-approach to patient care with the doctors. We have more face time with the doctors. I have learned more rationale for treatments during rounds thus able to convey a greater detailed plan to/with the patient.”
- “The communication and quality of patient care has improved immensely.”
- “Since the ITU has been on our unit the patients have received better care through enhanced communication, better teamwork and more availability of physicians on the floor.
- “ITU has made the nurse a more integral part of planning care for patients and physicians are taking stronger interest in nursing-care related issues.“

Key Lessons

- Orient, orient, orient
- Clear Expectations
- Establish a culture
- Monitoring, Coaching, Feedback
- Invest in relationships
  - In and out of the hospital
  - On and off the floor
- Regionalization of
  - patients
  - staff
  - work room and teaching space

Conclusions

- As compared to a typical inpatient care model, introduction of a facilitated team model was associated with
  - improved teamwork
  - significantly lower inpatient mortality
  - significantly lower length of stay
  - significantly increased time for educational activities
  - higher attending, nursing and resident satisfaction

Acknowledgements

The residents, patients, nurses and clinicians of the Brigham and Women's/Faulkner hospitals

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Building a Team

(that changes every month!)

Interdisciplinary Team

- Two attendings
- Two residents
- Three interns
- Two medical students
- Nurses
- Social worker
- RN Care Coordinator
- Physical therapist
- Pharmacy students and faculty supervisor

What makes a good team?

- Shared knowledge structures
- Mutual respect
- Coordination of collective behaviors (leadership)
- Effective communication
- Cross-monitoring team members actions
- Engaging in back-up behavior
- Appropriate assertiveness/conflict management
- Wise use of resources

Jeffrey B. Cooper “Teamwork in Healthcare” *Update in Hospital Medicine 2010*

Team Characteristics

- Two or more members ✓
- Common goals and purpose ✓
- Members are interdependent on one another
- Has value for acting collectively
- Accountable as a unit

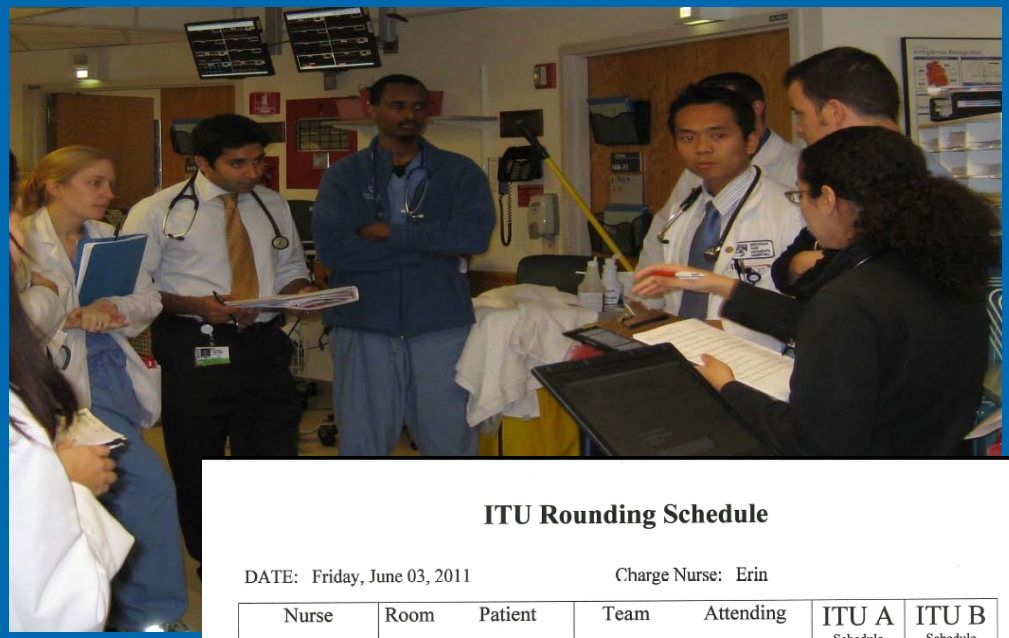
Needs to be created

Teambuilding

- Articulate the expectation
- Model
- Monitor, Coach, Feedback
- Create team-based activities
  - Simulator Program
  - Museum Program

Daily Rounds

- 2hrs
- Bedside rounds
- Resident-led
- Attending Teaching
- Patient-grps by nurse



ITU Rounding Schedule

DATE: Friday, June 03, 2011 Charge Nurse: Erin

Nurse	Room	Patient	Team	Attending	ITU A Schedule	ITU B Schedule
Erin	11-1	Lewis	ITU A	Smith	1	2
	14-2	Martin	ITU B	Jones		
	18	Davis	ITU A	Heart		
Jill	11-2	Oxford	ITU A	Smith	4	5
	12-1	Boston ☆	ITU B	House		
	19	Norwell ☆	ITU A	Heart		
John	12-2	Lynn ☆	ITU B	House	3	1
	15	Alice	ITU B	Jones		
	16	Marble	ITU A	Heart		
Jane	17	Hingham ☆	ITU B	Jones	2	3
	20-1	Hull	ITU B	House		
	21-2	Quincy ☆	ITU A	Smith		
Lee	20-2	Marlboro	ITU A	Smith	5	4
	21-1	Revere	ITU A	Heart		
	14-1	Spring	ITU B	Jones		

Highlight ITU A team on 10A and ITU B team on 10B Star all new admissions (admitted 5pm-7am)

Multidisciplinary Rounds

- Meeting with
  - Social work
  - Physical therapy
  - Medical residents
  - Nursing
- Shared purpose
- Differing perspectives
- Unique insights

Simulation Lab Teambuilding

- Involve multidisciplinary team
- Practice leadership
- Illustrate team dynamics
- Reflect and debrief

Sackler Museum Program

- Create openness and vulnerability
- Illustrate value of differing perspectives
- Use art to explore
  - Team dynamics
  - Communication styles
  - Hierarchy
  - Interdisciplinary relationships

Museum Night Reflections

"More relaxed, people interacted with each other more as friends. "

"How differently we all approached the same painting—but also how we could see each other's perspective easily, and discover how different perspectives fit together cohesively"

"Brought the team together. Everyone was on the same footing—there were no experts, no right or wrong interpretations."

Negative emotions	Negative characteristics of dysfunctional teams	Obstacles	Solutions	Positive characteristics of functional teams	Positive emotions