

April 2, 2014

LEAN PLANNING & DESIGN INNOVATION

Panelists:

Diane Anderson, MD, MArch, Resident Physician, Licensed Architect, New York Presbyterian Hospital Suzen Heeley, Executive Director, Design + Construction, Memorial Sloan Kettering Cancer Center Patrick Leahy, Healthcare Director, Planning and Design, Holland Basham Architects
Salley Whitman, Co-Founder, Executive Director, NXT Health
Hal Hudson, Director of Construction, Mercy Medical Center, North Iowa

Moderator:

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Process Improvement & Clinical Efficiency
Through Facility Design

Lean Planning & Design Innovation Webcast

New York City, NY April 2nd, 2014

Diana Anderson, M.D., M.Arch. Architect, OAQ, MRAIC, LEED AP

Resident Physician, Dept of Medicine New York-Presbyterian Hospital



Lean Process: Paving the most efficient path





Innovative Design: Clinical Practice Anecdotes

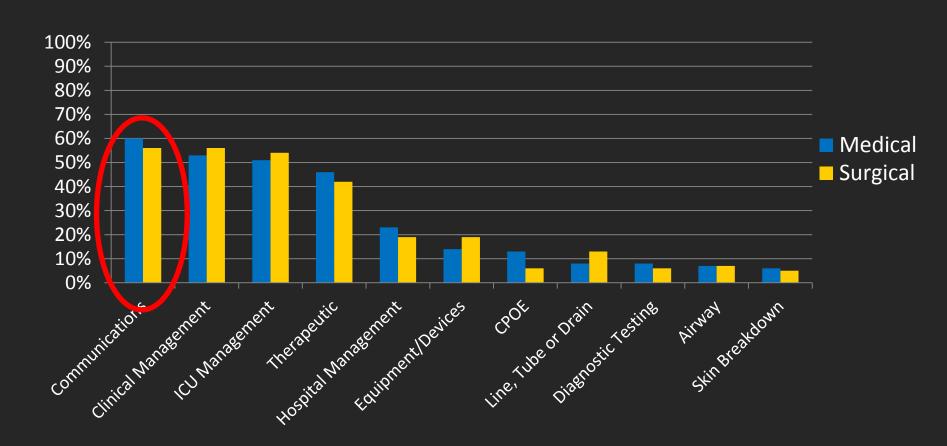
- Rounding: making the daily process of information gathering more efficient through design
- Nocturnal practice: changing work hour regulations for clinicians means subsequent space design modifications to support the new model
- Multidisciplinary teams: why the future of patient care will require designated spaces for promoting communication and teamwork
- The ambulatory setting: an understanding of medical conventions to promote efficient care in the clinic





Rounding: A Time For Communication

Communication failure among healthcare providers is one of the most frequently cited causes of preventable harm to patients:



Charting: Design Solutions







Rounding: Robot

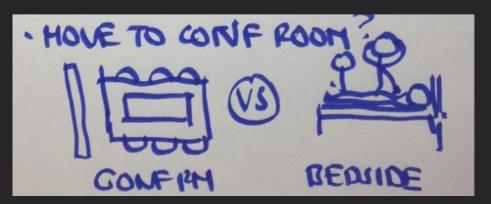


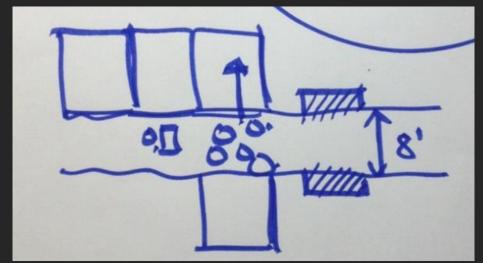


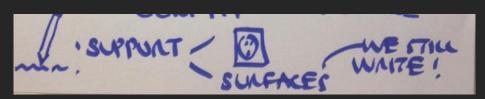
"It's instead of having the entire team standing outside the doorway, they are shoved inside of this little robot who's standing there." – ICU Physician

Rounding: An Intern's Wish List

- Electrical outlets throughout
- Somewhere to write, I still use paper!
- Somewhere to put my coffee mug
- Multiple sinks to decrease lines on bedside rounds
- Involve nursing on rounds – they have more updated info than the interns!









