Improving the Flow of Resident and Hospitalist Work

Alvin S. Calderon, MD, PHD
Daniel Hanson, MD
Virginia Mason

December 8, 2013
1:00 PM – 4:30 PM
1. Recognize how batched rounding impacts the clinical operations and education experiences of hospitalists and residents.

2. Run an interactive session demonstrating the differences between batch rounding and one-piece flow rounding at your home institution.

3. Plan a cycle of improvement to reduce or eliminate batching in your hospital rounds.
Outline for Session

Introduction

Hospitalists and resident team workflows.

Break

Batch-to-flow exercise

Plan a cycle of improvement to implement at your institution.

Break

Debrief
Activity
Rounds
Virginia Mason Medical Center Environment

Founded in 1920
An integrated healthcare system
501(c)3 Not for Profit
One 336 bed hospital
9 clinic locations
440+ physicians
5500 employees
17,000 admissions
32 bed adult ICU
22 hospitalists
4 ward teams
ACGME accredited training programs (6). Residents (116) in:

- Anesthesia
- Internal Medicine
- Surgery
- Radiology
- Transitional
- Pain Fellowship

Every resident required to participate in an improvement activity. Rapid Progress Improvement Workshop (RPIW), Kaizen Event, or System based-Practice Elective.

Lean Journey since 2002. Over 600 RPIWs. Decreased total staff walking by 60 miles per day. Saved $1 million in inventory (2009).

- 92% reduction in VAP.
- >99% staff influenza vaccinated annually.
- > 100 certified leaders including 30 MD.
The problems we were trying to solve by changing rounds

From an operations perspective, this was an intern workflow event.

Problems:
- Delayed discharges
- Waste in batching
- Variation in workflow across teams
LEAN THINKING

Lean is a system of improvement by which we improve our system.

VMPS is our adaptation of Lean to health care.
RPIW Project Form

RPIW Name: Improving the Workflow of the Teaching Services

Date: 10/31-11/4/11

Sponsor: Donna Smith, Gary Kaplan
Workshop Leader: Kim Pettenger
Team Leader: Don Hanson
Process Owner (SUBTL): Inghram/Caldwell/Hanlon
VMPS Specialist: Anderson/Vaught
RPIW Type: ◼Divisional ◡Non-Divisional

Current Situation:
Graduate Medical Education and the teaching services are an integral part of Virginia Mason Hospital. The attending hospitalists serve as faculty for the 4 teaching services, each comprised of two interns and a resident, that provide patient care to a panel averaging 15 patients per day. Numerous challenges impede the workflow of the teams and progression of patient care, including:

- Rounding starts 70-80 minutes after AM handoff.
- Attending spends considerable time in word processing tasks as part of set up rounding and documentation. Pre-rounding prep methods are not standard.
- Rounding order list not standardized
- Flow is challenged by interruptions such as unstable patients and codes.
- Discharge orders are delayed by these flow disruptions
- Discharge orders are delayed by incomplete discharge prep
- Teaching team does not have a standard sequence to rounding, although various attending have been trialing their own various methods.
- MD documentation and attending billing are not always done in flow.
- TDR with the RN is not consistent.
- Coordinating discharge meetings with patient and family is difficult, and leads to delay.
- WOWS are not available to the team on weekdays.

Production Requirements/Takt Time Calculation

690 min/15 patients = 46 min

Process Flow:

- AM handoff
- Pre-rounding prep
- Orders
- Round P#1 Intern A
- Bill
- Document
- Admit
- Morning report
- Document
- Round P#2 Intern B
- Orders
- Document
- Repeat
- Code
- Bill

RPIW Theme/Overview

Improve the workflow of the teaching services by application of the concepts of 5S. Set Up, Continuous Flow and Mistake Proofing. This RPIW will trial methods to accelerate discharges by 0900, further improve TDR, and standardize rounding sequence across all teaching services.
**Target Progress Report**

