Clinical Safety & Effectiveness

Cohort #15

Increasing Patient Care Efficiency in an Academic Pediatrics Continuity Clinic

CENTER FOR PATIENT SAFETY & HEALTH POLICY

UT HEALTH SCIENCE CENTER™

SAN ANTONIO

Educating for Quality Improvement & Patient Safety

THE TEAM

Team Lead: Janet F. Williams, MD – Faculty clinician

- **Pedi Resident Team/Efficiency QI:** Julie Fischer MD (PGY3), Veronica Del Greco MD (PGY2), Abby Hendricks MD (PGY2), Elise Adcock MD (PGY1), Thao Phuaong Hallet MD (PGY1) *PGY = Post-Graduate Year of Training*
- **CSE Alumni Members:** Sandra Jo Ehlers MD (2012 – current); Rob Sanders MD (2014); Krista Vizuete MD (PGY3) (Jan. 2014 – current)

- **Facilitator:** Karen Aufdemorte MHA
- **Clinic Team:** Supervisors & Staff
  - Registration, Nursing, Physicians
- **Sponsor Department:** Pediatrics
  - Division of General Pediatrics

AIM STATEMENT

By March 31, 2015, the average total daily Children's Health Center (CHC) clinic time from the first appointment to the last patient dismissal will decrease by 20%.

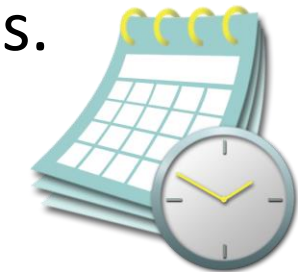
Project Milestones

Team Created: (Continuation of 2012-13; 2014 CSE)	Sept. 2014
AIM statement created	Sept. 2014
Periodic Team Meetings	Sept. – May 2014
Background Data, Brainstorm Sessions	Sept. – Oct. 2014
Workflow & Fishbone Analyses	Oct. 2014
Baseline Data Confirmation	Nov. 3 - 7, 2014
Interventions Enacted; Collect Post-Data	Dec. 8 - 18, 2014
Data Analysis	Jan. – May 2015
CS&E Graduation Presentation	June 2015

Background

- The Children's Health Center (CHC), i.e. the Pediatrics' house staff appointment clinic, serves over 18,000 patients annually as their medical home.

- The CHC is a continuity clinic for 'well child' patient care & clinical teaching. Patients have very high complexity.
- Same CHC faculty, ½-day/wk, 'same' PGY group X 3 yrs.
- PGY trainees fulfill PGY level-specific continuity patient panel mix & patient load standards. Faculty-trainee supervision matches PGY training requirements.