At Night, the Hospital Changes...

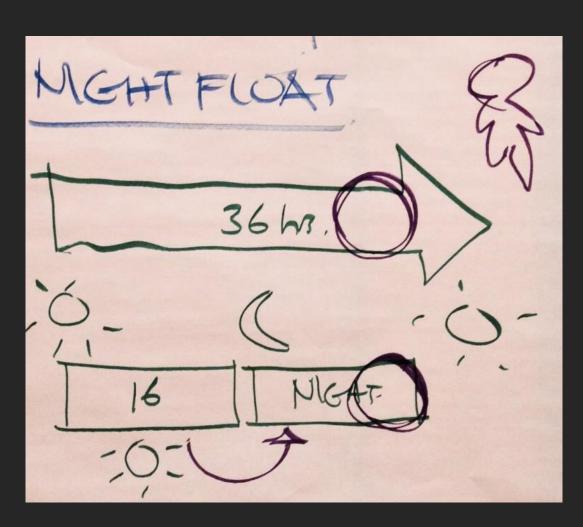


Night Float: Demise of the Call Room?





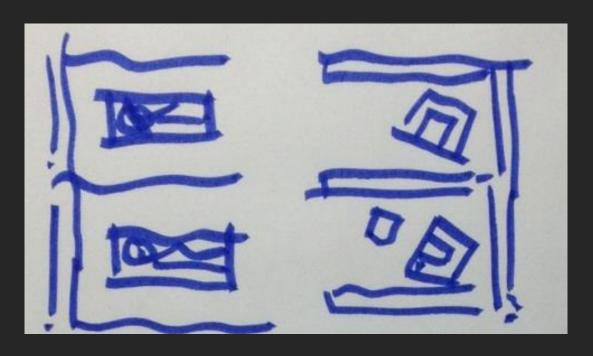
Night Float: Demise of the Call Room?



"With the new work hour restrictions, residents shouldn't need sleeping quarters anymore..."

-Hospital Administrator

Night Float: Demise of the Call Room?





Areas to rest and recharge, not necessarily sleep?

Areas for handoffs to take place, where should this occur?



Places of Respite: Where Can I Go to Compose Myself?

"Evidence is starting to accumulate that disillusioned and burned-out doctors make more errors and are more prone to substance abuse and depression. One American doctor takes his or her own life nearly every day - a rate that is much higher than in other professions."



Places of Respite: Where Can I Go to Compose Myself?



Places of Respite: Where Can I Go to Compose Myself?





Designing to Break Barriers

Can the design of the environment soften the metaphor of the hospital as a battleground for trainees?

Can better design be an influence in the model for behavioral change?



YES! The building is becoming part of the operational solution...

"There is a large window at the end of a corridor on the top floor of my hospital and I will take time to go there, especially after an overnight shift, just to see the sunrise over the city and reflect, leaving behind emotional and physical burdens of the shift. By providing light to staff areas, views to the exterior along wayfinding paths and areas of respite, the training experience can likely be made easier and more humanistic."

- Dochitect Journal





Where do Trainees Spend our Time?

2012 Johns Hopkins & University of Maryland: medical interns spend minority of their time directly caring for patients-

- 12% in direct patient care
- 64% in indirect patient care
- 15% in educational activities
- 9% in misc activities (eating, sleeping, socializing, walking)
- computer use occupies 40% of interns' time

Compared with studies prior to 2003, interns spend less time in direct patient care, and more time talking with other providers and documenting.

Where do Trainees Spend our Time?

Table 1. Percent of Time Spent in Each Activity by Site.

