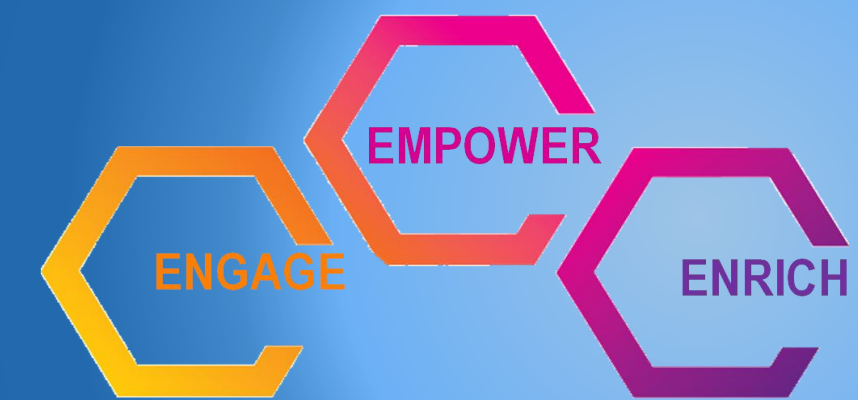


Bringing the Cleanroom to Standard: Cytotoxic Drug Preparation in Eldoret, Kenya



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OPTIMIZATION OPPORTUNITY

Moi Teaching and Referral Hospital (MTRH) in Eldoret, Kenya serves a population of ~24 million from western Kenya and neighboring countries.¹ The chemotherapy pharmacy consists of a cleanroom, anteroom, storage area, and pulley system to transport prepared chemotherapy to the administration area on the floor below. In September 2018, the pharmacy was facing a number of challenges.

- When constructed, a door was not built between the anteroom, where gowning and garbing occurs, and the cleanroom, where chemotherapy preparation occurs.
- Non-pharmacy personnel were entering the cleanroom without gown and garb to deliver chemotherapy orders.
- Dirt was visible on the cleanroom floor and walls.

These challenges indicated there was opportunity for quality improvement efforts to increase the pharmacy's compliance with best practices for cleanroom operations.