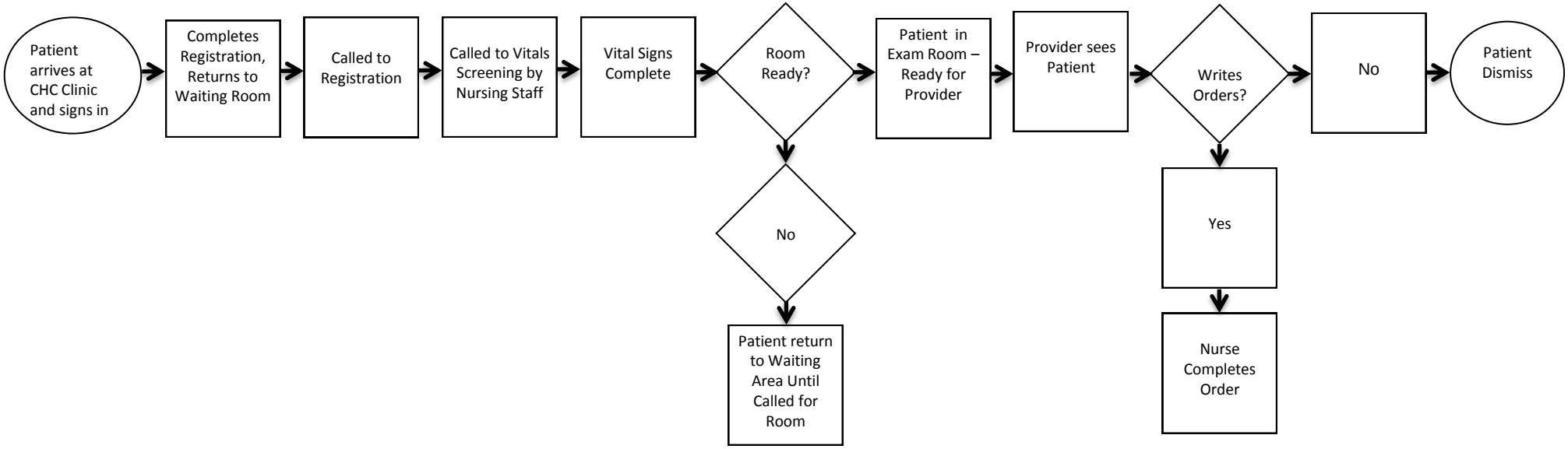


Background

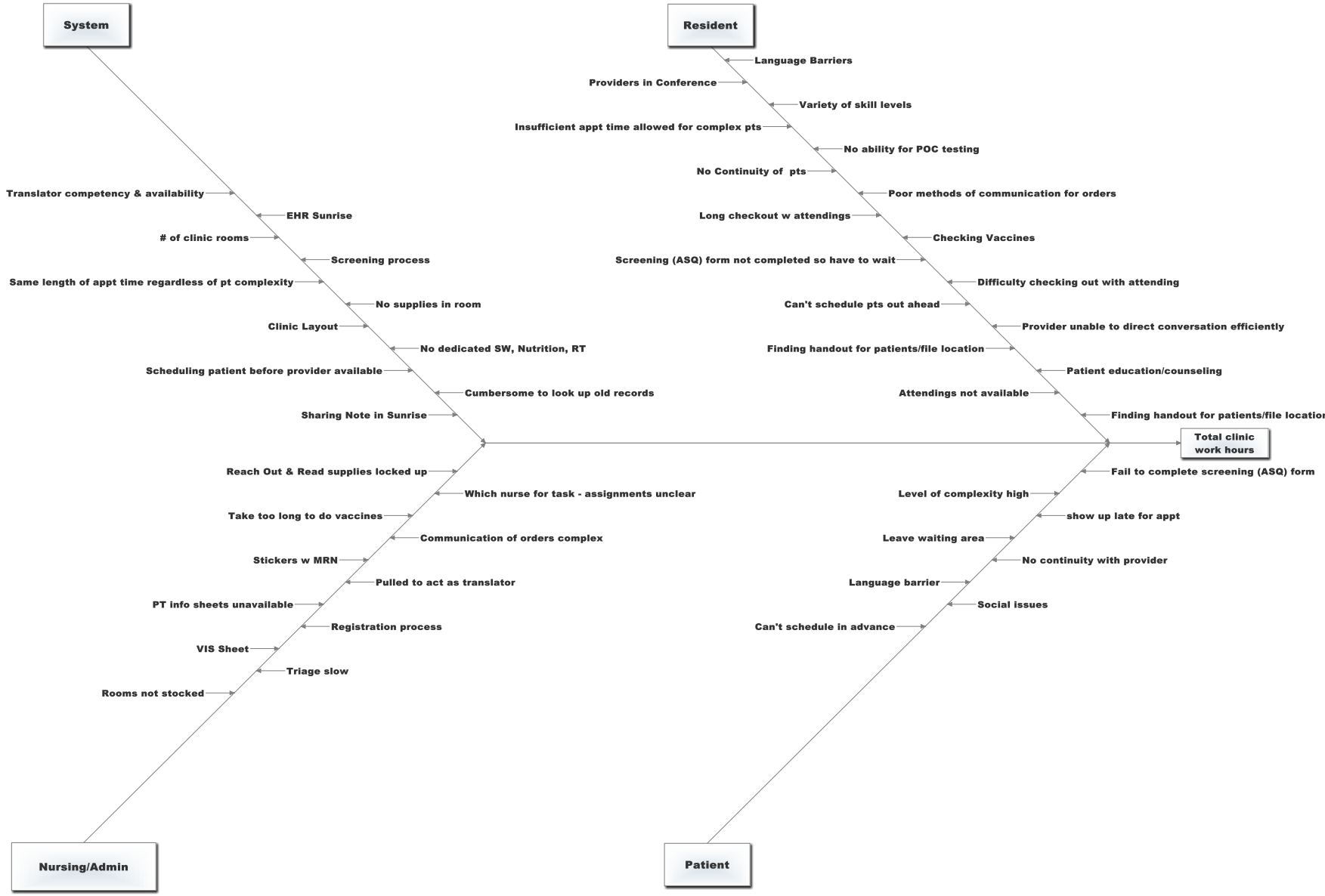
Long CHC patient wait & total patient through-put times:

