
Studying Patient Flow for Future Office Redesign in a Federally Qualified Health Center

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Patient Safety Fellowship



The Team



The Team

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- Carlow University, Master of Nursing and Leadership

- Lauren Kester

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- Neha Singla

- University of Pittsburgh, Master in Health Administration

FQHC Regulations and Operations

- Open 32 hours/week
- Recommends staffing for 4,200-6,000 visits/year
- Follows *medical home* model for continuity of care
- Provides in-home care
- Serves the homeless
- 25% increase in new patients this year

Business Case

- One in nine Pennsylvanians is uninsured
 - ❑ Job-based coverage is declining
 - ❑ 65% are from working families
 - ❑ 81% are between ages 19 and 54
 - ❑ 19% are under 19 years old
 - ❑ Uninsured seek less preventive and acute care
 - ❑ Hospital emergency departments are clogged, experiencing increased uncompensated care burden
 - ❑ Economic downturn is likely to raise the number of uninsured

Source: The Hospital & Health System Association of Pennsylvania (2009, Feb)

<http://www.haponline.org/resourcecenter/factsheets/>

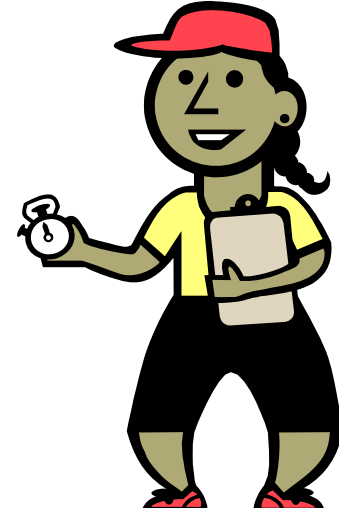
Proposed Goals

- Reduce *waste* time
- Increase time spent with patients
- Long term goal
 - Increase value-added time from average of 55% to 100%
 - Increase patient capacity

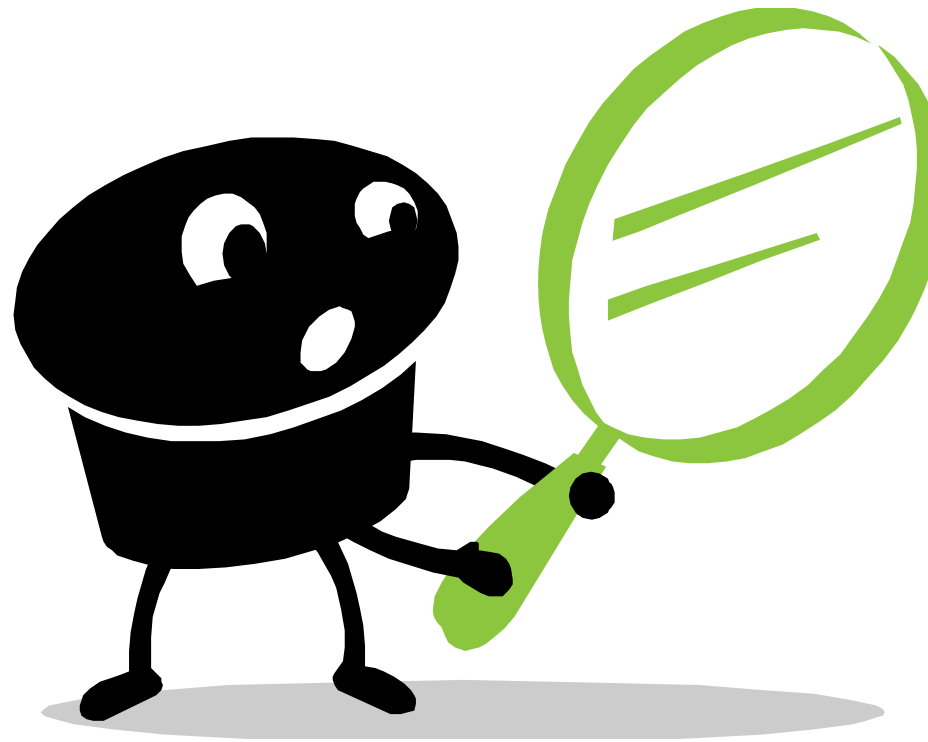


Observation Process

- Group members visited facilities and followed patients from check-in to check-out
- **Measurement:** Time spent at each step during the patient's visit
- **Metric:** Value-stream mapping
- **Research:** Patient-flow models



