

Reducing CAUTI Infections with Alternative External Collection Device Use

BACKGROUND:

- The duration of catheterization is a key risk factor for developing a Catheter Associated Urinary Tract Infection (CAUTI).
- Indwelling urinary catheters (IUC) come with high risk of CAUTIs leading to increased morbidity, mortality, length of stay, readmissions, and cost of care.
- Delay of discontinuation for IUCs is frequent despite available alternative External Collection Devices (ECDs) due to concern for urinary leakage and inaccurate measurement of urinary output.
- The Standardized Utilization Ratio (SUR) is used as a quality improvement measure by hospitals to compare local, state, and national levels. (*Device days/1000 patient days.*)
- The Standardized Infection Ratio (SIR) is used as a quality improvement measure to track Hospital Acquired Infections (HAIs) over time at local, state, and national levels. (*Infections/Predicted infections with benchmark ≤ 1*)
- The use of inaccurate ECDs and a need to reduce urinary catheter days and CAUTI infection rates prompted a quality initiative to expand alternatives.
- The first urine output study on a novel female ECD (Boehringer Laboratories Phoenixville, PA) was performed at WVU Uniontown Hospital.

SMARTER OBJECTIVE:

Specific: Reduce the number of CAUTIs by 10% with a focus on removing devices without clear indication

Measurable: Measure the SUR and SIR thresholds

Achievable: Provide education on appropriate functioning and placement of alternative ECD and utilize the electronic CAUTI surveillance tool within each unit

Relevant: Implement process to daily huddles and create escalation process

Time-bound: Decrease SUR and SIR below national level by end of calendar year 2024

Evaluated: Monitor utilization daily and report to all managers and directors at Leadership Daily Safety Briefing (DSB) and monthly report card

Revised: Round with CAUTI surveillance tool and provide 1:1 education and identify educational gaps to provide the best quality outcomes for our patients