**Department:** Hospital

**Product/Process Summary:** Daily hand-off & rounding through last patient documented and billed

<table>
<thead>
<tr>
<th>Team Name: Improving the Hospital Teaching Service Workflow</th>
<th>Date: 10-31-11 thru 11-4-11</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Takt Time:</strong> (include calculation) 690min/16 patients = 43 min</td>
<td><strong>Team Leader:</strong> Hanson <strong>Sub-Team Leader:</strong> Workshop Leader: Pittenger <strong>Process Owner:</strong> Ingraham/Hanlon</td>
</tr>
</tbody>
</table>

**Space/Storage**

- Do not value of supplies on the shelf waiting to be used

**Stat Walking Distance**

- Distance measured in feet traveled by the staff in the process

**Parts Travel Distance**

- Distance measured in feet traveled by the parts in the process

**Lead Time**

1. L/T #1 = start day thru 1st patient documented and billed (Attending MD) 6.75 hrs
2. L/T #2 = start day thru all patients documented and billed (Attending MD) 16 hrs

**Work in Process (WIP)**

- Number of patients on service D 10/19: 15

**Standard Work In Process (SWIP)**

- Lead time divided by takt time. Percent target should be the same as lead time target. 405 min/46 min = 9 (Used Lead time #1)

**Quality (defects)(%)**

1. % of time Teaching Attending works > 12 hours on a Tuesday 1.100%
2. % of duty hour violations per hospital wards rotation 2.26%
3. % of time first patient on rounding list seen and not documented and billed in flow 3.100%
4. % of DC orders not written in Cerner by 0900 75%

100% of the time, day 1 > 12 hours for attending.

2.6 breaks less than 10 hours per intern in prior month (Duty Hours)

100% out of flow (Attending)

75% of discharge orders entered after 9:00 for predictable DC’s.
Jan 2011 Time of Arrival of ED Patients & Discharge of Medicine & Surgery Patients (VM/GH/PM)

Number of Patients

Hour of Day

Discharge
ED Arrival
The problems we were trying to solve by changing rounds

From a resident education perspective, the problems to address included:

Variation in rounds by attending and residents

Duty hours violations
## Process Flow Map of Rounds

### RPIW - Hospitalist/HSTF TEAM Rounds (Current State)

<table>
<thead>
<tr>
<th>Patients</th>
<th>Primary RN</th>
<th>Intern #1</th>
<th>Intern #2</th>
<th>Hospitalist Attending Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Objective:**

- Improve efficiency in rounds
- Enhance communication among healthcare providers
- Streamline patient care processes

**Key Processes:**

1. **Patient Assessment:**
   - Initial patient assessment
   - Update patient status

2. **Team Collaboration:**
   - RN coordination
   - Resident discussion

3. **Handoff:**
   - Patient handoff at 0900
   - Update on patient status

4. **Decision Making:**
   - Medical decision making
   - Consultation requests

**Tools Used:**

- Post-it notes
- Chart papers
- Whiteboard

**Recommendations:**

- Implement digital rounds tools
- Regular feedback sessions with healthcare teams

---

*Image: Virginia Mason*
Average Breaks per Month less than 10 hours for Interns on Wards 2011-2012

- Twice a Month
- Once a Month
Solutions devised

Clear vision for one-piece flow or “flow rounds” for hospital rounds.
IMPROVING THE HOSPITAL TEACHING SERVICE WORKFLOW

UNITED WE FLOW

MULTIDISCIPLINARY COMMUNICATION

PRODUCTION BOARD
MAKING PROGRESS VISIBLE
AVAILABLE TO:
- PATIENT
- PLAN COORDINATOR
- RN
- MD

PRODUCTION BOARD
PATIENT NAME
GENDER
DATE OF BIRTH
HOSPITAL

STANDARD WORK
IMPROVING PATIENT ACCESS TO CARE = A SAFE, TIMELY TRANSITION TO HOME

- Physician
- Intern
- Resident
- Attending

Huddle AM/PM
- Morning
- Discharge
- Instructions
- Rx

WORK FLOW STATIONS
CREATING COORDINATED PATIENT CARE THROUGH TEAM MEDICINE & EDUCATION

"PRAWD"
ROUNDING STARTS @ 7:30

TEAM FLOW STATIONS

UNITED WE FLOW... DIVIDED WE BATCH
Notable innovations

FLOW ROUNDING

Each Intern seeing one patient at a time.