Current Condition

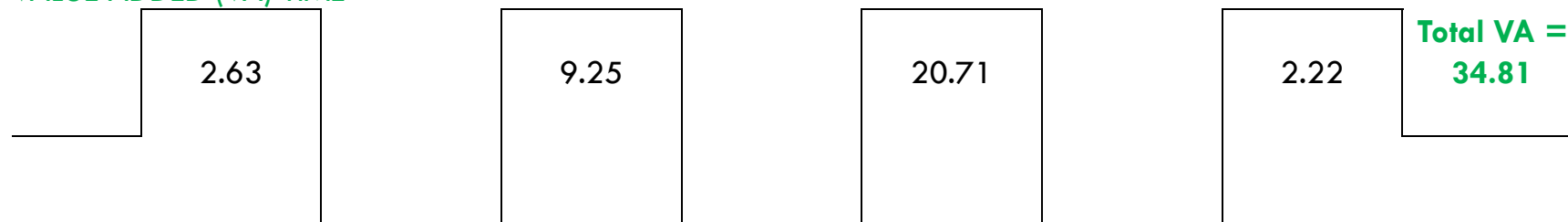


DATA COLLECTION

Site #1, Office Visit

Patient #	Registration (min.)	Post-registration wait/Waiting Area (min.)	Time with RN/MA in exam room (min.)	Post-rooming wait for physician (min.)	Interaction with MD in exam room (min.)	Time in exam room after MD leaves (min.)	Check out time (min.)	Total time (min.)
1	2	12	8	4	34	0	3	63
2	2	10	13	9	0	0	0	34
3	4	3	8	4	11	0	2.75	32.75
4	2	24	11	14	21	9	3	84
5	3	20	7	5	16	0	2	53
6	4	42	6	2	29	0	2	85
7	2	5	10	9	17	7	3	53
8	2	26.17	11	18	17	0	2	76.17
Ave	2.63	17.77	9.25	8.13	20.71	2.29	2.22	62.99

VALUE ADDED (VA) TIME



NON-VALUE ADDED (NVA) TIME

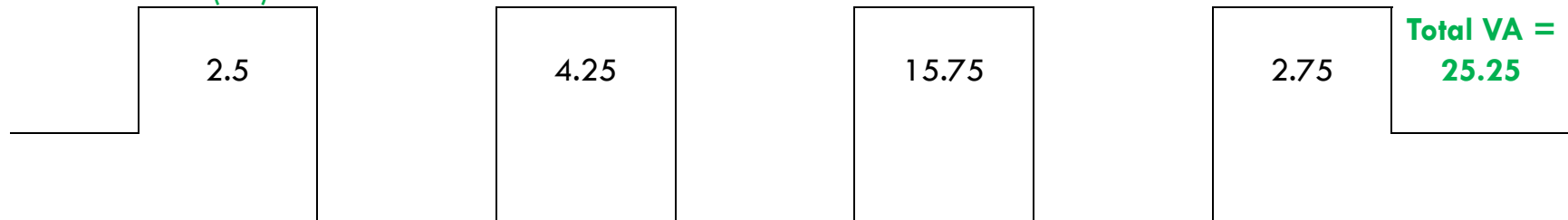
VALUE QUOTIENT = 55%

DATA COLLECTION

Site #2, Office Visit

Patient #	Registration (min.)	Post-registration wait/Waiting Area (min.)	Time with RN/MA in exam room (min.)	Post-rooming wait for physician (min.)	Interaction with MD in exam room (min.)	Time in exam room after MD leaves (min.)	Check out time (min.)	Total time (min.)
1	2	6	6	36	35	0	4	89
2	2	3	3	0	0	0	2	10
3	4	10	3	13	8	0	1	39
4	3	5	5	10	20	2	4	49
Ave	2.50	6	4.25	14.7	15.75	0.5	2.75	46.75

VALUE ADDED (VA) TIME



NON-VALUE ADDED (NVA) TIME

VALUE QUOTIENT = 54%

Opportunities for Improvement

Priority 1: Decrease excessive physical movement of doctors, nurses, and medical assistants, which causes time to be wasted

Priority 2: Decrease post-rooming wait for physicians

Priority 3: Decrease post-registration wait for patients in the waiting area

Ideas for Improvement

Priority 1: *Decrease excessive physical movement of doctors, nurses, and MAs causing wasted time*

- Assign adjacent patient rooms to one particular staff member
- Place printers in exam rooms
- Design center into a U-shaped plan for future space planning

