HDTDT: Rounding in Flow

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Virginia Mason Medical Center
Questions about Rounds

What is the purpose of rounds?
How is your current system accomplishing its purpose?
How good is your current system?
How do you measure its performance?
Are you satisfied with your current system?
What is the cost of change versus the cost of not?

The problems we were trying to solve by changing rounds

Variation in rounds by attending and residents

Extended work hours (less than 10 hours between shifts).
Systems Thinking

“Every system is perfectly designed to get the results it gets.” Paul Batalden, MD

“I want you to find a bold and innovative way to do everything exactly the same way it’s been done for 25 years!”

http://www.psqh.com/julaug08/editor.html

Average Breaks per Month less than 10 hours for Interns on Wards 2011-2012

- 2008-2011
- 2011-2012

Twice a Month

Once a Month
LEAN THINKING

Using LEAN as a system of improvement by which we improve our system of care.

Virginia Mason Production System

An adaptation of LEAN to health care.
Studying Rounds

Process Flow Map of Rounds
The problems we were trying to solve by changing rounds

EDUCATIONAL INNOVATION

Transforming Ward Rounds Through Rounding-in-Flow

Abstract

Background: Traditional “batched” bedside clinical care rounds, where rounds for all patients proceed clinical tasks, may delay clinical care and reduce resident work efficiency.

Innovation: Using Lean concepts, we developed a novel “Rounding-in-Flow” approach, with the patient care team completing all tasks for a single patient before initiating any tasks for the next patient. Outcome measures included timely patient discharge and intern work hours.

Methods: We performed a retrospective cohort study with historic and contemporaneous control groups, with flow series adjustment for underlying temporal trends at a single medical center. Primary outcomes were timely patient discharge orders and resident daily hours. Participants were 13,576 consecutive hospital inpatients between January 1, 2011 and June 30, 2012, and medical ward rounding teams of interns, residents, and attending hospitalists.

Results: Timely discharge orders, defined as written by 9:00 AM, have: improved from 8.6% to 21.6% (OR: 11.8, 95% CI 1.5–95.6; P = 0.035). Time of actual patient discharge was unchanged. Resident duty-hour violations, defined as less than 10 hours between clinical duties, decreased from 27.6 to 16.9% per intern per rotation (difference, 10.8, 95% CI 9.2–12.5; P < 0.001). Average daily intern work hours decreased from 10.5 to 9.9 hours (difference, 0.6 hours; 95% CI 0.4–0.8; P = 0.001).

Conclusions: Compared with batched rounding, Lean Rounding-in-Flow using 1-step “Flow” principles was associated with more discharge orders written before 9:00 AM and fewer violations in the 10-hour break rule, with minimal changes to intern total work hours and actual patient discharge time.
**Consequences of Batching**

Batching in the context of task switching cost.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10
A, B, C, D, E, F, G, H, I, J

Batching in the context of what the patient experiences.

Batching begets batches.
FLOW ROUNding

Each Intern seeing one patient at a time.

Team completes the care for EACH patient before moving to the NEXT patient.

The attending and resident “toggling” from one intern to the other.
Rounding in Flow

HOSPITAL MEDICINE DISCHARGE ORDERS - THRU JUNE 2012

VMH Hospital Medicine Discharge By 7am

VMH Hospital Medicine Discharge By 10am
Average Breaks per Month less than 10 hours for Interns on Wards 2012-2013

<table>
<thead>
<tr>
<th>Rotation</th>
<th>Twice a Month</th>
<th>Once a Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-2011</td>
<td>3.5</td>
<td>2.0</td>
</tr>
<tr>
<td>2012-2013</td>
<td>1.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Impact on Patient Satisfaction

Virginia Mason Inpatient Patient Satisfaction Trends, 2005 - 2012

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Impact on Patient Satisfaction

2011
~70th percentile

2013
~90th Percentile

Impact on Educational Outcomes

ITE 2007-2010 2013-2016

No change in ABIM pass rate
Teaching in Flow

How do you teach in this workflow?
Teaching in flow.

Take Home Points

How might you apply these strategies at your program?
Questions and Discussion