

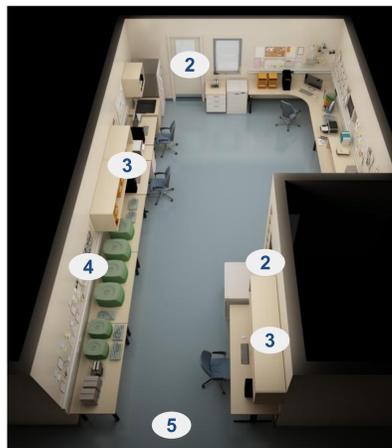
Improving Hospital Laboratory Specimen Handling

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Specimen Receiving Lab

- 01 Nurses collect specimens of blood, urine, tissues, or fluids from patients
- 02 Send to lab via manual drop off or pneumatic tube
- 03 Scan into computers
- 04 Run through centrifuge
- 05 Send to Chemistry for testing

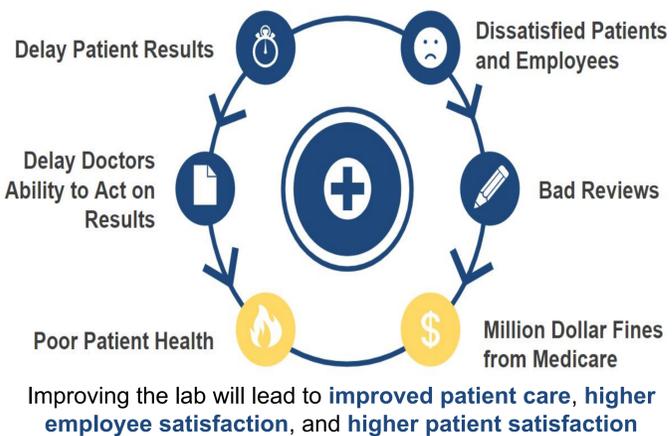


Current Lab Layout

Problems Addressed

- Misplaced specimens** cause delays in processing time or require recollects from patients
- Lab layout** is not optimal to promote standard & organized work
- Diverse handling practices** used by staff causes errors
- Construction plans** requested by client to enlarge footprint of lab (to be implemented ~2021)

Potential Consequences



Goals

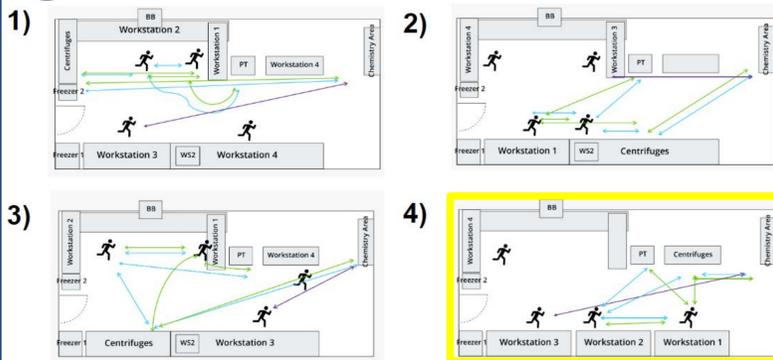
- Misplaced Specimens**
Decrease number of misplaced specimens by 25%
- Lab Layout**
Reduce staff walking distances in the lab by 15%
- Handling Practices**
Create and implement standardized work procedures

Construction Plans Solution



We recommend option 5 as it provides the most linear workflow, efficient use of space, and increased footprint

Lab Layout Solution

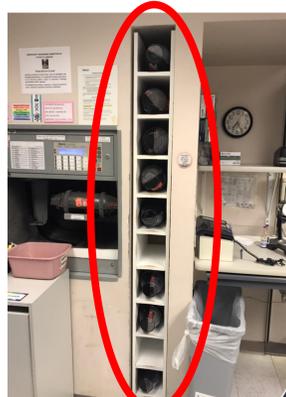


Distances Walked per Worker (meters) & Crossed Paths

	Worker 1	Worker 2	Worker 3	Total Walking Distance	Total # of Crossed Paths
Original	2.29	5.79	3.60	11.68	4
Layout 1	7.12	9.05	2.46	18.63	2
Layout 2	6.34	3.74	1.96	12.03	1
Layout 3	6.95	5.31	0.96	13.22	1
Layout 4	2.77	3.73	2.47	8.97	5

We recommend changing the lab setup to match Layout 4, this minimizes walking distances, thus speeding up specimen processing time

Handling Procedures Solutions



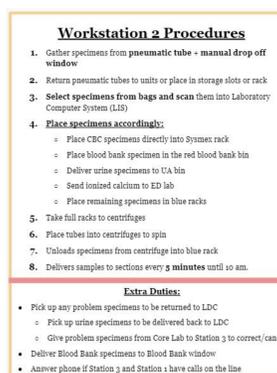
Pneumatic Tube Storage Slots



Example of Storage Rack



Drop-Off Window in Lab



Example Posted Procedures

Recommend a **pneumatic tube storage rack** that can fit under the counter and fold up when not in use

Utilize **manual drop off window** with sign-in sheet, drop bin, and bell for time sensitive specimens

Post updated **standardized procedures** at each workstation

Handling Procedures Solutions



Example Specimen Bin

Example Specimen Rack

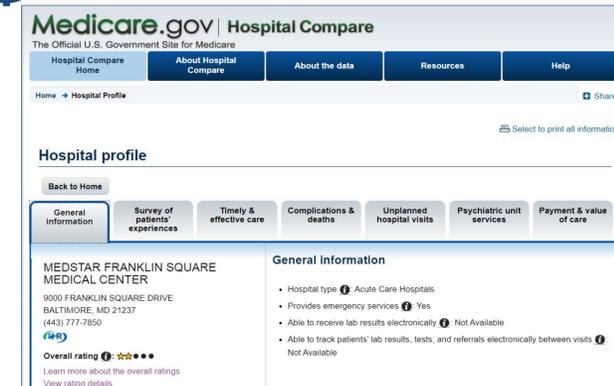
Only use **racks** to store specimens, instead of bins, to minimize lost specimens and keep work organized

Misplaced Specimens Solution

Misplaced Specimen Tracking Sheet

Initiate **misplaced specimen tracking sheet**, and recommend purchase of 3 **table bumper kits** (\$60) to prevent specimens from continuing to roll off countertops

Impact



Medicare runs patient survey of hospitals to provide hospitals ratings which can **affect clientele** and, if negative, **lead to million in fines**

Covid-19 Impact

- We understand Medstar and all healthcare providers are very busy at this time
- Because of this, there is no 'post implementation' data available to study the impact of our work
- We are also unable do analysis on the construction plans due to a lack of data on the room dimensions for walking distance calculations