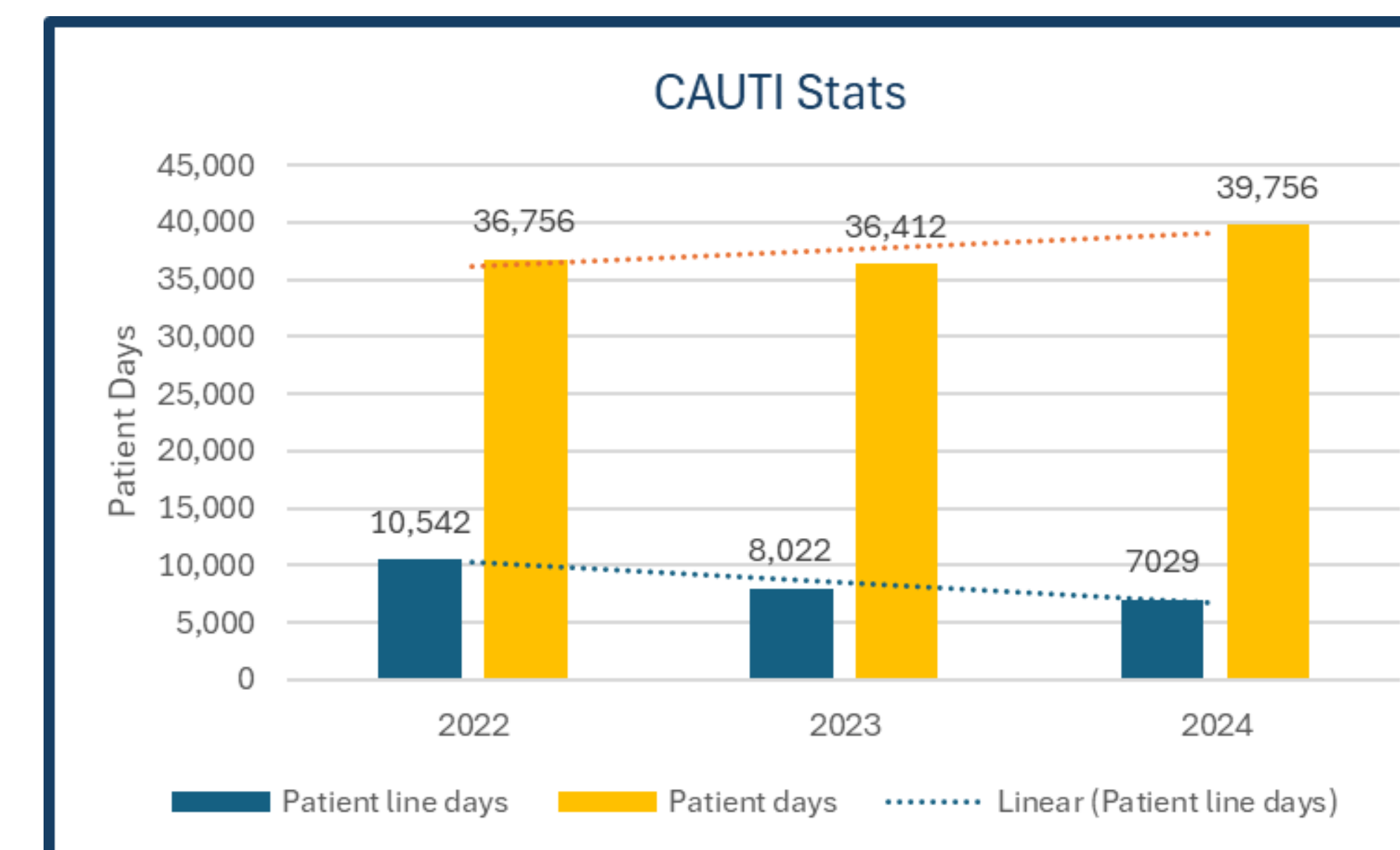
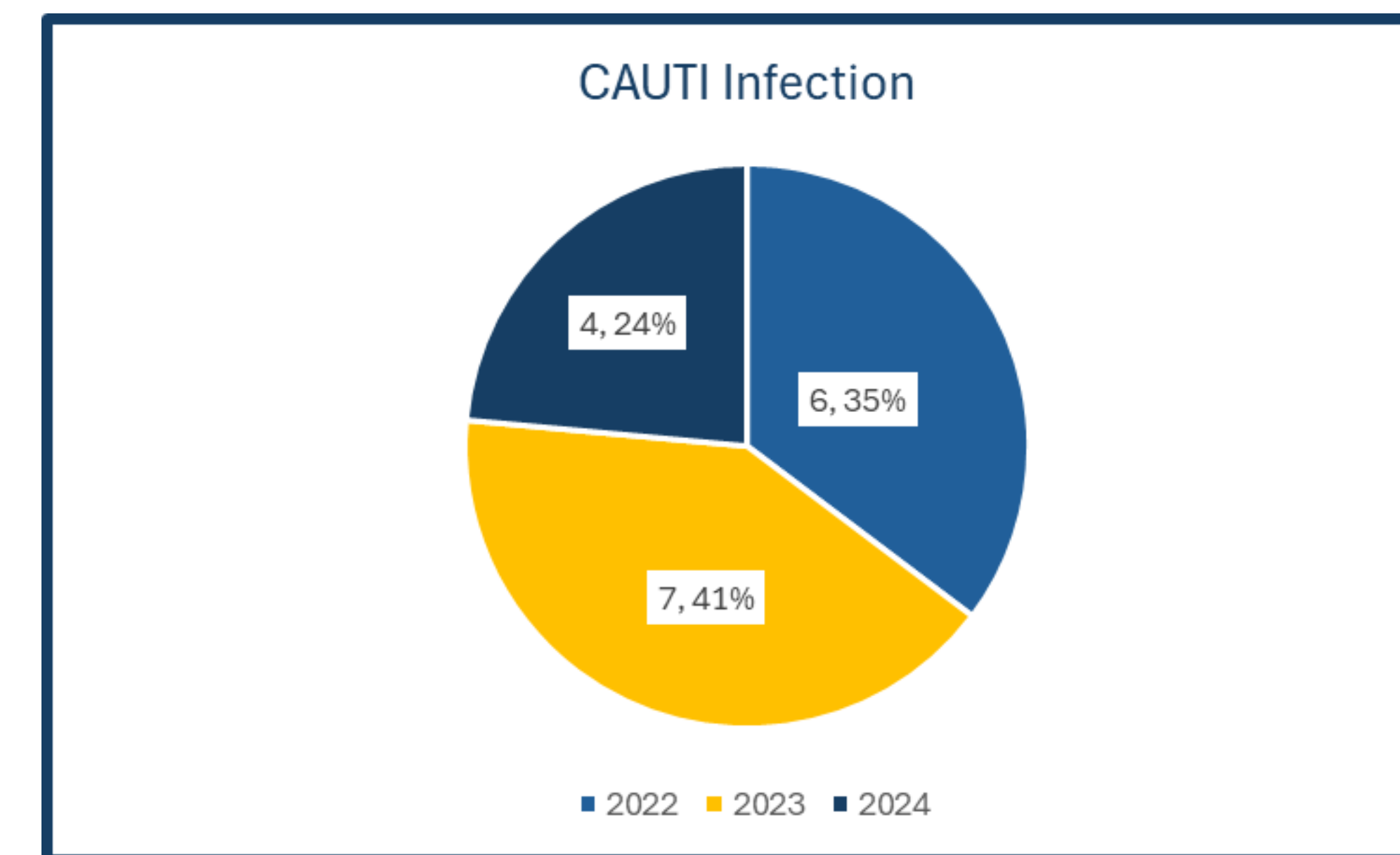
IMPROVEMENT ACTION PLAN WITH ACTIONS TAKEN

