X+Y Scheduling Models for Residency Training Programs

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Plan of Attack

- Need for redesign of residency training
- The original 4+1 model in Internal Medicine
- The birth and growth of X+Y Models
- Outcomes /Reflections on current models
- Important Questions for Pediatrics to Consider
- Future Trends → Pediatrics

Inadequate Models of Ambulatory Training– How did we get here?

- 108 Clinic Sessions over 3 years
  - ½-day per week continuity clinic
  - Pediatrics RRC- “36-in-26” rule
- IM-150? → 130 Sessions– built on broken system
- Emphasis on inpatient/specialty rotations
- ½-day clinics conflict with “Core Rotations”

“So...how’s that workin’ for ya’?”

From a Resident’s perspective…..

- Providing care in multiple venues
- Not available for unit/floor/consult duties
- Limited rounding with consult attendings
- Attendings on service are frustrated
- Interns are “orphaned”
- Residents dealing with floor issues from clinic
- Residents not able to focus on clinic
- Clinic is viewed as intrusive
- Limited time at clinic
- Travel time between sites

Resident Survey---“Clinic sucks!!”

Ambulatory Care and Education

- ½-day clinic marginalizes ambulatory education
- ½-day clinic provided suboptimal patient care / education
  - Patient access
  - Patient Follow-up
  - Continuity of Care
  - High “no-show” rates
  - Teacher / Learner Continuity
  - Scheduling is a nightmare

“It just doesn’t work”

Calls for Residency Redesign -

- Changes in the practice of medicine- more ambulatory
- Inadequate training in Ambulatory Care
- No exposure to highly functional ambulatory care settings-- Part of Primary Care Crisis??
- Poor patient continuity
- ACGME – “Programs must develop models and schedules for ambulatory training that minimize conflicting inpatient and outpatient responsibilities.”
The Dream (circa 2006)

- What if we got rid of the ½-day clinic per week?
- Discrete, week-long continuity clinic experiences
- Traditional rotations alternating with week-long blocks of continuity clinic (4+1:4+1)

The 4+1 was born

A bit of history....

- The 4+1 would have violated the 2006 regulations
- Section VII - Innovation and Experimentation Waiver
  LVHN granted the 1st waiver!!! - "LVH Task-at-Hand Proposal"

Back to the 4+1....
A bit of Background

Lehigh Valley Health Network is a 3-Hospital Network in Allentown, PA
- Main hospital is ~ 800 beds
- Affiliations with PSU, Temple, Drexel, PCOM
- 48 medicine residents
- 14 transitional year residents

Background – The Previous Clinic

- Held in our “center city” Allentown hospital
- Underserved population
- Traditional ½ day per week continuity clinic
- Residents “pulled” each week from 4 week rotations
- In order to meet quotas (>108 sessions), residents pulled from wards, consult services, ER, night float, MICU, etc.

4+1 Logistics - “The Stagger”

- To meet service requirements:
  - Residents were staggered
  - Divided into 5 “Cohorts”
  - Always one group of residents in clinic

4+1 Logistics - Inpatient Team Structure
4+1 Logistics- Our Outpatient Team Structure

- Three Subcohorts with assigned attendings
- Attendings provided continuity to patient panel
- Residents in clinic manage other residents’ patients
- 6 1/2-day clinic sessions/week
- 1/2-day of ambulatory lectures
- 3 other ambulatory venues
- Hepatitis C clinic
- HIV
- Ambulatory subspecialties
- Clinic QI

Sample Ambulatory week

<table>
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<tr>
<th></th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM</td>
<td>Continuity Clinic</td>
<td>Continuity Clinic</td>
<td>Continuity Clinic</td>
<td>Continuity Clinic</td>
<td>HIV Clinic</td>
</tr>
<tr>
<td>PM</td>
<td>Continuity Clinic</td>
<td>HIV Clinic</td>
<td>Academic 1/2 day</td>
<td>HIV Clinic</td>
<td>Continuity Clinic</td>
</tr>
</tbody>
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Goals for change

- More “focused practice” – “task-at-hand”
- Less conflict between inpatient/clinic tasks
- Emphasizes the importance of primary care
- More continuity sessions
- Improved patient continuity
- Improved learner continuity
- Improved satisfaction

So how’d we do overall?

