

# Access Device Standards of Practice

## FOR ONCOLOGY NURSING

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*To our mothers, who brought us together in so many ways.*

-Dawn Camp-Sorrell and Lauri Matey



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# Abbreviations

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**AANA**—American Association of Nurse Anesthetists  
**ANTT**—aseptic no-touch technique  
**APN**—advanced practice nurse  
**APRN**—advanced practice registered nurse  
**BSI**—bloodstream infection  
**CDC**—Centers for Disease Control and Prevention  
**CHG**—chlorhexidine gluconate  
**CLABSI**—central line–associated bloodstream infection  
**CNS**—central nervous system  
**CRBSI**—catheter-related bloodstream infection  
**CSF**—cerebrospinal fluid  
**CT**—computed tomography  
**CVAD**—central venous access device  
**CVC**—central venous catheter  
**DER**—dose error reduction system  
**DVT**—deep vein thrombosis  
**EMR**—electronic medical record  
**EtOH**—ethanol  
**HCl**—hydrochloric acid  
**ICU**—intensive care unit  
**IJ**—internal jugular  
**INR**—international normalized ratio

**INS**—Infusion Nurses Society  
**IP**—intraperitoneal  
**IR**—interventional radiology  
**IV**—intravenous  
**LMWH**—low-molecular-weight heparin  
**MPE**—malignant pleural effusion  
**MRI**—magnetic resonance imaging  
**NCCN**—National Comprehensive Cancer Network  
**NS**—0.9% normal saline  
**ONS**—Oncology Nursing Society  
**OR**—operating room  
**PASV**—pressure-activated safety valve  
**PICC**—peripherally inserted central catheter  
**PIV**—peripheral intravenous  
**RN**—registered nurse  
**SC**—subcutaneous  
**SVC**—superior vena cava  
**TENS**—transcutaneous electrical nerve stimulation  
**tPA**—tissue plasminogen activator  
**TPN**—total parenteral nutrition  
**VAD**—venous access device  
**WHO**—World Health Organization



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# Introduction

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For decades, access devices have been used to deliver complex and diverse treatments to patients with cancer. IV therapy is an integral part of modern medicine and nursing, as it is practiced in every healthcare setting, from the hospital to the home. A new generation of access devices is quickly being adapted to provide a safe means to administer therapies into body systems, such as the peritoneal, arterial, epidural, pleural, or intraventricular spaces. The daily use of access devices is central to the care that oncology nurses provide to patients with cancer. With this increased complexity, nurses have an increased responsibility in maintaining access devices and a key role in preventing device-related complications.

Evolving technology continuously leads to newer devices and products used concurrently with access devices. This technology continues to improve on existing access devices to decrease the occurrence of the most frequent complications: infection and occlusion. Increased safety features, for both patient and provider, help to decrease accidental exposures or catheter malposition. As new products emerge, nurses must advance their knowledge to provide competent and safe care.

Little empirical evidence and research are available to support evidence-based nursing care related to venous access devices (VADs). Few randomized controlled trials have been conducted to definitively support nursing practices. Practice continues to be dictated by manufacturer recommendations or manufacturer in vitro clinical trials performed for U.S. Food and Drug Administration device or product approval. Government regulations also dictate care from the standpoint of insurance reimbursement, but without clear evidence to support specific practices; in the absence of evidence but in the face of reimbursement losses, practices may be adopted without clear evidence to support them. Expert opinion and institution-specific historical data often are used to develop policies.

Oncology nurses must base practice on evidence-based research when available, but lack of evidence is a professional challenge. Given this, the Oncology Nursing Society (ONS) recognizes that both the unique complexities of patients with cancer and the extensive use of access

devices in this population warrants standards and recommendations that meet the specific needs of nurses who specialize in oncology nursing. ONS is well-positioned to define the standards of excellence for access device management in the specialty of oncology nursing and has continually updated its access device recommendations since 1989. Terminology used in *Access Device Standards of Practice for Oncology Nursing* is deliberately chosen to distinguish between evidence-based practices and those for which no definitive evidence is available.

*Access Device Standards of Practice for Oncology Nursing* was developed through a multiphasic process, beginning with an exhaustive analysis of empirical research, meta-analytical summaries, case reports, and review articles. PubMed, Cumulative Index to Nursing and Allied Health Literature, Cochrane Library, Database of Abstracts of Reviews of Effects, National Guideline Clearinghouse, U.S. Preventive Services Task Force, and Turning Research Into Practice databases were queried to ensure complete data inclusion. Although the main focus of these standards is the adult population, research conducted with pediatric populations is included when available and when appropriate to extrapolate findings to adults. Following this synthesis of evidence, clinical experts working in the field of oncology nursing developed each chapter. Several editorial review cycles followed to ensure accuracy and inclusion of all relevant data. Field reviewers, including the Infusion Nurses Society, were invited to provide in-depth analysis and feedback. An open public comment period was offered to ensure a rigorous and transparent review process. Appendix 1 provides evidence demonstrating the strength on which standard statements are made.

The ONS Board of Directors defines the characteristics of a *standard* as “an authoritative document that provides requirements, specifications, and/or characteristics that shall be used consistently across practice settings to ensure that nursing actions, processes, and services are used to achieve desired optimal results” ([www.ons.org/practice-resources/standards-reports](http://www.ons.org/practice-resources/standards-reports)). Practice statements in this publication are identified as standards, recommendations, or as practice for which no evidence can support a definitive statement in

the case of lacking evidence. The following language is used to identify these statements:

- **Practice standard:** Evidence is sufficient to conclude the acceptance of this practice.
- **Practice recommendation:** Evidence is less robust; expert opinion, generally accepted practice, and sound nursing judgement warrant consideration of this practice.
- **No definitive recommendation can be made:** Evidence is lacking to support a definitive practice.

The Standards have been developed from this synthesis of evidence, critical review, and analysis, focusing on those aspects of VAD management for which nursing is accountable and directly associated with VAD care. Historical evidence, when provided, is offered when recent evidence is lacking or to underscore the strength of a standard statement.

Ongoing surveillance of infection and occlusion rates and daily evaluation of access device use will help any institution evaluate policies to determine if revisions in practice are needed. Access device manufacturer websites should be consulted for recommendations on specific brand and device types. With limited research to guide practice, ongoing controversies remain concerning optimal management. Developing the expertise needed to successfully

manage access devices is a continual challenge to nursing professionals. The intent of these standards is to provide the foundation for evidence-based practice to guide individual oncology nursing practice.

*Access Device Standards of Practice for Oncology Nursing* is arranged in chapters for ease of use. Chapter 1 critically reviews controversies in access device care. Standard statements and recommendations made are based on the evidence presented. The remaining chapters detail each venous and specialty device. Patient selection criteria and advantage/disadvantage tables within each chapter can be used to select the best device based on the patient's needs. Chapter 17 explores recommended documentation and key legal ramifications concerning access devices and their management. Examples of competency practicums are provided as appendices.

It is clear that, despite the lack of evidence-based practice for care of access devices, patient quality of life has greatly improved over the past decades with the advances in access device technology. *Access Device Standards of Practice for Oncology Nursing* explores the latest technologies, management procedures, and the controversies that remain.

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