	Total	Site 1	Site 2
Total time (hours)	873	439 (50.3 %)	434 (49.7 %)
Activity			
Direct patient care	12.3 %	11.4 %	13.3 %*
Initial patient evaluation	3.8 %	3.6 %	4.1 %
Follow-up patient visit	7.2 %	6.5 %	7.8 %*†
Patient education	0.1 %	0.1 %	0.1 %
Family meeting	0.5 %	0.4 %	0.6 %
Procedures	0.7 %	0.8 %	0.6 %
Education	14.7 %	18.8 %	10.6 %*
Educational conferences	2.3 %	2.8 %	1.8 %
Reading about medicine	2.1 %	2.8 %	1.3 %*†
Rounds	9.7 %	12.2 %	7.3 %*†
Teaching students	0.6 %	1 %	0.3 %
Indirect patient care	63.6 %	61.2 %	66.1 %*
Reviewing patient chart	14.5 %	14.7 %	14.3 %
Writing notes	16.1 %	13.1 %	19.1 %
Talking with providers	20 %	20.5 %	19.5 %
Paperwork	3.8 %	1.5 %	6.1 %*†
Writing orders	6.4 %	7.3 %	5.4 %
Handoffs	2.9 %	4 %	1.7 %*†
Miscellaneous activities	9.3 %	8.6 %	10 %
Eating	1 %	0.8 %	1.3 %
Social/recreation	1 %	2.4 %	1.7 %
Walking	5.9 %	5 %	6.8 %*
Sleeping	0.3 %	0.3 %	0.2 %

^{*} p< 0.05 in unadjusted analysis between Site 1 and Site 2 † p< 0.05 in analysis adjusted for clustering at the intern and observer levels

Patient transport and procedure consent each accounted for less than 0.1 % of time

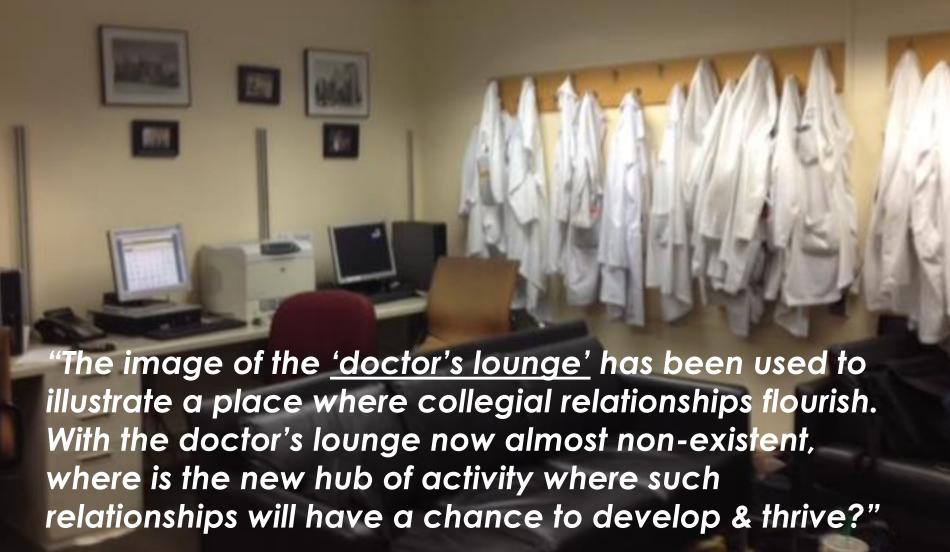
Table 2. Time Spent Per Patient by Shift

	Overall	Site One	Site Two
	Minutes	Minutes	Minutes
	(SD)	(SD)	(SD)
Per patient, overall Day admitting shift Night admitting shift Non admitting Shift Per new admission Day admitting shift Night admitting shift	7.7 (5.8)	7.3 (7.0)	8.0 (4.4)
	9.9 (7.1)	11.2 (9.1)	8.7 (4.5)
	6.6 (5.6)	6.8 (6.3)	6.1 (4.3)
	6.7 (4.2)	4.3 (3.0)	8.5 (4.1)
	16.6 (11.7)	20.6 (14.4)	13.6 (8.3)
	14.6 (9.9)	24.5 (11.5)	10.6 (5.6)
	18.6 (13.3)	18.5 (15.8)	18.6 (10.0)