Priority 2: *Decrease post-rooming wait for physicians*

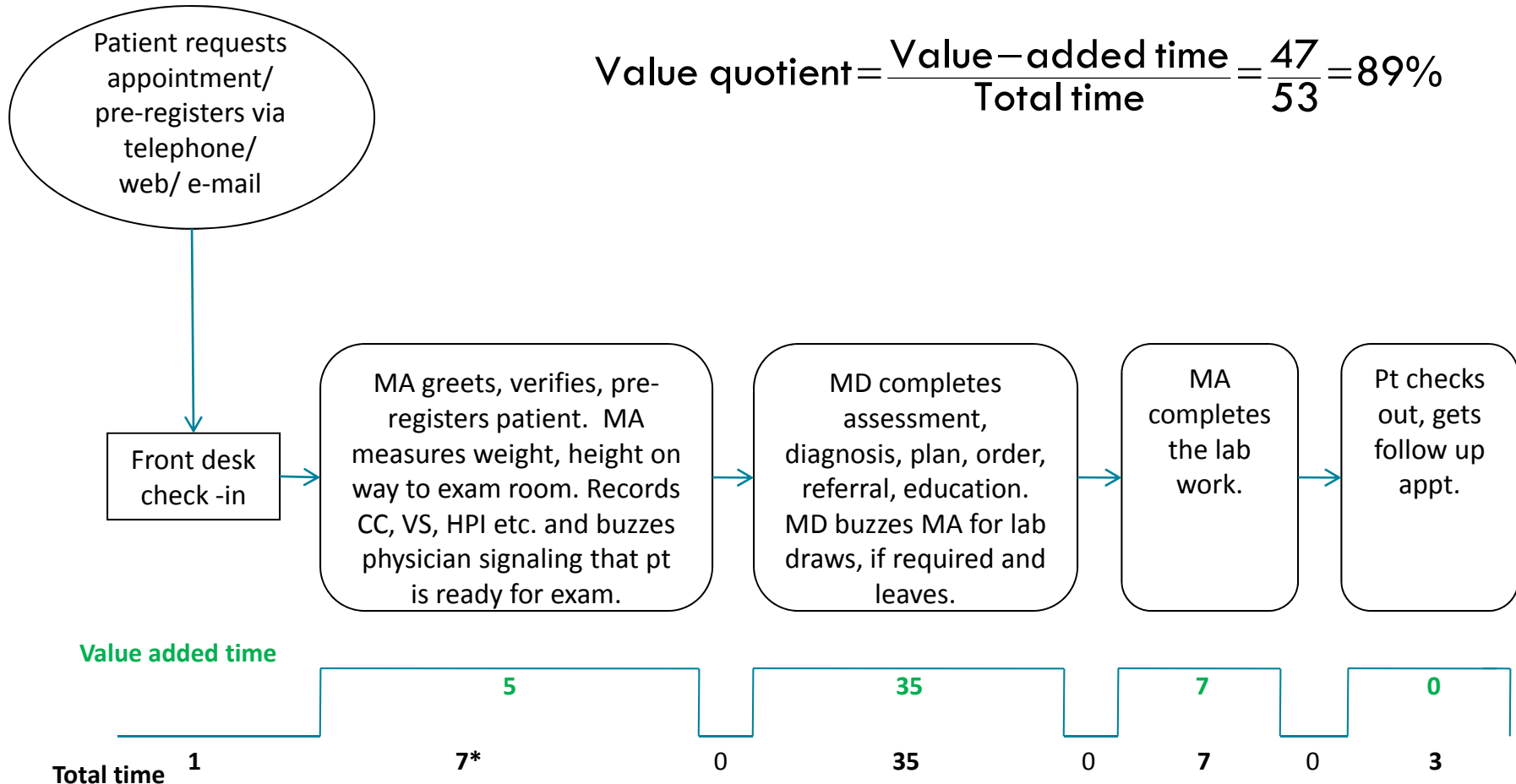
- Place patient/doctor assignment board (Kanban) near patient rooms instead of in staff room
- Complete electronic medical records (EMR) documentation, referrals and orders in exam rooms

Ideas for Improvement

Priority 3: *Decrease post-registration wait in waiting room*

- Increase number of exam rooms
- Conduct check-out procedures in exam rooms

Target Condition: A Lean Office Visit



$$\text{Value quotient} = \frac{\text{Value-added time}}{\text{Total time}} = \frac{47}{53} = 89\%$$

Patient requests appointment/
pre-registers via telephone/
web/ e-mail

Front desk
check-in

MA greets, verifies, pre-registers patient. MA measures weight, height on way to exam room. Records CC, VS, HPI etc. and buzzes physician signaling that pt is ready for exam.

MD completes assessment, diagnosis, plan, order, referral, education. MD buzzes MA for lab draws, if required and leaves.

MA completes the lab work.

Pt checks out, gets follow up appt.