Complete the work for each patient before moving to the next patient.

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

Intern A

Attending and Senior

Intern B

Rounding in Flow
# Standardized Work for Inpatient Service

## Intern Work Flow for Inpatient Service

### Purpose:
The one-piece flow for hospital patient rounding by intern.

### Related Policies and Evidence:
RPW 10/31-11-4 with documented improvements in efficiency and lead time as well as resident satisfaction.

### Roles/Work Units Who Must Adopt This Process:
- Interns

### Quality Check Safety Precaution Standard WIP

<table>
<thead>
<tr>
<th>Step</th>
<th>Operator</th>
<th>Task Description</th>
<th>Tools/Supplies Required</th>
<th>Cycle Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intern</td>
<td>Arrive 5:30am-6:15am</td>
<td>- Attend quality, safety or NPI symbols as needed</td>
<td>&lt;5min</td>
</tr>
<tr>
<td>2</td>
<td>Intern</td>
<td>Obtain team cell phone from locker room</td>
<td>- Get sign out from night team (verbal/sign out sheet)</td>
<td>&lt;5min</td>
</tr>
<tr>
<td>3</td>
<td>Intern</td>
<td>Census review (in lounge at present, in future - flow station)</td>
<td>- Print pt list from Cerner</td>
<td>&lt;25min</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Review PAL for critical test results</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Vitals, labs, imaging</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Enter urgent orders</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Review H&amp;P on overnight admits (see list in lounge on dining table)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Update Sr. Resident as needed for unstable pts</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Intern</td>
<td>7am Handoff</td>
<td>- Get handoff from night team on new admits – in future, stay at flow station - night team to come to flow station.</td>
<td>&lt;15min</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Return to flow station for team huddle, review rounding list, update as needed for unstable pts</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Call urgent consults, orders for handoff pts</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Intern</td>
<td>Pre-round – begin 10mins prior to attending rounds</td>
<td>- Secure COW, Cerner</td>
<td>&lt;10min</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Review chart</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Labs, Images, Vitals</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Notes from overnight</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Consult notes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Examine patient</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Intern</td>
<td>Formulate care plan outside pt's room</td>
<td>- Page Sr. Resident when ready to staff</td>
<td>&lt;5min</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Page RN</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Intern</td>
<td>Team Rounding: Meet w/team outside pt's room</td>
<td>- Present plan of care to team in room when appropriate</td>
<td>&lt;15min</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Discuss updates to Cerner VM pages</td>
<td></td>
</tr>
</tbody>
</table>

### Approval Dates:
- Month/Year

### Governing Departments:
- Who ensure compliance and provide content expertise
- Required to be placed on VNet
- Next Review Date:
- Identity data for governing departments to review

