



Improving Clinic Operations Using Time and Motion Study Methodology

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LAPTN is a Project of L.A. Care Health Plan

Agenda

- Introductions – 5 mins
- Discussion: *Poll Everywhere Questions* – 10 mins
- Introduction to Work Measurement – 15 mins
- Activity – 15 mins
- Case Studies- 15 mins
- Clinic Reflections- *JWCH, Clinic Y* – 5 mins
- Discussion: *Poll Everywhere Question* – 5 mins
- Work Measurement Toolkit -5 mins
- Questions – 15 mins



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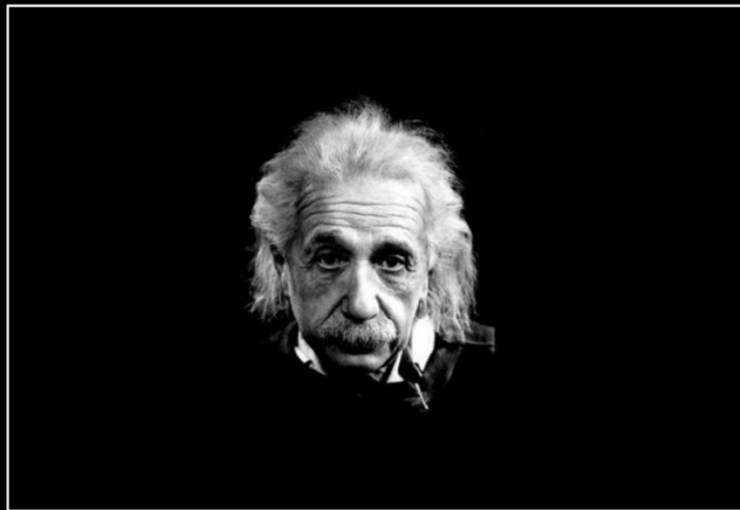
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Poll Everywhere



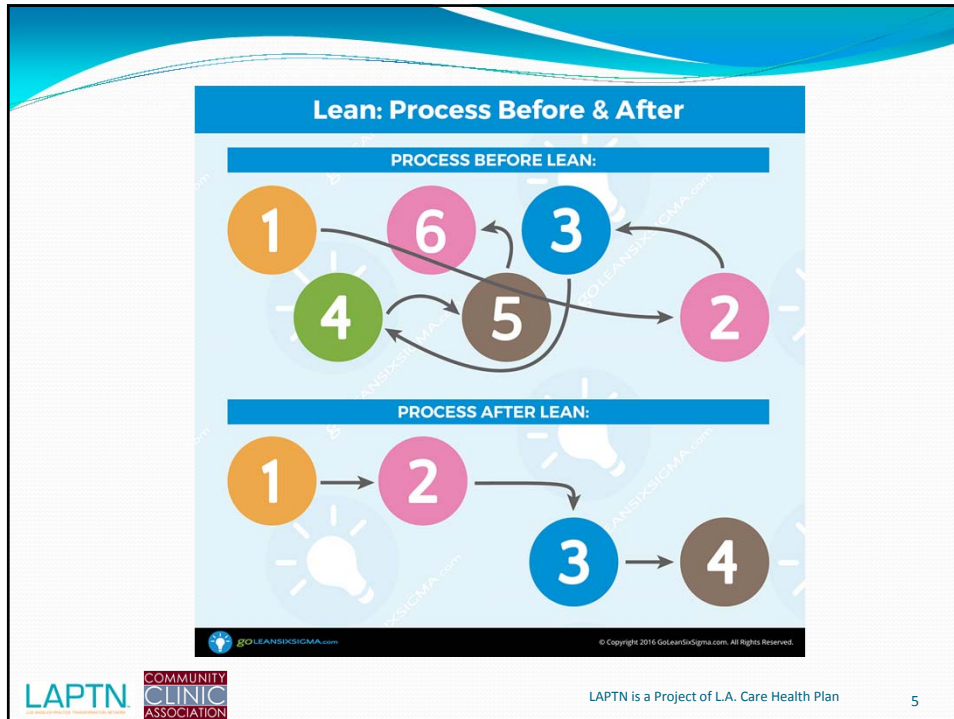
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PROBLEM SOLVING

We can't solve problems by using the same kind of thinking we used when we created them.



