



How to Meet Pediatric Well-Visit Requirements using Lean QI Methods

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Presenter Disclosure

The following individuals have responded that they have nothing to disclose:

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What is Lean ?

Quality improvement tools and concepts

- Reducing waste
- Increasing efficiencies
- While focusing on customer value

Where did Lean come from?

After World War II, Japan:

- Lacked Money...
- Lacked Resources...
- Lacked People...
- Needed to fix the problem fast...

Why do we use Lean?

- **For the same reasons as Japan**
- To keep up with Health Care Transformation
 - Payment Reform
 - Implementation of Quality Measures
 - Meeting Patient Satisfaction Expectations
- Health Care Sustainability

Who did we use Lean with?

Rochester Pediatric Associates



Frisbie Memorial Hospital

THANK YOU



How did we start using Lean?

Strategic
Objectives

- By reviewing strategic objectives

Watching

- By watching

Listening

- By listening

Identifying

- By identifying

Prioritizing

- By prioritizing

Plan, Do,
Study, Act

- By planning, doing, studying and acting

Examples of strategic objectives

Strategic Objectives

Watching

- Increase productivity

Listening

- Improve patient satisfaction

Identifying

- Improve best practice protocols

Prioritizing

- Improve staff and provider satisfaction

Plan, Do,
Study, Act

Examples of what we looked for

Strategic Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do, Study, Act

- Staff, Provider and Patient movement throughout the area
- Delays in the process
- Location of supplies and equipment
- Length of time for the visit
- Number of patients scheduled vs seen
- Right person doing the right job at the right time
- Everyone has a clear understanding of their role and responsibility

Observation details

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

- Observation timeframe 8:00am-11:45am
- One provider (MD) and one clinical support (RN)
- 8 patients
 - 4 well patients seen
 - 2 cancellations
 - 1 no-show
 - 1 acute appointment added
- 3 well child visits, 1 follow up visit, 1 acute visit
- Additional staff include PSRs and a Triage Nurse
- Practice uses the Bright Futures recommendations for pediatric healthcare schedule

Bright Futures Schedule

American Academy of Pediatrics Recommendations

AGE ¹	INFANCY								EARLY CHILDHOOD						MIDDLE CHILDHOOD						ADOLESCENCE												
	Prenatal ²	Newborn ³	3-5 d ⁴	By 1 mo	2 mo	4 mo	6 mo	9 mo	12 mo	15 mo	18 mo	24 mo	30 mo	3y	4y	5y	6y	7y	8y	9y	10y	11y	12y	13y	14y	15y	16y	17y	18y	19y	20y	21y	
HISTORY	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MEASUREMENTS																																	
Length/Height and Weight		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Head Circumference		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Weight for Length		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Body Mass Index ⁵												●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Blood Pressure ⁶		★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★		
SENSORY SCREENING																																	
Vision ⁷		★	★	★	★	★	★	★	★	★	★	★	★	●	●	●	●	★	●	★	●	★	●	★	★	●	★	★	★	★	★		
Hearing ⁸		● ⁹	● ¹⁰	→	★	★	★	★	★	★	★	★	★	★	●	●	★	●	★	●	●	←	● ¹¹	→	←	●	→	←	→	←	→		
DEVELOPMENTAL/BEHAVIORAL HEALTH																																	
Developmental Screening ¹²								●			●	●																					
Autism Spectrum Disorder Screening ¹³										●	●																						
Developmental Surveillance		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Psychosocial/Behavioral Assessment ¹⁴		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Tobacco, Alcohol, or Drug Use Assessment ¹⁵																						★	★	★	★	★	★	★	★	★	★		
Depression Screening ¹⁶																							●	●	●	●	●	●	●	●	●		
Maternal Depression Screening ¹⁶				●	●	●	●																										
PHYSICAL EXAMINATION¹⁷		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
PROCEDURES¹⁸																																	
Newborn Blood		● ¹⁹	● ²⁰	→																													
Newborn Bilirubin ²¹		●																															
Critical Congenital Heart Defect ²²		●																															
Immunization ²³		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Anemia ²⁴					★				●	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★		
Lead ²⁵						★	★	● or ★ ²⁶		★	● or ★ ²⁶		★	★	★	★																	
Tuberculosis ²⁷				★		★		★		★		★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★		
Dyslipidemia ²⁸										★			★			★		★	←	●	→	★	★	★	★	★	★	★	★	★			
Sexually Transmitted Infections ²⁹																						★	★	★	★	★	★	★	★	★	★		
HPV ³⁰																						★	★	★	★	★	★	★	★	★	★		
Cervical Dysplasia ³¹																															●		
ORAL HEALTH³²							● ³³	● ³³	★		★	★	★	★	★	★	★																
Fluoride Varnish ³⁴							←	→	●	→	→	→	→	→	→	→																	
Fluoride Supplementation ³⁵							★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★		
ANTICIPATORY GUIDANCE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		