---

**Virginia Mason**
## Standardized Work

### Standard Process Description: Intern Work Flow for Inpatient Service

<table>
<thead>
<tr>
<th>Step</th>
<th>Intern</th>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
</table>
| 8    | Intern | Documentation:  
- Write progress note/discharge summary - future form using VMPages  
- VMPages Input summary - add subjective and exam, update dx, care will be popular plan  
- Use hospitalist template to import Input summary  
- Modify plan as necessary  
- Submit  
- Confirm that sign out and discharge in VM pages has been updated by Sr. Resident | ≤10min |
| 9    | Intern | Follow up actions outside of room before seeing next pt:  
- Call consultants  
- Review results that are associated with team rounding | ≤5min |
| 10   | Intern | Repeat steps 5-9 for next patient | 30min-40min/pt |
| 11   | Intern | Noon Conference 12:15-12:45 | Lunch | 30min |
| 12   | Intern | Afternoon work as needed:  
- Family meetings  
- Follow up on studies, consults  
- Didactics | |
| 13   | Intern | Afternoon Hudson (2 to 5pm) with attending, Sr. Resident, interns, medical students (in future will be at flow station)  
- Review updates  
- Discuss discharge plans for next day  
- Complete discharge instructions  
- Complete MedRec  
- Start discharge summary  
- Enter new orders as necessary  
- Update Sign out through VM Pages as necessary | |
| 14   | Intern | Sign out - When work completed for day:  
- Verbal sign out w/Sr. Resident  
- Print Sign out through VM pages  
- Page xCover intern and sign out  
- Sign out pager to Medicine cross cover until next morning at 7AM | |
INTERN WARDS SKILLS CHECKLIST

Please use this as a guide to familiarize yourself with Cerner and our rounding process. These elements should be reviewed with your resident coach. We recommend that the intern always drive the computer.

- **CERNER SET-UP**
  - Build All Appropriate Lists (Floors, ED, CCU)
  - Prescription Printers Added to Favorites
  - VM Pages (Make sure Handoff tool is included)
  - How to save Auto-Text
  - How to save orders to favorites

- **CERNER NAVIGATION AND USE**
  - How to navigate labs, results, Ins & Outs
  - How to read MAR 48Hr
  - How to organize clinical notes (by type, date, etc) and expand range
  - Starting Note types (Progress Note, Discharge Summary, H&P, Consultation)
  - How to import meds, labs, problems, etc.

- **PRE-ROUNDING ON PATIENTS (One-Piece Flow)**
  - Contacting the nurse for overnight events
  - Reviewing Data Efficiently
  - Start Progress Note
  - Seeing the patient (Subjective and focused physical exam, prepare patient for rounds)
  - Page senior resident when ready

- **ROUNDING ON PATIENTS**
  - Present to senior resident (3-5 min)
  - Physical Exam by Resident +/- Attending
  - Review plan of care with team. Senior Resident to place most of the orders
  - Complete note, finalize any other orders, update RN, and call consults before moving to next patient.

- **PROGRESS NOTES**
  - Hospital Medicine Progress Note Template
  - Appropriate Use of SOAP format
  - Importing Vitals
  - Summary Assessment Statement
  - If Copying and Pasting, never use “today” or “tomorrow”, use 6/25 or 6/26
CALLING CONSULTS
  - Use of VNET to find who is on call
  - How to Call Consult – What information is needed
  - How to consult surgery
  - How to consult IR (Place the order +/- calling)

SIGN OUT / HANDOFF TOOL
  - Get to Handoff form from VM Pages “Inpatient Summary”
  - Complete “In flow”
  - Anticipate IF/THEN
  - Appropriate Use of Follow Up

PAGER SIGN-OUT
  - How to sign out your pager to Crossover
  - How to sign out your pager on your day off
  - How to sign out someone else’s pager when they forget

ADMITTING A PATIENT
  - Admission Orders
    - Also review admission specific ordersets (Chest Pain, Stroke, CHF)
  - H&P Template
    - Notify appropriate providers
  - Code Status Discussion (Surrogate, Preferences, Assume, More)
  - Document Medication by History
  - Medication Reconciliation

DISCHARGING A PATIENT
  - Start Discharge plans from VM Pages Inpatient Summary
    - Also review CHF and Anticoagulation Discharge plans
  - How to print Discharge Plans
  - Medication Reconciliation
  - Inpatient Discharge Summary Template
  - Discharge Notification to PCP

IMPORTANT CERNER ORDERSETS
  - Insulin Orderset
  - Pain Management Orderset
  - Sepsis Orderset
  - Blood procurement and Blood administration
  - Consults to PT/CT/SLP/Dietary/RT/Palliative Care/Chaplain
Outcomes
First Patient Complete in 88 minutes versus 6.75 hours

Still staying late.

57% decrease in duty hour violations

90% improvement in attending flow.