Work Measurement

- What is work measurement (W.M.)?
 - An observer follows a subject and continually records the nature and duration of every activity in a data collection tool, produces detailed account of activity is the most precise standard
- What is the goal?
 - Improving productivity and efficiency within a system
 - Establish a baseline to drive improvement efforts, and standardize clinic processes
 - The results of the time study when implemented lead to better resource utilization, higher job satisfaction and overall efficiency
- How is this achieved?
 - Complex tasks broken into small, simple steps
 - Precise time measured for each step within process
 - Movement sequence observed and recorded to detect redundant or wasteful motion

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Why Work Measurement?

- Distinguish what *appears* to be happening from what is *really* happening
- Establish a baseline (measure before improvements are made)
- Make decisions based on solid evidence
- Demonstrate that changes lead to improvements
- Allow performance comparisons across sites
- Monitor process changes to ensure improvements are sustained over time
- Recognize improved performance

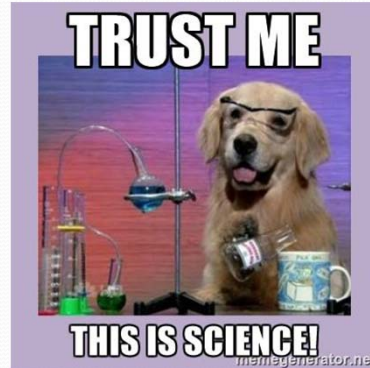
How Has Work Measurement Been Used in Outpatient Healthcare?

- Proportion of physician time spent face-to-face with patients and proportion completing care coordination and proportion completing paperwork (Sinsky et al., 2016; Farber, Siu, & Bloom, 2007; Gottschalk, 2005; Chen et al., 2010; Baron, 2010)
- Nurse time (Burke et al., 2000)
- Dollars lost in patient care costs (Gottschalk, 2005)

Why Adopt this Approach?

We follow an evidence-based model, that's why.

- SEIPS Model
 - Systems Engineering Initiative for Patient Safety
 - Development funded by AHRQ in 2006



Waste Analysis

An analysis that is used to understand which activities either add value or waste.

- **Defects:** Mistakes or errors that result in rework
- **Overproduction:** Producing too much too soon or setup
- **Waiting:** Wasted time waiting for the next step in the process
- **Non-utilized or underutilized talent:** Underutilizing someone's talents, skills and knowledge
- **Transportation:** Moving things around
- **Inventory:** Too much inventory, or too little
- **Motion:** Unnecessary movements by people (walking, searching)
- **Excess Processing:** Duplication, unnecessary changes, approval

Waste Analysis: Examples

Type of Waste	Examples
Defects	Incorrect entry of ICD/CPT code, incorrect EMR mapping with external software, computers freezing, mediation of interpersonal issues
Overproduction	Send info automatically when not required, printing and filing unnecessary documents, long set-up times
Waiting	Patient waiting to be seen by provider, patient waiting to get vitals complete
Non-utilized or underutilized talent	Having Care Managers work the front desk
Transportation	Moving files from one location to another, scanning documents
Inventory	Running out of flu vaccines, unused or rarely used equipment
Motion	People searching for materials, tools or equipment, looking for support staff, too many clicks in the EMR to complete a task
Excess Processing	Too many approvals to get a task completed, double documenting

Time Observation Sheet

TIME OBSERVATION SHEET*													
Patient #				Observer:		Date:		Page:					
Process:				Value	Waste Analysis (DOWNTIME)								
Step#	Time	Observation Documentation		Person responsible	Value	Defect	prod	Wait	intra	Trans	Inventory	Motion	Process
Start	End	Work Element	Remarks	Value	Value	s	actn	ng	ng	port	ary	on	step
Summarize Units (Mins/Secs)													

*Form modified for use from the fabrication TOS for highly-variable process observations. Used with permission from UCLA Health.

