Healthcare system administrators and nurses are faced with the challenge of providing more efficient and cost-effective healthcare. Point-of-care ultrasonography is a proven method of improving patient care. Point-of-care ultrasound refers to the use of portable ultrasonography at a patient’s side for diagnostic (e.g., symptom- or sign-based examination) and therapeutic (e.g., image-guidance) purposes. Point-of-care ultrasonography has the capacity to revolutionize nursing care and improve procedural efficacy (e.g., peripheral intravenous [IV] placement), decrease complications, and limit patient pain and suffering, while saving hundreds of millions of dollars on an annual basis across healthcare systems. The use of point-of-care ultrasonography supports the Centers for Medicare & Medicaid Services (CMS) goals for value-based purchasing and will provide long-term savings by improving patient health and reducing complications.  

Examples of literature-based, proven-effective nurse-performed ultrasound application include:

**Bladder Ultrasonography**

A growing number of nurse-driven protocols aim to reduce the incidence of urinary catheter insertion and subsequent catheter-associated urinary tract infections (CAUTI). Urinary catheters, especially indwelling catheters, have been shown to sharply increase the incidence of urinary tract infections (UTIs).

Bladder ultrasonography has reduced the incidence of CAUTIs by eliminating unnecessary catheterizations.  

Bladder ultrasound can determine whether a patient requires catheterization and is a key component of many protocols. The use of a bladder ultrasound can reduce the CAUTI risk by decreasing the overall frequency of urinary catheterization. For example, not urinating for 6 hours is a sign that alerts nurses to a patient’s possible urinary system problems. Traditional nursing assessments of interviewing a patient and checking for symptoms of urinary retention, such as palpating the bladder for distention, can now routinely be supplemented by the use of bladder ultrasonography. This tool provides data about whether the patient’s bladder is full enough to warrant catheterization or irrigation. When a catheterized urine sample is required as part of an assessment for an infant with a fever, ultrasound-guided bladder catheterization is a documented method to reduce patient discomfort and improve the patient and family experience. Overall, bladder ultrasonography has reduced the incidence of CAUTIs by eliminating unnecessary catheterizations.
Ultrasound-Guided Peripheral Vein Cannulation

Successfully obtaining IV access can be difficult in many patients. A patient’s anatomy may cause access problems or their veins may be scarred from previous indwelling catheters or blood specimen phlebotomy. There are also patients for whom obtaining IV access may be difficult due to a transient medical situation, such as low blood volume or shock. In these cases, a delay in obtaining IV access may delay diagnosis and treatment, thereby endangering the patient. Using ultrasound to help guide insertion of peripheral IV lines can save precious time and hasten the diagnosis and care. Nurse-driven ultrasound-guided peripheral IV line programs demonstrate improved success in obtaining IV access and a subsequent decrease in the need for central IV access. These programs also decrease the time required to obtain IV access so patient care can begin quickly. This type of ultrasound has been found to be especially useful in emergency departments. International evidence-based recommendations on ultrasound-guided vascular access include using ultrasound imaging to “demonstrate a patent and healthy vessel prior to cannulation,” optimizing correct placement on the first attempt, and minimizing the risk for complications. Using ultrasound for peripheral IV insertion has been shown to decrease patient pain and anxiety, thus improving the patient experience.4,5,6,8

Additionally, point-of-care ultrasonography4,5,6,8,11

• Minimizes ionizing radiation exposure during medical imaging, reducing the risks of excessive radiation exposure for both patients and nurses.
• Puts the emphasis on less-invasive interventions, allowing for a greater success rate with initial interventions (e.g., placing peripheral IVs) and reducing the need for more complicated procedures (e.g., central venous access).
• Improves clinician efficiency, which has a positive impact on patient care and the overall patient experience.

Nurses and other clinicians who have undergone ultrasound training and have learned to incorporate this important tool into their daily practice have expressed satisfaction with its use. In some cases, ultrasonography can also avoid overuse of expensive sterile equipment and save valuable nursing time. Overall, the use of ultrasound in nursing practice can improve patient care and outcomes.
REFERENCES


How Nurse-Performed Ultrasound is Improving Patient Care and Nursing Efficiency