41% of DC orders in by 9:00 AM.
Average Breaks per Month less than 10 hours for Interns on Wards 2012-2013

- Twice a Month
- Once a Month
Challenges encountered

GSD → Doing the right stuff

Autonomy and Supervision

Quality/safety Agenda and the Educational Agenda

Interns in Flow; Attending and Resident on the Run

Separating Mistakes from Errors
Anecdotes

“I love the VM rounding style. It was a big reason I wanted to come here.” - Intern.

“It’s scary at 10 am, when we have only seen a discharge and 2 patients, but a marvel at 4 pm when we are done with our work.” - Intern

“I don’t feel like I’m missing anything.” - Intern

“Before, I didn’t think I had the time to get things [the note] done so I would go to the next patient. It turns out the time was there. It’s nice to get things done. You don’t have things looming over you. “ – Intern

“Hi, my name is XXX and I batch…”
# Standard Rounding Checklist version: 061412

<table>
<thead>
<tr>
<th>Team</th>
<th>Observation Date: ____________</th>
<th>Intern: (circle one)</th>
<th>Intern: (circle one)</th>
<th>Intern: (circle one)</th>
<th>Intern: (circle one)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rm# __________</td>
<td>Rm# __________</td>
<td>Rm# __________</td>
<td>Rm# __________</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Patient #1</td>
<td>Patient #2</td>
<td>Patient #3</td>
<td>Patient #4</td>
</tr>
<tr>
<td><strong>MS3 or INTERN</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intern A:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(name)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intern B:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(name)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Med Stud:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(name)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Resident:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(name)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Attending:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(name)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **HOLDS BEDSIDE ROUNDS (AS APPROPRIATE)**
- Introduces team, updates names on white board
- Asks for RN input when available
- Presents patient in SOAP format
- Solicits resident/attending feedback
- Explains plan of care summary to patient
- Finishes documentation (after bedside rounds)
- Pages RN to join rounds
- Actively listens to presentation (no interrupting)
- Provides presenter with guidance/feedback
- Examines patient
- Use “One minute preceptor” when applicable
- Additional teaching pearl on related topic when able
- Places orders in Cerner (after bedside portion complete)
- Reviews MAR (after bedside portion complete)
- Actively listens to student/intern and resident, without interrupting
- Provides guidance/feedback on plan
- Use “One minute preceptor” when applicable
- Additional teaching pearl on related topic when able
- Finishes documentation and billing (after bedside portion complete)

OBS = Action Observed  DNO = Did Not Observe; Unknown
Value Stream Map of Hospitalist Rounds (batching method)

START
- Hospitalist reviews all labs and vital signs on computer
- Walking time
- Information transferred from computer to paper notes
- Interrupted to leave the room to get information from RN or other staff
- Multiple pages and cell phone calls from staff who have been waiting to see hospitalist

See and examine patient # 1
- 3 min
- 32 min

See and examine patient # 2
- 3 min
- 21 min
- 21 min
- 250 min
- (10 patients)

See all orders after seeing all 12 patients
- 19 min

Writes all progress notes and discharge summaries
- 3 min
- 60 min

FINISH

Completes all progress notes and discharge summaries

Value added work
- 15 min
- 20 min
- 20 min
- 200 min
- 15 min
- 25 min
- 295 min (71%)

Non-value added work
- 20 min
- 4 min
- 4 min
- 50 min
- 7 min
- 35 min
- 120 min (29 %)

Lead Time (Time from start of process to finish) = 415 min (36 min/patient/day)
Value Stream Map of Hospital Rounds (Using One Piece Flow)

**Rapid Process Improvement Workshop Progress Report**

**Team Name:** Hospitalists

**Process Summary:** Reduce the non-value added time in the Hospitalists daily rounds through creation of one piece flow, standard work and elimination of interruptions.