Waste Analysis: Example

Step	Value	Defects	Overproduction	Waiting	Not utilizing talent	Transportation	Inventories excess	Motion waste	Excess processing
1. Patient waits for the provider in the exam room				12 min.					
2. Provider walks in and performs a physical exam	15 min.								
3. Provider documents in the EHR, but can't find the right CPT code for a physical		4 min.							
4. Provider walks out of the room to ask the nurse for help								3 min.	
5. Nurse walks in and documents the right CPT code	1 min.								
TOTAL	16	4		12				3	

Institutional Review Board

- Federal regulations require that research projects involving human subjects be reviewed by an Institutional Review Board (IRB)
- What is a research project?
 - **A systematic investigation**, including research development, testing, and evaluation, designed to develop or contribute to **generalizable knowledge**. Examples:
 - Collection of quantitative or qualitative data
 - Collection of data using surveys, testing or evaluation procedures, interviews, or focus groups
 - Collection of data using experimental designs such as clinical trials
 - Observation of individual or group behavior
 - If your project does not meet the definition of a research project then an IRB application is not needed

Tips for Success

- Empower your staff
- Better to implement an imperfect change than no change at all, you will learn valuable lessons either way
- Pilot newest changes on smallest scale to not waste too many resources early on
- Measure your metrics continuously as you implement and always establish a baseline
- Have complete buy-in from everyone involved in the process: executives, providers, nurses, MAs, patients, etc.
- Be open-minded: someone who disagrees with you may have insights that will change your thinking
- Make changes as painless as possible: make it easy to do the right thing
- Just do it!

IF YOU DO
WHAT YOU'VE
ALWAYS DONE
YOU'LL GET
WHAT YOU'VE
ALWAYS GOTTEN

ANTHONY ROBBINS



Activity: Applying Work Measurement Concepts



Clinic Case Studies: *John Wesley Community Health (JWCH) Clinic Y Community Healthcare*

Protocol- Clinic Y and JWCH

- Two observers followed individual patients from check-in to discharge
- Documented: Task and time it took to complete the task
 - *Note: Patient health information was not documented*
- Verbal consent was obtained from the patients on the day of the study
 - If a patient declined, the observer did not follow the patient
 - *No patients declined to participate in the study*
- Observer did not go into the room with the patient
- Observer did not intervene or interrupt current workflow
- Protocol was reviewed and approved by the Los Angeles County Department of Public Health's Institutional Review Board
- Sample size: 5 per clinic (Niebel, 1992)

Data Collected: Clinic Y and JWCH

- Patient wait time (Intake, after intake, post-visit with provider)
- Cycle time
- Time it took for patient to check-in*
- Time it takes for MA to collect vitals (BMI, BP, PHQ)
- Total time the patient is in the room with the provider
- PHQ-9 conducted (verify if a follow-up plan was initiated if PHQ-9 score was above 10)*
- BMI assessed (verify if follow-up plan was initiated if patient was out of range)*
- Clinical guidelines checked*
- Visit type: Primary Care or Narcotic Treatment Program†
- Labs collected†
- Other activities performed by Medical Assistant†
- Follow-up appointments made after discharge
- Customer satisfaction*

* Data collected only at JWCH
† Data collected only at Clinic Y

JWCH: Objective of Study

1. Observing one clinic site, develop best practice workflow for depression screening and follow-up and BMI screening and follow-up
2. Disseminate best practice protocols to the other 22 health centers enrolled in Los Angeles Practice Transformation Network (LAPTN)
3. Document cycle time and address operational concerns