- Negatively impact patient (& parent) satisfaction, show rate, return rate and left-before-seen rate.
- Increase clinic overhead, nursing staff hours & overtime.
- Decrease house staff training satisfaction, & ability to fulfill CHC & other work duties within work hour limits.
- Decrease total CHC productivity.

Process Analysis Tool: Patient Visit Flow



Process Analysis Tool: Fishbone Diagram



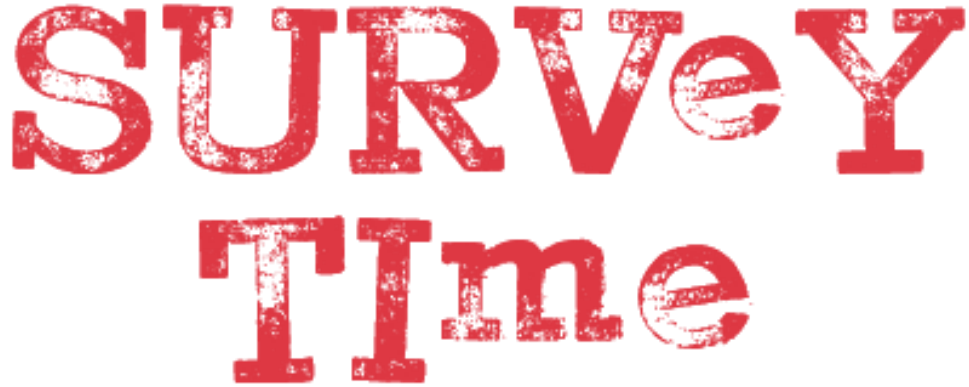
Decision-Making Tools

DISCUSSION across clinic team representation & leadership: registration, nursing staff, faculty and house staff. Review past data collection process & Survey Tool used, interventions and results.

- Renew buy-in & commitment
- Nominal Group Technique: priorities

Pre-Intervention Baseline

GOAL: To identify and target for reduction and elimination, 'waste' in the form of patient wait times, so that CHC clinic patient care efficiency will increase.

