Phlebotomy & Delayed Discharges at an Academic Teaching Hospital

Timothy Quinn
Jenny Rudolph, PhD
Hospital Overview

• Academic Teaching Hospital
  – Residents make the clinical decisions
  – Attending physicians supervise & teach

• Hospitalized Patients
  – Clinical decisions ← Information from laboratory tests on blood samples
    • Drawn multiple times daily (usually scheduled)
  – Census: 150-180 medicine & surgery patients
Problem Statement

Average Turnaround Time for Lab Test Results

1. Inefficiency
   – Impedes clinical decision-making
2. Lower Quality & Higher Risk
   – Delays patient care plan implementation
3. Lower Margins
   – Increases chance of postponed discharges

Current Level

Perfect World

“Acceptable” Minimum

1993 2004 2005

No change

Improvement
Work Context

• Two interdependent “organizations”
  – Laboratory & Phlebotomy (operations)
  – Physicians & Nurses (clinical)

• Constraints affect each group differently
  – No one group sees entire system
  – Nobody looking out for entire system

• Groups blame other groups, not system
Challenge: Getting Everyone Around the Same Table

• How did we meet this challenge?
  – Required tactful facilitation of entire team
  – Active listening \(\rightarrow\) elicit frustrations
  – Use “objective” process flowcharts
    • Build understanding of how things work
    • Basis for communication among groups

• Results
  – “I had never heard that lab turnaround time delayed clinical decision making.” – VP, General Services
  – Residents and nurses blame phlebotomy for being unresponsive \(\rightarrow\) don’t realize they are understaffed
  – Residents don’t realize they make an implicit risk tradeoff: act without info or wait for info \(\rightarrow\) patient safety
Client Insights from Reference Modes

• System in Equilibrium
  – Patient volume consistently close to maximum capacity
  – Staffing levels “frozen” because of chronic budget shortfalls
  – Phlebotomy productivity is stable and better than the benchmark

• Dissatisfaction with Lab Turnaround Time
  → “paradigm shift”, not erosion of current service
Putting the Pieces Together

- Average Lab Turnaround Time
- Average Time to Make Clinical Decisions
- Average Length of Stay
- Phlebotomists
- Hiring

Quality of Patient Care

Death Spiral

Hospital Profit

R

Quality Erosion

R

+
Putting the Pieces Together

Clinical Organization

Average Time to Make Clinical Decisions

Average Lab Turnaround Time

Phlebotomists

Operations Organization

Hiring

Hospital Profit

Death Spiral

Quality of Patient Care

Quality Erosion

Average Length of Stay

R
**Phlebotomy Staffing Policies (1)**

- **Insight 1:** Hospital financials constrain ability to hire phlebotomists
  - Can’t close staffing gap

- **Insight 2:** Little attention to phlebotomy supply-demand balance across depts
Policy Implications

• Need proactive, periodic review of where phlebotomists are assigned
Phlebotomy Staffing Policies (2)

• *Insight 3*: Lower profitability results in fewer desired staff
  – Should phlebotomy be cut in a budget crunch?
  – What staffing level is “optimal”?
Policy Implications

• Need proactive, periodic review of where phlebotomists are assigned

• Investments required to get out of the hole
  – Possibility: Hire *more* phlebotomists when profitability is low
No Silver Bullet

- Residents make up phlebotomy staffing shortfall
No Silver Bullet

- **Insight 4:** Residents as “solution” makes problem worse
  - where to allocate time
  - time to make clinical decisions is most important

- **Insight 5:** Shorter lab turnaround time is necessary, but not sufficient, for better performance
Policy Implications

- Need proactive, periodic review of where phlebotomists are assigned
- Investments required to get out of the hole
  - Possibility: Hire *more* phlebotomists when profitability is low
- Focus on improving timeliness of clinical decision-making and interventions
  - Pay special attention this high-leverage point
  - Don’t just fight fires when crises happen
  - Hard to measure abstract processes
Client-Reported Project Benefits

• Explore system response to changes
  – Justify incremental phlebotomy staffing
  – Time required to make clinical decisions is the high-leverage point
    • Info available earlier must be acted on earlier
    • more process improvements needed

• Insights not possible from discussion alone
  – Everyone tends to focus on the details of their area → need framework for systems thinking
  – Recognize that processes evolve around constraints (e.g. when rounds happen)