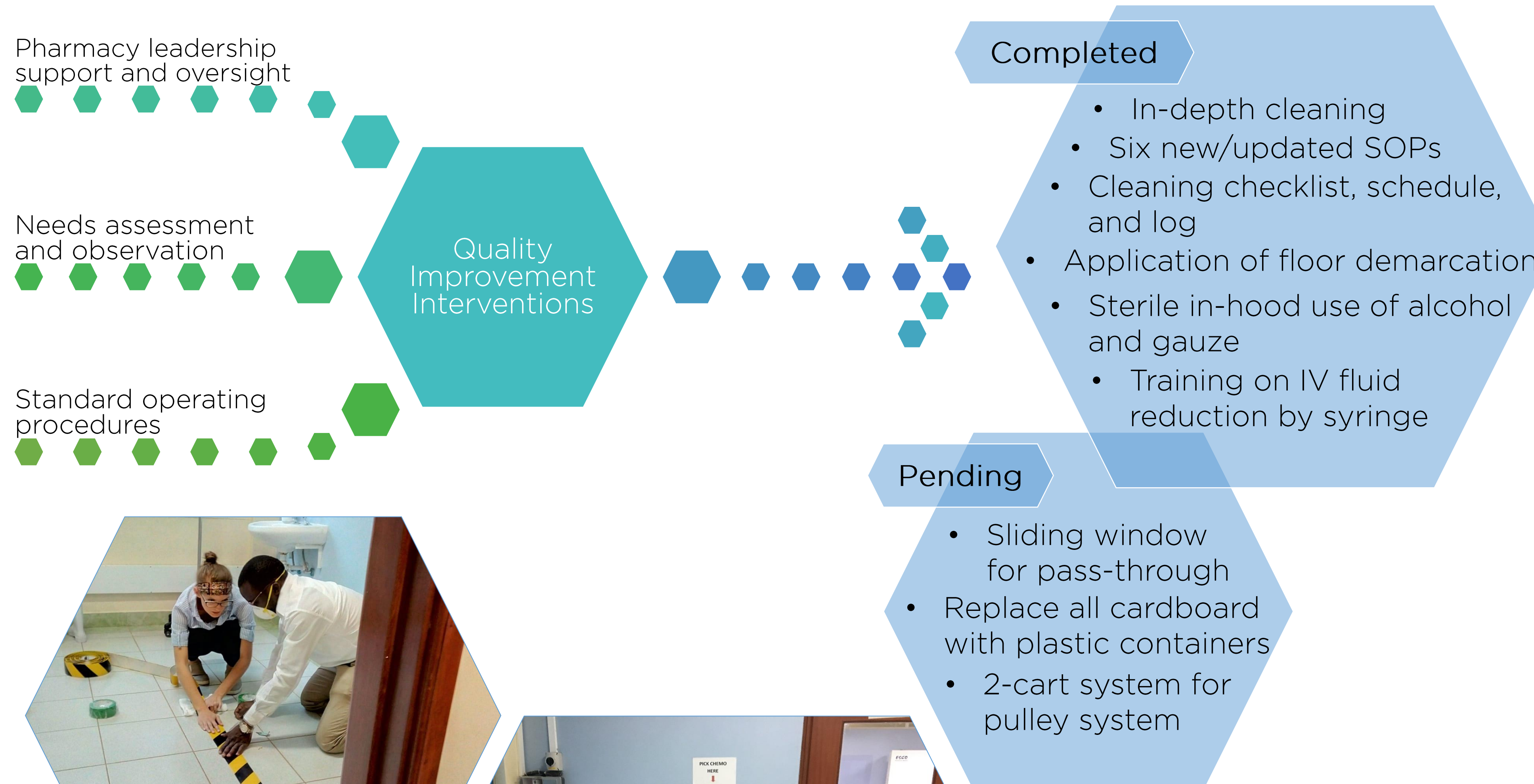
OBJECTIVE

The primary objective was to improve the compliance of a cytotoxic drug preparation cleanroom in Eldoret, Kenya with best practice standards.

METHODS

- Support and oversight from pharmacy leadership was obtained.
- A needs assessment was conducted by pharmacy leadership, staff, and the author, including observation of daily chemotherapy pharmacy activities.
- Applicable standard operating procedures (SOPs) were gathered and reviewed. Additional SOPs were developed as needed.
- Quality improvement interventions were developed and implemented to address:
 - Pharmacy cleanliness
 - Anteroom-cleanroom configuration
 - Sterile preparation practices

RESULTS



NEXT STEPS

- Chemotherapy pharmacy leadership will:
- Maintain SOPs at regular intervals
 - Enforce proper cleanroom operations and cleaning techniques
 - Monitor completion of checklists, schedules, and logs
 - Advocate for funding for pending interventions
 - Provide initial and refresher training for new and seasoned staff

LIMITATIONS

- Cleanroom-anteroom construction
- Limited medical equipment and technology
- Lack of sterile compounding and cytotoxic preparation certifications for pharmacy personnel
- Lack of advanced-degree pharmacy training
- Limited pharmacy personnel
- Hospital resources and financing
- Hospital leadership's priorities

CONCLUSIONS

While chemotherapy pharmacies in Kenya are not held to standards like the USP 800, it is of benefit to patient safety and health outcomes to comply with best practices.

Although the MTRH pharmacy may not be able to meet all standards currently, there was opportunity to make several manageable changes that increased compliance with best practices. The pharmacy also has a plan for additional changes to advocate for to hospital leadership.

This project highlighted the pharmacy's strengths in creative problem-solving and maintaining a continuous quality improvement mindset. These strengths will serve them well in continuing to improve patient care.

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DISCLOSURE

The author is affiliated with the Rutgers Institute for Pharmaceutical Industry Fellowship Program and is a paid employee of Rutgers, the State University of New Jersey.