<table>
<thead>
<tr>
<th>Metrics</th>
<th>Baseline</th>
<th>Target &gt; 50%</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 5</th>
<th>Final</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Time – Time it takes to complete rounds on 12 patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>415 min</td>
<td>350 min</td>
<td>270 min</td>
<td>320 min</td>
<td>290 min</td>
<td>270 min</td>
<td></td>
</tr>
<tr>
<td>Quality – Percent of patients w/ completed rounds by 12PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>34%</td>
</tr>
<tr>
<td></td>
<td>66%</td>
<td>100%</td>
<td>80%</td>
<td>90%</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Quality – Number of defects (interruptions, unnecessary pages, delayed progress notes and orders.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>64%</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Walking distance – Hospital daily walking distance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>2.09 miles</td>
<td>1 mile</td>
<td>1.9 miles</td>
<td>1.9 miles</td>
<td>1.9 miles</td>
<td>1.9 miles</td>
<td></td>
</tr>
</tbody>
</table>
Got Flow?
Why Does Water Flow?

WHY?
WHY?
WHY?
WHY?
WHY?
Why Does Water Flow?
Standardized Work

- Putting down in writing, an agreement, that tells everyone where we are at a point in time.

- We cannot improve, or know we have improved, without a standard.

- Makes it visible to know abnormal from normal or expected from unexpected
Standardized Work

Variation → Standardization → Improvement
Standardized Work
A Typical Visit Cycle

- Walk to next Patient (11%)
- Chart Review (18%)
- Talk with Nurse (6%)
- See and Evaluate Patient (28%)
- Charting, Orders, Billing (49%)
One Piece Flow by Patient:

- 40 min:
  - Walk to next (11%)
  - Chart Review (10%)
  - See, Eval. Patient (28%)
  - Chart, Orders, Billing (48%)

- 40 min:
  - Walk to next (11%)
  - Chart Review (10%)
  - See, Eval. Patient (28%)
  - Chart, Orders, Billing (48%)

- 40 min:
  - Walk to next (11%)
  - Chart Review (10%)
  - See, Eval. Patient (28%)
  - Chart, Orders, Billing (48%)

- Break

- 30 min:
  - Chart Review (10%)
  - See, Eval. Patient (28%)
  - Chart, Orders, Billing (48%)
Observation

How many of you have observed a hospitalist or resident from the beginning to the end of their rounds?
Hospitalist Float Team Rounding: Variation from Scheduled Rounding Arrivals

<table>
<thead>
<tr>
<th>Time Scheduled</th>
<th>Patient Rounding Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>7AM</td>
<td>1</td>
</tr>
<tr>
<td>7:30</td>
<td>2</td>
</tr>
<tr>
<td>7:45</td>
<td>3</td>
</tr>
<tr>
<td>8:00</td>
<td>4</td>
</tr>
<tr>
<td>8:15</td>
<td>5</td>
</tr>
<tr>
<td>8:30</td>
<td>6</td>
</tr>
<tr>
<td>8:45</td>
<td>7</td>
</tr>
<tr>
<td>9:00</td>
<td>8</td>
</tr>
<tr>
<td>9:15</td>
<td>9</td>
</tr>
<tr>
<td>9:30</td>
<td>1</td>
</tr>
<tr>
<td>9:45</td>
<td>2</td>
</tr>
<tr>
<td>10:00</td>
<td>3</td>
</tr>
<tr>
<td>10:15</td>
<td>4</td>
</tr>
<tr>
<td>10:30</td>
<td>5</td>
</tr>
<tr>
<td>10:45</td>
<td>6</td>
</tr>
<tr>
<td>11:00</td>
<td>7</td>
</tr>
<tr>
<td>11:15</td>
<td>8</td>
</tr>
<tr>
<td>11:30</td>
<td>9</td>
</tr>
<tr>
<td>11:45</td>
<td>1</td>
</tr>
<tr>
<td>12:00</td>
<td>2</td>
</tr>
<tr>
<td>12:15</td>
<td>3</td>
</tr>
</tbody>
</table>

