Urine Collection QI Project

**AIM Statement:** To improve throughput time for patients with abdominal pain by 50% by improving the collection process of urine specimens.

**Measurements:**
- Throughput time for patients with abdominal pain.
- Arrival time to discharge/admit time.
- Turnaround time for urinalysis.
- Arrival time to results received on urine sample.
- Data may be obtained electronically through IT, with retrospective chart auditing, or real-time data gathering using a simple clipboard.

**Change Package:**
- Form a multidisciplinary team to develop and approve the change package. Meetings are brief, few in number, and focused. The team will buy in on the process changes, prompts and reminders, triggers, standardized order sets, and cueing.
- The urine collection process will be standardized.
- All patients with abdominal pain who are ambulatory will be walked to the restroom, and the urine will be collected before the patient is placed in a room.
- This process will occur by default and without requiring a physician order.
- Place prompts and reminders of new process in triage.
- Use email, posters, flyers, and staff meetings to inform staff of the initiative.

**Methodology:**

**Week 1:** Sample patients with abdominal pain, and compute average overall throughput times or turnaround time (or both) on urine specimens. Educate staff about coming change.

**Week 2:** Implement change and measure results.

Before launching, QI project educational sessions for staff are encouraged. It is important that all workers affected by the change understand the project and its expected outcomes to gain as much staff support as possible. Hopefully this advance promotional effort will generate enthusiasm for the project. In-service conferences, emails, bulletin boards, posters, and even threaded email conversations might be used to set the stage for a QI project.

As soon as the QI project is launched, data should be collected and a feedback loop for staff created. If there is improvement, this often can drive the improvement project by energizing the team. Often stakeholders are motivated by data. If there is no improvement early on, the team can try to assess the reasons. In most instances, gains will be seen and produce further improvement. The feedback loop is one of the most powerful tools in the reliability toolbox. Another powerful tool is the default mitigate them. In this model, biology will work against a 100 percent reliable urine collection. Some patients will be unable to void on command, some will have gone just before they left home, and some may be dehydrated. What to do with these patients who fail to produce a urine specimen using the new process? One fail-safe urine protocol includes:

- All patients with clinical indications are walked to the restroom prior to room placement and instructed in how to provide a urine sample. Once the sample is collected, they will be placed in a room.
- All debilitated or nonambulatory patients with clinical indications will have a catheterized urine specimen obtained upon room placement.
- All ambulatory patients unable to void will be given a timer set at 30 minutes. If the patient still has not voided, the physician will be alerted and asked to give one of the following orders:
  - Start IV fluids and notify the physician if no sample is obtained in 30 minutes.
  - Start IV fluids 1 liter normal saline wide and notify the physician if no sample is obtained in 30 minutes.
  - Catheterize patient for urine sample. Many ED processes are highly unreliable and consequently inefficient. By standardizing the process, we can anticipate increased reliability and efficiency.

Urine collection is such a common problem, it may be the perfect place to begin applying reliability tools and to launch an ED QI project. This project and its methodology can serve as a prototype for other improvement projects.

Meanwhile, as the initiative is being launched, we might consider T-shirts and bumper stickers! Maybe we could use this slogan: “Urine Nation: It’s All About Flow!”

Thanks to Dr. Scott Jolley of LDS Hospital in Salt Lake City for coining the phrase “Urine Nation.” This QI project is part of a portfolio of projects in trial at the Institute for Healthcare Improvement’s ED Collaborative and Innovation Community.

Dr. Welch is the quality improvement director in the emergency department at LDS Hospital in Salt Lake City, a clinical faculty member at the University of Utah School of Medicine, faculty at the Institute for Healthcare Improvement and the Urgent Matters Project for the Robert Woods Johnson Foundation, a quality improvement consultant to Utah Emergency Physicians, and a member of the Emergency Department Benchmarking Alliance.