Residents
- Less Conflict - “Duty Separation”
- Better focus on the “patients in front of them”

Faculty
- Residents seem “more satisfied” in both venues
- Residents seem less “stressed out”
- Residents not “in a mad rush” to get out from either venue

Clinic Administration / Staff
- Loved it!

The Clinic- The Big Picture

- 180 Clinic / 3 years
- Faster growth of resident patient panels
- Enhanced continuity of (chronic) care
- Attendings anchor patient care on “off” weeks
- Better sense of “team” at clinic
- Resident able to follow results of interventions
- Same week appointments
- More future appointments (6 1/2 days vs 1/2 day)
- Lower “No-show” rate
- Improved resident/preceptor continuity
- More accurate competency assessments
- “Immersion” → resident engagement in improvement efforts

Inpatient Rotations

- Sense of “team” was not lost with overlap
- Team stayed together all week – no “orphans”
- Availability to floor patients and ER
- More autonomy (especially in units)
- Benefits to having “fresh” team member
- No switch-day phenomenon
- Learning efficiency may have decreased
Consultative Rotations

Not being pulled to clinic allowed for...

- An additional 2+ full days on rotation (10%+)
- Residents less likely to "hide"
- Teaching rounds occurred everyday
- Attendings more motivated to teach

Outcomes from the literature... (4+1, 4+4, 6+2)

- Reduced Conflict / Educational Fragmentation
- Increased time in Ambulatory Settings / # Clinics
- Better Sense of Team Work
- Improved satisfaction with ambulatory (and inpatient) training
- Lower "No-show" rates
- Increased engagement in improvement efforts
- Some effect on primary care as a career choice
- Variable effect on continuity of care
- More complicated schedule

The Birth of the X+Y....

- The 4+1 concept spread
- Other programs experimented (4+2, 6+2, 3+1, 4+4)
- Termed, “block-scheduling” or the “X+Y”
- 2009, RRC-IM regs language softens
  - X+Y models no longer require a waiver!!
- Pediatrics??? Not yet, but working on it

The X+Y Survey

- Survey of 38 PD’s who implemented an X+Y model
- July/August 2013
- 33/38 Responded (87% !!)

  Developed by
  - Maria DeOliveira, C-TAGME
  - John Donnelly, MD
  - Craig Noronha, MD
  - Marc Shalaby, MD
  - Sandi Yaich, MEd, C-TAGME
  - Ryan Zitnay, MD

Who is utilizing an X+Y model in Internal Medicine Residencies?

- ~60% University Programs
- ~40% Community Programs
- Tended to be medium to larger programs

What type of X+Y?

- 4+4
- 3+3
- 5+2
- 4+2
- 3+2
- 5+1
- 4+1
- 5+1
- Other: 2+2, 2+2+2, modified 4+2
Why did you make the switch?

- Reduce disruptions on inpatient service
- Better emphasis on outpatient training
- Improved resident/faculty pairing
- Increase continuity of clinic sessions
- Improve duty hour compliance
- Improve resident lifestyle
- Improve patient continuity in the outpatient office
- Reduce patient handoffs
- Other: Resident satisfaction with clinic
- Fulfill other task required by program
- Try to increase to "1/3 time" in ambulatory settings

How many Continuity Clinic Sessions / 3 yrs?

Programs

PD Satisfaction with X+Y?

- 82% Unsatisfied
- 12% Somewhat unsatisfied
- 6% Neutral
- 15% Somewhat satisfied
- 8% Mostly satisfied

Resident Satisfaction with X+Y

- 85% Mostly satisfied
- 15% Mostly satisfied
- 6% Somewhat satisfied
- 27% Neutral
- 9% Somewhat unsatisfied
- 12% Unsatisfied

Faculty Satisfaction with X+Y

- 61% Mostly satisfied
- 27% Neutral
- 9% Somewhat unsatisfied
- 12% Unsatisfied

Would you consider going back?