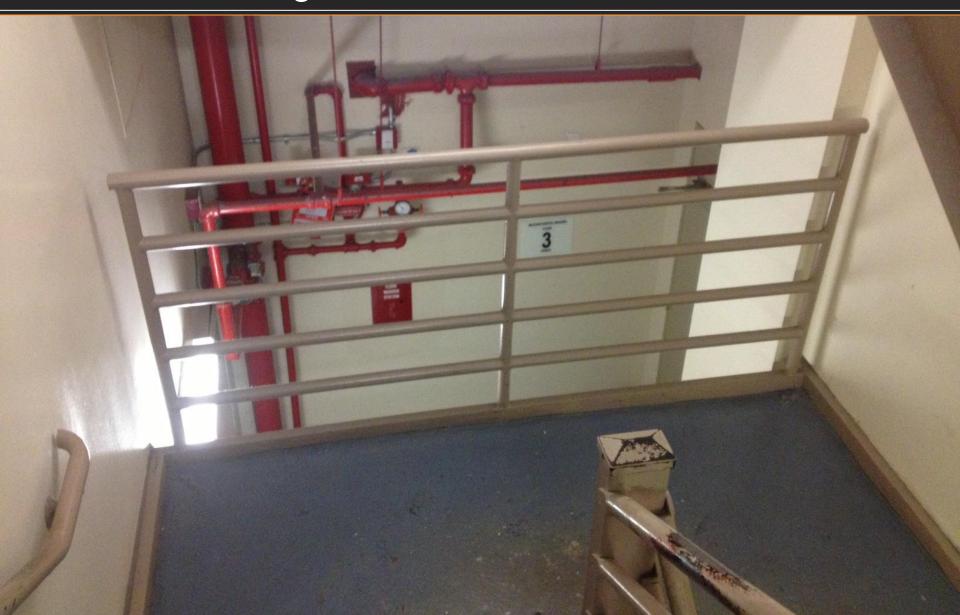


Where is the MD Lounge?

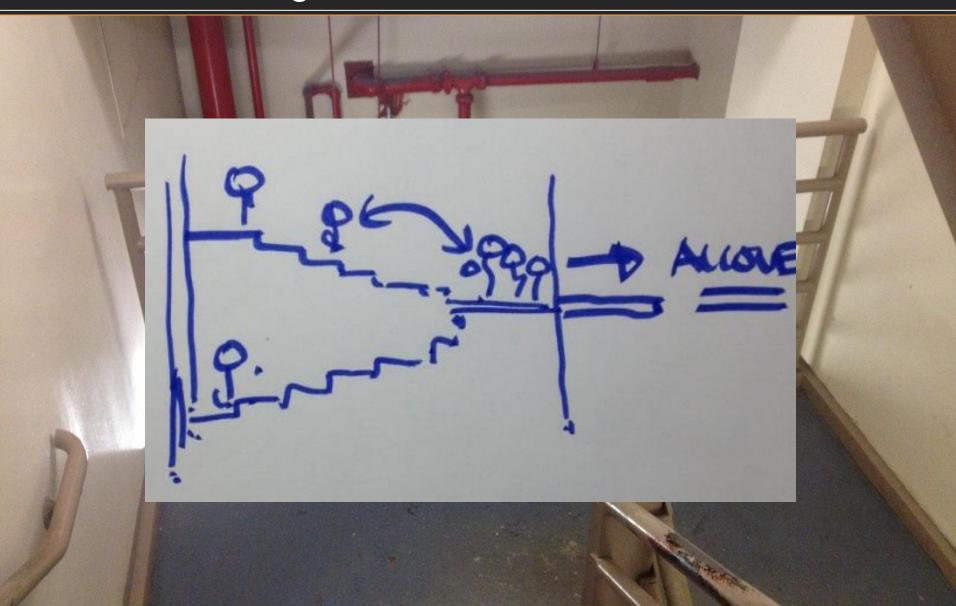


-CFPC/RCPSC Conjoint Discussion Paper, 08-2006

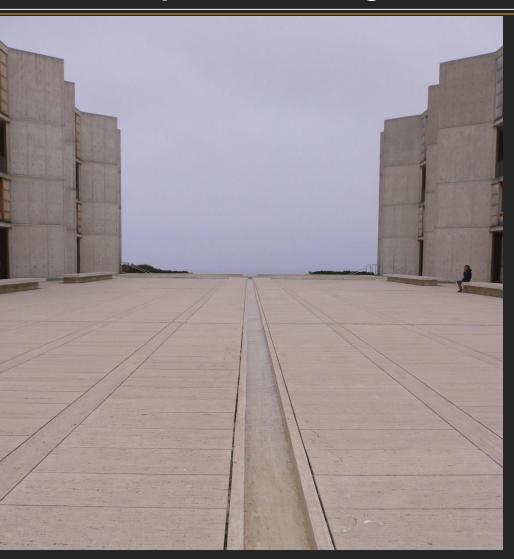
Our New Meeting Place? "Lets take the stairs..."



