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Earlier Urinary Catheter Removal to Promote Independent Bladder Function in Patients with Epidurals

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Background and Triggers

- Thirty percent of all healthcare infections are catheter-associated urinary tract infections. (Yokoe, Anderson, Berenholtz, Calfee, Dubberke, Ellingson, & Maragakis, 2014).
- Patients do not have the proper education to help prevent urinary tract infections (Quast, Knobloch, Patterson, Purvis, Shirley, Safdar, 2016).
- Less invasive procedures, such as intermittent urinary catheterization, are preferable to more invasive procedures such as indwelling urinary catheterization (Yokoe, Anderson, Berenholtz, Calfee, Dubberke, Ellingson, & Maragakis, 2014).
- LVHN does not have a current policy on indwelling urinary catheters with epidurals.
- On 4KS, surgical oncology patients with epidurals utilize indwelling urinary catheters until the removal of the epidural.
 - Epidural removal is expected no earlier than post-operative day 3, but may be delayed as evidenced in our pre-intervention data.

Evidence

- No increase in the risk of infections with indwelling urinary catheters observed if removed within 48 hours post-op (Hu, Craig, Rowlingson, Morton, Thomas, Persinger, Kozomer, 2014).
- For total joint arthroplasty surgery, with early removal of the indwelling urinary catheter there was only 1 UTI as compared to 8 UTIs seen in the control group when the urinary catheter remained until the removal of the epidural (Zhang, Liu, Hu, Xue, Li, Zhang, Pan, Ma, Yam, 2015).
- For spinal surgeries, the research showed that the number of inserted indwelling urinary catheters used in the PACU significantly decreased when utilizing an algorithm that included more frequent use of intermittent urinary catheters. This was possible because of the implemented algorithm eliminating patients with risk factors such as POUR. (Hoke & Bradway, 2016).