JWCH: Study Summary

- 2 observers participated in the study
- On-site observations conducted on: 5/18, 5/25
- A total of 10 patients were tracked from check-in to discharge across two days
- Visit Types: (8) primary care, (1) peds, (1) behavioral health
- Locum providers were observed

JWCH: Results - Cycle Time

- **Primary Care** (7 observations)
 - Average cycle time: **2 hr 10 mins**
 - Day one 5/18: **2 hr 4 mins** (1 provider call in sick)
 - Day two 5/25: **1 hr 43 mins** (normal clinic flow)
- **Behavioral Health** (1 observation):
 - Cycle time (5/18): **1 hr 10 mins**
- **Pediatric Care** (1 observation)
 - Cycle time: **39 mins**
- **Reschedule Appointment** (1 observation)
 - Pt. arrived late and Pt. was informed to reschedule appt.
 - Total time to reschedule appt. 20 mins

JWCH: Results - Value Vs. Waste

- 1. Examples of waste "Average Primary Care" cycle:**
 - Total waste: 58%
 - Patient waiting to get vitals checked: $(9 \text{ mins}/130 \text{ mins} * 100) = 7\%$
 - Patient waiting to see PCP: $(57 \text{ mins}/130 \text{ mins}) = 44\%$
 - Patient waiting to be seen by discharge MA: $(9 \text{ mins}/130 \text{ mins} * 100) = 7\%$
- 2. Examples of waste "Behavioral Health" cycle:**
 - Total waste: 66%
 - Patient waiting to get vitals checked: $(13 \text{ mins}/70 \text{ mins} * 100) = 19\%$
 - Patient waiting to see Behavioral health Specialist $(33 \text{ mins}/70 \text{ mins} * 100) = 47\%$
- 3. Examples of waste "Pediatrics" cycle:**
 - Total waste: 0%
 - No patient wait time

Primary Care Workflow: Avg. Cycle Time (7 obs.) 2hr 10 min

Step	Task	Average Step Time (mins)	Observation Range
1	Pt. checks in	1	0-6
2	MA checks eligibility	5	0-9
3	Pt. completes PW (not all patients complete this step)	7	0-16
4	Pt. waits to get vitals checked	9	0-22
5	Pt. gets vitals checked (height, weight, care guideline, visit reason)	16	9-26
6	Pt. goes back to lobby and waits to be seen by PCP	57	0-101
7	Pt. sees provider	18	5-32
8	Pt. waits to be seen by discharge MA	9	2-17
9	Pt. checks out with discharge MA	4	2-6
10	Pt. completed labs	4	0-18
11	Pt. leaves	-	

JWCH: Results- Protocols

- **Quality Measures:**
 - 100% (5/5) patients had BMI screening, 0% (0/5) patients received follow-up
 - 100% (5/5) patients had depression screening, no patents needed follow-up
- **Care Guidelines:**
 - 100% (8/8) patients had care guidelines checked at intake
- **No Show Rates:**
 - Definition: Total no show/total scheduled visits for the day
 - Primary Care: 35% (25/72) on 5/18
 - Primary Care: 35% (32/92) on 5/25

JWCH: General Observations

1. Scheduling impacts cycle time!
 - Double booked appts. (ER f/u and new patient)
 - Providers that did not have double booked appts. had lower cycle times
 - Patients incorrectly scheduled for a follow-up visit but visit was more complicated
2. Protocols:
 - Providers call in sick, but no coverage for that provider
3. Customer Service:
 - Staff did an excellent job deescalating patients who were upset
 - Some patients rescheduling appts. because wait was too long
4. Health Promotion:
 - Lack of hand sanitizers available and promotion of handwashing
 - Family Feud, soap operas playing on the television in waiting room
 - Behavioral health appointment reminder flyer not known by staff
5. Resource Availability:
 - MA's pulled in several directions