Value added time

5

35

7

0

1

7*

0

35

0

7

0

3

Total time

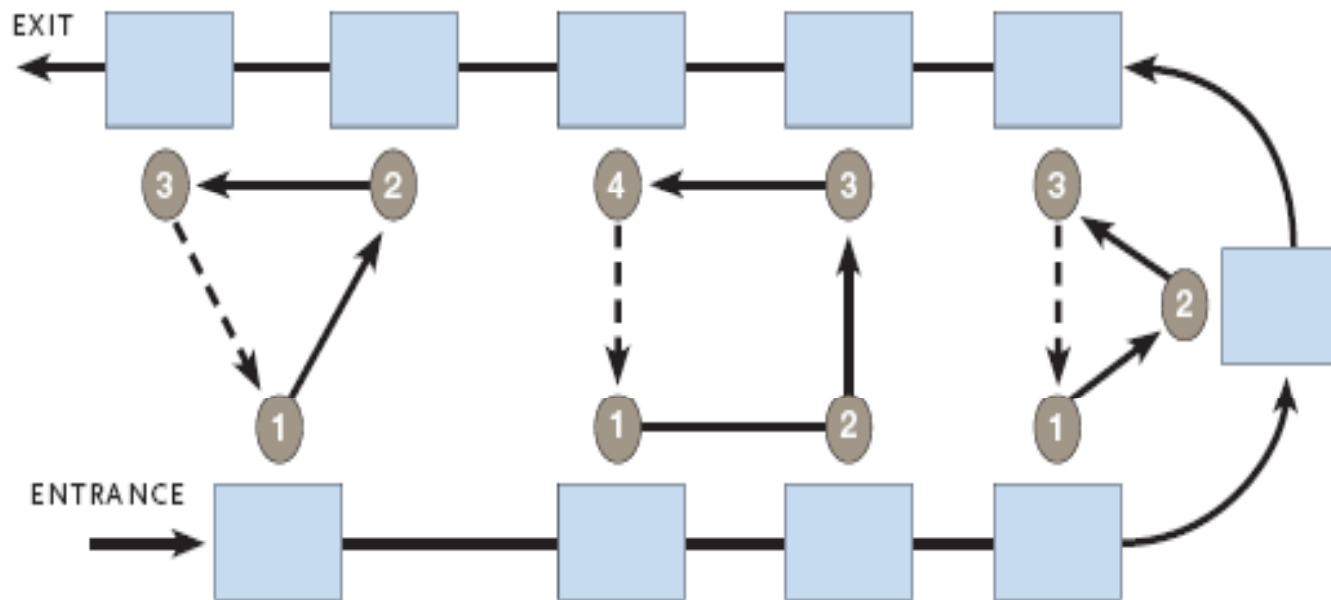
*The total time for the step was 7 minutes, of which 5 minutes were identified to be value added time.

Plan for Proposed Experiment

- Change one thing at a time, in consultation with the staff
(Applying principles of P-D-C-A and continuous improvement)
 - Develop new process for patient flow (Plan)
 - Ex., place Kanban near exam rooms for one month (Do)
 - Re-observe patient flow, collect data or create value stream map (Check)
 - Study results and compare to initial map (Check)
 - Keep, modify or reject change (Act)
 - Plan new change, ex., group exam rooms (Plan)

Future Target Condition

U-Shaped Cells Minimize Walking Distance



Source: [VirginiaMason.org](http://www.virginiamason.org).

http://www.innovativecaremodels.com/uploads/File/tinc/vmps_nursing_brochure.pdf.

Learning

Along with my ongoing summer internship at The Western Pennsylvania Hospital, this Patient Safety Fellowship constitutes my first experience in the healthcare industry from the provider viewpoint. I have learned that healthcare services are not always as beneficial to the health of the consumers as they are intended to be. This program has helped me understand how simple, but great ideas, along with committed efforts and information sharing can promote a safer delivery of healthcare services.

Neha Singla, University of Pittsburgh, Master in Health Administration

As a nurse, it is great for me to learn organizational skills. I am working on my master's degree and will eventually move on to other positions. These are skills I would love to bring to my new positions in the future.

Johanna Balogh, Carlow University, Master of Nursing Education and Leadership

The most important thing I learned is that improvement in safe care of patients is possible. As a nurse, I am now more able to transform what seems to be an insurmountable problem into an opportunity for improvement. I had thought that one needed to be a genius to figure these things out. Now, I know it just takes us, many of us, and hopefully in time, all of us, to improve the safety of care we deliver to our patients.

Susan McCarthy, Robert Morris University, Master of Science in Nursing Education



Thanks/Recognition

- We highly appreciate the efforts made by Jewish Healthcare Foundation to make it the best possible learning experience for us
- We thank the staff at the family health center* for their guidance and support during our site visits

*name not disclosed to protect privacy



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