Floor Plan

Strategic Objectives

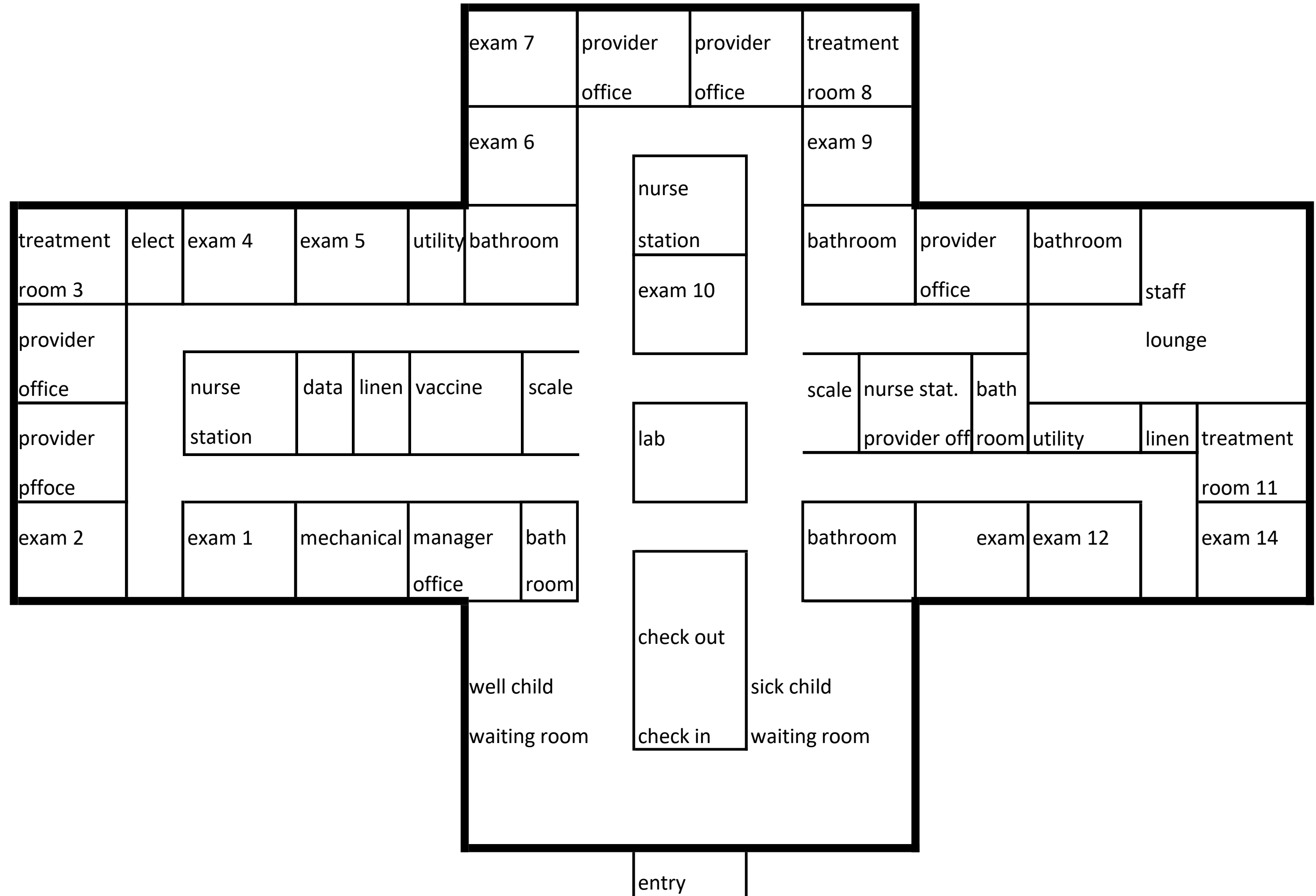
Watching

Listening

Identifying

Prioritizing

Plan, Do, Study, Act



Spaghetti Diagram

Strategic Objectives

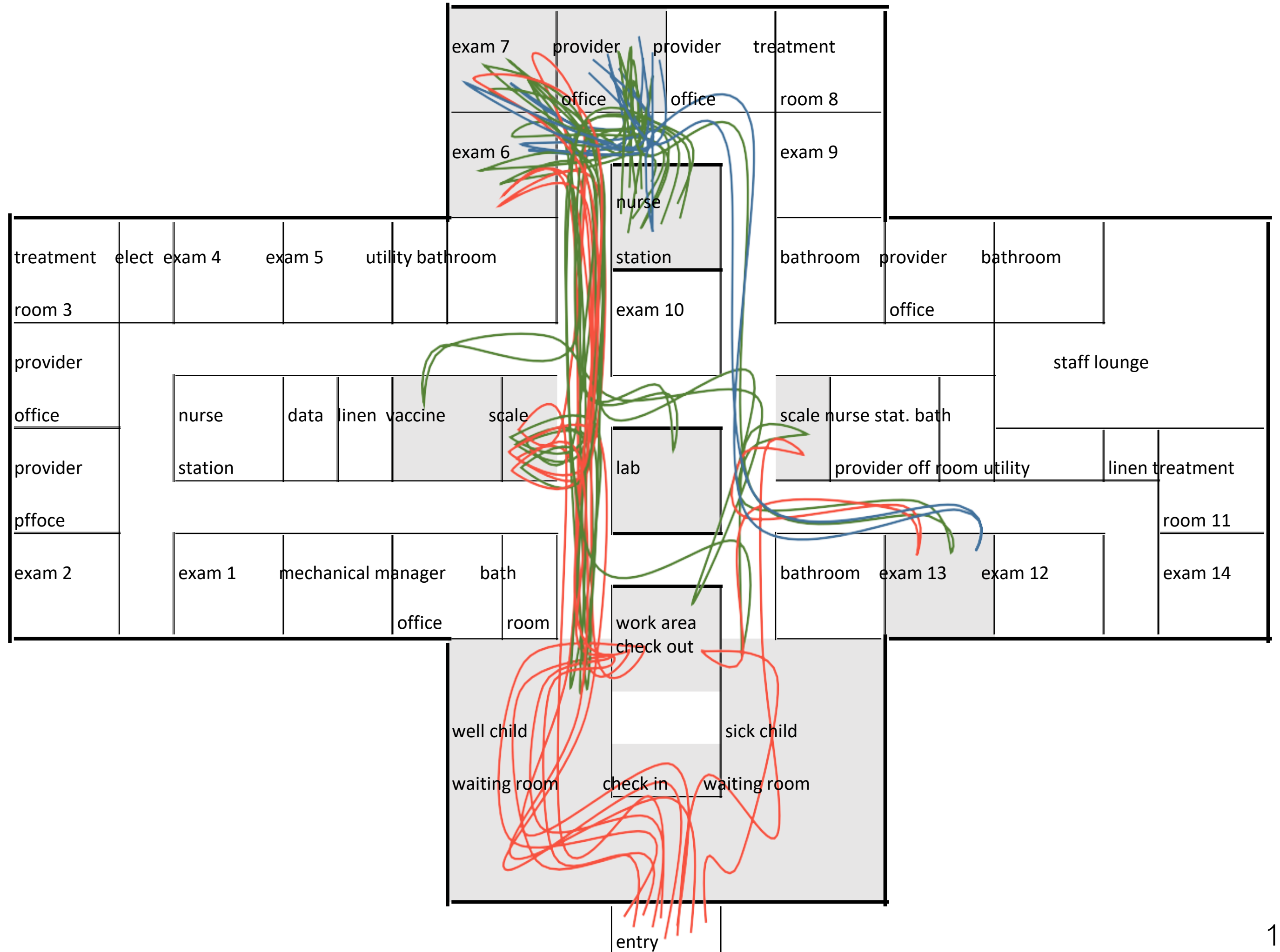
Watching

Listening

Identifying

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Patient 1 (6 year old female)

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

Appointment - 8:00-8:30am Follow-Up Visit

Reason - ADHD follow up post Neurologist visit

8:06-8:11 – Patient arrived, checked in and seated

8:11-8:13 – Nurse collected weight and height

8:13-8:16 – Nurse collected additional intake and history

8:16-8:18 – Nurse updated provider patient set to be seen

8:18-8:21 – Patient waiting in exam room for provider

8:21-8:43 – Provider in exam room with patient

8:43-8:47 – Patient discharged

41 minutes total clinic time for patient

15 minutes additional Provider time after visit

Patient 2 (No Show)

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

Appointment – 8:30-9:00am

Office policy states that patient is not a no show until at least one half of the visit is over.