0% 8% 50% 31% 67% 50% 75%
One Piece Flow By Floor

Schedule | Work | Patient Visit
---|---|---
Rm 1758 | Walk to next (11%) | 
| | Chart Review (18%) | 
| | Talk with RN (8%) | 
| | See, Eval. Patient (28%) | 
| | Charting, Orders, Billing (49%) | 
Rm 1664 | Talk with RN (6%) | 
| | Write Orders | 
| | Talk with RN (6%) | 
| | Write Orders | 
Rm 1678 | | 
| | Walk to next (11%) | 
| | Chart Review (18%) | 
| | Talk with RN (8%) | 
| | See, Eval. Patient (28%) | 
| | Charting, Orders, Billing (49%) | 
Rm 1680 | | 
| | | 
| | | 
| | | 
| | | 
| | |
The Result

% "On Time" (within 2 hours)

August-September: 60%
October-November: 87%

Actual Time late

If off by MORE than 2 hrs (actual time late) If off by LESS than 2 hrs (actual time late)

August-September
October-November

BREAK
Level Loading & Visual Control
GOT FLOW?
Break
Activity

Batch to one-piece flow.

Discussion
Instructions for One-Piece Flow Exercise

Materials needed:
- Post-Its or Index Cards
- Pens / Pencils
- Timers

Instructions: (Batch Mode)
Participants arrange in groups of five.
Assign one person in each group to time activity.
Each group gets a stack of five post-its.
Start timer.
The first participant signs all of the post-its then passes all five post-its in the stack to the next member and so on until all members have signed the stack.
Group reports the time to complete signing all post-its.
Discuss the experience

Instructions: (One piece flow).
Participants remain in groups of five.
Assign one person in each group to time activity.
Each group gets a stack of five post-its.
Start timer.
The first participant signs the first post-it then passes it to the next participant then signs the second post-it and passes it along and so on until all members have signed the stack.
Group reports the time to complete signing all post-its.
Discuss the experience.
Questions to ask during discussion

Discussion questions: (Batch Mode)
What was the experience like for the first person?
What about the last person?
What about for the people waiting for the competed product?
What about the product?

How is this similar to the way we do our work?

What would be the challenges to change?
Questions to ask during discussion

Discussion questions : (One Piece Flow)

What was the experience like for the first person?
What about the last person?
What about for the people waiting for the competed product?
What about the product?

How is this similar or different to the way we do our work?
What would be the challenges to doing this?
PDSA Worksheet for Testing Change

**Aim:** (overall goal you wish to achieve)

*Every goal will require multiple smaller tests of change*

<table>
<thead>
<tr>
<th>Describe your first (or next) test of change:</th>
<th>Person responsible</th>
<th>When to be done</th>
<th>Where to be done</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Plan**

List the tasks needed to set up this test of change

<table>
<thead>
<tr>
<th>Person responsible</th>
<th>When to be done</th>
<th>Where to be done</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Predict what will happen when the test is carried out

<table>
<thead>
<tr>
<th>Measures to determine if prediction succeeds</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Do**

Describe what actually happened when you ran the test

**Study**

Describe the measured results and how they compared to the predictions

**Act**

Describe what modifications to the plan will be made for the next cycle from what you learned

Institute for Healthcare Improvement
AIM: Overall goal you wish to accomplish.

**PLAN**

*Every goal will require multiple smaller tests of change*

Describe your first (or next) test of change:
- Person Responsible?
- When to be done?
- Where to be done?
From Ideas to Action : PDSA

Plan:
List the tasks needed to set up this test of change.
	Person Responsible?
	When to be done?
	Where to be done?
Predict what will happen when the test is carried out

Measures to determine if prediction succeeds
From Ideas to Action : PDSA

**Do:**
Describe what actually happened when you ran the test

**Study:**
Describe the measured results and how they compared to the predictions

**Act:**
Describe what modifications to the plan will be made for the next cycle from what you learned
Break into groups to plan PDSA

Be prepared to report out your plan to the main group.

Discussion.
Conclusion.