

Urinary Retention

- ❖ 7.9/100,000 patients aged 70-83.
- ❖ Multi-factorial:
 - ❖ Neurogenic, obstructive, pharmacologic...
- ❖ Common post-surgical complication.



Post Void Residual (PVR)

- ❖ Volume of urine in the bladder following completion of urination.
- ❖ Adult bladder has a maximum capacity of 500cc. A physiologic PVR is typically considered <150cc, though there are exceptions.
- ❖ Urinary retention is NOT a binary concept.
- ❖ Urology residents and NPs were polled, and estimated that in the Downtown ED this data point is required between 5-7 times monthly.

Current Paradigm

- ❖ "Bladder Ultrasound pre- and post-void" (CPT 76830 26) is currently the only reliable method to obtain PVR data in the downtown ED.
- ❖ Cost to the patient: \$1,046.
- ❖ Estimated average monthly cost to the "system:" \$5,230 - \$7,322.

Alternative Methods

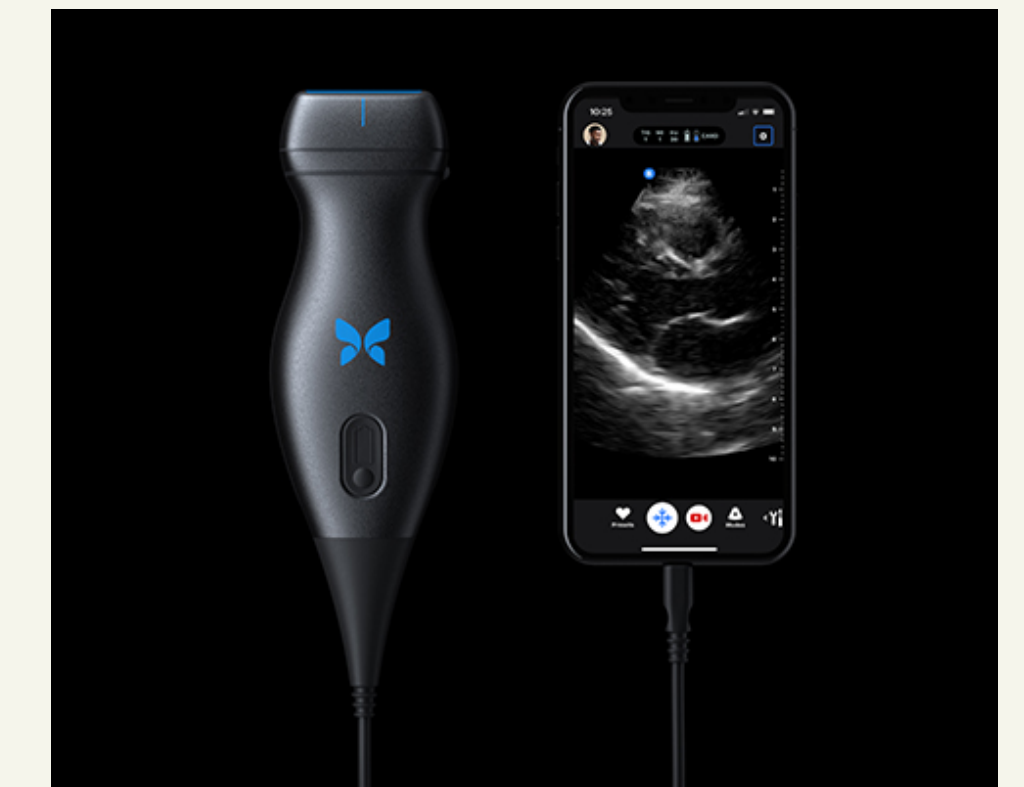
- ❖ Post-void straight catheterization (CPT 51701).
 - ❖ Technically the gold-standard but most invasive, risk of UTI.
 - ❖ Requires nursing staff to successfully place catheter.
- ❖ Portable Bladder Scanner (CPT 51798).
 - ❖ Easy to use, risk free. Limited additional utility.
- ❖ Portable Bedside Ultrasound evaluation (CPT 51798).
 - ❖ Time consuming, requires measurement at bedside by resident.
 - ❖ Operator dependent.



Verathon BLADDERSCAN BVI 9400

Alternative Methods Cont.

- ❖ Butterfly iQ+ Handheld Portable Ultrasound Machine (CPT 51798).
 - ❖ Automatically calculates bladder volume similar to a bladder scanner while also providing actual images.
 - ❖ Multiple other non-urologic functions:
 - ❖ Vascular line placement.
 - ❖ FAST exam.
 - ❖ Cardiac Assessment.
 - ❖ Nerve Blocks/Musculoskeletal injections.



Cost Comparison

Method of investigation	Initial Investment	Estimated Monthly Cost	Estimated Annual cost (including upfront investment)
Formalized Bladder Ultrasound	\$0	\$5,230 - \$7,322	\$62,760 - \$87,864
Portable Bladder Scanner	\$5,000 - \$7,000	\$190 - \$266	\$5,190 - \$7,266
"Butterfly iQ+" Handheld Portable Ultrasound Machine	\$2,399	\$190 - \$266	\$2,589 - \$2,665
Post-Void Straight Catheterization	\$0	\$135-\$189	\$1,620 - \$2,268
Bedside Portable Ultrasound	\$0	\$190 - \$266	\$190 - \$266

Conclusion & Going Forward...

- ❖ A one time purchase of a bladder scanner or several "Butterfly" portable ultrasound machines will decrease monthly costs to the healthcare system and to patients. It will expedite patient care by avoiding costly and time consuming formalized imaging studies.
- ❖ Current cost to the system calculations rely on an estimated frequency of encounters requiring PVR data on a monthly basis.
- ❖ The Urology Department plans on prospectively recording encounters at the Downtown ED requiring PVR data over several months to generate more accurate data to better calculate the cost of the current paradigm on patients and the healthcare system.