- 88% Yes
- 9% No
- 3% Maybe
- 1% Already have
“Top 3 Benefits” (from X+Y Survey)

- Improved Focus
- Improved Resident Satisfaction / Stress Reduction
- Improvement in curricular content/delivery

“Honorable Mention”
- Improvement in Ambulatory Scheduling
- Improved patient continuity
- Improved Compliance with Regulations

“Top 3 Challenges” (from X+Y Survey)

- Less Flexibility
- Ambulatory Continuity of Care / Cross coverage
- Administrative complexity
- Attending / Institutional Buy-in

Can Pediatrics do an X+Y??

- Short answer………YES
- Bigger Programs tend to have an easier time
- Multiple Hospitals not necessarily an issue

Which One??

- Do you have a preference?
- How many residents can you spare from inpatient services?

How do I start??

Think different-ly…

- Willing suspension of previous hard-held ideas
- The turmoil is an opportunity for change
- Why do we do this?
- Do we really NEED to do it this way?

- What about Med-Peds?

Do I need a waiver?? Maybe Not

- From ACGME Program Requirement for Graduate Medical Education………
- The only reg in question is the “36 in 26” rule.

“Programs in substantial compliance with the Outcome Requirements may utilize alternative or innovative approaches to meet Core Requirements”

Taking a hard look at your program..

- Should some rotations be eliminated?
- Can some required rotations be electives?
- Which must remain 4 weeks? 2 weeks? 1 week?

- Are there other learners to consider?
  e.g. Family Medicine, OB/GYN  Rotators, EM
- Are there experiences to add (e.g. QI) ?
Taking a hard look at your program...

- What regs are you violating now?
- Outright? Partially?
- How do we do vacations? Holiday block?

You gotta’ makes some choices..

- What are your priorities??
- Clinic? NICU? PICU? Wards? Peds ER?
- Which services require a consistent team structure?
- Which services / specialties MUST have coverage?
- Which can function without a resident presence?

Crafting your “X” Rotations

- Optimal number of inpatient teams?
- Which services need restructuring/ removal?
- Optimal team structure?
- Is the intern/resident ratio fixed or variable?
- Can services accommodate variable numbers of residents?

Crafting Your “Y” Weeks

- What number of continuity clinic sessions is optimal?
- How many clinic sites are optimal?
- Should some be eliminated?
- How does this affect Medical Student Education?

Clinic During the “Y” Week

- Can/should we restructure how the clinics function?
- Work flow / cross-cover discussions
- How many sessions should some faculty precept? Others?
  - Who are the faculty “leads?”
- Do faculty schedules need to be altered?

“Y” Week Curriculum

- Are there enough ambulatory experiences to round out the ambulatory week?
- Do you want an Academic half day? YES
- Will ambulatory residents participate in other standard educational forums?
  - (e.g. resident report, noon conference, etc.)
Effects on Others

- Are there other pools of learners to consider?
  - e.g. Peds-Neuro, Med-Peds, medical students
  - "off-service" residents rotating on Pediatrics

- How will the X+Y affect other departments?
  - (e.g. Neurology, Emergency Medicine, etc.)

- Will faculty scheduling need to be altered to accommodate learning and supervision objectives?

More questions than answers??…..Sorry

- Lots of things to consider (and reconsider) as you go
- Willing suspension of previous hard-held ideas
- Why do we do this?
- Do we really NEED to do it this way?
- It is totally do-able

The Future?

- X+Y Schedules are here to stay (> dozen more for Medicine 2014)
- Pediatrics?
- PD’s, Faculty, and Residents prefer them.
- Improves inpatient AND ambulatory experiences
- Reduce Conflict and Stress
- Increasing experience / familiarity with them
- Meets calls for Residency Redesign

- Tends to be more complicated with less flexibility
- Need to find ways to improve follow-up and continuity of care

Special Thanks.....

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Questions?

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