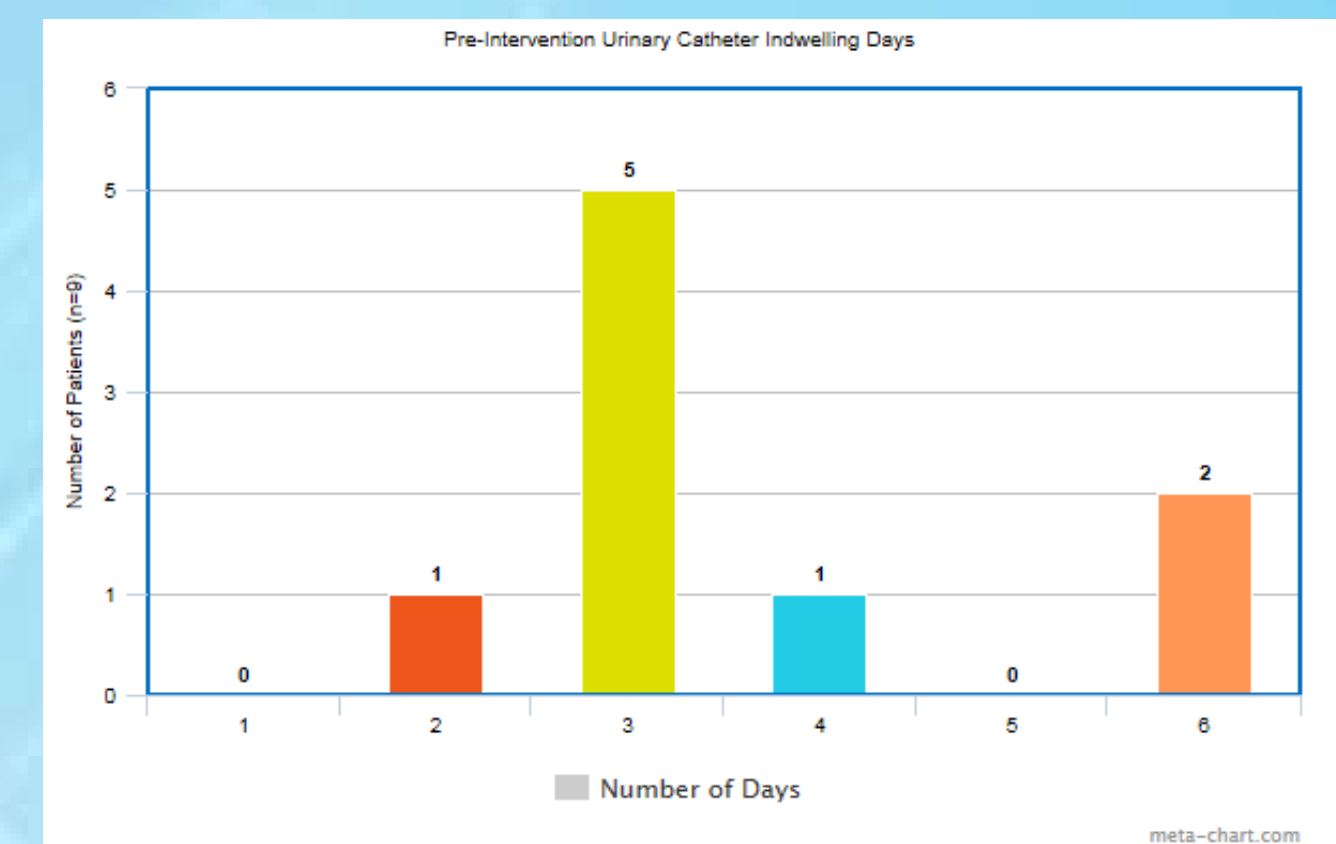
Purpose

P.I.C.O.

- In post-surgical oncology patients with epidurals on 4KS, will the removal of the indwelling urinary catheter on post-operative day two at midnight with the implementation of an intermittent straight catheter only protocol be successful in decreasing the urinary catheter utilization ratio while managing bladder function effectively?

Outcomes

Pre-Intervention



- 7/9 indwelling urinary catheters were removed on the same day that the epidural was removed.
 - 5/9 of these were removed on post-operative day 3.
- 1/9 indwelling urinary catheter was removed 5 days before the epidural removal.
- 1/9 indwelling urinary catheter was removed 1 day after the epidural removal.

Post-Intervention

- Indwelling urinary catheters were removed on post-operative day 2 at midnight per physician ordered protocol (n=2).
- 1/2 patients was able to achieve independent bladder function immediately upon removal of the indwelling urinary catheter.
- 1/2 patients was able to void a small amount post indwelling urinary catheter removal, requiring one intermittent catheterization before achieving independent bladder function.

Implementation and Methodology

- Developed a new order set with the surgical oncology team.
 - Removal of indwelling urinary catheter on post -op day two at midnight as compared to post-op day three or later.
 - New utilization of an intermittent straight catheter only protocol post indwelling catheter removal.
- Monitored the number of indwelling urinary catheter days pre-intervention.
- Monitored the number of intermittent catheterizations required before regaining independent bladder function post-intervention.
- Assessed influence of order set on urinary catheter utilization ratio.
- **Barriers:** Low provider use of order set

Conclusion

- 8 out of 9 patients had the indwelling urinary catheter in place for 3 or more days in our pre-data. Our evidence stated that there is no increase risk of infection if removed within 48 hours post-op.
- Patients with epidurals are able to have independent bladder function. Because of this, we were able to reduce the urinary catheter utilization ratio in our post-data.
- Indwelling urinary catheters should not be kept in for the duration of the epidural.
- **Limitations:** Small sample size and short duration of interventional phase

Implications for Future Nursing Practice

- Develop a policy or algorithm for the proper indication of catheterization in conjunction with epidurals.
- **Further Research:** Collect data on earlier removal of the indwelling urinary catheter in PACU and the influence on independent bladder function and occurrences of urinary tract infections.

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