Our New Meeting Place? "Lets take the stairs..."



Social Spaces: Driving innovation



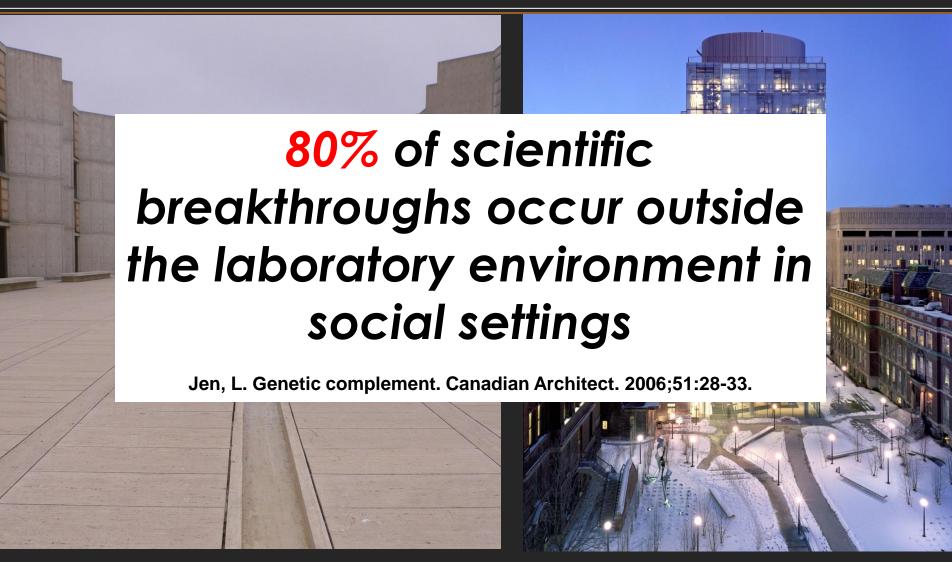


Salk Institute La Jolla, CA

Terrence Donnelly Center for Cellular and Biomolecular Research, Toronto, Canada



Social Spaces: Driving innovation







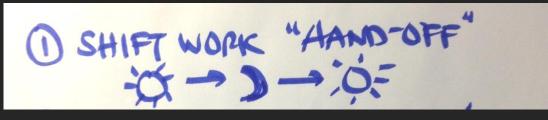
The Physical Exam Convention

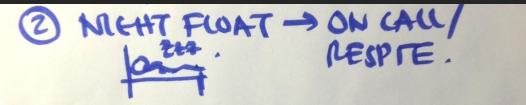


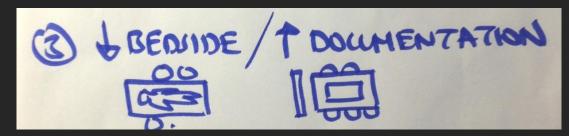
Ambulatory Care – Can I examine from the right?

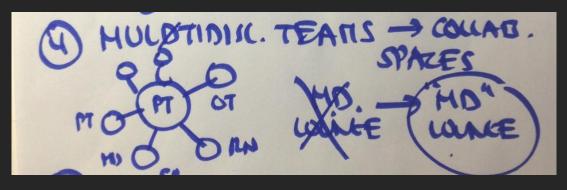


Design Trends Going Forward









"Although only medical anecdotes, these eventually lead to confirmation studies and change follows."

-D. Kirk Hamilton, Healthcare Architect



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Questions & Answers with our Panelists



Diane Anderson, MD, MArch Resident Physician/Licensed Architect New York-Presbyterian Hospital



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Executive Director, Design &
Construction
Memorial Sloan-Kettering
Cancer Center



Patrick Leahy,
Healthcare Director
Planning and Design
Holland Basham Architects



Salley Whitman
Co-Founder, Executive
Director
NXT Health



Hal Hudson
Director of Construction
Mercy Medical Center,
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