Patient 3 (11 year old female)

Appointment - 9:00-9:30am Well Child Visit

Reason – Well child visit, one year behind in vaccines

Strategic Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do, Study, Act

8:28-8:45 – Patient arrived, checked in and seated

8:48-8:50 – Nurse collected weight and height

8:50-8:54 – Nurse collected BP, BMI and history

8:54-8:55 – Nurse updated provider child

8:55-9:24 – Provider in exam room with patient

9:24-9:46 – Patient waiting for vaccines

9:42-9:45 – Nurse drawing and administering vaccines

9:45-9:47 – Patient discharged

1 hour, 19 minutes total clinic time for patient

4 minutes additional nurse time entering orders and charges for vaccines

15 minutes additional Provider time after visit

Patient 4 (6 year old male)

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

Appointment - 9:30-10:15am Well Child Visit & Follow Up

Reason – Well child visit, med check for ADHD, sleeping disorder and anxiety

9:21-9:25 – Patient arrived, checked in and seated

9:26-9:28 – Nurse cleaned room and set up screening

9:29-9:31 – Nurse collected weight and height information

9:31-9:40 – Nurse collected BP, BMI, history, vision and hearing

9:40-9:42 – Nurse updated provider mom has concerns

9:45-10:25 – Provider in exam room with patient

10:25-10:27 – Patient discharged

1 hour, 6 minutes total clinic time for patient

30 minutes additional Provider time after visit

Patient 5 (2 year old female)

Strategic Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do, Study, Act

Appointment – 10:30-11:00 Well Child Visit

Reason – Well child visit

10:18-10:30 – Patient arrived, checked in and seated
 10:28-10:30 – Nurse cleaned room and prepped room
 10:30-10:32 – Nurse collected weight and height
 10:32-10:36 – Nurse collected lead screening, BMI, and MCHAT
 10:36-10:38 – Nurse updated provider with normal lead
 10:32-10:42 – Patient waited in room for provider
 10:42-11:03 – Provider in exam room with patient
 11:03-11:09 – Patient discharged

51 minutes total clinical time for patient

5 minutes additional nurse time entering orders, running test and entering charges for lead screening

15 minutes additional provider time after visit

Patient 6 & 7 (Cancellations)

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

Appointments – 11:00-11:30 & 11:30-12:00

Cancellations left on the overnight voicemail and retrieved first thing in the morning

One opening was rebooked with another patient

Patient 8 (7 year old female)

Strategic Objectives

Appointment – 11:00-11:30 Acute Visit

Watching

Reason – Rash

Listening

Identifying

10:50-11:01 – Patient arrived, check in and seated

11:01-11:02 – Nurse collected weight and height

11:02-11:05 – Nurse collected additional intake and history

Prioritizing

11:05-11:06 – Nurse updated provider with history and reason

11:06-11:25 – Provider in exam room with patient

Plan, Do, Study, Act

11:25-11:29 – Patient discharged

39 minutes total clinic time for patient

10 minutes additional provider time after visit

Examples of what we heard

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

- Electronic Health Record isn't always user friendly or customizable
- Providers aren't always comfortable with "select all" options
- Hard stops in the registration process create problems when the patient doesn't have the information
- Patients are encouraged to come 15 minutes early but most are not put in early
- Previous medical records are often hard to obtain or decipher
- In order to meet time requirements some patients have to be seen without records
- Not sure which services need charges

Examples of what we heard

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

- Entering orders can be repetitive and it takes a lot of time
- Vaccine administration always requires 2 clinical staff
- Staff can be left on hold for extended periods of time or they play a lot of telephone tag
- No shows and late cancelations are a problem for everyone
- Information collected during intake depends on how much time the nurse has available to spend with the patient
- Information prepped for next days patients depends on how much time the nurse has that day
- Clinical supplies are inventoried and re-ordered weekly

Examples of strategic objectives

Strategic Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

- Increase productivity
- Increase patient satisfaction
- Improve best practice protocols
- Improve staff and provider satisfaction

Examples of what we can identify

DOWNTIME

Strategic Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do, Study, Act



DEFECTS



OVER-
PRODUCTION



WAITING



NON-UTILISED
TALENT



TRANSPORT



INVENTORY



MOTION



EXTRA
PROCESSING

The 8 Wastes

Defects

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

- Registration or scheduling errors
- Missing charges or incorre
- Misdiagnosis or missed ser



Overproduction

Strategic Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do, Study, Act

- Preparing tests or vaccines before the patient gives consent
- Printing more medical records than necessary
- Not staffing to volumes



Waiting

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

- Time spent in waiting room by patient
- Uneven workloads
- Time spent on hold



Non-Utilized Talent

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

- Staff not working at the top of their license
- Roles and duties so restricted that staff can't help each other
- Not listening to employees



Transportation

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

- Moving patients back and forth between locations
- Moving supplies back and forth between locations