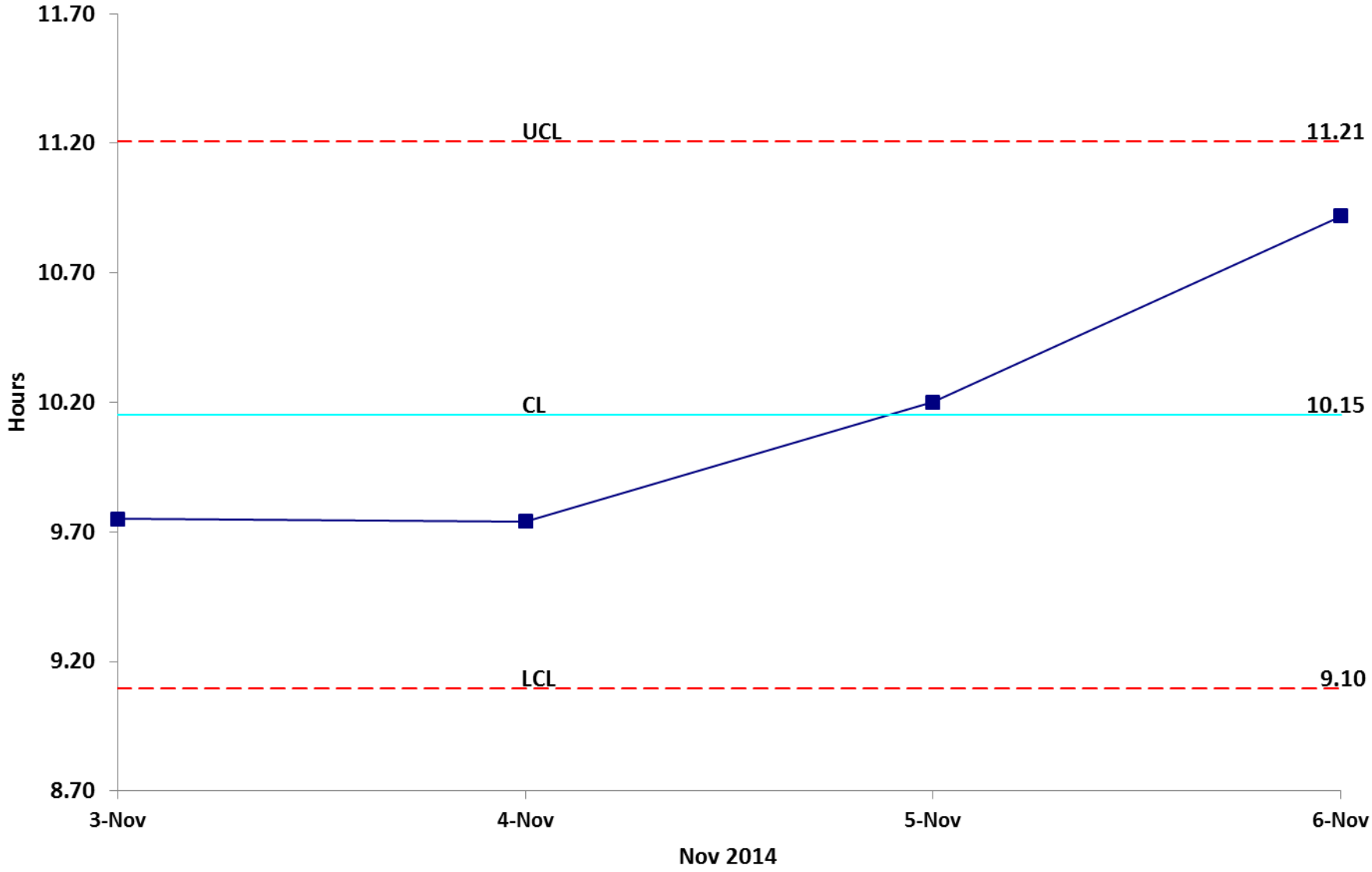


Pre-Intervention Baseline

- Evaluation of Past Survey Tool indicated the need to create a New Survey Tool to measure time spent in each of the three main clinic role SERVICE areas: Registration, Nursing staff, House staff.

- The manually completed surveys separately tracked all registration, nursing staff, & house staff time expenditures during & between times of direct service delivery, i.e. service time vs. wait time.

CHC Total Clinic Time in Hours
Pre Intervention



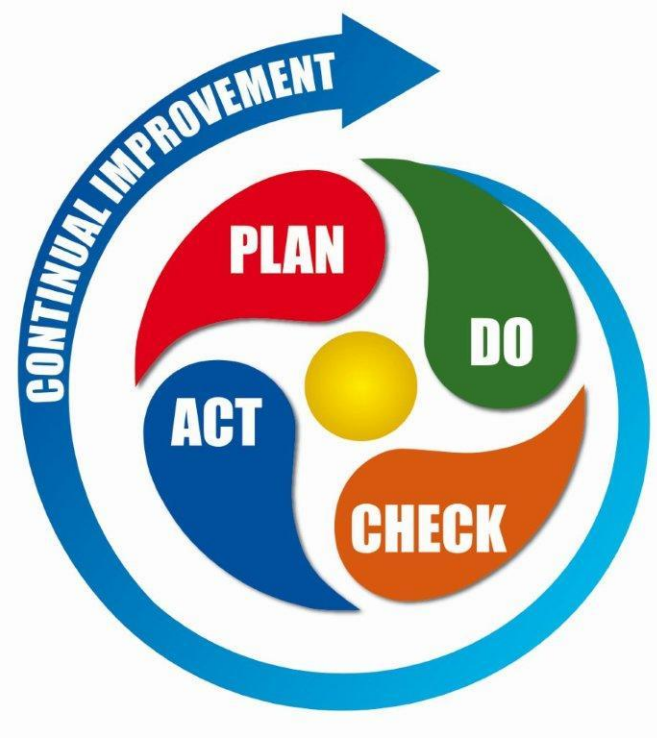
Pre-Intervention Baseline - Patient Flow Average

Wait or Service Time in Minutes

- **5.7 = Wait** for Registration
- 4.7 = Registration
- **16.7 = Wait** for Nursing staff
- 9.3 = Nursing staff: VS, hearing/vision, ROR, forms/ASQ, etc.
- **43.9 = Wait** for House Staff includes wait for room
- 52.1 = House Staff: Min/pt allotted PGY1/2/3 = 45/30/20
- 13.6 = Dismissal: Vaccines, forms, asthma ed., SW, etc.