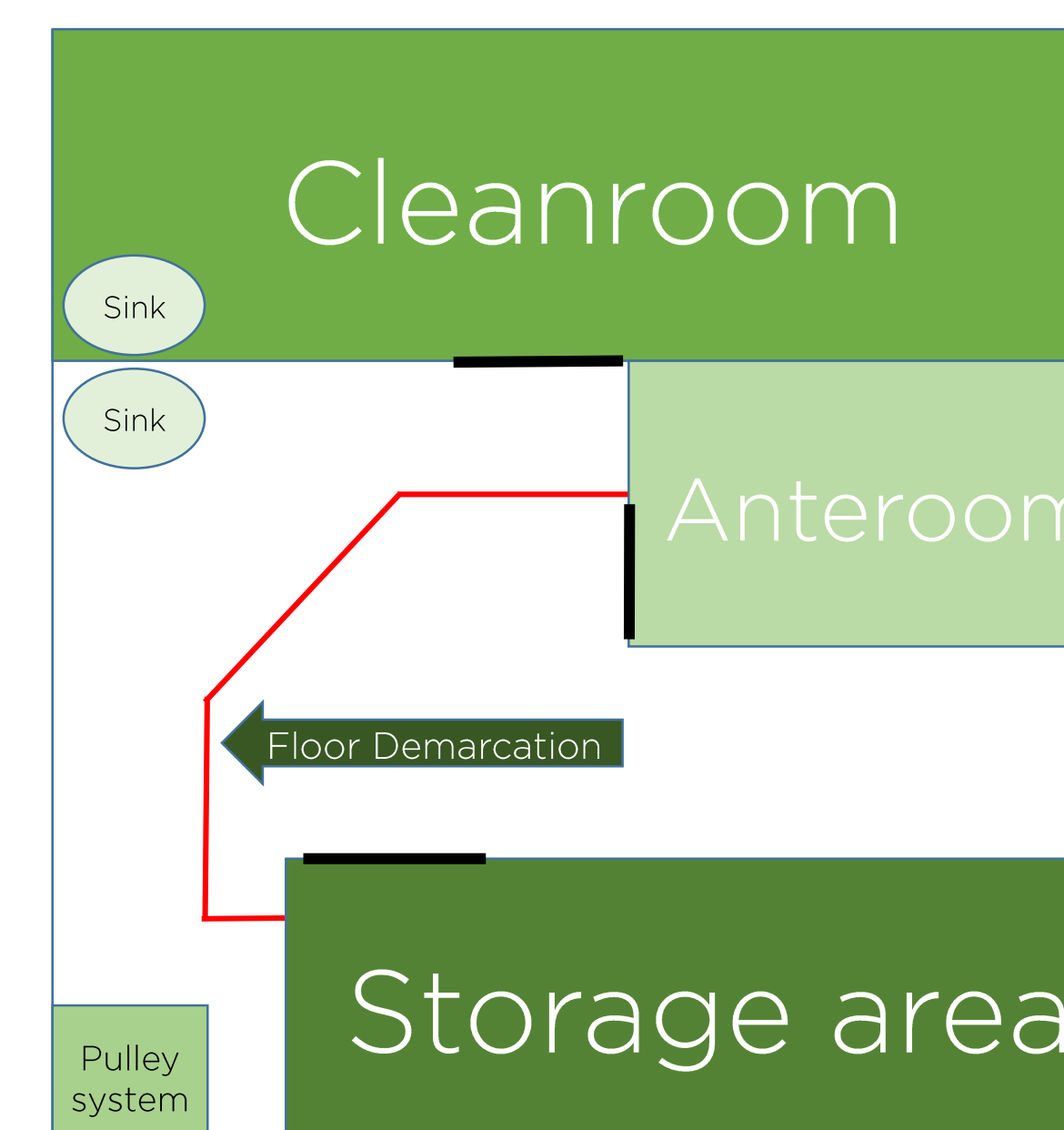


Figure 3. Cleanroom pharmacy layout