Inventory

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

- Excessive supplies taking up space
- Needing to discard expired supplies
- Running out of supplies



Motion

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

- Printers and fax machines not close at hand
- Paper supplies and forms not easy to reach
- Exam rooms not laid out efficiently



Extra Processing

Strategic
Objectives

Watching

Listening

Identifying

Prioritizing

Plan, Do,
Study, Act

- Information printed or collected and not used
- Unnecessary referrals
- Unnecessary testing



Example of how we can prioritize

Strategic Objectives

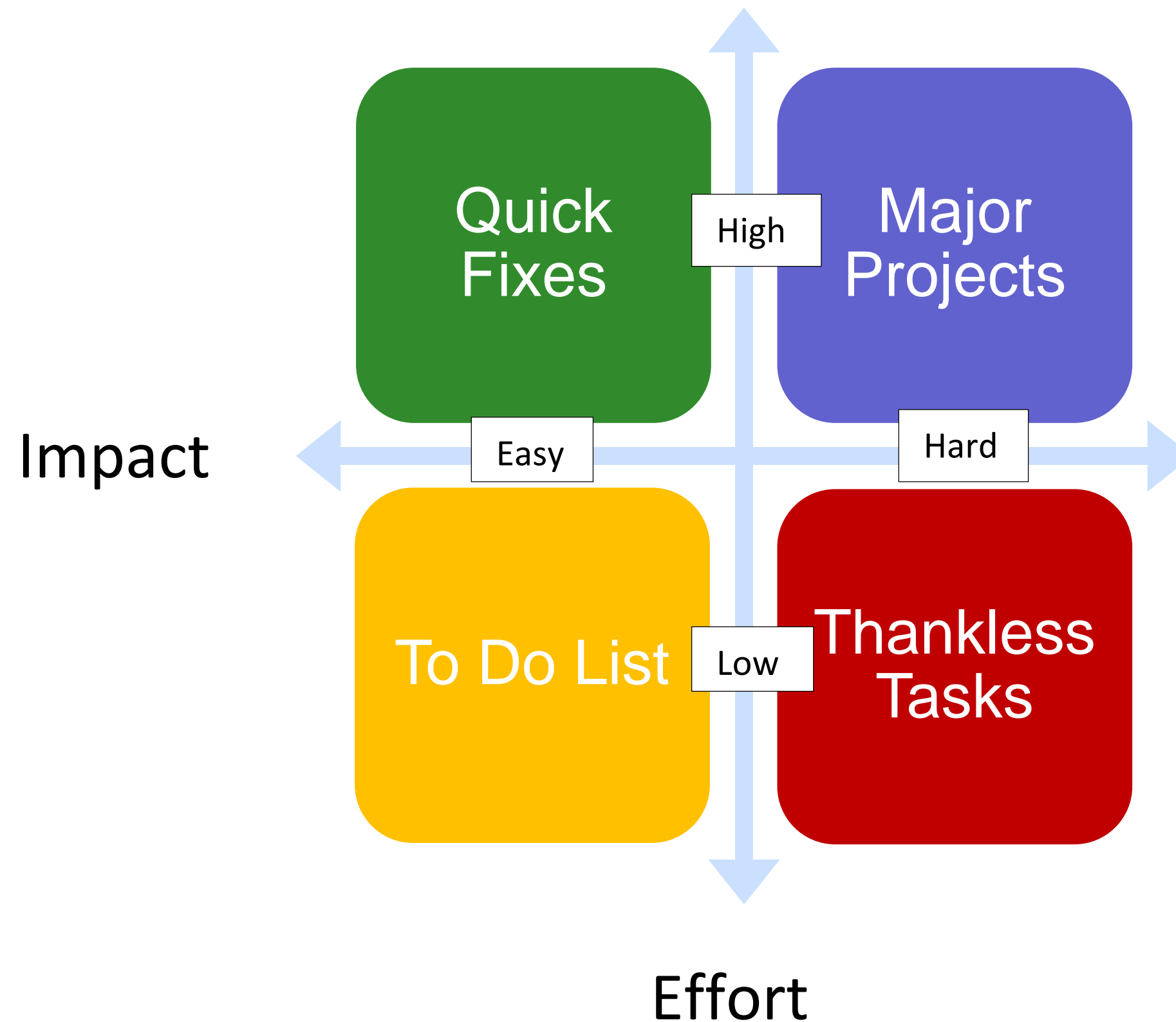
Watching

Listening

Identifying

Prioritizing

Plan, Do, Study, Act



Examples of PDSA cycles

Strategic Objectives
Watching
Listening
Identifying
Prioritizing
Plan, Do, Study, Act