- Performed a study for quantification of urine capture by a novel female external catheter with hydrophilic, polyurethane foam-based properties for accurate urine output measurement
 - *Acute Care Settings Involved:
 - Medical Intensive Care Unit
 - Medical/Surgical Units including Step-down, Renal, and Cardiac patients
 - *Team members:
 - Infection Control Practitioners
 - Nursing/Education Staff
 - Boehringer Representatives
 - *Patient population:
 - Non-ambulatory Females without urinary retention
- Increased surveillance rounding with **electronic CAUTI educational tool**
 - *Staff required to submit 25 observations per month
 - *Feedback provided monthly to nursing units
- Educated staff on:
 - *Nurse Driven Foley Removal Protocol
 - *Bladder Scanning for Post-Void Residual
 - *Intermittent Catheterization
 - *Positive Urine Culture Process Algorithm
 - *Educational Barriers with placement of ECD
 - *Appropriate candidates for ECD
 - ***DAILY** Discussion of IUC necessity at unit huddles



RESULTS:

- Through the ECD study, over 5-day period, among 25 patients, 93 samples were obtained.
- The capture rate was 97.2% (n=93, $\pm 3.148\%$).
- Notably, 54 out of 93 measurements exceeded a capture rate of 98%, which was statistically significant.

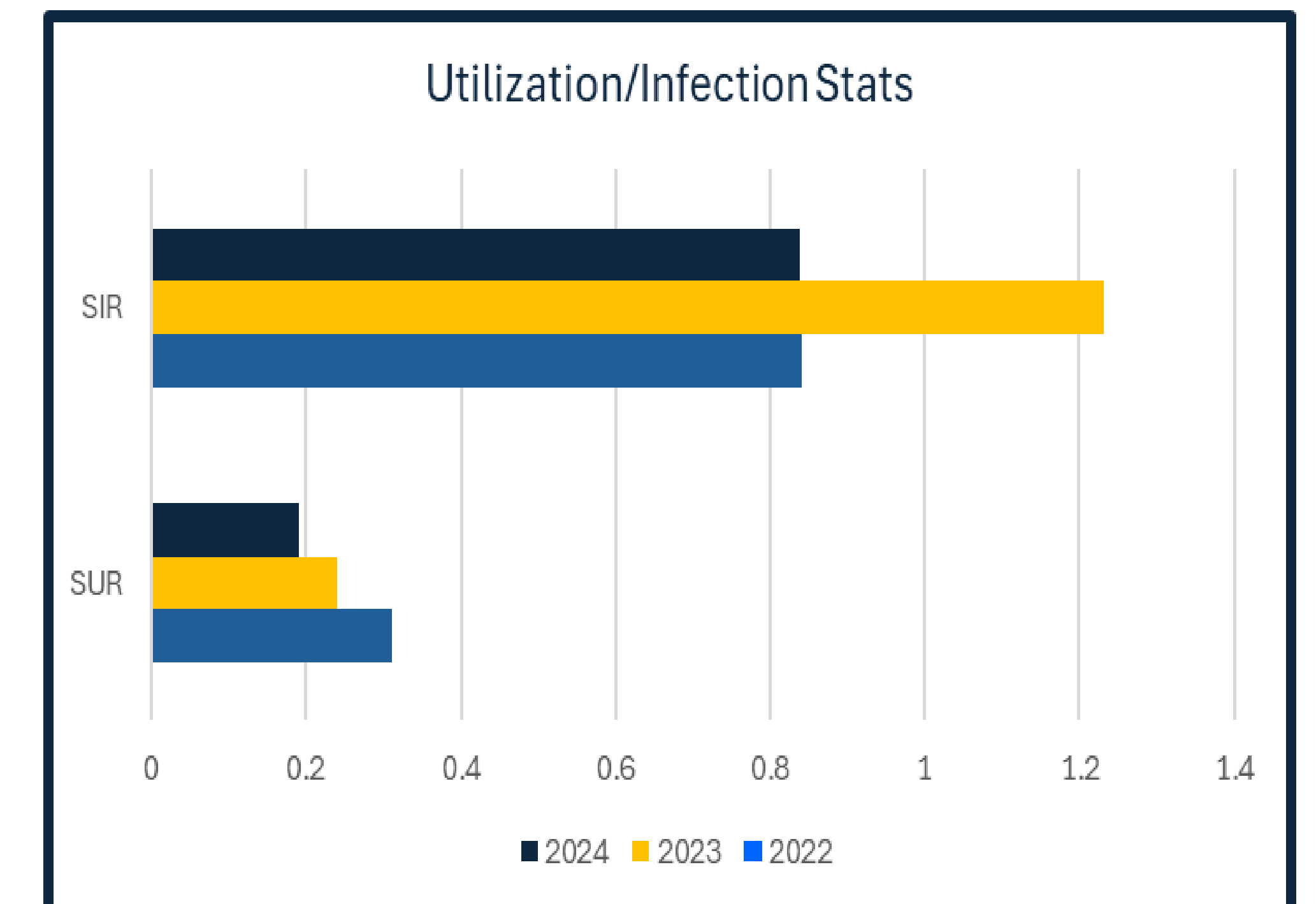


SCALE UP PLAN:

A systematic approach to assess urinary catheter appropriateness and alternative devices facilitated the discontinuation of the catheters, which lead to a decrease in the SUR, thus decreasing the SIR below the national benchmark for 2024.

SUCCESS HIGHLIGHTS

- Executive leadership support
- CAUTI Champion on each nursing unit
- Daily review of IUC necessity
- Accurate placement of ECD -Key to product success



SUSTAINABILITY PLAN:

- WVU Medicine Uniontown Hospital follows a Standard of Work Process for all quality projects and initiatives.
- Nursing unit leadership completes Root Cause Analysis (RCAs) as soon as CAUTI occurs to identify process gaps.
- RCAs are reviewed for trends at Infection Control Committee Meetings.

LESSONS LEARNT:

- Perform assessment of actual baseline Nursing knowledge and understanding of IUC and Nurse Driven Foley Removal Protocol
- Make nursing units accountable for removal of IUC
- Educate Nursing Care Assistants with direct 1:1 real time education for ECD placement