JWCH: Actions

1. Quality Measures:
 - Retrained providers on correct documentation/workflows for BMI and depression screening follow-up
2. Scheduling Policy:
 - Implemented new scheduling policy
 - Reviewing process to address broken appointments
 - Retrain call center on scheduling policy
3. Standardize protocol for reminding patients of appts. to decrease no show rate
 - Call patients day before appt. r/s confirmed double book appts.
 - Automate appt. reminders (i.e. Care Message)
 - Possible PDSA "Robust calling"

JWCH: Actions

4. Waiting room:
 - Considering implementing waiting room concierge
 - Implement health education videos in waiting room
5. Revised Diabetes Care Coordinators job description
 - See patients while waiting for provider
6. Retrain staff on how to correctly start & stop cycle time
7. Standardized hand sanitizer protocol
8. Facilitate Non-Violent Crisis Intervention training for staff
9. Time Study Workgroup
10. Shared data transparently (ops, providers, staff)

Clinic Y: Objective of Study

1. Identify and reduce waste in medical assistant workflows
2. Streamline medical assistant work across clinics

Clinic Y: Business Case

1. Increase reach to managed care membership
2. Improve performance on incentive programs

Clinic Y: Study Summary

- 1 observer participated in the study
- On-site observations conducted on: 12/5/2017, 11/29/2017, 11/30/2017, 11/15/2017, 2/2/2018
- A total of 13 patients were tracked from intake into the back office across 5 locations
- Visit Types: (9) primary care, (4) narcotic treatment program

Clinic Y: Results - Value Vs. Waste

1. Value-added time:

- Range: 4%-46%
 - Patient getting vitals checked: 20% of total time
 - Lab collection: 5% of total time

2. Non-value added time:

- Range: 54%-96%
 - Scanning-related time: 23% of total time
 - Total defects: 20% of total time

Clinic Y: General Observations

1. Not taking full advantage of technology
 - One location still documenting on paper charts
 - Working bidirectional interface not being utilized
 - Printing and hand-filling documents unnecessarily
2. Inequitable division of resources
 - Staffing not reflective of productivity or needs
 - Staff bringing in personal technology
3. No proactive outreach to members observed
 - Some management not fluent with managed care expectations
 - Population health is not a priority

Clinic Y: Actions

1. Reduce waste:
 - Reduce papers that “require” scanning through use of Save to PDF, and existing electronic templates
 - Train staff on use of lab interface
2. Increase Population Health:
 - Approve “Gaps in Care” policy
 - Develop and train on training plan
 - Set standard for population health work
 - Assess rates of population health activities through another round of time and motion

Conclusions

- Time Study methodology is an important tool to address day to day clinic operations. This work supports:
 - Improving quality and Pay for Performance measures
 - Increasing clinic revenue
 - Management of resources
 - Staff satisfaction and joy in work
 - Patient satisfaction

Limitations- Clinic Y and JWCH

- At JWCH, for all observation days; followed staff on the same day of the week and during similar times
- Multiple observers
- Staff performing better than “normal” due to observers being onsite
- Not one and done, time and motion observation is a snapshot in time

Acknowledgements

- We would like to thank representatives from Clinic Y Treatment Centers and John Wesley Community Health for allowing the observers to come onsite and share relevant findings with outside stakeholders

Clinic Reflections

Testimony from Clinic Y

- This time and motion study has been exceedingly helpful in identifying inefficient workflows with our clinics. As a result, we have a comprehensive list of changes that we can implement to improve efficient, high value work at our clinics. Our hope is this will make patients more satisfied and thus more compliant with clinical goals and staff happier with their employment experience. Once center director told me this study was “ the most important information he’s ever gotten in running this clinic.”

Discussion: *Poll Everywhere*

Work Measurement: Toolkit

- Protocol, *A Guide to Work Measurement in Outpatient Safety Net Clinics*
- IRB application materials from the Los Angeles County Department of Public Health
- Deliverables from clinic case studies
- Time observation sheet

Don't ever be too busy to improve!