PLAN & Next PDCA Steps

- DO: Implement the Change
- CHECK: Results/Impact
- ACT: Sustain the Results
- Return on Investment
- Conclusions/Next Steps
  - More PDCA
  - Sustaining Success

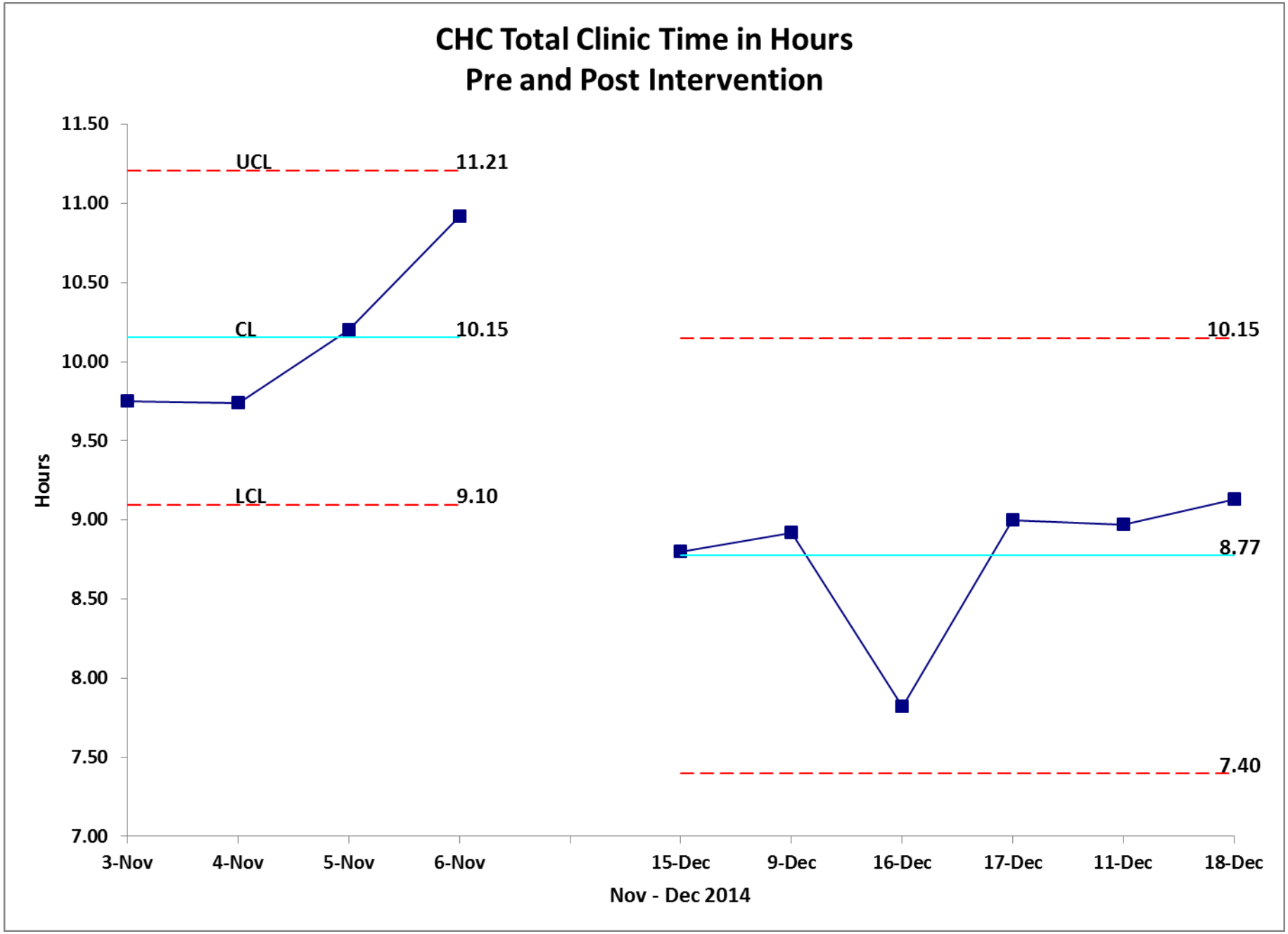


PLAN: Intervention

1. **Nursing Staff availability**
   - Assign each day's 1:1 'team' staffing: One medical assistant (MA) works with one house staff physician.
   - Teamwork orientation – Success as a team!
   - 'Knock and talk' MA action to alert doc to the time

2. **Room availability during CHC session**
   - Ensure 2 assigned rooms per house staff physician

Post-Intervention Measurements


CHC Total Clinic Time in Hours
Pre and Post Intervention
11.50
11.00
10.50
10.00
9.50
9.00
8.50
8.00
7.50
7.00
Hours
UCL
11.21
CL
10.15
LCL
9.10
10.15
8.77
7.40
3-Nov
4-Nov
5-Nov
6-Nov
15-Dec
9-Dec
16-Dec
17-Dec
11-Dec
18-Dec
Nov - Dec 2014

AIM STATEMENT REVISITED

By March 31, 2015, the average total daily Children's Health Center (CHC) clinic time from the first appointment to the last patient dismissal will decrease by 20%.

Intervention results: Average CHC 1.4 hours shorter (14%)

Return on Investment

Indirect ROI – Increased satisfaction

- Registration staff happy to learn they are efficient.
- Nursing staff/admin: Greater satisfaction & confidence.
  - All prefer 1:1 staffing: teamwork, 'predictable' clinic flow
  - But, insecure about interrupting doctor by 'Knock & Talk'
- House staff/faculty prefer 1:1 team; greater satisfaction.
  Efficiency: house staff meet work hour limits; the quicker return to 'rotation' duties (rounds, call, etc.) helps selves/others meet limits.
  Ultimate stake is training program compliance & re-accreditation.
- Expect increase in patient satisfaction from less waiting.

House Staff: Average Time with Patient

Aver. Time with Pt. (Min.)	PGY - 1	PGY - 2	PGY - 3	Overall
Nov. 3 - 6	70.7	43.0	42.5	52.1
Dec. 8 - 11	46.9	48.6	36.9	44.1
Dec. 15 - 18	46.7	38.4	30.8	38.6*
Allotted CHC appt. time	45	30	20	

** 26% decrease from Nov. baseline*

Return on Investment (ROI)

Direct ROI

- Reduced risk of regulatory sanctions for house staff transgressing work hour limits.
- Reduced cost of overhead from longer hours of operation.
- Reduced cost of staff overtime pay
  - Pay = ‘time & ½’ for average of 1.4 hours saved or 83 minutes
- Nursing staff available for redeployment to other clinics.
  - Reduced cost of overhead & staff overtime costs in those clinics.

$ample ROI - Nur$ing $taff Overtime Co$t$ $aved

- **CHC operations:**
  - 49 weeks/year & 4 CHC days/week = 196 CHC/year
  - Staffing: 4 MA and 1 LVN/CHC day
  - CHC overtime (OT) saved = 1.4 hours daily

    - **MA** OT pay range = $17.74 – $26.79/hr X 1.4 hr = $24.84 – $37.50/MA/day
      - Annual OT savings across pay scale = 1 **MA low:** $4,869 to **high:** $7,350
      - **$6,110 = Average OT costs saved/MA/year** (2 - 4 MA = $12,219 - $24,438)
    - **LVN** OT pay range = $20.65 – $40.18/hr X 1.4 hr = $34.77 – $56.25/LVN/day
      - Annual OT savings across pay scale = **1 LVN low:** $6,815 to **high:** $11,025
      - **$8,920 = Average OT costs saved/LVN/year**

- **$21,139 = OT Co$t $aving$/year** (based on 2 MA, 1 LVN, mid-range pay)

Next Steps – More PDSA

- **DO:** Sustain staffing & room availability changes
  - Empower 'Knock & Talk'
  - Enact patient schedule changes
  - Enact QI targeting house staff
    - Well-child EHR guidelines
- **CHECK:** Results/Impact
- **ACT:** Sustain Progress
  - Return on Investment
- **PLAN:** More

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